Project co-financed by the European Regional Development Fund

D.4.1.1. Evaluation report

The report includes the results of the transnational meetings and the comparative assessment of pilot experiences

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WP 4 - Transferring

Activity 4.1 – Comparing pilot experiences

Deliverable 4.1.1. – Evaluation report

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INTRODUCTION

One of the goals of ENERJ project is to improve and enhance the coordination and implementation of energy planning and optimize the planning process in the area of energy efficiency in public buildings. To achieve this, a methodology for increasing cooperation between public bodies and achieving a unified and easy-to-use implementation procedure for potential projects on local and transnational level had to be established. The methodology was developed through the various transnational meetings held by the partners during the projects implementation period and ultimately through the pilot experiences information and data provided by each project partner, resulting in a cross-referential table for easier comparison of mentioned experiences and serving as a referential tool for the development of the methodology. This document is the result of the inputs provided by the project partners and their consolidation.

The first part of the document shows the process of establishment of the Joint Action methodology through the transnational meetings held in Malta, Nova Gorica, Gavião and Nikosia. The second part shows the data provided by the project partners, the comparation of their pilot experiences results and evaluation of the implemented Joint Actions. The third part shows the final version of the established methodology and explains how it can be used and transferred to future projects, achieving the goals set by the project.

1. ESTABLISHMENT OF JOINT ACTIONS METHODOLOGY

1.1. TRANSNATIONAL MEETING 1 – MALTA

The first transnational meeting for the ENERJ project was held in Malta on 22nd and 23rd of November 2017, hosted by the project partner Gozo Development Agency – Gozo Regional Committee GDA/GRC. The meeting was focused on the design of the Joint Action plans of the involved Municipalities for the improvement of their buildings' energy efficiency. During the meeting, partners confirmed the progress achieved in the implementation of the energy audits of the public buildings and the possible ways to better explore the web platform with the buildings' energy data, under development at that time. The consortium analyzed and set the framework for the development of the Joint Action plans for the improvement of the energy efficiency of buildings for a number of Municipalities. The accumulated best practices related to Joint Actions for energy efficiency have been discussed and analyzed by all project partners.

GOLEA presented the past activities related to the energy audits and tasks to be completed in the following months after the meeting. Each partner briefly presented the results of the energy audits for its territory and a discussion was held regarding specific aspects of buildings' energy performance in each territory. Audits for Cyprus and Malta were at the time expected to be ready until the end of the year, while audits for Albania were expected to be ready until the middle of February.

The energy audits presented by the partners contained information about total building net surface (m^2), total gross surface (m^2), net volume (m^3), gross volume (m^3), ratio total gross surface/gross volume and total annual energy consumption per building.

Picture 1: Members of the partnership during the meeting in Malta

Project partner Anatoliki S.A. presented the audits of 12 buildings – 4 Municipal and 8 schools (+2 extra included). They are located in three Municipalities of eastern Thessaloniki and the selection of target buildings was in collaboration with the interested Municipalities. The buildings included were 1st Elementary School of Kalamaria (New), 1st Elementary School of Kalamaria (Old), 3rd High School of Kalamaria (year 1993. building), 9th Elementary School of Kalamaria (year 1950. building), 23rd Elementary School of Kalamaria (year 1990. building), Town Hall of Vasilika – Thermi (year 1981. building), Clinic Center of Vasilika – Thermi (year 1981. building), City Hall of Thermi (year 1998. building), Town Hall Trilofos – Thermi (year 1985. building), Municipal financial Services – Thermi (year 1998. building), 1st Elementary School Pilea (year 2004. building), 2nd High School Pilea (year 1998. building), 2nd Elementary school Panorama (year 1995. building) and General High School Panorama (year 1991. building).

Project partner Andalusian Federation of Towns and Provinces (FAMP) presented the energy audits of 10 buildings: Alcalá la Real City Hall, Plaza del Ayuntamiento 1, Alcalá la Real (Jaén), tercerary public building (Library), St. Obispo Ceballos 1, Alcalá la Real (Jaén), nursing Home Virgen de las Mercedes, St. Moreas de Gamboa, Alcalá la Real (Jaén), tercerary Public Building (School) in Alcolea del Río (Seville), Cádiz County Council Building (administrative building), Plaza de España 1, Cádiz (Cádiz), Cádiz County Council Building (administrative building), Av. Ramón de Carranza 11, Cádiz (Cádiz), tercerary Public Building (school), St. Francisco Martínez Delgado 1, Cazorla (Jaén), Tercerary Public Building (school), St. Francisco Martínez Delgado 1, Cazorla (Jaén), tercerary Public Building (town hall), Ayuntamiento Sq 1, Jerez (Cádiz), tercerary Public Building (public library), St. Pueblo Nuevo 1, Jerez (Cádiz), tercerary Public Building (university) and St. Placido Fernández 14, Seville (Seville).

Project partner IRENA – Istrian Regional Energy Agency presented the energy audits of 10 buildings; 4 health centers and 6 schools. The buildings presented are Istrian Health Center Palladiova 22, Pula, Istrian Health Center Pula, central building Flanatička 27, Pula, Istrian Health Center Buzet, Goričica 1, Buzet, Istrian Health Center Rovinj, Istarska b.b., Buzet, gymnasium and technical School Juraj Dobrila, II. Šetalište pazinske gimnazije 11, Pazin, high School Buzet, Antuna Cerovca-Tončića 7, Buzet, elementary School Vladimir Nazor, II. Dumbrova 12, Potpićan, elementary School Vladimir Gortan Žminj, 9. rujna 2, Žminj, Croatia, elementary School Vazmoslav Grzalja, 9. rujna 2, Žminj, Croatia, elementary School Ivan Goran Kovačić, Purgarija Čepić 1, Kršan.

Project partner Citta Metropolitana di Roma Capitale (CMR) presented the energy audits of 9 buildings: high school Via Domizia Lucilla, 76 Rome, high school 'Einstein' Via Pasquale II, Rome, high school 'Heinrich Hertz' Via Walter Procaccini, 70 Rome, high school 'Labriola' Via Capo Sperone 50, Rome, high school 'Manara' Via Basilio Bricci, Rome, high school 'Lombardo Radice' Piazza Ettore Viola, Rome, high school 'Pasteur' Via Barellai 130, Rome, high school 'Ruiz' Viale Africa 109, Rome and high school 'Via Domizia Lucilla' Via C. Lombroso 116, Rome.

Project partner Goriška Local Energy Agency (GOLEA) presented the energy audits of 8 buildings; 1 kindergarten, 1 Dormitory/Youth hostel, 1 Municipal administration building, 3 Elementary schools, 1 Sports hall and 1 Healthcare center. The buildings involved included: Kindergarden "Tolmin", dormitory/Youth hostel Nikolaja Pirnata Idrija, municipal administration building in Ajdovščina, elementary school Most na Soči, elementary school Livade Izola, elementary school Vojke Šmuc Izola, sports hall Kraška Ulica Izola and healthcare center Ajdovščina.

Project partner Ministry of Energy and Industry Albania (MIE) presented the energy audits of 12 buildings; 2 kindergartens and 10 schools located in 4 Municipalities in South Albania. The involved buildings included: Kindergarden 'Cicerimat', kindergarden nr.1, elementary school 'Hoxha Tahsim', elementary school 'Adem Sheme', elementary school', high school 'Koto Hoxhi', elementary school 'Bilal Golemii', elementary school 'Niko Aleksi', elementary school 'Avni Rustemi', elementary school 'Marigo Posjo', elementary school 'Teli Ndini', elementary school 'Balil Pelari' and elementary school 'Hasan Tahsini'.

Project partners CIMAA and AREANATejo presented 27 buildings energy audits together; CIMAA presented 13 buildings audits and AREANATejo presented 14 buildings audits. The buildings included were: Arronches municipality municipal swimming pool, Arronches municipality sports complex, Arronches municipality cultural centre, Arronches municipality municipal town hall, Ponte de Sor municipality Centro de Artes e Espetáculos, Ponte de Sor municipal swimming pool, Ponte de Sor municipal stadium, Ponte de Sor municipality elementary school, Campo Maior municipality, Campo Maior municipal warehouse, Campo Maior municipality community center, Campo Maior municipality cooperative school, Sousel municipality White House Kindergarden, Sousel municipality sports complex, Sousel municipal library, Sousel municipal town hall, Castelo de Vide municipal market nad warehouse, Castelo de Vide municipality library, Castelo de Vide municipal town hall, Castelo de Vide municipality sport area, Gavião municipality library, Sports Complex of Salgueirinho, Gavião municipal Swimming Pool, Gavião municipality firehouse, Marvão municipal museum, Marvão municipal indoor pool and Marvão municipality culture house.

The first transnational meeting was therefore focused mostly on defining the Joint Action plan design and the process of energy audits achieved on public building. This was the preliminary step between the project partners needed in order to set the framework for the development of the Joint Action plans.

1.2. TRANSNATIONAL MEETING 2 – NOVA GORICA

The second transnational meeting for the ENERJ project was held in Nova Gorica, Slovenia on 5th June 2018 hosted by the project partner GOLEA. All partners from ENERJ project participated at the meeting. The purpose of the meeting was to summarize and make the comparison and evaluation of pilot activities made by all partners and exchange the Focus Groups activities performed among local authorities and various stakeholders for the energy upgrade of public buildings.

ANATOLIKI has performed one Focus Group meeting, with representatives from three municipalities and representatives of ESCO, while the next Focus Group meeting was then set for July. CEA organized one Focus Group meeting with representatives of municipalities and energy auditors. One of the issues addressed at the meeting was the difficulty in involving ESCOs, and the next meeting was also to be organized in July. CMR held their first Focus Group meeting to better explain the purpose of the project and explain the involvement and importance of stakeholders. ESCO model was also presented. Their second Focus Group was more focused on the Joint Actions and the possible results. Next Focus Group was set for July and the last one for September. IRENA carried out three Focus Groups with local authorities and stakeholders, where they introduced the project and began discussing possible Joint actions models for public building refurbishment through the use of locally available resources and potential problems that could occur.

GOLEA carried out four Focus Groups with different stakeholders, introducing the ENERJ project and discussing identification and introduction of possible local Joint actions. Ministry of Energy and

Infrastructure of Albania (MIE) organized four Focus Groups in order to define Joint actions and Joint action strategy. The ESCO model was still not well defined in Albania at that time. FAMP organized three Focus Groups and the last was set for September, however the Joint actions definition was not completed. CIMAA & AREANATejo from Portugal held the Focus Group meeting together because of small territory size and small available stakeholder group to hold separate meetings. One meeting was organized in April where there was a discussion about energy efficiency in buildings and a proposal for the local Joint Action has been formulated. The finalization of the four Focus Groups was planned until the end of October 2018.

Picture 2: Meeting in Nova Gorica, Slovenia

At this stage, there was a lack of concrete inputs to complete the template for assessment of pilot activities which IRENA presented at the meeting. The updated template containing the name of the Joint Action, partner, organizations involved, type of action, pilot area selected, most

appropriate financing tools, planned energy savings, estimated value of investment if the activity is carried out independently or as part of a Joint Action, monitoring plan and foreseen sources of founding was planned to be discussed on the next transnational meeting. After IRENA had received feedback from the partners, the template would be updated and finalized according to proposed amendments which would be most appropriate for comparing pilot activities and to evaluate their potential. The criteria list was to be expanded due to the need for additional information. Partners discussed the need to perform additional work on the definition of local Joint Actions and the preparation of the local Joint Action plans. After fulfilling these terms, more information and criteria were expected to be utilized for the next template through which it would be possible to compare and evaluate pilot activities and more accurately estimate the efficiency of transfer to other pilot areas.

Therefore, the results of the second transnational meeting included the summary of the pilot activity comparison and evaluation up to that point and current status of the Focus Group activities of each project partner, which are connected to the pilot activities. Regarding the initial template for the assessment of pilot experiences, further inputs from all partners were needed in order to compile a more thorough and detailed comparison.

1.3. TRANSNATIONAL MEETING 3 – GAVIÃO

The third transnational meeting for the ENERJ project was held on 4th and 5th of December 2018 in Gavião, Portugal, organized by the Portuguese project partner AREANATejo. All partners from ENERJ project participated at the meeting, except for Gozo Development Agency from Malta, which was not present.

Project partners have started working on the identification of local Joint Action Plans' per partner area, the public buildings' energy related data for the countries of the MED area have been generated and energy upgrade measures' have been specified. Working groups per partner

country (focus groups) for the definition of Joint Actions among Local Authorities and various stakeholders, for the energy upgrade of public buildings have been established and operate through the implementation of Focus groups sessions. The need for further study and analysis of joint actions per partner, as well as inclusion of the audits' results in the overall effort for the definition of joint actions was highlighted.

The ENERJ web platform and the training courses where the platform would be presented were planned to be developed soon after the end of the meeting, with further effort put in the implementation of transferring activities.

The project partners have translated the WP3 material connected to the web platform, but the implementation of the training courses was dependant on the realization of the platform that had to be demonstrated within the courses. The ENERJ web platform was presented by CMR which proposed the platform structure divided in four parts: 1) data on public building stock, preparatory to explore the chance to implement energy efficiency interventions on public buildings; 2) a dynamic data base to know the state of art about the implementation of energy efficiency interventions at local levels; 3) presentation of municipality SEAP's in our territory; 4) presentation of best practices from the ENERJ project and more. CMR presented the main characteristics of the databases (types of data, structures, and inputs) as well as general characteristics related to the platform (user management, access by the Municipalities, open access of data). Partners discussed CMR's proposal and the outcome was related to the: 1) exploitation of the existing databases of the energy audits, 2) exploitation of the database with the data accumulated beyond the audits, 3) development of a repository with links in the Municipal SEAPs and 4) Repository of the ENERJ relevant material and deliverables. Afterwards CMR would prepare a draft version of the platform set to be finished by the end of February.

GOLEA presented the current status of the training courses and it was established that the partners have to prepare their own PPT material on a basis of training course material until April in their languages. After the completion of the platform, the LP was designated to prepare a PPT

as a guide for the use of the platform and partners would translate it in order to use it in their training courses. Partners would have to organize seminars (the number of these seminars is up to each partner to decide) of duration of 26-30 hours. A certificate of participation (with the indications of the project, European flag etc.) should be given at the end of the courses. Partners were designated to finish their courses until the end of June 2019, after this each partner would need to prepare the final deliverable that describes the training activities.

Picture 3: Transnational meeting held in Gavião, Portugal

CIMAA presented the situation regarding the implementation of Focus Groups. At that point, the meetings have been implemented FAMP, IRENA, GOLEA and MEI organized 4/4 focus groups sessions, ANATOLIKI and Metropolitan City of Capital Rome have made 3/4 focus groups, CEA implemented 2/4 focus groups, AREANATEJO/CIMAA 1/4 focus groups and GOZO has not reported any Focus Group implementation. Partners were instructed to conclude the focus groups sesssions (4 sessions in total) until the end of April, and they would have to organize a local conference within WP3. The description and

conclusions of each focus session and local conference would have to be prepared by each partner and sent to CIMAA, in order to prepare the final report.

CIMAA also presented the progress achieved in the Joint Actions definition, where the partners have defined their local joint action cases with the topics as presented below:

- CMR – Metropolitan Energy Efficiency Actions on Public Buildings
- MIE – Improvent of Energy Efficency in Public Buildings
- FAMP – REDEMA Andalusian Municipalities Energy Network
- GDA – Joint preparation of ELENA project for the Energy retrofit of public buildings in Gozo
- GOLEA – Refurbishment of sports hall lightning systems in Primorska region
- IRENA – Creating a synergistic effect on the use of local resources in the renovationn of public buildings
- AREANATEJO – Improvement of Energy Efficency in Public Buildings
- CEA – Energy Upgrade of Public Buildings
- ANATOLIKI - Energy Upgrade of Municipal Buildings

All partners have filled the template providing preliminary information. ANATOLIKI has elaborated an extended version including more details in the local joint action plan. Since a better definition of joint actions has to be prepared by each partner, all partners were instructed to further elaborate the information in each template section. Partners were asked to provide more information on the nature and the type of energy efficiency interventions that are being studied by each partner until the end of December 2018. In addition, the final joint action plans description per partner was planned to be made by the end of February 2018, in a text up to 30 pages. The text was planned to include an integrated specification and analysis of the joint action case per partner country. Regarding the guidelines for financing the Joint Actions, CIMAA has made an initial analysis of the financing mechanisms, but the Joint Actions had to be detailed so they could be analyzed and included in the report. Each partner also presented the local joint action case of its area at the end of the first day of the meeting.

AREANATEJO presented a proposal related to transferring and networking activities and would prepare a proposal related to forms that can be used to transfer project results which may include unique texts that are addressed to specific stakeholders, presentations in other project's meetings and events, webinars and conferences. They would also prepare technical presentations in English applicable to all partners and accumulate all organized events in which partners have participated under WP4 in order to prepare the final report.

GOLEA presented the outputs of the Interreg MED SISMA project, a tool in order to calculate the amount of subsidy that an energy project should have so as the investment to be feasible. GOLEA intended to use the tool produced by the SISMA project to calculate the respective figures for the multiple buildings in the context of the Joint Action definition for Slovenia.

Climate Alliance Italy presented the existing situation related to WP2 activities - the 4th Newsletter had been elaborated, which partners would have to translate in their national language until the end of December 2018. Partners would have to finish the organization of local conferences until the end of June 2019. At that point all partners have performed the 1st Local Conference except for Gozo.

In the context of the WP4 and regarding the deliverable 4.1., IRENA developed a preliminary draft set of criteria for the comparation and evaluation of pilot experiences from all project partners. This criteria, presented by IRENA, which would be further developed in the continuation of the project and with the input from all project partners based on their feedback, would be used to determine the measuring and comparing of the methodology used within each Joint Action, concrete activities and actions, Joint Action planning and implementation, effectiveness of the proposed model of Joint Actions for energy efficiency and potential Joint Action transferability and future use. The final form of the template would be ready at the end of February, while afterwards, partners based on the definition of their local joint action cases would fill the template so the results are comparable and ready to be transferred to other areas. IRENA also requested to include the outcomes of the final meeting in Thessaloniki in the 4.1.2 Transnational meeting report in order for more solid results

to be documented. The deliverable would be uploaded as a draft to the program's platform, and would be finalized once the results of the meeting of Thessaloniki are included in the report.

The criteria developed by IRENA was divided into four categories:

1. Stakeholders
2. Joint Action
3. Financing and market risks and opportunities
4. Energy Efficiency implementation effectiveness

Based on these categories, each project partners' Joint Action category could be divided and assessed separately in order to compare them in a more transparent way.

1. STAKEHOLDERS	
Number of participating stakeholders (fill out data below for each stakeholder)	
Stakeholder name	
Stakeholder type (public or private):	• Local/regional public authorities, energy agencies, knowledgeable persons, financing mechanisms
Stakeholder size (no. of employees, municipality size...)	
Stakeholder's cooperation motives (why is the stakeholder participating)	
Stakeholder Joint Action role/tasks/commitment	
Percieved risks/obstacles regarding stakeholder participation (if existing/applicable)	
Possible solutions regarding percieved risks/obstacles (if existing/applicable)	

Table 1: Initial comparison criteria for 'Stakeholders' category

The first category focused on the information regarding stakeholders involved with the project. The goal is to determine the number and basic information of each stakeholder (name, type, size, motives for participating, commitments…) in order to demonstrate the profile of organization and people involved in the project and their respective role. This would hopefully facilitate the process of determining the stakeholders required, as well as subsequent profiling and communicating in any future project based on the practice of ENERJ.

2. JOINT ACTION	
Joint Action name	
Joint Action type (studies, methodology know-how, etc., what type of Joint Action have you decided to be the best option for the community)	
Joint Action description:	• Implementation timeline period • Stakeholders involved • Pilot area/location selected (reason/s, why have you selected that specific area for Pilot actions) • Type of interventions (1. Energy Efficiency in Buildings - Lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - Biomass, Solar – PV, Hydropower, geothermal installation...; 3. Awareness; 4. Funding; 5. Other (please specify)) • Number of buildings involved (fill out data below for each source) • Type of buildings involved (Administrative buildings, schools, gyms, cultural centers, other (please specify)) • Building size and characteristics (number of occupants, building structure description, number of floors, building material..)
How was the Joint Action determined	
Joint Action goal (Planned energy savings)	
How is the Joint Action monitored	
How is the Joint Action advertised/promoted	
Percieved risks/obstacles regarding Joint Action implementation (if existing/applicable)	
Possible solutions regarding percieved risks/obstacles (if existing/applicable)	

Table 2: Initial comparison criteria for 'Joint Action' category

The second category regarding Joint Actions was set to assess the basic information of each project partners' Joint Action undertaken (name, type, description...), the process of defining the Joint Action, the

perceived end goal, monitoring plan, promotion plan and perceived risks/obstacles and solutions in order to show and compare the set of activities, the selected buildings involved, the process of planning and measuring the set goals, and the potential external factors linked to the implementation of the Joint Action. This will enable future users to see the whole Joint Action process methodology and implementation from beginning to end as an example for their own potential projects.

3. FINANCING AND MARKET RISKS & OPPORTUNITIES	
How was the financing tool determined	
Sources of financing:	• Number of sources involved (fill out data below for each source) • Source name • Source organisation (bank, municipality...) • Source type (Structural funds, cohesion funds, Horizontal funds, loans, Crowd funding, Public private partnership, other financial solutions etc.) • Total value of investment • Investment use (what is the investment used for) • Legal form (contract type and terms) • Financing plan - timeline
Projected estimate of money saved from implementing Joint Action (total value and percentage)	
Percieved opportunities regarding financing and market (if existing/applicable)	
Percieved risks/obstacles regarding financing and local/state market (ex. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	
Possible solutions regarding percieved risks/obstacles (if existing/applicable)	

Table 3: Initial comparison criteria for 'Financing and market risks & opportunities' category

The third category consists of criteria for determining financing and market risks and opportunities, sources of financing and their information (name, type, value of investment, investment use, financial plan…) and assessment of financial tools to demonstrate and compare

the financial actions for each specific Joint Action and serve as an example for possible financial options and financing process for a Joint Action in future projects.

4. EE IMPLEMENTATION EFFECTIVENESS
How was the Joint Action efficiency determined
Data measured before Joint Action implementation (which data and quantities were measured)
Source of data extrapolation before Joint Action implementation (who measured the data and when)
Data measured after Joint Action implementation (which data and quantities were measured)
Source of data extrapolation after Joint Action implementation (who measured the data and when)
Monitoring plan description (for EE comparation)
Is the Joint Action transferable to other projects and if so, please write possible examples
Potential added value from Joint Action (if applicable)

Table 4: Initial comparison criteria for 'EE implementation effectiveness' category

The fourth category serves to compare and evaluate energy efficiency implementation effectiveness, its methodology, measuring process, data collection process, monitoring plan, transferability potential and potential added value in order to see and compare the data before and after the Joint Action and conclude the results achieved by the Action. This way, it would be possible to compare Joint Actions of each project partner on their relative success and see which of them were most effective, and in doing so, identify the best practices for future use.

Since the Joint Actions were still in the development stage and not all of them were determined, the criteria were still flexible and open to discussion for all project partners involved. In the next couple of months, a questionnaire with a revised set of criteria was sent to all partners for further feedback and revision, after which point IRENA conducted a final analysis.

The partners reported on the current status of the implementation of Focus Groups. ANATOLIKI's focus group was mostly related to the concept of the Energy Communities which are consisted in the form of Urban Cooperatives and are regulated by the recent Law of 4513/2018 and the subsequent questions regarding implementation possibilities of Joint Actions, possibilities of Local Authorities' involvement and steps for the establishment of an Energy Community by Local Authorities. ANATOLIKI presented some examples of energy communities' establishment and operation with the participation and active involvement of Local Authorities. A discussion was developed between the participants regarding the specific case of the three Municipalities involved and the possibility of implementing Joint Actions using the mechanisms introduced by Energy Communities. The conclusion from the discussion was that the Institution of Energy Communities provides opportunities and prospects for the implementation of Joint Energy Efficiency Actions among Local Authorities. Also, the representatives of the Municipalities expressed their interest regarding the prospect of using the institution and expressed the need to further study the parameters of the issue. The overall subject was determined to be examined through the organization of a local conference and the formulation of a case study. ANATOLIKI's focus groups also examined the financing aspects of Joint Actions. The perspective of the ELENA financing mechanism, as well as loans provided by the Greek Deposit and Loans Fund were discussed between representatives of the respective financing organizations and the involved Municipalities.

Cyprus Energy Agency's focus group discussed the ESCO market not being supported by banks and lack of funding and incentives from Local Authorities as well as solutions in the form of existing clusters in Cyprus communities already in place for other economic activities. Città Metropolitana Roma (CMR)'s focus group focused on incorporating the mechanism of the Elena funds on the Joint Action example done by the Province of Milan, which could be re-purposed on the territory of Rome. After the definition of the required activities and final goals, it was agreed to continue the discussion regarding implementation on the next focus group.
IRENA's focus group focused on the development of a model of energy refurbishment for 'Radost II' kindergarten in Poreč, Croatia and the next actions were determined.

FAMP's focus group discussed some of the proposals made by the participants (audits campaign, training courses and workshops for energy managers and provincial entities, County Council collaboration agreement…) and concluded that the actions related to the coordination of the stakeholders and trainings should be the priorities to be developed and offered within the network (REDEMA).

Every partner also presented their current version of Joint Action to be implemented in the scope of the project. ANATOLIKI S.A.'s Joint Action preliminary steps consisted of consultation with local authorities, preparation of the common tender for the implementation of energy audits in buildings' of the municipalities of Thermi, Pilea - Hortiatis and Kalamaria and the implementation of the energy audits, specification of the common Joint Action scheme and the integration of the Joint web platform in the Municipalities normal operation procedures. Two options were presented for the Joint Action: the first option included contractual agreements for joint projects based on the establishment of a common contract with predefined actions, roles and timeline, where the contract has a specific duration, and studies as well as interventions' implementation and RES installation is mainly performed by the technical department of each Municipality and the establishment of a new body is not required. The second option was the establishment of a local energy community, an initiative with the participation of municipalities that can implement actions in the fields of local electricity production, as well as undertake the energy upgrade of buildings among municipalities with the potential of third parties participation. As energy communities' actions do not have a specific duration, studies as well as interventions' implementation and RES installation would mainly be performed by the energy community and would be established as a distinct entity. In the frame of the Joint Action, 8 school buildings and 4 administrative buildings were defined for refurbishment.

Città Metropolitana di Roma identified the ELENA initiative as the best possibility to implement some of the actions of the local SEAPs and, in general, the energy retrofit of the public buildings, primarily because of availability of financial resources and the possibility of establishing a centralized, co-financed project implementation unit having the technical capacities to handle, manage and monitor the implementation of the actions, and by-passing the technical and financial difficulties

experienced by the municipalities. CMR Joint Action plan consisted of improvement of the energy efficiency of as many as possible municipal buildings in the area of MCR (Territorial Coordinator of CoMO), under EPC contracts co-financed by the EIB through the ELENA initiative, establishment of a project implementation unit coordinated by MCR and funded by ELENA funds. Up to that point, 38 school buildings, 10 public office buildings, 3 sports buildings and 12 other types of buildings were included.

Ministry of Infrastructure and Energy of Albania (MIE)'s preliminary Joint Action steps were consultation with local authorities, participation of the municipalities of Saranda, Gjirokastra, Vlora and Permeti, common tender prepared by MIE for the implementation of energy audits in buildings of the 4 municipalities and the implementation of the energy audits. Steps undertaken after that are specification of the common Joint Action scheme and integration of the Joint web – platform in the Municipalities normal operation procedures. The Joint Action in the four municipalities at that time included 10 school buildings and 2 kindergardens.

Preliminary Joint Action steps taken by FAMP included cooperation with local authorities and Andalusian Energy Agency, development of focus groups: energy efficiency experts, preliminar REDEMA launching and definitions of actions to include and boost through REDEMA (Action Plan). Steps planned to be finalized afterwards were collaboration with Andalusian Energy Agency, County Councils and County and local energy agencies (development of Action Plan and funding tools) and municipalities adhesion procedure to network and development of actions. FAMP included 33 municipalities in the study of the audits and SEAPs to be included in the ENERJ web platform, and the municipalities where the 10 initial audits were carried out have been taken as the initial pilot area. Future plans after the meeting include specification of the funding mechanisms and model of collaboration with Andalusian Energy Agency, County Councils and County and Local Energy Agencies, call meeting with FAMP Commissions (specifically the Environment and Urbanism Commissions) to stablish a roadmap to REDEMA development and defining a timetable for the implementation process.

GOLEA's proposed Joint Action consisted of the installation of LED lightning systems in 10 sports halls in the region of Primorska. The criteria for defining the sports halls for the installation were following: the sports halls are owned by municipalities, they are in the statistical region of Goriška and Obalno-Kraška, they are in use at least 5 days/week and 6 hours/day, lighting system was not renovated in the last 5 years and there is an absence of on-going energy contracting or other service that ensures energy savings from provision of lighting of the facility. Most of the selected buildings use reflector lamps with metal halide (MH) lamps with nominal power of 400 or 1.000 W. By finding an already made detailed design for a project of instalation of LED lightning in a sports hall, GOLEA was able to better estimate the potential investment costs. A pricelist of the main equipment was also obtained from LED lightning manufacturers. Replacement of 441 MH reflectors with LED lights in 10 sports halls and total investment cost of 225.462,64 EUR (VAT excluded) was estimated. The expected results included energy use decrease by 56%, (117 MWh), energy use and maintenance cost decrease by 26.800 €/year and 57,2 tons of CO2 emisions saved. In case there is no subsidy of Joint Action, the predicted return on investment was predicted to be 11 years, with a net present value of 129.053 EUR and internal rate of return (IRR) of 10,09%. In case subsidy by ECO fund is present, the return of investment was predicted to be 9 years, the net present value at 171.894 EUR and the IRR at 13,41%.

For IRENA, the selected pilot areas for the implementation of the Joint Action included the two neighboring communities' cities of Poreč and Rovinj, on the basis of public call issued after the second focus group. Set of actions proposed for implementation were offsite renewable energy production and public building refurbishment that would be partially/completely accomplished by transfer of that energy to it. Cities of Poreč and Rovinj were planned to cooperate on development of technical documentation that would be easily replicated on both sites and in other coastal communities and public buildings. One of the selected buildings was the kindergarden 'Radost II' in Poreč, which is a culture heritage building built in 1912., owned by the City of Poreč and under protection of Conservation department of Pula. Because of the cultural heritage status, the main obstacle is the very limited options for building refurbishment, as well as the lack of national

guidance/standards. IRENA's current obligation at that time was completing the conservation elaborate needed for analyzing the possible refurbishment options on the building and defining the second pilot area in Rovinj, which was still in the process of being chosen.

AREANATejo's Joint Action preliminary steps consisted of involving the key actors (decision makers, municipal departments and local energy managers), defining intervention priorities (9 of the 14 buildings were analyzed), identification of the type of funding more profitable, prepared applications for municipalities in collaboration with AREANATejo which were undergoing review by the management of the program at the time. 29 interventions for assistance on application of thermal insulation in walls, floors and roofs, replacement of window frames with simple glass for window frames with double glazing and thermal cutting, replacement on interior lighting with LED solutions, installation of solar thermal panels for DWH and others were submitted in the scope of the Joint Action. The predicted results were an annual reduction of primary energy consumption in public buildings in the amount of 1.193.610 kWhep (37,03%) with the investment of 2.064.762,39 EUR (Participation by the European Development Fund by means of non-refundable grants of 1.061.668,78 EUR (51,4%). The next steps in the development of the Municipal Energy Matrix in the region of Alto Alentejo have forseen a technical and highly specialized work in terms of establishing an inventory of energy consumptions and CO_2 emissions baseline, projections of consumption and emissions inventories for a period of prospective analysis (previously defined by the municipality and for the whole region), identification/design of indicators that allow the monitoring and verification of the results obtained and insuring the availability of the indicators on a digital platform (online) so they could be reviewed annually according to the baseline and with the respective projections for the various sectors of activity (e.g. domestic, industry, services, agriculture, transport) and by forms of energy (e.g. electricity, natural gas)

Cyprus Energy Agency (CEA)'s first Joint Action steps consisted of consultation with the local authorities, participation of the municipality of Pegeia and the communities of Pano Arodes, Kato Arodes, Drousia, Kathikas and Neo Chorio, preparing the common tender for the implementation of energy audits and the issuing of EPC in 8 buildings of

the 6 local authorities and the implementation of the energy audits. 8 selected buildings were predicted to have a total post-refurbishment savings of 106.817 kWh per year, mostly from photovoltaics, while the total installation costs were predicted at 52.174 EUR, where the roof insulation is the highest priced investment. Next steps included the specification of the common Joint Action scheme, the integration of the Joint web platform in the municipalities normal operation procedures, identifying financial mechanisms for Joint procurement, identifying clusters that have a potencial for becoming energy communities, identifying the leaders of the joint actions for each cluster and identifying any facilitators to the joint action implementations (NGO's, District Governance, Local Authorities with technical expertise).

The overall outcome of the third transnational meeting included the preliminary scheme of local Joint Action Plans for every project partner, specification of the energy upgrade measures for the public buildings associated with the project and current state and progression of focus groups set to define the Joint Actions among local authorities and stakeholders. The meeting also included the presentation of the initial draft of ENERJ web platform and its proposed structure, set to be further developed in the future months after subsequent feedback from the partners. Also, a preliminary draft set of criteria for the comparation and evaluation of pilot experiences was presented and divided into four categories which also remained active in the later stages of the project, although certain subcategories and items were removed, added or changed.

2. INFORMATION ON PILOT EXPERIENCES PROVIDED BY PROJECT PARTNERS

Through a series of questionnaires previously defined by the partnership and distributed by IRENA to all the project partners and their feedback, general data about each partners' pilot experience, consisting of the information about stakeholders, joint actions, financing and market risks & opportunities and energy efficiency implementation effectiveness was gathered. This data, although incomplete due to the joint actions still being in progress, is meant to serve as a basis for a comparative assessment of all the partners' pilot experiences, evaluating the effectiveness of the implemented Joint Actions and defining a unified Joint Actions methodology for future use, suitable of being transferred and implemented in different territories.

In continuation the data for all the partners are shown in the four categories mentioned above and will be used in the comparison and evaluation in the third section of the report.

2.1. LP - DEVELOPMENT AGENCY OF EASTERN THESSALONIKI'S LOCAL AUTHORITIES – CENTER FOR THE DEVELOPMENT OF HUMAN RESOURCES AND THE SUPPORT OF LOCAL ECONOMY (ANATOLIKI S.A)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	4 Stakeholders involved
Stakeholder #1 name/title	**ANATOLIKI S.A.**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Development Agency/Expert Advisor regarding Energy Efficiency
Stakeholder #1 field of work / main activities	Supporting Local Authorities, Supporting enterprises, Promotion of innovation and new technologies, Social economy, Human resources, Environment and infrastructures, Energy, Sustainable mobility, Environmental education, Consulting support on school communities
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	-
Stakeholder #1 Joint Action role/tasks/commitment and contribution	ANATOLIKI S.A. Acts as the Joint Action Coordinator among the three Local Authorities offering its expertise on Energy Efficiency measures. ANATOLIKI will also be the supervisor of the new PV park that will be established
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	None
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	-

Stakeholder #2 name/title	**MUNICIPALITY OF THERMI**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #2 field of work / main activities	Local Authority
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community
Stakeholder #2 Joint Action role/tasks/commitment and contribution	Provide staff and/or Municipal land/buildings depending on the Consitutional Statement of the Energy Community
Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for, in the sense that a loan with a high interest rate will delay the amortization of the investment
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Study carefully the loan terms and clauses
Stakeholder #3 name/title	**MUNICIPALITY OF PILEA-HORTIATIS**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #3 field of work / main activities	Local Authority
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community
Stakeholder #3 Joint Action role/tasks/commitme	Provide staff and/or Municipal land/buildings depending on the Consitutional Statement of the Energy Community

nt and contribution	
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for in the sense that a loan with a high interest will delay the amortization of the investment
Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Study carefully the loan terms and clauses
Stakeholder #4 name/title	**MUNICIPALITY OF KALAMARIA**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #4 field of work / main activities	Local Authority
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community
Stakeholder #4 Joint Action role/tasks/commitment and contribution	Providing of staff and/or Municipal land/buildings depending on the Consitutional Statement of the Energy Community
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for in the sense that a loan with a high interest will delay the amortization of the investment
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	Study carefully the loan terms and clauses

Table 5: Stakeholders table for ANATOLIKI S.A.

2. JOINT ACTION

Joint Action name/title	Establishment of an Energy Community (En.Con.) consisting of three neighbouring Local Authorities for improving Public Buildings Energy Efficiency and establishing a 1MW PV investment
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Establishment of an Energy Community (Greek Law. 4513/18, Law.1667/86), as a cooperative initiative with the participation of Municipalities. The Energy Community can implement actions in the fields of local electricity production through virtual net-metering, as well as to undertake the energy upgrade of buildings among Municipalities with the potential of third parties participation. Elaboration of studies and actions' implementation by the Energy Community
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	Consultation with Local Authorities. Participation of the three (3) Municipalities of Thermi, Pilea - Hortiatis, Kalamaria. Common tender will be prepared by Anatoliki for the implementation of energy audits in buildings of the 3 Municipalities. Implementation of the energy audits for subsequent interventions. Specification of the specific common Joint Action scheme in contrast with a Contractual Agreement as an alternative
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	The location of the PV installment will be at a Field of the Municipality of Thermi, capable of supporting a PV Park of 1MW of power
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	1. Elaboration of studies regarding Energy Efficiency 2. Electricity production 3. Actions regarding Energy Efficiency increase for 14 pre-determined Municipal Buildings
Intervention #1 type and description 1. Energy Efficiency in structures - lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation...; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type	Elaboration of studies regarding Energy Efficiency

implemented and describe how and where it was used	
Intervention #1 activity/installation cost please write the cost of intervention activity	Costs depend on the type of studies to be implemented and the result of the tender
Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	The energy savings will incur at a later stage after the implementation of the studies' findings.
Intervention #2 type and description	Electricity Production by the installment of a PV Park of a total power of 1 MW
Intervention #2 activity/installation cost please write the cost of intervention activity	The total investment cost is estimated at € 1 / W, or € 1,000,000 (1MW). Interest rate: 3,75% Duration of loan 5 years Monthly Amortization Amount (total for all 3 Municipalities): € 8,346.59 Annual installment of amortization installments: € 100,159.08 Protection against theft and vandalism service. Annual cost: € 1,000 Cleaning of the surfaces of PVs, mainly after rains. Annual cost: € 1,500 Cleaning the field from grass. Annual cost: € 800 Insurance service. Annual cost: € 3,000 Rent for the use of the field (23 ha x 100 € per acre): € 2.300 Total Annual Cost: € 9,600 Establishment costs for En. Com.: 6.160 € broken down as: Fund raising capital: € 5.160 Legal assistance: € 1.000 The equity capital that the 3 Municipalities will invest amounts to € 60,000 (€ 20,000 per municipality) (Law 4513 / 2018) and will come from own resources. The Municipalities will receive a loan from the Deposits and Loans Fund Mechanism amounting to 456,000 € (152,000 € per each Municipality) to be paid as cooperative capital. The investment will be subsidized by 50% by National Funds
Intervention #2 expected savings please specify the estimated energy savings, monetary savings and ROI	The plant will produce 1.300 MWh (=1.300.000 KWh) of electricity per year, which will be distributed to each Municipality, in proportion to its participation in the Energy Community. Energy consumption saved: 0.1 € / KWh. Annual savings: 130,000 €. Part of this amount will be invoiced to the Municipalities (or their Legal Entities)

	which consume the electricity.					
Intervention #3 type and description	Actions regarding Energy Efficiency Increase for 14 Municipal Buildings					
Intervention #3 activity/installation cost please write the cost of intervention activity	Regarding the interventions specified in the context of the audits of the 14 Municipal buildings, the overall cost for upgrading them at least to energy class B, has been estimated to approximately 1,5 million euros, with an average payback period of 16,5 years.					
Intervention #3 expected savings please specify the estimated energy savings, monetary savings and ROI	In case of the implementation of all the proposed interventions for the 14 buildings the maximum energy efficiency gain is expected to reach 58% compared to the situation before the interventions (i.e. energy gains of 1,678 kWh/year).					
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	14 buildings					
Structure details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	Building Type	Municipality	Type	m2	Class	Annual KWh
Structure #1	Financial services Thermi	Thermi	Administrative	3883,9	C	876596,2
Structure #2	Town hall Thermi	Thermi	Administrative	532,82	C	119831,2
Structure #3	Administrative services Vasilika	Thermi	Administrative	529,85	C	134740,9

Structure #4	Administrative services – Social services for the elderly - Municipal medical office	Thermi	Administrative	94,27	C	36982,12
Structure #5	Administrative services - Trilofos	Thermi	Administrative	560,91	C	124746,4
Structure #6	High School	Pylaia - Hortiatis	School	2733	D	321674,1
Structure #7	1st Elementary school	Pylaia - Hortiatis	School	3726	D	408742,2
Structure #8	2ND High School Pilea	Pylaia - Hortiatis	School	2910,32	D	392893,2
Structure #9	2nd Elementary school	Pylaia - Hortiatis	School	2441	D	289258,5
Structure #10	9 Elementary school	Kalamaria	School	529,56	F	131595,7
Structure #11	23rd High School	Kalamaria	School	2792,74	C	288490
Structure #12	3 High school	Kalamaria	School	2755,44	D	348012,1
Structure #13	1 st Elementary school Neo	Kalamaria	School	1879	D	235062,9
Structure #14	1 st Elementary school Palio	Kalamaria	School	596,11	G	157909,5
Implementation timeline period please write a general implementation plan schedule	The Establishment of the Energy Community will be completed within the first month of the operating schedule. Once it has been established a tender will take place within the second month in order to assure the most suitable offer regarding the energy upgrade of the 14 buildings. Regarding the supply and installment of the 1MW PV park, its construction will take place simultaneously and it can be completed amd connected to the electricity grid within the third month of the Energy Community's operation.					

Joint Action promotion please explain the Joint Action advertisement/promotion strategy	Promoting through press releases as well as the shareholders' websites and social media platforms
Perceived risks/obstacles regarding Joint Action implementation if existing/applicable	No risks perceived
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation if existing/applicable	-

Table 6: Joint Action table for ANATOLIKI S.A.

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	3 sources of funding
Financing source #1 name/title	Municipalities' own Funding
Financing source #1 organization structure e.g. bank, municipality…	Municipality
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Own Funding
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	Each Municipality will contribute with 20.000 € as equity capital for the establishment of the Energy Community
Financing source #1 total value of	Equity Capital equals 60.000 € (20.000 € per Municipality)

investment	
Financing source #2 name/title	Loan
Financing source #2 organization structure e.g. bank, municipality…	Each Municipality will obtain a loan from the Deposits and Loans Funding Mechanism amounting to 152.000 € (A total of 456.000 € for the three Municipalities involved
Financing source #2 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Loan from the Deposits and Loans Mechanism
Financing source #2 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	Each Municipality will obtain a loan from the Deposits and Loans Funding Mechanism amounting to 152.000 € (A total of 456.000 € for the three Municipalities involved. The interest rate will be 3,75% and for a duration of 5 years
Financing source #2 total value of investment	The total value of the loan will be 456.000 € (152.000 € for each participating Municipality)
Financing source #3 name/title	National Funds through Investment Law
Financing source #3 organization structure e.g. bank, municipality…	National Funds
Financing source #3 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	National Funds through Investment Law since Energy Communities have priority over other private Investments regarding financing through the Greek Investment Law
Financing source #3 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	National Funds financing through Investment Law since Energy Communities have priority over other private Investments regarding financing through the Greek Investment Law. The total eligible amount will be 500.000 €
Financing source #3 total value of investment	500.000 €
Projected estimate of savings from Joint Action implementation please specify the total monetary value and estimated percentage of savings from the combination of all financing sources	The first 5 years, during which the 3 Municipalities will repay the loan, the En.Com. will invoice the 3 Municipalities 20,000 € per year. After the 5th year, the En.Com. will invoice its services for 120,000 € per year. So, the 3 Municipalities will have a benefit of approx. € 10,000 per year (based on 130.00 Euro savings from the PV plant, paying loan installments, amortization costs etc.), while at the same time they will have created an investment tool capable of intervening independently in the exploitation of RES and in energy saving.

Perceived financing and market opportunities if existing/applicable	This initiative will serve as Good Practice for other Local Authorities and will attract market actors
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	No risks foreseen
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	-

Table 7: Financing and market risks & opportunities table for ANATOLIKI S.A.

4. EE IMPLEMENTATION EFFECTIVENESS

Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	The PV plant will produce 1.300 MWh (=1.300.000 KWh) of electricity per year, which will be distributed to each Municipality, in proportion to its participation in the En.Com. Energy consumption saved: 0.1 € / KWh. Annual savings: 130,000 €. Part of this amount will be invoiced to the Municipalities (or their Legal Entities) which consume the electricity. The first 5 years, during which the 3 Municipalities will repay the loan, the En.Com. will invoice the 3 Municipalities 20,000 € After the 5th year, the En.Com. will invoice its services for 120,000 €. So, the 3 Municipalities will have a benefit of approx.€ 10,000 per year, while at the same time they will have created an investment tool capable of intervening independently in the exploitation of RES and in energy saving.	
Efficiency indicator #1 description please specify the name and unit of measurement (e.g. kW, tCO_2…)	Kwh of Electricity produced per annum and tCO_2 reduction	
Efficiency indicator #1 selection motive please specify why the indicator was selected	The specific indicator is crucial for the monitoring procedure of the Energy Community as a Joint Action Scheme since the electricity produced can be utilized by the three Municipalities for supporting low income households as well as for replacing energy produced by coal with electricity from RES for their Public Buildings	
Efficiency indicator #1 measurement source and time please specify the person/organization providing the indicator measurement and	Ex ante: ANATOLIKI S.A. As the Joint Action Coordinator	Post ante: ANATOLIKI S.A. As the Joint Action coordinator

the exact time of measurement			
Efficiency indicator #1 data and quantity measurement please specify the data and quantity measured	Ex ante: 0	Post ante: 1.300.000 KWh per annum equivalent to approx. 1,5 tCO_2	Difference: 1.300.000 KWh per annum, equivalent to approx. 1,5 tCO_2
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	The plant will produce 1.300 MWh (=1.300.000 KWh) of electricity per year, which will be distributed to each Municipality, in proportion to its participation in the En.Com. Energy consumption saved: 0.1 € / KWh. Annual savings: 130,000 €. Part of this amount will be invoiced to the Municipalities (or their Legal Entities) which consume the electricity.		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	The Joint Action Scheme will be continuously monitored by ANATOLIKI as the Joint Action Coordinator. It will be responsible for Audit of output. Guarding and protection against theft and vandalism Cleaning the surfaces of PVs, mainly after rains containing dust Works to clean the field for installation for PVs & after		
Joint Action transferability please specify if the Joint Action is transferable to other projects and if so, please write possible examples	The transferability of the Joint Action is assured due to its win-win characteristics		
Other potential added value from Joint Action if applicable	-		

Table 8: EE implementation effectiveness table for ANATOLIKI S.A.

2.2. PP1 – ANDALUSIAN FEDERATION OF TOWNS AND PROVINCES (FAMP)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	Andalusian Energy Agency, 8 County Councils, 6 County Energy Agencies, 2 Local Energy Agencies, ENDESA, APADGE, AVRA, UCA-UCE and 33 Municipalities (Pilot Area)
Stakeholder #1 name/title	**Andalusian Energy Agency**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Regional Energy Agency / Regional Public Authority because the Andalusian Energy Agency belongs to the Andalusian Regional Government
Stakeholder #1 field of work / main activities	The Andalusian Energy Agency is a public agency attached to the Regional Ministry of Finance, Industry and Energy from the Andalusian Regional Government. Its main objective is to contribute to making Andalusia a reference region in the energy sector, both at national and community level, promoting a new energy culture among people, companies and administrations.
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	The Andalusian Energy Agency is a key stakeholder because it is the regional and public management agency of the Low-Carbon Economy axis from the Andalusia ERDF OP 2014-2020, Thematic Objective 4.
Stakeholder #1 Joint Action role/tasks/commitment and contribution	The inter-institutional cooperation with the Andalusian Energy Agency, as the Andalusian Energy Strategy 2020 Managing Authority, would be key for the development the actions integrated in REDEMA. During this process of inter-institutional collaboration with Andalusian Energy Agency, FAMP and the Andalusian Energy Agency have both signed a Covenant with the aim of the promotion of energy efficiency and the use of renewable energy in Andalusian cities, and REDEMA is included between the actions to foster. FAMP is also looking for some financing sources with the Andalusian Energy Agency in order to start the Network with enough resources and staff.
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	-

Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	-
Stakeholder #2 name/title	**8 County Councils (Huelva, Seville, Cadiz, Cordoba, Malaga, Jaen, Granada and Almeria County Councils) and 6 County Energy Agencies and 2 Local Energy Agencies**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	County public authorities and local agencies
Stakeholder #2 field of work / main activities	The County Energy Agencies belong to the Andalusian County Councils. Its main field of work and activities is related to collaborate in the management of the local activity, to manage the economic-administrative interests of the counties and specially its work is closer to those municipalities with less than 20,000 inhabitants. The County Energy Agencies are responsible for energy measures in the municipalities of each county.
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	The main conclusion drawn from the Focus Group meetings and the Local Conference for the Joint Action Implementation is that the Joint Action Plan should cover the following aspects or phases of an Action Plan, mostly among those municipalities with less capacity (with less than 20,000 inhabitants), so the collaboration with the main stakeholders who manage a lot of the local authorities issues in these small municipalities is essential for the REDEMA's success.
Stakeholder #2 Joint Action role/tasks/commitment and contribution	The County Energy Agencies, the County Councils and the Local Energy Agencies would realise the energy audit campaign between the municipalities interested in the development of energy efficiency measures.
Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	-
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	-
Stakeholder #3 name/title	**ENDESA, APADGE, AVRA, UCA-UCE**

Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Knowledgeable persons
Stakeholder #3 field of work / main activities	ENDESA (Electric utility company), APADGE (Andalusian Professional Association of Energy Managers), AVRA (Andalusian Refurbishing and Housing Agency) and UCA-UCE (Andalusian Consumers' Association)
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	ENDESA (Electric utility company), APADGE (Andalusian Professional Association of Energy Managers), AVRA (Andalusian Refurbishing and Housing Agency) and UCA-UCE (Andalusian Consumers' Association) as key stakeholders during the Focus Groups development, will continuously provide support, expertise and knowledge to increase the effectiveness of REDEMA
Stakeholder #3 Joint Action role/tasks/commitment and contribution	They will participate in the events and workshops related to the Network implementation and in case it would be necessary the development of additional Focus Groups, they will be invited as experts
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	-
Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	-
Stakeholder #4 name/title	**33 Municipalities (Pilot Area): Alcala la Real, Alcolea del Rio, Cazorla, Jerez de la Frontera, Sevilla, Arahal, Jodar, Palma del Rio, Montilla, Alcaracejos, El Ronquillo, Ubeda, Casariche, Huesa, Montefrio, Lecrin, La Carlota, Bonares, Isla Cristina, Berja, Pulpi, Chipiona, Tarifa, Rute, Villanueva de Cordoba, Churriana de la Vega, Huetor Vega, Aracena, Bollullos Par de Condado, Bailen, Arhidona, Ojen and Espartinas.**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authority
Stakeholder #4 field of work / main activities	Government of the municipality
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	The 33 Municipalities with which FAMP had already been working for the study of the audits and SEAPs to be included in the ENERJ web platform, as well as the municipalities where the 10 initial audits were carried out, have been choose as initial pilot area.

Stakeholder #4 Joint Action role/tasks/commitment and contribution	These municipalities would be adhered to the Network and would be benefited for REDEMA actions: audits campaigns, trainings, events, energy data management tools, and so on. With all these actions, they will realise the energy efficiency measures included in their SEAPs and SECAPs
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	The adhesion to REDEMA by Local Authorities could be seen with non-added value.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	It is crucial to provide to the Network with enough content and its communication so the municipalities would see its value. For that purpose, the process developed gradually and all the work for the implementation of measures to improve energy conditions at Andalusian Local Authorities up to the creation of the Network would be transmitted through the additional Conferences prepared for its launching, adhesion and implementation.

Table 9: Stakeholders table for FAMP

2. JOINT ACTION

Joint Action name/title	REDEMA: Energy Network of the Andalusian Municipalities
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	A network as a cooperation tool to foster energy efficiency measures among local authorities
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	In the process of identifying a possible Joint Action for ENERJ, meetings were held by FAMP with a selected group of experts: the ENERJ Focus Groups. Also a Local Conference were held in this process, with the aim of the involvement of regional stakeholders into the implementation of the Joint Action identified. The generalized conclusion by all the participants revolved around the importance of unify efforts to foster EE initiatives in the municipalities, especially among those municipalities with less capacity (with less than 20,000 inhabitants). The main Good Practice considered during Focus Groups as potential solution was REDEJA (Andalusian Government Energy Network for Andalusian Government Public Buildings). REDEJA is an instrument created to promote within the Andalusian Administration principles of energy saving and diversification and to implement renewable energy facilities in its buildings. In conclussion, the Joint Action identified was the creation of an Energy Network of the Andalusian Municipalities, REDEMA (as a reflection of REDEJA but at local level).
Pilot area/location selection please specify the reasons and the process of selection of the	The 33 Municipalities with which FAMP had already been working for the study of the audits and SEAPs to be included in the ENERJ web platform, as well as the municipalities where the 10 initial audits were carried out, have been choose as initial pilot area.

specific area for Pilot actions	
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	9
Intervention #1 type and description	**AUDIT CAMPAIGN** Type: Diagnosis: Work methodology - Audits Description: The aim is to establish a work methodology related to the implementation of Energy Efficiency actions within the municipalities adhered to REDEMA, linked to the realisation of a first phase of diagnosis through energy audits and certifications and a second phase of development of actions through the different funding sources that are available to local entities
Intervention #1 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	The expected savings are linked with the whole Joint Action and it will be described below
Intervention #2 type and description	**TRAINING COURSES** Type: Training / Tools - Technical assistance Description: FAMP will design and carry out courses for the two identified profiles (technical and political, control and verification and secretariat). These courses will be opened to those municipalities that are members of REDEMA, other than availability of both, conferences and taught or online courses. The contents of the course will be aimed at bringing the work of the technical staff familiar with Energy Efficiency and Energy Managers role. The contents of the course for political profiles, control and verification and secretariat, will be aimed at improving the empowerment and awareness of the efficient use of ERDF funds and the various voluntary commitments acquired by local administrations, through a strategic framework and of energy planning carried out.
Intervention #2 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #2 expected savings please specify the estimated	The expected savings are linked with the whole Joint Action and it will be described below

energy savings, monetary savings and ROI	
Intervention #3 type and description	**CAPACITY BUILDING COURSES** Type: Training Description: The aim is to create a network structure, so that County Councils and Local Energy Agencies serve as multipliers of these training courses at various levels. FAMP will also elaborate and carry out training courses for the multiplying organisations, in order for them to carry out future training courses at the Local Entities' level.
Intervention #3 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #3 expected savings please specify the estimated energy savings, monetary savings and ROI	The expected savings are linked with the whole Joint Action and it will be described below
Intervention #4 type and description	**FAMP COLLABORATION AGREEMENT - COUNTY COUNCILS** Type: Governance and awareness Description: The aim is to generate synergies between FAMP and the County Councils in order to empower local governments to access the available funds and their most profitable use for the development of energy efficiency measures in public buildings. For this, through different meetings with the County Councils and Local Energy Agencies, local governments capacities will be identified in order to offer them resources for them to develop different roles and actions through REDEMA.
Intervention #4 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #4 expected savings please specify the estimated energy savings, monetary savings and ROI	The expected savings are linked with the whole Joint Action and it will be described below
Intervention #5 type and description	**EVENTS FOR THE VISIBILISATION OF LOCAL GOVERNMENTS IN THEIR EFFORTS TOWARD A LOW CARBON ECONOMY** Type: Governance and awareness Description: The aim is to visibilise good practices and cases of success in Andalusia Local Governments related to Low Carbon Economy actions, in order to empower Local Governments to develop energy efficiency measures in their public buildings. For this, FAMP will hold conferences and establish a series of Awards that

	recognise the work carried out by Local Governments in Andalusia in various aspects related to the implementation of measures that promote the Low Carbon Economy and can be identified as good practices and solutions or success stories. In addition, a specific section will be developed on FAMP website that will serve as a Bank or Database of Good Practices and Success Stories of Local Governments adhered to REDEMA.
Intervention #5 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #5 expected savings please specify the estimated energy savings, monetary savings and ROI	The expexted savings are linked with the whole Joint Action and it will be described below
Intervention #6 type and description	**ENERJ WEB PLATFORM AND BUILDING GUIDES (BOOK OF THE PUBLIC BUILDING IN ANDALUCIA)** Type: Tools - Technical Assistance Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to tools developed by FAMP European projects. To this end, the web platform created in the ENERJ project will be disseminated, as a tool that gathers and processes energy information related to public buildings in Andalusia. To facilitate its use, specific sections will be included in the different training sessions for municipal technical staff. In addition, an update of the Guides made by the Andalusian Energy Agency will be proposed, with the data obtained from the data collection of the public buildings of the Andalusian local governments in ENERJ web platform, with the aim of generating a "Municipal Building Guide", so that it serves as a "manual" or guide for municipal strategic energy planning.
Intervention #6 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #6 expected savings please specify the estimated energy savings, monetary savings and ROI	The expected savings are linked with the whole Joint Action and it will be described below
Intervention #7 type and description	**GUIDES FOR SUSTAINABLE AND INNOVATIVE PUBLIC PROCUREMENT** Type: Tools - Technical Assistance Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to the tools developed during the participation of FAMP in different European projects. To this end, the guides generated in GreenS project will be disseminated to include green criteria in public tenders, adapted to the new LCSP (public service

	contracts law).
Intervention #7 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #7 expected savings please specify the estimated energy savings, monetary savings and ROI	The expexted savings are linked with the whole Joint Action and it will be described below
Intervention #8 type and description	**ACTION PLAN FOR ANDALUSIA REGIONAL OPERATIONAL PROGRAM 2021-2027** Type: Tools - Technical Assistance Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to tools developed by FAMP European projects. SUPPORT project Action Plan for Andalusian ERDF Regional Operational Program 2021-2027 will be disseminated to address the difficulties and barriers of Local Entities in the application of sustainable energy policies.
Intervention #8 activity/installation cost please write the cost of intervention activity	To be defined
Intervention #8 expected savings please specify the estimated energy savings, monetary savings and ROI	The expected savings are linked with the whole Joint Action and it will be described below
Intervention #9 type and description	**SUPPORT TOOLS: GUIDES, RECOMMENDATIONS, PLATFORM CATALOGUES, ENERGY MANAGEMENT TOOLS** Type: Tools - Technical Assistance Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to tools developed in FAMP Participatory Energy Efficiency Laboratory's collaborative work process. For this, different activities will be convened to participating actors with the aim of identifying the different tools that favour and support municipal energy management. To do this, actors will be asked to include information in a database (tools, documents, guides, sheet catalogues, etc.). In addition, the presentation of these tools and tool database will be promoted in different activities related to the Low Carbon Economy promoted or carried out by FAMP.
Intervention #9 activity/installation cost please write the cost of	To be defined

intervention activity	
Intervention #9 expected savings please specify the estimated energy savings, monetary savings and ROI	The expected savings are linked with the whole Joint Action and it will be described below
Interventions expected savings please specify the estimated energy savings, monetary savings and ROI	The measures proposed with an energy consumption reduction goal of 7577.74Mwh/year, there are almost 4200Mwh/year not reached, since the actions proposed in the buildings have not been initiated.
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	In a first approximation, a study was made of the state of implementation of 20 Andalusian municipalities, which had included in their SEAPs energy efficiency actions in 480 public buildings, of which almost 180 have not carried out their energy measures included in the audits.
Structure details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	Buildings of different types Area of intervention: mainly on energy efficiency for lightning systems, renewable energy for space heating and hot water and/or integrated actions/varies
Implementation timeline period please write a general implementation plan schedule	Intervention #1: Short-Mid Term (2019-2021) Intervention #2: Short Term (2019) Intervention #3: Short-Mid Term (2019-2021) Intervention #4: Short-Mid Term (2019-2021) Intervention #5: Short-Mid Term (2019-2021) Intervention #6: Short Term (2019) Intervention #7: Short Term (2019) Intervention #8: Short Term (2019) Intervention #9: Short-Mid Term (2019-2021)
Joint Action promotion please explain the Joint Action advertisement/promotion strategy	The main way to promote the adhesion of municipalities to the Network will be through communication with the municipalities adhered to FAMP, such as letters, circulars, announcements, emails, and so on; or through events where the Network is presented and the possibility of its adhesion is offered. A specific Regional Conference will be developed to promote the adhesion to REDEMA June of 2019. In addition, the work through FAMP Commissions, especially with Urbanism and Environment Commissions, will multiply the dissemination effect among Andalusian municipalities. FAMP already has the Participatory Energy Efficiency Laboratory, which includes several municipalities working on Low Carbon Economy, as well as a Network of Cities with Sustainable and Integrated Urban Development Strategies, shaped by those municipalities with more than 20,000

	inhabitants which have obtained funding to develop their strategy. Therefore, the objective will be these municipalities already working in another Networks related with FAMP, as well as the dissemination of REDEMA among municipalities with less than 20,000 inhabitants. In addition, for the ENERJ project, as for other European projects related to low carbon economy, work is being carried out with a number of municipalities, carrying out audits, identifying good practices, analysing SEAPs, and so on. Through the recognition of these municipalities through conferences, prizes or their inclusion in databases or banks of good practices, by example, will encourage the adhesion to the Network, to producing a higher recognition of the work developed in a Low Carbon Economy by Andalusian Local Authorities. This option is included as an operation within REDEMA's Governance work line, since one of the Network's objectives is to gradually increase the number of municipalities involved in it, achieving higher quality in the exchange of information and practices as well as increasing the number of beneficiaries and potential improvements in municipal management.
Perceived risks/obstacles regarding Joint Action implementation if existing/applicable	The Network must be provided with sufficient economic and human resources. 'Soft measures' related to the coordination and governance and the training courses should be the priorities to be developed and offered within the Network in the initial steps, because several municipalities have not carried out energy efficiency actions in public buildings mainly due to the obstacles of lack of technical personnel and the difficulty that bureaucracy issues represent for them as bottle neck, so it would overcome these situations. The adhesion to REDEMA by Local Authorities could be seen with non-added value.
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation if existing/applicable	For the possible risks regarding sufficient economic and human resource, the collaboration with key stakeholders as the Energy Agencies (at Regional and County level) is essential. Without their collaboration, the initial actions that could be developed by FAMP own resources are limited without considering the possibility to submit and get new EU cooperation projects funds. It is crucial to provide to the Network with enough content and its communication so the municipalities would see its value. For that purpose, the process developed gradually and all the work for the implementation of measures to improve energy conditions at Andalusian Local Authorities up to the creation of the Network would be transmitted through the additional Conferences prepared for its launching, adhesion and implementation.

Table 10: Joint Action table for FAMP

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	FAMP is looking for funding tools through cooperation projects and also FAMP would carry out some preliminar actions with the some collaborations and resources 4 types of financing sources are involved
Financing source #1 name/title	Interreg Europe - Pilot Action
Financing source #1 organization structure e.g. bank, municipality…	Cooperation project
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	ERDF Funds
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	FAMP is looking for funding tools through cooperation projects such as Interreg programme (Interreg Europe Pilot Action, POCTEP, SUDOE, Med…), so the development of the Network could be progressive, increasing its resources and capacities to develop the activities and actions it undertakes. As a first step, FAMP has presented a "Pilot Action" in the framework of the SUPPORT project of the Interreg Europe programme, with the aim to seek the possibility of financing a concrete action in the framework of REDEMA: the Regional Energy Observatory. The development of a Regional Energy Observatory, within REDEMA's group of activities, will contribute to start the process of comparison of certain parameters of public buildings (energy consumption, emissions, costs…) according to their characteristics (surface, number of workers, number of users, hours of operation, type of public equipment…).
Financing source #1 total value of investment	35.000 €
Financing source #2 name/title	Regional, County and Local Energy Agencies + County Councils own funds
Financing source #2 organization structure e.g. bank, municipality…	Regional, county and local public entities
Financing source #2 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial	Own funds

solutions etc.	
Financing source #2 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	To carry out audits campaigns and energy efficiency actions in buildings, FAMP will look for the collaboration and resources managed by the County and Local Energy Agencies, belonging to the County Councils, and the Andalusian Energy Agency through the signature of collaboration covenants.
Financing source #2 total value of investment	To be defined
Financing source #3 name/title	ERDF OP for Andalusia 2014-2020 / Andalusian Energy Agency Order of Incentives
Financing source #3 organization structure e.g. bank, municipality…	Regional Energy Agency from the Regional Government of Andalusia
Financing source #3 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	ERDF Funds
Financing source #3 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	The audit campaigns are carried out in those municipalities adhered to REDEMA on the buildings included in their SEAPs / SECAPs that have not yet been implemented, with the commitment that local entities subsequently present the actions defined in this diagnosis through the funds of the Order of Incentives of the Andalusian Energy Agency. The Andalusian Energy Agency, as the managing body of the ERDF OP, makes available the Incentive Programme for the Sustainable Energy Development of Andalusia 2020 "Andalusia is more". It has 3 lines of incentives and a total of 76 measures, through which energy refurbishment actions will be financed in three lines: - SUSTAINABLE CONSTRUCTION incentive line - SUSTAINABLE SME Incentive Line - INTELLIGENT NETWORKS incentive line The Local Entities would submit their proposal in the "SUSTAINABLE CONSTRUCTION" incentive line.
Financing source #3 total value of investment	To be defined
Financing source #4 name/title	FAMP's Lifelong Learning

Financing source #4 organization structure e.g. bank, municipality…	Local Entities Federation
Financing source #4 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Own funds
Financing source #4 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	For the development of trainings, FAMP has a specific Department on its organisation called "FAMP's Lifelong Learning" which has a specific budget to develop trainings for their municipalities adhered. The trainings that will be developed within REDEMA measures will be fund by "FAMP's Lifelong Learning" own resources
Financing source #4 total value of investment	10,000-15,000 €
Projected estimate of savings from Joint Action implementation please specify the total monetary value and estimated percentage of savings from the combination of all financing sources	To be defined
Perceived financing and market opportunities if existing/applicable	To be defined
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	The Network must be provided with sufficient economic and human resources. Without the regional and county energy agencies collaboration, the initial actions that could be developed by FAMP own resources are limited without considering the possibility to submit and get new EU cooperation projects funds.
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	It is crucial to seek collaboration with key stakeholders as the Andalusian Energy Agencies and the County Energy Agencies and County Councils

Table 11: Financing and market risks & opportunities table for FAMP

4. EE IMPLEMENTATION EFFECTIVENESS

Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	In a first approximation, a study was made of the state of implementation of 20 Andalusian municipalities, which had included in their SEAPs energy efficiency actions in 480 public buildings, of which almost 180 have not carried out their energy measures included in the audits.		
Efficiency indicator #1 description please specify the name and unit of measurement (e.g. kW, tCO_2…)	Mwh/year		
Efficiency indicator #1 selection motive please specify why the indicator was selected	It is the main indicator included in the SEAPs for energy efficiency actions in public buildings		
Efficiency indicator #1 measurement source and time please specify the person/organization providing the indicator measurement and the exact time of measurement	Ex ante: Local Authorities in their SEAPs	Post ante: Local Authorities in their SEAPs	
Efficiency indicator #1 data and quantity measurement please specify the data and quantity measured	Ex ante: (The SEAPs include only the savings, not the ex ante / post ante situation)	Post ante: (The SEAPs include only the savings, not the ex ante / post ante situation)	Difference: 4200Mwh/year
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	The measures proposed in the SEAPs of the Municipalities included in the Pilot Area, have an energy consumption reduction goal of 7577.74Mwh/year, there are almost 4200Mwh/year not reached, since the actions proposed in the buildings have not been initiated. Through improving governance in municipalities, with specific training for municipal technicians and facilitating their access to funding from the Andalusian Government for these actions through the Order of Incentives of the Andalusian Energy Agency, a substantial improvement could be achieved in these municipalities.		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	There is no specific monitoring plan developed for the Joint Action, but there are some additional indicators related to the development of REDEMA that will be monitored during its development during the next months and years: - Number of Andalusian Municipalities adhered to the Network - Number of documents developed: projects, studies, reports, dissemination materials, and so on - Events - Impacts: Dissemination actions and trainings - Buildings that will optimise power and/or modify its facilities		

Joint Action transferability please specify if the Joint Action is transferable to other projects and if so, please write possible examples	REDEMA would serve as a linked cooperative and technical assistance workspace for the adhered municipalities in order to bring together and show the different possibilities of financing EE measures to local entities, improving the implementation of the local authorities' energy planning. The practice shows that it is important to not only provide local authorities with an energy management tool (metering device, software, etc.) but to support them to establish a structure of actually managing energy consumption and climate protection. Also meaning to implement efficiency measures. With this process, it is possible to support municipalities in their political decision-making processes. The establishment of networks based on transferring and capitalisation actions, disseminating outcomes by demonstrating a wide range of opportunities at a glance, promoting new investments, supporting teaching/learning processes (with experts, researches, citizens…) and improving the collection and processing of energy data at local level through an innovative tool in the region with specific training for its use for municipal technicians and facilitating their access to funding for energy efficiency actions, in different regions would foster a substantial improvement with the municipalities involved, specially with the smaller ones.
Other potential added value from Joint Action if applicable	-

Table 12: EE implementation effectiveness table for FAMP

2.3. PP2 - IRENA – ISTRIAN REGIONAL ENERGY AGENCY L.T.D. (IRENA)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	4
Stakeholder #1 name/title	**City of Poreč**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Public Authority
Stakeholder #1 field of work / main activities	Local authority, as regarding the project; participation in the focus groups, local conference
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action To share the obtained knowledge about procedures of local public authorities
Stakeholder #1 Joint Action role/tasks/commitment and contribution	The city provided one of the building (kindergarten) that is the subject of the JA, provides necessary documentation and information (such as energy audit...), participation on meetings
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	Since the kindergarten building in Poreč is protected as a cultural heritage, there are obstacles to its reconstruction and energy upgrade in the form of restrictions by the Conservation Department in Pula
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	Constant communication and contact with the Conservation Department in Pula to find the best solution for the energy renovation of the building without affecting its appearance too much
Stakeholder #2 name/title	**City of Novigrad**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Public Authority

Stakeholder #2 field of work / main activities	Local authority, as regarding the project; participation in the focus groups, local conference
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action To share the obtained knowledge about procedures of local public authorities
Stakeholder #2 Joint Action role/tasks/commitment and contribution	The city provided one of the building (building of city administration) that is the subject of the JA, provides necessary documentation and information (such as energy audit...), participation on meetings
Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Since the building administrations' building in Novigrad is protected as a cultural heritage, there are obstacles to its reconstruction and energy upgrade in the form of restrictions by the Conservation Department in Pula
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Constant communication and contact with the Conservation Department in Pula to find the best solution for the energy renovation of the building without affecting its appearance too much
Stakeholder #3 name/title	**Istrian Region**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Regional Public Authority
Stakeholder #3 field of work / main activities	Regional authority, as regards the project; participation in focus groups and local conference
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action To share the obtained knowledge about procedures of local public authorities
Stakeholder #3 Joint Action role/tasks/commitment and contribution	The Istrian Region provided one of the building (healthcare center) that is the subject of the JA, provides necessary documentation and information (such as energy audit, technical documentation...), participation on meetings
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	-
Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	-

Stakeholder #4 name/title	**Conservation Department Pula**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Regional Public Authority
Stakeholder #4 field of work / main activities	Regional authority; determination of the property of a cultural property, legal protection and entry in the Register of Cultural Property of the Republic of Croatia; establishing measures for the protection and preservation of cultural property; establishing special conditions for the protection of the cultural property in the process of issue; location permits and decisions on construction conditions; inspection activities; authorizing the export and export of cultural property; preparation of conservation studies for the purposes of spatial planning; as regards the project, participation in focus groups and local conference.
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	Participation is necessary because 2 of 3 selected buildings are cultural heritage and under protection of Conservation Department. Any kind of upgrade or refurbishment of such buildings requires their permission.
Stakeholder #4 Joint Action role/tasks/commitment and contribution	Participation in focus groups, meetings and conferences, providing advices, suggestions and good practices.
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	-
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	-

Table 13: Stakeholders table for IRENA

2. JOINT ACTION

Joint Action name/title	Defining the methodological approach to the restoration of protected and other complex public buildings
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Methodology know-how of energy restoration of cultural heritages' and complex buildings
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	The County of Istria and local authorities in the area of the mentioned county are owners / managers of a large number of public buildings representing cultural heritage. For a significant part of this building fund, there is a need for a comprehensive, and also energy, renewal that, especially considering the fact that these buildings are under the protection of the Conservation Department, require complex procedures at the planning and implementation level. The complexity of the procedures, the technological approaches to restoration, the financial requirement and the long lead times of the investment and the lack of technical experience at the regional / local level cause a complete blockade of restoration of protected buildings and, consequently, their decay.
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	Pilot area/location is in Istrian Region; City of Poreč and Novigrad and Municipality of Motovun
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	3 building; total number of interventions suggested: Novigrad 9; Poreč 14; Motovun 7

Intervention #1 type and description 1. Energy Efficiency in structures - lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation…; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type implemented and describe how and where it was used	Novigrad: Exterior wall repair. Remediation of capillary moisture. Repair of the flat roof of the bell tower. Construction of thermal insulation by laying of steam dam and mineral wool on the attic floor and construction of walking paths. Replacement of exterior joinery. Dismantling of existing air conditioners, disposal of freons in accordance with the Rules of the profession. Introduction of a heating / cooling system into a building with a VRF type heat pump. 20 kW solar power plant construction. Measuring energy consumption and CNUS. Poreč: Exterior wall repair. Roof remediation: dismantling of cover, thermal insulation performance, surfacing, air layer and roof covering. In the price, the performance of the tinplate hangs. Replacement of exterior joinery. Design of a system with hot water solar collectors for hot water preparation. Dismantling of equipment in the boiler room. Supply and installation of a new heat pump. Reconstruction of heating distribution. Reconstruction of the complete kitchen block with the installation of new energy efficient appliances. LED lightning implementation. 15 kW solar power plant construction. Motovun: Rehabilitation of stormwater drainage and construction of drainage around the building with appropriate rehabilitation of waterproofing. Exterior wall repair. Replacement of exterior joinery. New cover design, roof reconstruction. Removal of suspended ceilings and associated necessary landscaping. Reconstruction of the heating system. 7,5 kW solar power plant construction. Measuring energy consumption and CNUS.
Intervention activity/installation cost please write the cost of intervention activity	Novigrad: 1. 20.300,00 €; 2. 34.000,00 €; 3. 4.700,00 €; 4. 5.400,00 €; 5. 38.700,00 €; 6. 700,00 €; 7. 40.500,00 €; 8. 60.800,00 €; 9. 20.300,00 € Poreč: 1. 110.000,00 €; 2. 71.000,00 €; 3. 85.700,00 €; 4. 6.000,00 €; 5. 1.600,00 €; 6. 51.300,00 €; 7. 18.900,00 €; 8. 40.500,00 €; 9. 42.500,00 €; 10. 2.900,00 €; 11. 7.500,00 €; 12. 4.700,00 €; 13. 12.100,00 €; 14. 40.500,00 €; 15. 20.200,00 € Motovun: 1. 40.500,00 €; 2. 40.200,00 €; 3. 5.400,00 €; 4. 37.500,00 €; 5. 1.300,00 €; 6. 40.500,00 €; 7. 16.800,00 €; 8. 10.100,00 €

Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	TBD
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	3
Structure #1 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify)	Kindergarten Adress: Otokara Keršovanija 14 Year: 1912 Size: 692,1 m2 Floors: 3
Structure #2 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify)	City Administration Adress: Veliki trg br. 1 Year: 1609 Size: 590 m2 Floors: 3
Structure #3 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify)	Health centre Adress: Kanal 4 Year: Size: 212,84 m2 Floors: 1
Implementation timeline period please write a general implementation plan schedule	Interactive workshops that will stimulate the exchange of experience and knowledge of the focus groups' stakeholders and ultimately, as a consortium, to enable the process management to be carried out through the preparation of the technical documentation of the energy reconstruction is planned to be finished by the end of September 2019.
Joint Action promotion please explain the Joint Action advertisement/promotion strategy	Further meetings with stakeholders, dissemination of information via social media and IRENAs' and stakeholders' institutional website
Perceived risks/obstacles regarding Joint Action implementation if existing/applicable	None
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation if existing/applicable	None

Table 14: Joint Action table for IRENA

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	3
Financing source #1 name/title	Public
Financing source #1 organization structure e.g. bank, municipality…	City of Poreč
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	City of Poreč funds
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	Details are not yet known, but it has been said that the city of Poreč will provide funds in the budget for the reconstruction of the mentioned buildings
Financing source #2 total value of investment	This information will be known upon completion of the project documentation
Financing source #2 name/title	Public
Financing source #2 organization structure e.g. bank, municipality…	City of Novigrad
Financing source #2 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	City of Novigrad funds
Financing source #2 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	Details are not yet known, but it has been said that the city of Novigrad will provide funds in the budget for the reconstruction of the mentioned buildings
Financing source #2 total value of investment	This information will be known upon completion of the project documentation

Financing source #3 name/title	Public
Financing source #3 organization structure e.g. bank, municipality…	City of Motovun
Financing source #3 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	City of Motovun funds
Financing source #3 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	Details are not yet known, but it has been said that the city of Motovun will provide funds in the budget for the reconstruction of the mentioned buildings
Financing source #3 total value of investment	This information will be known upon completion of the project documentation
Projected estimate of savings from Joint Action implementation please specify the total monetary value and estimated percentage of savings from the combination of all financing sources	-
Perceived financing and market opportunities if existing/applicable	This initiative will serve as Good Practice for other Local and Regional Authorities since it is a metter of energy upgrade of cultural heritage and complex buildings which, in most cases, represents slight difficulties because Conservation Deparment is very strict in case of cultural heritages' building restoration. Completing successfully this kind of action will attract market actors.
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	-
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	-

Table 15: Financing and market risks & opportunities table for IRENA

4. EE IMPLEMENTATION EFFECTIVENESS			
Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	The calculation of energy usage and CO2 emissions before renovation an after renovation. Energy audits provide such data but also the ISGE which is energy management information system. Through ISGE we can monitor electricity, water and heating fuel spending so it is easy to compare usage and spendings before and after energy restoration.		
Efficiency indicator #1-2 description please specify the name and unit of measurement (e.g. kW, tCO2..)	kW and CO2		
Efficiency indicator #1-2 selection motive please specify why the indicator was selected	By implementing selected energy efficiency measures most savings will be accomplished in electricity and CO2 emission.		
Efficiency indicator #1-2 measurement source and time please specify the person/organization providing the indicator measurement and the exact time of measurement	Ex ante: ISGE / technical expert		Post ante: ISGE / technical expert
Efficiency indicator #1-2 data and quantity measurement please specify the data and quantity measured	Ex ante: electricity and oil consumption	Post ante: electricity and oil consumption	Difference: reduction of consumption
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	Not available at this moment		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	The effectiveness of these actions will be monitoret through the ISGE system which is a national energy management information system.		
Joint Action transferability please specify if the Joint Action is transferable to other projects and if so, please write possible examples	The idea of this Joint Action is transferable to other project since it represents a methodology on how to define the methodological approach to the restoration of protected and other complex public buildings. Since region of Istria aong with Croatia has a significant number of cultural heritages' buildings, methodology defined through this project could be of use in some other project that is dealing with this kind of problem.		

Table 16: EE implementation effectiveness table for IRENA

2.4. PP3 - CYPRUS ENERGY AGENCY (CEA)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	9
Stakeholder #1 name/title	**Drousia Community**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #1 field of work / main activities	Administrative
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	Building user
Stakeholder #1 Joint Action role/tasks/commitment and contribution	Financing and procurement
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	Financial constraints, lack of technical personnel
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	The Ministry of Interior and the Ministry of Education, Culture, Sports and Youth could join the efforts for upgrading the school, the procurement authority could be one with more technical expertise
Stakeholder #2 name/title	**Pano Arodes Community**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority

Stakeholder #2 field of work / main activities	Administrative
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	Building user
Stakeholder #2 Joint Action role/tasks/commitment and contribution	Financing and procurement
Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Financial constraints, lack of technical personnel
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise
Stakeholder #3 name/title	**Kato Arodes Community**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #3 field of work / main activities	Administrative
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	Building user
Stakeholder #3 Joint Action role/tasks/commitment and contribution	Financing and procurement
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Financial constraints, lack of technical personnel
Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation	The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise

if existing/applicable	
Stakeholder #4 name/title	**Neo Chorio Community**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #4 field of work / main activities	Administrative
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	Building user
Stakeholder #4 Joint Action role/tasks/commitment and contribution	Financing and procurement
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	Financial constraints, lack of technical personnel
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise
Stakeholder #5 name/title	**Neo Chorio Community**
Stakeholder #5 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #5 field of work / main activities	Administrative
Stakeholder #5 cooperation motives please fill out the stakeholders' reasons for participating	Building user

Stakeholder #5 Joint Action role/tasks/commitment and contribution	Financing and procurement
Perceived risks/obstacles regarding stakeholder #5 participation if existing/applicable	Financial constraints, lack of technical personnel
Possible solutions regarding perceived risks/obstacles regarding stakeholder #5 participation if existing/applicable	The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise
Stakeholder #6 name/title	**Pegeia Municipality**
Stakeholder #6 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #6 field of work / main activities	Administrative
Stakeholder #6 cooperation motives please fill out the stakeholders' reasons for participating	Building user
Stakeholder #6 Joint Action role/tasks/commitment and contribution	Financing and procurement
Perceived risks/obstacles regarding stakeholder #6 participation if existing/applicable	Financial constraints, lack of technical personnel
Possible solutions regarding perceived risks/obstacles regarding stakeholder #6 participation if existing/applicable	Funding by the Central Government
Stakeholder #7 name/title	**Ministry of Education, Culture, Sports and youth**

Stakeholder #7 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Ministry
Stakeholder #7 field of work / main activities	Central Governement, Administrative
Stakeholder #7 cooperation motives please fill out the stakeholders' reasons for participating	Building owner
Stakeholder #7 Joint Action role/tasks/commitment and contribution	Financing
Perceived risks/obstacles regarding stakeholder #7 participation if existing/applicable	Only one building that concerns the Ministry is involved, lack of strategy for school upgrading
Possible solutions regarding perceived risks/obstacles regarding stakeholder #7 participation if existing/applicable	Inclusion of more school buildings in the joint action
Stakeholder #8 name/title	**Ministry of Interior**
Stakeholder #8 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Ministry
Stakeholder #8 field of work / main activities	Central Governement, Administrative
Stakeholder #8 cooperation motives please fill out the stakeholders' reasons for participating	Financing of Communities
Stakeholder #8 Joint Action role/tasks/commitment and contribution	Financing
Perceived risks/obstacles regarding stakeholder #8 participation if existing/applicable	Lack of strategy for financing energy upgrading projects

Possible solutions regarding perceived risks/obstacles regarding stakeholder #8 participation if existing/applicable	Creation of an action plan for upgrading energy intensive Community buildings
Stakeholder #9 name/title	**Ministry of Energy, Commerce and Industry**
Stakeholder #9 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Ministry
Stakeholder #9 field of work / main activities	Central Governement, Administrative
Stakeholder #9 cooperation motives please fill out the stakeholders' reasons for participating	Implementation of the Action plan for reduction of CO2 emissions in public buildings
Stakeholder #9 Joint Action role/tasks/commitment and contribution	Funding schemes, Legislation
Perceived risks/obstacles regarding stakeholder #9 participation if existing/applicable	Low energy consumption of Community buildings
Possible solutions regarding perceived risks/obstacles regarding stakeholder #9 participation if existing/applicable	Increase the amount of buildings involved in the joint action

Table 17: Stakeholders table for CEA

2. JOINT ACTION

Joint Action name/title	Joint Procurement for Energy Upgrading
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Refurbishment, retrofitting, energy upgrading
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	The energy audits provided the building owners with the knowledge on energy savings potential of their buildings and facilities. The legislation in Cyprus allows a group of public bodies to collectively procure with one public entity to be the procurer and therefore the joint action will take advantage of this and have one local authority with the technical capacity, to become the procurer. The procurements will be focused on one energy efficiency measure in more than one building. The measures will include installation of PV systems, lighting upgrading to LED and thermal insulation both rooftop and thermal.
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	The pilot area is the Akamas Peninsula area that have elaborated Energy Audits in their buildings.
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	No interventions have taken place yet
Intervention #1 type and description 1. Energy Efficiency in structures - lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation...; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type implemented and describe how and where it was used	Lighting replacement, installation of LED lighting in 4 buildings (Drousia primary school, Pegeia sports arena, Pano Arodes Community offices and Kato Arodes community offices)
Intervention #1 activity/installation cost please write the cost of intervention activity	9,733.00 EUR

Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	Energy Savings: 8,899 kWh, Money Savings: 1,334.92 EUR, Simple payback: 7 years
Intervention #2 type and description	Installation of 5kW PV system on the roofs of the Primary School of Drousia Community and the Multipurpose building of Peyia Municipality
Intervention #2 activity/installation cost	13,000.00 EUR
Intervention #2 expected savings	Energy Savings: 18,000 kWh, Money Savings: 2,700.00 EUR, Simple payback: 5 years
Intervention #3 type and description	Installation of roof insulation at the Pano Arodes Community offices, the Kato Arodes Community offices, the Neo Chorio Community offices and the Multipurpose building of Peyia Municipality
Intervention #3 activity/installation cost	6,614.00 EUR
Intervention #3 expected savings	Energy Savings: 13,200 kWh, Money Savings: 1,980.00 EUR, Simple payback: 3 years
Intervention #4 type and description	Installation of external thermal insulation at the Pano Arodes Community offices, the Kato Arodes Community offices and the Multipurpose building of Peyia Municipality
Intervention #4 activity/installation cost	17,436.00 EUR
Intervention #4 expected savings	Energy Savings: 6,941 kWh, Money Savings: 1,041.00 EUR, Simple payback: 17 years
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	5
Structure #1 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	NAME: Drousia Community Primary School - TYPE: School building - ADDRESS: Lahis street no.5, 8700 Drousia, Pafos - YEAR: 2004 - SIZE: 492m^2

Structure #2 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	NAME: Peyia Municipali Stadium - TYPE: Sport Facility - ADDRESS: Lahis street Demoticou Stadiou street, Pegia, Pafos - YEAR: 2004 (2008 refurbished) - SIZE: 1984 m^2 (2 floors)
Structure #3 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	NAME: Kato Arodes Community Offices - TYPE: Administrative building - ADDRESS: 8702, Kato Arodes, Pafos - YEAR: UNKNOWN (refurbished in 2014) - SIZE: 99 m^2
Structure #4 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify)	NAME: Pano Arodes Community Offices - TYPE: Administrative building - ADDRESS: Pano Arodes, 8703 Pafos, Cyprus - YEAR: 1930 - SIZE: 112.85 m^2
Structure #5 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify)	NAME: Peyia Multipurpose Building - TYPE: Care Centre - ADDRESS: Evangelou Floraki street, no.20, Pegeia Pafos - YEAR: 1996 - SIZE: 410 m^2 (2 floors)
Implementation timeline period please write a general implementation plan schedule	3 months for finalising procurement documents, 2 months for procurement selection process, 1 month to initiate contract, 8 months for implementation. Total of 14 months for the implementation
Joint Action promotion please explain the Joint Action advertisement/promotion strategy	Promotion through the Local authorities' websites and the Cyprus Energy Agency Newsletter
Perceived risks/obstacles regarding Joint Action implementation	-
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation	-

Table 18: Joint Action table for CEA

3. FINANCING AND MARKET RISKS & OPPORTUNITIES	
Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	-
Financing source #1 name/title	-
Financing source #1 organization structure e.g. bank, municipality…	-
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans..	-
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	-
Financing source #1 total value of investment	-
Projected estimate of savings from Joint Action implementation	47,000 kWh/year
Perceived financing and market opportunities if existing/applicable	ESCO partial financing
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	Lack of interest by ESCOs, ESCO market not mature enough in the building sector
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	Governmental funding

Table 19: Financing and market risks & opportunities table for CEA

4. EE IMPLEMENTATION EFFECTIVENESS

Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	Creation of baseline from the data of previous years and monitoring the electricity consumtion of the next years monthly.		
Efficiency indicator #1 description please specify the name and unit of measurement (e.g. kW, tCO^2...)	kWh consumption		
Efficiency indicator #1 selection motive please specify why the indicator was selected	To be included in the energy efficiency targets of the Local authorities		
Efficiency indicator #1 measurement source and time please specify the person/organization providing the indicator measurement and the exact time of measurement	Ex ante: -	Post ante: -	
Efficiency indicator #1 data and quantity measurement please specify the data and quantity measured	Ex ante: -	Post ante: -	Difference: -
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	-		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	Recording of electricity consumption per month		
Joint Action transferability please specify if the Joint Action is transferable to other projects and if so, please write possible examples	Once building owners have identified their energy saving potential, they can work together to create joint procurements for the purchasing of the equipment and/or the services.		
Other potential added value from Joint Action if applicable	-		

Table 20: EE implementation effectiveness table for CEA

2.4. PP4 - GOZO DEVELOPMENT AGENCY – GOZO REGIONAL COMMITTEE GDA/GRC

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	15
Stakeholder #1 name/title	**Nicky Saliba**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #1 field of work / main activities	Mayor of Zebbug local council
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #1 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #2 name/title	**Paul Buttigieg**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council

Stakeholder #2 field of work / main activities	Mayor of Qala local council
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #2 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #3 name/title	**Josef Schembri**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #3 field of work / main activities	Mayor of Victoria local council
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #3 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection

Stakeholder #4 name/title	**Mario Azzopardi**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #4 field of work / main activities	Mayor of Kercem local council
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #4 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #5 name/title	**Philip Vella**
Stakeholder #5 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #5 field of work / main activities	Mayor of Sannat local council
Stakeholder #5 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #5 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan

Perceived risks/obstacles regarding stakeholder #5 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #5 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #6 name/title	**Noel Formosa**
Stakeholder #6 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #6 field of work / main activities	Mayor of San Lawrenz local council
Stakeholder #6 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #6 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #6 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #6 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #7 name/title	**Saviour Borg**
Stakeholder #7 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #7 field of work / main activities	Mayor of Fontana local council

Stakeholder #7 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #7 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #7 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #7 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #8 name/title	**Franco Ciangura**
Stakeholder #8 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder # field of work / main activities	Mayor of Ghajnsielem local council
Stakeholder #8 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #8 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #8 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #8 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #9 name/title	**Daniel Attard**

Stakeholder #9 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #9 field of work / main activities	Mayor of Ghasri local council
Stakeholder #9 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #9 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #9 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #9 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #10 name/title	**Paul Azzopardi**
Stakeholder #10 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #10 field of work / main activities	Mayor of Xeukija local council
Stakeholder #10 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #10 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #10 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.

Possible solutions regarding perceived risks/obstacles regarding stakeholder #10 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #11 name/title	**David Apap**
Stakeholder #11 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #11 field of work / main activities	Mayor of Gharb local council
Stakeholder #11 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #11 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #11 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #11 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #12 name/title	**Edward Said**
Stakeholder #12 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #12 field of work / main activities	Mayor of Nadur local council
Stakeholder #12 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted

Stakeholder #12 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried out within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #12 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #12 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #13 name/title	**Joseph Cordina**
Stakeholder #13 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council
Stakeholder #13 field of work / main activities	Mayor of Xaghra local council
Stakeholder #13 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #13 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #13 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #13 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #14 name/title	**Sonja Abela**
Stakeholder #14 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	local authority / local council

Stakeholder #14field of work / main activities	Mayor of Munxar local council
Stakeholder #14 cooperation motives please fill out the stakeholders' reasons for participating	The local council's facilities and schools are included in the joint action plan, for which renotation / retrofitting /EE activities are forecasted
Stakeholder #14 Joint Action role/tasks/commitment and contribution	the local council is a beneficiary of the joint action plan. Energy audits already carried oout within the local council's facilities and schools, as well as other local action plans, if any, will be included in the joint action plan
Perceived risks/obstacles regarding stakeholder #14 participation if existing/applicable	it is difficult to get technical data from the local councils, mainly due to a lack of expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #14 participation if existing/applicable	GRC will train the local councils officials and will provide technical expertise for the data collection
Stakeholder #15 name/title	**Vicky Xuereb**
Stakeholder #15 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	regional authority, Ministry
Stakeholder #15field of work / main activities	Ministry for Gozo, decision-maker, Director of the Eco-Gozo directiorate
Stakeholder #15 cooperation motives please fill out the stakeholders' reasons for participating	the Ministry for Gozo is the main authority in the Region. As representative of the Government and of all the ministries in the Region, including the Ministry of Education and the Planning Authority, it shall be involved so to get the permit to carry out renovation /restoration activities in public buildings, including schools.
Stakeholder #15 Joint Action role/tasks/commitment and contribution	the Ministry for Gozo won't be directly involved in the implementation of the activiites, but its support will be necessary for the developmet of the joint action plan
Perceived risks/obstacles regarding stakeholder #15 participation if existing/applicable	it is very difficult to get the Ministry for Gozo involvement, especially with regards to major activities to perform in public administrations.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #15 participation if existing/applicable	it has been decided to leave the Ministry for Gozo out from the direct implementation of the activities. It will, instead, be included as main stakeholder and target group of the joint action plan.

Table 21: Stakeholders table for GDA

2. JOINT ACTION	
Joint Action name/title	Joint preparation of ELENA proposal for the energy retrofit of public buildings in Gozo
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Refurbishment
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	Idea for the action plan is born after the activities of energy audits in the targeted public buildings. Due to (mainly) cultural issues and lack of expertise, most of the public buildings in Gozo lack energy efficiency, insulation, etc. At the moment, there aren't any public funds available for financing retrofitting and refurbishment of buildings and due to the small size of the public buildings and local councils, it is very difficult to attract private investments. Thus, during the workshops organized within the Enerj project, and during bilateral meetings with the main stakeholders, it has been decided to join the efforts and apply for a unique financing for the restoration/renovation/refurbishment of all the local councils' facilities in Gozo. After an in deep analysis of the financing instruments available at Euroepan level, it has been decided to apply for the ELENA programme. In order to reach the threshold set by the programme, public schools have been involved in the joint action plan.
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	The pilot area cover the whole island of Gozo, due to the reasons explained above.

Table 22: Joint Action table for GDA

3. FINANCING AND MARKET RISKS & OPPORTUNITIES	
Number of financing sources involved	1
Financing source #1 name/title	ELENA
Financing source #1 organization structure e.g. bank, municipality…	EU funding
Financing source #1 type e.g. structural funds, cohesion funds…	EU funding

Table 23: Financing and market risks & opportunities table for GDA

2.5. PP5 - METROPOLITAN CITY OF CAPITAL ROME (CITTÀ METROPOLITANA ROMA)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	5
Stakeholder #1 name/title	**Albano Laziale - Municipality**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authorities
Stakeholder #1 field of work / main activities	Participation in the focus group, local conference
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action
Stakeholder #1 Joint Action role/tasks/commitment and contribution	The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	The persistence of political commitment after the change of local government
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	Bind the multi-year commitments undertaken with administrative documents
Stakeholder #2 name/title	**Montetondo - Municipality**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing	Local public authorities

institutions…)	
Stakeholder #2 field of work / main activities	Participation in the focus group, local conference
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action
Stakeholder #2 Joint Action role/tasks/commitment and contribution	The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings
Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Lack of economic resources and personnel for the activation of the necessary procedures, administrative and technical.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Ability to merge resources between multiple bodies, public and private
Stakeholder #3 name/title	**Trevignano Romano - Municipality**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authorities
Stakeholder #3 field of work / main activities	Participation in the focus group, local conference
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action
Stakeholder #3 Joint Action role/tasks/commitment and contribution	The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Difficulty in implementing energy efficiency measures in historic bound buildings, general lack on technical and administrative expertise

Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Assistance from Region and metropolitan city, to help municipalities find joint solutions to the problem of lack of experience and human resources and funds
Stakeholder #4 name/title	**Pomezia - Municipality**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authorities
Stakeholder #4 field of work / main activities	Participation in the focus group, local conference
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action
Stakeholder #4 Joint Action role/tasks/commitment and contribution	The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	Difficulty to give continuity to the preparation of interventions on public buildings due to the complexity of the procedures, the long times needed and the scarce resources
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	Seeking collaboration with other municipalities to find common solutions to the problems of scarce resources
Stakeholder #5 name/title	**Tivoli - Municipality**
Stakeholder #5 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authorities
Stakeholder #5 field of work / main activities	Participation in the focus group, local conference

Stakeholder #5 cooperation motives please fill out the stakeholders' reasons for participating	Interest in participating in the joint action
Stakeholder #5 Joint Action role/tasks/commitment and contribution	The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings
Perceived risks/obstacles regarding stakeholder #5 participation if existing/applicable	Lack of administrative and technical human resources, no time and founds for those activities that need also a specific expertise.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #5 participation if existing/applicable	Using the expertise of one enery manager for different municipalities to easly work together on joint project

Table 24: Stakeholders table for CMR

2. JOINT ACTION

Joint Action name/title	Metropolitan energy efficiency actions on public buildings
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Studies
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	Currently real problems related to the implementation of the actions indicated on the SEAPs are common to most of the municipalities of the CMR as well as to some of the ENERGY partners. The reason mostly are: -the elaboration of SEAPs is based on desires rather than real capacities by the municipalities -they do not take into account the feasibility of actions from the financial point of view -they do not take into account the feasibility of actions from the point of view of the actual capabilities of the municipalities' human resources. The ELENA initiative has been identified as the best possibility to implement some of the actions of local SEAPs and, in general, the energy retrofit of the public buildings, for the following reasons: - availability of financial resources (both co-financing and bank loans), crucial for undertaking a comprehensive & coordinated energy retrofit of public buildings - possibility of establishing a centralized, co-financed Project Implementation Unit having the technical capacities to handle, manage and monitor the implementation of the actions, overcoming the technical and financial difficulties experienced by the Municipalities.
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	Metropolitan area
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	121 Buildings (75 school buildings, 20 public office buildings, 8 sports buildings, 18 other types of buildings (libraries, cemeteries, museums…) – 2 types of interventions

Intervention #1 type and description 1. Energy Efficiency in structures - lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation...; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type implemented and describe how and where it was used	Energy retrofit actions that are suitable to this category and can achieve important results with limited investments and short payback time are: Interventions on heating systems: Replacing existing furnaces with condensing boilers Replacing existing pumping systems with highly efficient ones Insulation of distribution pipes Installation of thermostatic valves Installation of climate control systems Replacement of lighting systems using energy efficient light bulbs or LEDs; Installation of Building-integrated Photovoltaics on roofs.
Intervention #1 activity/installation cost please write the cost of intervention activity	35 million euros: 1,350,000 (EIB through ELENA), 150,000 (CMR), 33,500,000 (private investments by ESCOs).
Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	Energy retrofit actions that are suitable to this category and can achieve important results with limited investments and short payback time are: Interventions on heating systems: energy saving 15/20% - payback time 8/10 years; Replacement of lighting systems using energy efficient light bulbs or LEDs: energy saving 40/60 % - payback time 3/5 years; Installation of Building-integrated Photovoltaics on roofs: payback time 8-10 years.
Intervention #2 type and description	Within the framework of its role as Covenant of Mayors Coordinator, CMR intends to involve the Municipalities that signed the CoM in the promotion and implementation of initiatives for awareness raising and education on energy saving, both in public offices and schools.
Intervention #2 expected savings **please specify the estimated energy savings, monetary savings and ROI**	Expected energy saving is 5-8 % for each office/school involved in the initiative.
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	121 buildings from 5 municipalities
Structure #1 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment	75 school buildings 20 public office buildings 8 sports buildings 18 other types of buildings (libraries, cemeteries, museums…)

structure size (in m2) + number of floors	
Implementation timeline period please write a general implementation plan schedule	The estimated time needed for the implementation of the joint action is 4 years: 1 year to present the proposal to the ELENA Programme, 3 years for the tendering procedures and the implementation of the interventions.
Joint Action promotion please explain the Joint Action advertisement/promotion strategy	Further meetings with stakeholders, dissemination of information via social media and CMR institutional website
Perceived risks/obstacles regarding Joint Action implementation if existing/applicable	A problem could be due to the lack of interest on the part of the ESCOs to finish the prepared projects.
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation if existing/applicable	Building interventions packages that are actually interesting and sustainable from an economic-financial point of view

Table 25: Joint Action table for CMR

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	The value of the total amount of the planned investment is 35 million euros. Energy retrofit actions that are suitable to this category and can achieve important results with limited investments are: Interventions on heating systems: energy saving 15/20%; Replacement of lighting systems using energy efficient light bulbs or LEDs: energy saving 40/60 %;
Financing source #1 name/title	Public
Financing source #1 organization structure e.g. bank, municipality…	Municipality
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private	EIB Program ELENA funds, municipalities funds

partnership, other financial solutions etc.	
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	EPC or other contractual forms with ESCOs for a duration that will go from 4 to 10 years depending on the type of interventions that will be carried out.
Financing source #1 total value of investment	1.350,000 (EIB through ELENA), 150.000 (Municipalities)
Financing source #2 name/title	Private
Financing source #2 organization structure e.g. bank, municipality…	Bank, Esco
Financing source #2 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Public private partnership, other financing solutions
Financing source #2 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	EPC with ESCOs
Financing source #2 total value of investment	33.500,000 (private investments by ESCOs).
Projected estimate of savings from Joint Action implementation please specify the total monetary value and estimated percentage of savings from the combination of all financing sources	The value of the total amount of the planned investment is 35 million euros. Energy retrofit actions that are suitable to this category and can achieve important results with limited investments are: Interventions on heating systems: energy saving 15/20%; Replacement of lighting systems using energy efficient light bulbs or LEDs: energy saving 40/60 %. The monetary value and percentage of saving depending on the type of interventions that will be inserted in the real Joint action plan.
Perceived financing and market opportunities if existing/applicable	-
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if	Administrative and financial barriers

existing/applicable)	
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	-

Table 26: Financing and market risks & opportunities table for CMR

4. EE IMPLEMENTATION EFFECTIVENESS

Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	Consumption survey of the last three years and energy audit of the buildings included in the project		
Efficiency indicator #1 description please specify the name and unit of measurement (e.g. kW, tCO_2...)	kW		
Efficiency indicator #1 selection motive please specify why the indicator was selected	kW is the reference unit of measurement of the energy classes indicated in the energy performance certificate required by the regulations in force		
Efficiency indicator #1 measurement source and time please specify the person/organization providing the indicator measurement and the exact time of measurement	Ex ante: municipality Technical expert	Post ante: municipality Technical expert	
Efficiency indicator #1 data and quantity measurement please specify the data and quantity measured	Ex ante: gas and electricity consumption	Post ante: gas and electricity consumption	Difference: reduction of consumption
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	Preparation of a full feasibility study to submit to ELENA, taking into account also the management, administrative and procedural aspects of the joint action implementation, or an Energy Performing Contract (EPC) with ESCO		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	Post operam consumption detection and new energy audit of the building that certifies the transition to more efficient energy classes		

Joint Action transferability please specify if the Joint Action is transferable to other projects and if so, please write possible examples	The methodology used to finance the project can be applied for the development of other Joint Action project with other municipalities of the territory
Other potential added value from Joint Action if applicable	-

Table 27: EE implementation effectiveness table for CMR

2.6. PP6 - GORIŠKA LOCAL ENERGY AGENCY (NOVA GORICA – GOLEA)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	14
Stakeholder #1 name/title	**Municipality of Brda, Municipality of Nova Gorica, Municipality of Pivka**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authority
Stakeholder #1 field of work / main activities	Municipalities play a key role in renewable energy and energy efficiency sector. Local authorities have capacities in raising of energy efficiency and in sustainable energy supply. They are energy consumers, service providers and buyers of various products and services entailing energy impacts.
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	To share the obtained knowledge about procedures of local public autorities. Refurbishment of indoor lighting in one of their buildings.
Stakeholder #1 Joint Action role/tasks/commitment and contribution	Municipal representatives shared their view on possibility of apllying joint action. The municipal task is to plan the investment in their municipal budgets at the end of the year to perform the choosen action. Municipalities are requested to prepare the tecnical project documentation.
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	Municipalities usually implement individual projects for energy efficiency improvement based on their own funds and available national grants. The most critical buildings with highest consumption were already rennovated in last five years, however, there is a large stock of buildings that still have need for certain rennovation measures (e.g. facade insulation). In general,

	municipalities would like to obtain more grants and other funding (e.g. installation of LED lightning, insultation of facade, ...) as their budget is limited or in most cases is not at disposal.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	Generally, the municipalities favour the third-party financing mechanisms, but they would like to see bigger competition (more ESCO companies) in the energy services market. Municipalities find idea of joint action as interesting. A similar action is already established in Slovenia in energy (electricity, natural gas and fuel oil) procurement in a form of joint tenders which are implemented regularly by Association of municipalities and towns of Slovenia.
Stakeholder #2 name/title	**SID Bank; EKO found; Petrol Company**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Financing institutions
Stakeholder #2 field of work / main activities	SID Bank is a national promotional development bank. The fundamental activity pursued by SID Bank is funding market gaps, such as: development of small and medium enterprises and entrepreneurship, research, development and innovations, environmental protection, energy efficiency and climate change, international business transactions and international economic cooperation, regional development, economic and public infrastructure. PETROL company, the leading Slovenian energy company, is the principal strategic supplier of oil and other energy products to the Slovenian market. The principal development direction of the Petrol Group is the introduction of new energy activities, in particular the sale of gas, heat and electricity, but in the long run also renewable energy sources. ECO FUND, the largest financial institution of the Republic of Slovenia, promotes investments that comply with the National Environmental Action Plan and the Environmental Policy of the European Union. Eco Fund is under the jurisdiction of the Ministry of Environment. Citizens, legal entities and individual entrepreneurs are eligible for the funding.
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	Their main cooperation motive was to share their knowledge and past experience on financing of different energy service projects.
Stakeholder #2 Joint Action role/tasks/commitment and contribution	SID bank is constantly developing different financial products that help raising energy efficiency in large enterprises, SME's and municipalities. Their commitment is to follow the project activity development and to evaluate their possibility/availability to finance the identified joint action.

Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	The concept of joint actions, where more than one municipality is a partner in the project is new and not tested yet in Slovenia.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Important legal issues would have to be resolved in case of financing such a project by a third (private) party. The main question would be how to appropriately implement certification procedures in city councils and how to upgrade the savings calculation and imbursement.
Stakeholder #3 name/title	**IRI UL, Klima 2000, Enekom d.d.**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Knowledgeable persons
Stakeholder #3 field of work / main activities	ENEKOM company - ENEKOM's principles are professionally independent advisory as well as transfer of know-how and applicational solutions to companies and institutions. Its main activities are: Energy Audits, Energy Information Systems Implementation, Energy Management Systems Building. KLIMA 2000 - Bureau for architectural and engineering design and related technical consulting KLIMA 2000 d.o.o. is a company in which they plan and manage the most demanding projects in the field of infrastructure, engineering, high and low construction and other demanding structures. The Institute for Innovation and Development (IRI UL) was founded in 2007 by the University of Ljubljana, together with 10 Slovenian companies, as a non-profit development and research institute. The Institute promotes the creation, transfer, dissemination and use of knowledge. Through the transfer of research results into practice and their commercial use the Institute facilitates the integration of the innovation triangle (research-education-innovation).
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	To share obtained knowledge in energy effciency interventions in public buildings.
Stakeholder #3 Joint Action role/tasks/commitment and contribution	As they are tecnical experts their main role was to give support in the definition of suitable joint actions in the region and the identification of suitable type of equipment and feasibility steps to be implemented.
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	The main obstacle is having complete, accurate and reliable data that is a basis for a good decision.

Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Introduction of energy management database/software in public buildings, that ensure also data on energy consumption and costs.
Stakeholder #4 name/title	**Local energy agency of Gorenjska; Local energy agency of Dolenjska; Local energy agency of Pomurje; Energy agency of Savinjska, Šaleška and Koroška region**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Energy agencies
Stakeholder #4 field of work / main activities	Local energy agencies were established to provide services both to users and public authorities, including: independent advice and guidance to energy users; technical support and policy advice to public authorities; they act as an information channel between EU policy makers and users and public authorities.
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	Their motivation was to obtain additional knowledge on possible joint actions and possible solutions. In fact, energy agencies were established with the aim of co-operation, preparation and implementation of the common objectives in the local environment as well as efficient involvement in national and international frameworks agencies established a national consortium of energy agencies (LEAS Consortium). The aim of the consortium is the realization of the priorities based on three program pillars: energy management, energy data base and related information, promotion and dissemination of results.
Stakeholder #4 Joint Action role/tasks/commitment and contribution	They commited to gather the data on their past experience and to share the information during the organised meeting.
Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	There were no risks/obstacles regarding their participation.
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	-

Table 28: Stakeholders table for GOLEA

2. JOINT ACTION

Joint Action name/title	Joint action to renovate indoor lighting in sports halls in the Primorska region.
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Refurbishment
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	We were researching possible energy efficiency interventions and we had set few basic demands: technically simple intervention, low to moderate investment costs, an intervention interesting for EPC, easy to determine energy savings potential. Four focus groups were held in Slovenia with: local public authority, financing bodys, knowledgable persons and energy agencies. In focus groups large potential on implementation of individual measures for energy efficiency and renewable energy sources in public buildings was found. Whereas a significant number of public buildings were subject of deep energy renovation of public in past years, a large number of buildings exists where only one or few measures have to be done. These smaller projects are scattered and less interesting for third party financing (ESCO's). Combining these individual projects to one large joint action could have positive result of achieving an economy of scale, that would attract private capital and enable realization of the investment. For each individual buidling, a calculation of energy savings and investment cost was elaborated. The next steps are Preparation of tecnical project documentation, Test of private public partnership should be carried out, Preparation of public procurement for selection of ESCO company, Negotiations with the concessionaire (ESCO) and last signing the contract with the selected ESCO.
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	On a basis of the document „selection criteria" 10 sports halls were identified. The selection critera were the following: - sports halls are owned by municipalities sports hall in statistical region of Goriška and Obalno-Kraška, - sports hall in use at least 5 days/week and 6 hours/day, - lighting system was not renovated in last 5 years, - absence of on-going energy contracting or other service that ensures energy savings from provision of lighting of the facility. The sport halls are all located in Primorska region.
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	10 (1 type of intervention)
Intervention #1 type and description 1. Energy Efficiency in structures -	1. instalation of LED lightning systems

lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation...; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type implemented and describe how and where it was used	
Intervention #1 activity/installation cost please write the cost of intervention activity	225.462,64 € (VAT excluded)
Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	117 MWh, 26.800 €/year, ROI = 11 years (without subsidy), 9 years (25% subsidy)
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	10
Structure #1 details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	Sport halls
Implementation timeline period please write a general implementation plan schedule	2020/2021

Joint Action promotion please explain the Joint Action advertisement/promotion strategy	Through the project activity 4.2 several activities were implemented and events were organised with the aim of promotion of joint action as follows: - on 24/08/2018 the Borzen meeting was organised in order to strengthen the networking between key stakeholders and to design the conference starting point (on 18/09/2018). To this end the selected key stakeholders and representatives of state bodies were invited to take part at meeting. In addition, participants discussed about the present situation in energy field and possibilities of spreading best practices in relation to innovative measures for financing joint measures. - on 18/08/2018 the tecnical conference was organised by Borzen in the city of Ljubljana. The event was intitled »Sustainable Energy Locally 18 – how to finance and implement RES and EE interventions through municipal netwoorking«. There were two main event topics: 1. Cooperation and netwoorking increments the financing possibilities to realise the RES and EE investment projects (Rajko Leban director of GOLEA, mayor of Novo Mesto municipality and mayor of Idrija municipality presented the existing joint projects in energy field (one of it was also a joint action that was defined by GOLEA within ENERJ project – refurbishment of indoor lightning within sports halls) and the topic n.2 was Interactive discussion between participants. - On 14/09/2018 GOLEA organised a workshop "Joint actions for energy refurbishment and increase of RES in public buildings" in order to transfer the knowledge about the local joint action identified by GOLEA. - a supporting tool at planning process of joint action investments for increasing EE of buildings was developed by GOLEA on a basis of SISMA SET tool. - on 07/06/2019 the upgraded tool was presented at the "XXIV. meeting of entrepreneurs and businessmen of the Posočje region".
Perceived risks/obstacles regarding Joint Action implementation if existing/applicable	Summarizing the main obstacles/risks regading JA implementation: - the municipalities expressed concern about the length of ESCO selection process, number of ESCOs bidding for public projects is low and consequentlly there is a low competition, planning ahead - investments must be planned in municipal budgets (end of the year), lack of municipal own founds.
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation if existing/applicable	Establishment of presence of joint action coordinators is important in order to shorten the preparation time and to accelerate the realisation. Use of upgraded SISMA tool - the tool enables a quick calculation of the investment economic indicators.

Table 29: Joint Action table for GOLEA

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	3
Financing source #1 name/title	10 involved municipalities
Financing source #1 organization structure e.g. bank, municipality…	Municipality
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Municipality budget (own funds)
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	If the joint action would be implemented with ESCO company 9% of investment costs should be covered by the municipalities. The money comes from municipality budged, so the investment must be planned in advance. If the municipaliy wants to implement the action without ESCO company they have to provide 100% of the investment cost from municipal budget. If the municipality would like to apply for ECO found subsidy, they also have to provide 100% of investment cost, of which 20% are refunded by ECO Fund.
Financing source #1 total value of investment	20.292 € (without VAT) - with ESCO
Financing source #2 name/title	Not defined private company
Financing source #2 organization structure e.g. bank, municipality…	Private company (ESCO)
Financing source #2 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Public private partnership
Financing source #2 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	If the joint action would be implemented with ESCO company 71% of investment should be covered by the ESCO company. ESCO companies use their own money or they take a loan by the bank. Normal duration of the financing plan is 15 - 20 years.

Financing source #2 total value of investment	160.078 € (without VAT)
Financing source #3 name/title	ECO Fund
Financing source #3 organization structure e.g. bank, municipality…	Financial institution of the Republic of Slovenia, promotes investments that comply with the National Environmental Action Plan and the Environmental Policy of the European Union.
Financing source #3 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	State subsidy - the financial assistance is offered mainly through soft loans from revolving funds and since the year 2008 through grants. In comparison with commercial banks, Eco Fund's principal advantages in the market for environmental financing are that it provides soft loans at lower interest rates than prevailing commercial market rates and it is able to lend for significantly longer periods than commercial banks.
Financing source #3 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	The municipalities can apply for ECO Fund subsidy (20 % of the investment).
Financing source #3 total value of investment	45.093 (without VAT)
Projected estimate of savings from Joint Action implementation	26.800 €
Perceived financing and market opportunities if existing/applicable	-
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	It is necessary that all involved municipalities have own founds in their budgets – this enables the implementation of public procurement (planning ahead) also without involvement of ESCO companies.
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	Investments must be planned in municipal budgets ahead (at end of the year).

Table 30: Financing and market risks & opportunities table for GOLEA

4. EE IMPLEMENTATION EFFECTIVENESS

Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	The calculation of energy usage and CO2 emissions before renovation and after renovation.		
Efficiency indicator #1 description please specify the name and unit of measurement (e.g. kW, tCO2...)	kWh, CO2		
Efficiency indicator #1 selection motive please specify why the indicator was selected	Wiith these indicators you can compare the conditions before and after renovation.		
Efficiency indicator #1 measurement source and time please specify the person/organization providing the indicator measurement and the exact time of measurement	Ex ante: Building manager with cooperation of energy manager / 2018	Post ante: -	
Efficiency indicator #1 data and quantity measurement please specify the data and quantity measured	Ex ante: The consumption data was not measured, it was calculated by the type and number of installed indoor lights	Post ante: -	Difference: -
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	Energy use decrease by 117 MWh; 57,2 tons CO2 emisson saved		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	Joint Action monitoring plan and methodology have not been defined yet.		
Joint Action transferability please specify if the Joint Action is transferable to other projects and if so, please write possible examples	The joint action is transferable to all projects of energy renovation of buildings that don't have EPC yet.		
Other potential added value from Joint Action if applicable	Added value: contribution to EU and national objectives, establishment/reinforcement of networks between municipalities, strenghtening local/regional economies.		

Table 31: EE implementation effectiveness table for GOLEA

2.7. PP7 - MINISTRY OF INFRASTRUCTURE AND ENERGY (MEI)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	4 Stakeholders involved
Stakeholder #1 name/title	**Natural Agency of Natural Resources**
Stakeholder #1 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	DEVELOPMENT AGENCY/EXPERT ADVISOR REGARDING RES AND EE
Stakeholder #1 field of work / main activities	Analyzes energy needs, promotes RES and EE, monitors the implementation of the national and local level EE and RES programs
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	Service of the Albanian energy sector governance and operational institutions for RES and EE
Stakeholder #1 Joint Action role/tasks/commitment and contribution	National Agency of Natural Resources is the coordinator institution which offers its expertise on Energy Efficiency measures
Perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	None
Possible solutions regarding perceived risks/obstacles regarding stakeholder #1 participation if existing/applicable	-
Stakeholder #2 name/title	**Municipality of Gjirokastra**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #2 field of work / main activities	Local Authority
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	Monitoring and control of specific energy related EE projects.
Stakeholder #2 Joint Action role/tasks/commitment and contribution	Provide staff and/or Municipal land/buildings depending on national programe for EE

Perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Contrasting interests of power groups, economic lobbies, bureaucratic barriers, social, public and private stakeholders' misinformation
Possible solutions regarding perceived risks/obstacles regarding stakeholder #2 participation if existing/applicable	Partnership cohesion and willingness to cooperate
Stakeholder #3 name/title	**Municipality of Saranda**
Stakeholder #3 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #3 field of work / main activities	Local Authority
Stakeholder #3 cooperation motives please fill out the stakeholders' reasons for participating	Preparation of regional and local programmes for sustainable energy production and consumption, Providing Electricity at no cost for low income households and its own buildings. Provide energy efficiency found.
Stakeholder #3 Joint Action role/tasks/commitment and contribution	Provide staff and/or Municipal land/buildings depending on national programe for EE
Perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Contrasting interests of power groups, economic lobbies, bureaucratic barriers, social, public and private stakeholders' misinformation
Possible solutions regarding perceived risks/obstacles regarding stakeholder #3 participation if existing/applicable	Partnership cohesion and willingness to cooperate
Stakeholder #4 name/title	**Municipality of Vlora**
Stakeholder #4 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local Authority
Stakeholder #4 field of work / main activities	Local Authority
Stakeholder #4 cooperation motives please fill out the stakeholders' reasons for participating	Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community
Stakeholder #4 Joint Action role/tasks/commitment and contribution	Providing of staff and/or Municipal land/buildings depending on the council of Municipality

Perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for in the sense that a loan with a high interest will delay the amortization of the investment
Possible solutions regarding perceived risks/obstacles regarding stakeholder #4 participation if existing/applicable	Study carefully the loan terms and clauses

Table 32: Stakeholders table for MEI

2. JOINT ACTION

Joint Action name/title	Establishment of a group from four Albania Municipalities (Gjirokastra, Permeti, Vlora and Saranda) for improving Public Buildings Energy Efficiency and install solar panel for hot water.
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	Establishment of an energy group from four municipalities (Energy Efficiency Law 124/2015) The energy group from four municipalities can implement actions in the fields of integrations of of energy efficiency measures, as well as to undertake the installation of solar panel for hot water. Elaboration of studies and actions' implementation by the energy group from municipalities.
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	Consultation with Local Authorities. Participation of the four (4) Municipalities of Gjirokastra, Permeti, Vlora and Saranda Common tender will be prepared by National Agency og Natural Resources for the implementation of energy audits in buildings' of the 4 Municipalities. Implementation of the energy audits for subsequent interventions. Specification of the specific common Joint Action scheme in contrast with a Contractual Agreement as an alternative
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	Investment for impruved EE and Installation of solar panel for hot water in four municipalities (Public Buildings)
Number of interventions implemented please write the total number of interventions involved in the Joint Action and fill out data below for each intervention	1. Elaboration of studies regarding Energy Efficiency 2. Hot water production 3. Actions regarding Energy Efficiency increase for 14 pre-determined Municipal Buildings

Intervention #1 type and description 1. Energy Efficiency in structures - lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation…; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type implemented and describe how and where it was used	Elaboration of studies regarding Energy Efficiency
Intervention #1 activity/installation cost please write the cost of intervention activity	Costs depend on the type of studies to be implemented and the result of the tender
Intervention #1 expected savings please specify the estimated energy savings, monetary savings and ROI	The energy savings will incur at a later stage after the implementation of the studies' findings.
Intervention #2 type and description	Hot water production (Public Buildings) and investment for EE
Intervention #2 activity/installation cost please write the cost of intervention activity	The total investment cost is estimated at € 3,104,025 Euro Investment: Grant from EU project and donors (Swiss Government and KfW bank) Contribution: 15 % Albania Government and 85 % EU and donors Gjirokastra Municipality : 724,641 Euro Permenti Municipality: 556,681 Euro Vlora Municipality: 858,520 Euro Saranda Municipality; 964,183 Euro Municipalities will support by budget of Albania government
Intervention #2 expected savings please specify the estimated energy savings, monetary savings and ROI	Energy Saving Municipality of Gjirokastra (3 public buildings) : 144,816 kwh/a Energy Saving Municipality of Permeti (3 public buildings): 104,435 kwh/a Energy Saving Municipality of Saranda (3 public buildings): 146,576 kwh/a Energy Saving Municipality of Vlora (3 public buildings): 158, 487 kwh/a Annual Saving: 554,314 Euro IIR: 16.89 %

Intervention #3 type and description	Actions regarding Energy Efficiency Increase for 12 Municipal Buildings					
Intervention #3 activity/installation cost please write the cost of intervention activity	Regarding the interventions specified in the context of the audits of the 12 Municipal buildings, the overall cost for upgrading them at least to energy class B, has been estimated to approximately 3.1 millio euros, with an average payback period of 16.89 years.					
Intervention #3 expected savings please specify the estimated energy savings, monetary savings and ROI	In case of the implementation of all the proposed interventions for the 12 buildings the maximum energy efficiency gain is expected to reach 55% compared to the situation before the interventions (i.e. energy gains of 46,192 kWh/year).					
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	12 buildings					
Structure details please fill out: structure type/function - e.g. administrative building, residential building, school, gym, cultural center, other (please specify) structure address structure year of establishment structure size (in m2) + number of floors	Building Type	Municipality	Type	m2	Class	Annual KWh
Structure #1	School Avni Rustemi	Vlore	School	2285	G	429.951
Structure #2	School Marigo Posjo	Vlore	School	2588	G	288.577
Structure #3	School Teli Ndini	vlore	School	1824	F	310.000
Structure #4	School “Hasan Tahsini”	Sarande	School	3594	G	640.218
Structure #5	School “Adem Sheme”	Sarande	School	833,22	F	251.760
Structure #6	Kindengarten Nr. 3 "Cicerimat"	Sarande	Kindergarten	522	F	115.052
Structure #7	Koto Hoxhi	Gjirokastra	School	3726	F	606.716
Structure #8	Cicerimat	Gjirokastra	Kindergarten	2910,32	F	215.511

Structure #9	Bilal Golemi	Gjirokastra	School	2441	G	140.670
Structure #10	High school Piskova	Permet	School	1335	G	206.806
Structure #11	High school Sami Frasheri	Permet	School	2524	F	379.048
Structure #12	Kindengarten nr.1	Permet	Kindergarten	636	F	379.048
Implementation timeline period please write a general implementation plan schedule	Municipalities energy group will be completed within the second month of the operating schedule. Once it has been established a tender will take place within the third month in order to assure the most suitable offer regarding the energy upgrade of the 12 buildings.					
Joint Action promotion please explain the Joint Action advertisement/promotion strategy	Promoting through press releases as well as the shareholders' websites and social media platforms					
Perceived risks/obstacles regarding Joint Action implementation if existing/applicable	No risks perceived					
Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation if existing/applicable						

Table 33: Joint Action table for MEI

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Number of financing sources involved please write the total number of financing sources involved in the Joint Action and fill out data below for each source	Sources of funding (EU programe and Swis Government found)
Financing source #1 name/title	EU Programe (IPA Cross Border Greece Albania)
Financing source #1 organization structure e.g. bank, municipality…	Co-financing EU and Albania government
Financing source #1 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Grant
Financing source #1 description please specify key contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	EU 1.360.000 Euro and Albania 240.000 Euro
Financing source #1 total value of investment	Swiss Government Found
Financing source #2 name/title	Grant
Financing source #2 organization structure e.g. bank, municipality…	Each Municipality will obtain a grant Gjirokastra 350178 Euro, Permeti 269012 Euro, Saranda 414874 Euro and Vlora 465935 Euro
Financing source #2 type e.g. structural funds, cohesion funds, horizontal funds, loans, crowd funding, public private partnership, other financial solutions etc.	Grant
Financing source #2 description please specify key	Each Municipality will obtain the grant with % interest

contractual obligations, financing strategy, eligibility criteria, financing source duration and investment use	
Financing source #2 total value of investment	The total value of the grant will be 1.500.000 EUR
Projected estimate of savings from Joint Action implementation please specify the total monetary value and estimated percentage of savings from the combination of all financing sources	EU program will start in 2020 in two municipalities (Gjirokastra and Vlora) with a fund of 1.6 million Euro. Program will continue for 2 years. Swiss Government Fund is 1.5 million Euro and programe will start in the second period of 2020 for 4 municipalities. The objective of the program will be the integration of energy efficiency measures and promotion of RES in public buildings.
Perceived financing and market opportunities if existing/applicable	This initiative will serve as Good Practice for other Local Authorities and will attract market actors
Perceived financing and market risks/obstacles e.g. local/state legislative framework potential risks/obstacles, administrative or financial barriers (if existing/applicable)	No risks foreseen
Possible solutions regarding perceived financing and market risks/obstacles if existing/applicable	

Table 34: Financing and market risks & opportunities table for MEI

4. EE IMPLEMENTATION EFFECTIVENESS

Joint Action efficiency methodology please describe the methodology used for determining the EE implementation effectiveness	The total investment cost is estimated at € 3,104,025 Euro (EE and RES) Energy Saving Municipality of Gjirokastra (3 public buildings) : 144,816 kwh/a Energy Saving Municipality of Permeti (3 public buildings): 104,435 kwh/a Energy Saving Municipality of Saranda (3 public buildings): 146,576 kwh/a Energy Saving Municipality of Vlora (3 public buildings): 158, 487 kwh/a Annual Saving: 554,314 Euro IIR: 16.89 % The project will start in 2020 for 2 years		
Efficiency indicator #1 description please specify the name and unit of measurement (e.g. kW, tCO2..)	Annual Saving: 554,314 Euro and tCO2 reduction 1154 ton, IRR: 16.89 %		
Efficiency indicator #1 selection motive please specify why the indicator was selected	The specific indicator is crucial for the monitoring procedure of the energy group as a Joint Action Scheme since the electricity produced can be utilized by the three Municipalities for supporting low income households as well as for replacing energy produced by coal with hot water from RES for their Public Buildings		
Efficiency indicator #1 measurement source and time please specify the person/organization providing the indicator measurement and the exact time of measurement	Ministry of Infrastructure and Energy	Ministry of Infrastructure and Energy	
Efficiency indicator #1 data and quantity measurement please specify the data and quantity measured	Ex ante: 0	Post ante: 2.162.877KWh per annum equivalent to approx. 3.2 tCO2	Difference: 2.162.877 KWh per annum, equivalent to approx. 3.2 tCO2
Joint Action end target (efficiency score) please explain the planned Joint Action energy savings final results in numbers and include a short commentary if needed	Energy Saving Municipality of Gjirokastra (3 public buildings) : 144,816 kwh/a Energy Saving Municipality of Permeti (3 public buildings): 104,435 kwh/a Energy Saving Municipality of Saranda (3 public buildings): 146,576 kwh/a Energy Saving Municipality of Vlora (3 public buildings): 158, 487 kwh/a Annual Saving: 554,314 Euro IIR: 16.89 %		
Joint Action monitoring plan please specify the monitoring plan description and methodology for EE implementation effectiveness comparation	The Joint Action Scheme will be continuously monitored by Ministry of Infrastructure and Energy as the Joint Action for Albania. Monitor Energy Consumption in 12 buildings.		
Joint Action transferability please specify if the Joint Action is transferable to other projects	The transferability of the Joint Action is assured due to its win-win characteristics		

Table 35: EE implementation effectiveness table for MEI

2.8. PP8 - REGIONAL ENERGY AND ENVIRONMENT AGENCY FROM NORTH ALENTEJO (AREANATEJO) + PP10 - COMUNIDADE INTERMUNICIPAL DO ALTO ALENTEJO (CIMAA)

1. STAKEHOLDERS	
Number of participating stakeholders please write the total number of stakeholders participating in the Joint Action and fill out data below for each stakeholder	2 types: around 30 persons
Stakeholder #1 name/title	**Municipal Technical**
Stakeholder #1 type please fill out stakeholder type	Local public authorities
Stakeholder #1 field of work / main activities	It is the municipal technicians who, knowing in detail the reality of the municipalities, who know in greater detail the difficulties felt and the needs of the municipality, providing the data necessary for the work of the energy agency.
Stakeholder #1 cooperation motives please fill out the stakeholders' reasons for participating	The reason for their participation results from the important involvement of the municipalities in these actions.
Stakeholder #1 Joint Action role/tasks/commitment and contribution	Sending data requested by AREANATejo for the implementation of actions; to make known the reality of each one of the Muncipios and their needs and difficulties; streamline communication between AREANATejo and executive Organs (policy makers).
Stakeholder #2 name/title	**Municipal executive bodies**
Stakeholder #2 type please fill out stakeholder type (e.g. local/regional public authorities, energy agencies, knowledgeable persons, financing institutions…)	Local public authorities
Stakeholder #2 field of work / main activities	Identification of problems or needs that can be worked out in the project; validation and definition of actions in conjunction with the energy agency.
Stakeholder #2 cooperation motives please fill out the stakeholders' reasons for participating	As politicians in the region, it is important to be involved both in identifying the needs of the region and in defining the actions to fill them.
Stakeholder #2 Joint Action role/tasks/commitment and contribution	The reason for their participation results from the important involvement of the municipalities in these actions.

Table 36: Stakeholders table for AREANATEJO/CIMAA

2. JOINT ACTION	
Joint Action name/title	Static and Prospective Municipal Energy Matrices for the Sub-region of Alto Alentejo.
Joint Action type please write the type of Joint Action selected (e.g. refurbishment, studies, methodology know-how, etc.)	The characterization and quantification of the energy consumption in the region, by sector (domestic, industry and agriculture) and by type (electric energy and fuels), extrapolating its evolutionary tendency until 2050, all this through the elaboration of Municipal Energy Matrices. This task aims to create a valid local strategic planning instrument, combined with the promotion of energy intensity reduction by improving energy efficiency and the use of endogenous energy resources, by identifying measures and targets for sustainable local development of all the region involved.
Joint Action definition process please explain how the Joint Action was determined and the implementation methodology used	The motivation to initiate joint action is grounded in the mission of AREANATejo to contribute to local strategic planning combined with the promotion of energy intensity reduction by improving energy efficiency and the use of endogenous energy resources by identifying measures and targets for sustainable local development of the entire region concerned. Despite the implementation of measures, its correct monitoring and control is very important, hence the need for the development of the Energy Matrix for the region.AREANATejo assessed the interest of the Municipalities of the region in the elaboration of the Energy Matrix and contracted the development of the work to a company specialized in the area according to all the technical specifications already defined by AREANATejo.
Pilot area/location selection please specify the reasons and the process of selection of the specific area for Pilot actions	Sub-region of Alto Alentejo
Intervention #1 type and description 1. Energy Efficiency in structures - lighting replacement, insulation, heating/cooling systems' replacement, shadings...; 2. Installation of RES - biomass, solar, photovoltaic, hydropower, geothermal installation...; 3. Awareness; 4. Funding; 5. Other (please specify) Please select the intervention action type implemented and describe how and where it was used	The elaboration of the Static and Prospective Energy Matrices was structured around the following general objectives: i. To allow the updating of the statistical inventory related to energy demand and greenhouse gas emissions, by sector of activity, year and energy vector with integration of the energy matrix and the other numerical, statistical, geographic and electronic platform documents A model of static characterization and simulation of decisions on regional public projects, plans and policies should be made available / developed; ii. Provide reliable, up-to-date and reliable information for the exploitation of energy, economic, social and environmental indicators, for the promotion of energy and climate efficiency and for the mobilization of public, business and private agents; iii. Support initiatives aimed at promoting the local and regional sustainability strategy and to boost their respective impacts on innovation, competitiveness, investment attraction, internationalization and economic growth. The Static and Prospective Energy Matrixes characterize the energy flows and consequent emissions of greenhouse gases in the territory involved.

	They determine the energy balance based on historical and recent data on the use of energy sources and vectors and their distribution and allocation by sectors of economic activity. This task is of high importance, taking into account the monitoring of energy efficiency improvement measures implemented in the region (monitoring and control), but also in the preparation of future interventions, in a planned and phased manner with all stakeholders.
Number of structures involved please write the total number of structures involved in the Joint Action and fill out data below for each structure	In the elaboration of the Energy Matrices, the domestic, industrial, industry, services and transportation sectors are characterized, and the infrastructures that compose them are analyzed globally.

Table 37: Joint Action table for AREANATEJO/CIMAA

3. FINANCING AND MARKET RISKS & OPPORTUNITIES

Due to the project partners' pilot being connected to development of other studies and the preparation of strategic documents and therefore still in the implementation phase, no information for financing and market risks & opportunities was recieved.

4. EE IMPLEMENTATION EFFECTIVENESS

Due to the project partners' pilot being connected to development of other studies and the preparation of strategic documents and therefore still in the implementation phase, no information for EE implementation effectiveness was recieved.

3. COMPARATION AND EVALUATION OF PILOT EXPERIENCES BY PROJECT PARTNER

In order to effectively compare the information provided by the project partners, the data has been rearranged by specific items in order to better visualize the possible trends and patterns and to more easily note the similarities and differences in approach between partners.

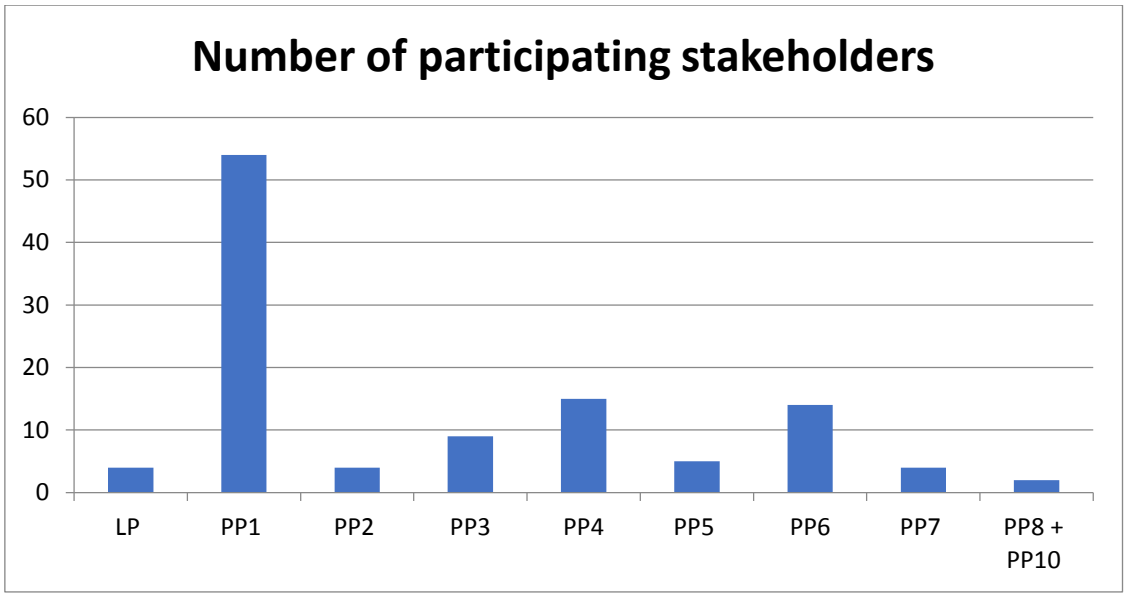
3.1. STAKEHOLDERS

The section regarding stakeholders takes into consideration the structure and various groups involved with the project, their role and motives for cooperation and is meant to demonstrate the profile of the interested parties who are willing to participate in these types of projects and their usefulness. This information can be used to our advantage in the process of implementing the defined methodology by accelerating and simplifying the stakeholder selection process, qualitative critical assessment of stakeholder profiles and their roles in the project and better understanding of their motives in order to attract them and generate interest for the project more easily.

3.1.1. COMPARISON OF STAKEHOLDERS DATA BY PROJECT PARTNER

Number of participating stakeholders

LP – ANATOLIKI S.A.	4
PP1 – FAMP	54 (4 groups)
PP2 – IRENA	4
PP3 – CEA	9
PP4 – GDA	15
PP5 - CITTÀ METROPOLITANA ROMA	5
PP6 – GOLEA	14 (4 groups)
PP7 – MEI	4
PP8 + PP10 – AREANATEJO + CIMAA	2 types: around 30 persons



Graph 1: Number of participating stakeholders by project partner

The number of participating stakeholders mostly varies between 4 or 5 stakeholder groupations, although certain partners included more or less stakeholders. FAMP has the highest number of stakeholders (54).

Stakeholder name/title

LP – ANATOLIKI S.A.:

Stakeholder #1 - Anatoliki S.A.

Stakeholder #2 – Municipality Of Thermi

Stakeholder #3 – Municipality Of Pilea-Hortiatis

Stakeholder #4 – Municipality Of Kalamaria

PP1 – FAMP:

Stakeholder #1 - Andalusian Energy Agency

Stakeholder #2 –8 County Councils (Huelva, Seville, Cadiz, Cordoba, Malaga, Jaen, Granada and Almeria County Councils) and 6 County Energy Agencies and 2 Local Energy Agencies

Stakeholder #3 – ENDESA, APADGE, AVRA, UCA-UCE

Stakeholder #4 – 33 Municipalities (Pilot Area): Alcala la Real, Alcolea del Rio, Cazorla, Jerez de la Frontera, Sevilla, Arahal, Jodar, Palma del Rio, Montilla, Alcaracejos, El Ronquillo, Ubeda, Casariche, Huesa, Montefrio, Lecrin, La Carlota, Bonares, Isla Cristina, Berja, Pulpi, Chipiona, Tarifa, Rute, Villanueva de Cordoba, Churriana de la Vega, Huetor Vega, Aracena, Bollullos Par de Condado, Bailen, Arhidona, Ojen and Espartinas.

PP2 – IRENA:

Stakeholder #1 - City of Poreč

Stakeholder #2 – City of Novigrad

Stakeholder #3 – Istrian Region

Stakeholder #4 – Conservation Department Pula

PP3 – CEA:

Stakeholder #1 - Drousia Community

Stakeholder #2 – Pano Arodes Community

Stakeholder #3 – Kato Arodes Community

Stakeholder #4 – Neo Chorio Community

Stakeholder #5 - Neo Chorio Community

Stakeholder #6 – Pegeia Municipality

Stakeholder #7 – Ministry of Education, Culture, Sports and youth

Stakeholder #8 – Ministry of Interior

Stakeholder #9 – Ministry of Energy, Commerce and Industry

PP4 – GDA:

Stakeholder #1 - Nicky Saliba

Stakeholder #2 – Paul Buttigieg

Stakeholder #3 – Josef Schembri

Stakeholder #4 – Mario Azzopardi

Stakeholder #5 - Philip Vella

Stakeholder #6 – Noel Formosa

Stakeholder #7 – Saviour Borg

Stakeholder #8 – Franco Ciangura

Stakeholder #9 – Daniel Attard

Stakeholder #10 – Paul Azzopardi

Stakeholder #11 – David Apap

Stakeholder #12 – Edward Said

Stakeholder #13 – Joseph Cordina

Stakeholder #14 – Sonja Abela

Stakeholder #15 – Vicky Xuereb

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - Albano Laziale - Municipality

Stakeholder #2 – Montetondo - Municipality

Stakeholder #3 – Trevignano Romano - Municipality

Stakeholder #4 – Pomezia - Municipality

Stakeholder #5 - Tivoli - Municipality

PP6 – GOLEA:

Stakeholder #1 - Municipality of Brda, Municipality of Nova Gorica, Municipality of Pivka

Stakeholder #2 – SID Bank; EKO found; Petrol Company

Stakeholder #3 – IRI UL, Klima 2000, Enekom d.d.

Stakeholder #4 – Local energy agency of Gorenjska; Local energy agency of Dolenjska; Local energy agency of Pomurje; Energy agency of Savinjska, Šaleška and Koroška region

PP7 – MEI:

Stakeholder #1 - Natural Agency of Natural Resources

Stakeholder #2 – Municipality Of Gjirokastra

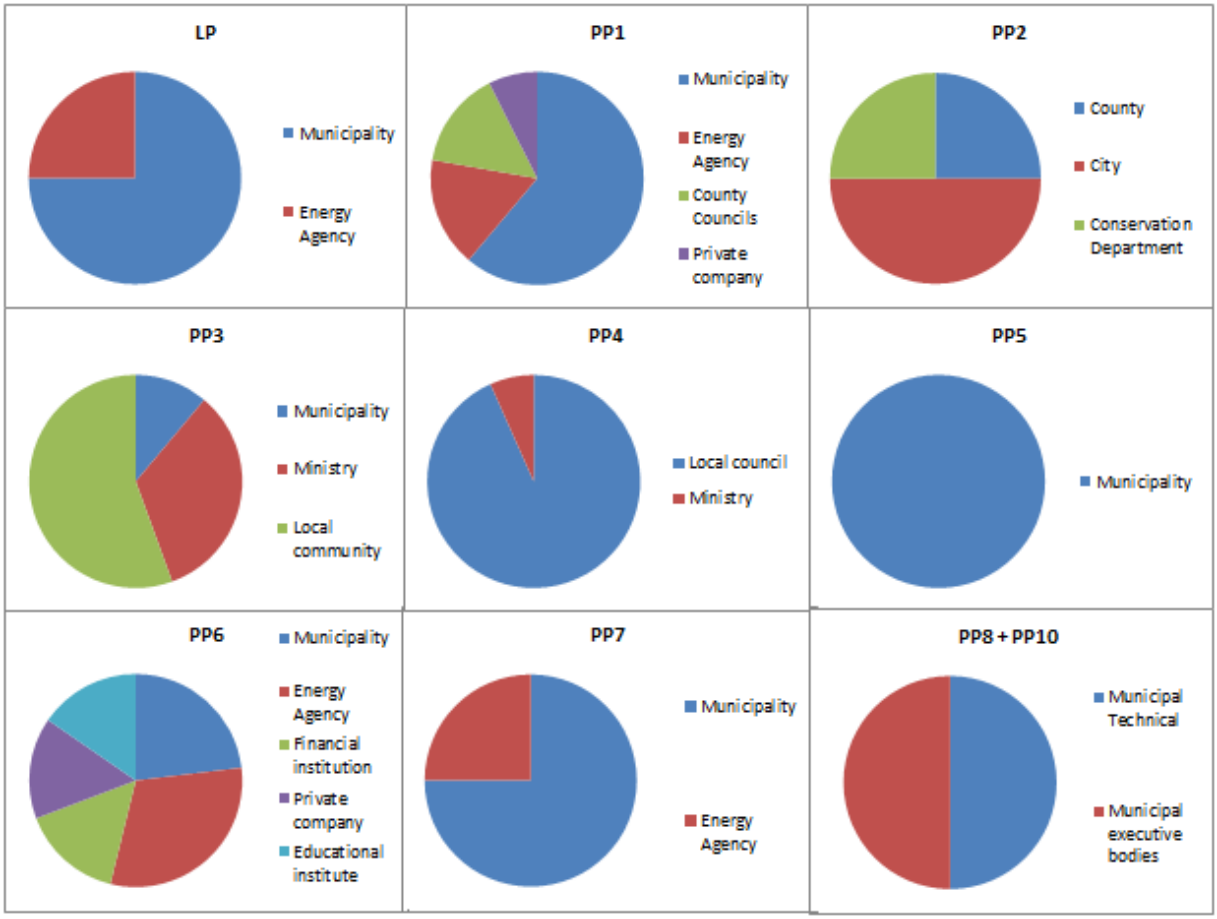
Stakeholder #3 – Municipality Of Saranda

Stakeholder #4 – Municipality Of Vlora

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - Municipal Technical

Stakeholder #2 – Municipal executive bodies



Graph 2: Stakeholder name/title type structure by partner

From the collection of data from Graph 2, it is visible that even though the stakeholder structure varies, all project partners have involved a certain percentage of municipalities in their stakeholder structure except for GDA, and 50% of the partners also included various local and regional energy agencies. Partners selected between 1 and 5

stakeholder groups, mostly selecting 2 or 3 groups of stakeholder groups.

Stakeholder type

LP – ANATOLIKI S.A.:

Stakeholder #1 - Development Agency/Expert Advisor regarding Energy Efficiency

Stakeholder #2 – Local Authority

Stakeholder #3 – Local Authority

Stakeholder #4 – Local Authority

PP1 – FAMP:

Stakeholder #1 - Regional Energy Agency / Regional Public Authority because the Andalusian Energy Agency belongs to the Andalusian Regional Government

Stakeholder #2 – County public authorities and local agencies

Stakeholder #3 – Knowledgeable persons

Stakeholder #4 – Local public authority

PP2 – IRENA:

Stakeholder #1 - Local Authority

Stakeholder #2 – Local Authority

Stakeholder #3 – Regional Public Authority

Stakeholder #4 – Regional Public Authority

PP3 – CEA:

Stakeholder #1 - Local Authority

Stakeholder #2 – Local Authority

Stakeholder #3 – Local Authority

Stakeholder #4 – Local Authority

Stakeholder #5 - Local Authority

Stakeholder #6 – Local Authority

Stakeholder #7 – Ministry

Stakeholder #8 – Ministry

Stakeholder #9 – Ministry

PP4 – GDA:

Stakeholder #1 - Local Authority

Stakeholder #2 – Local Authority

Stakeholder #3 – Local Authority

Stakeholder #4 – Local Authority

Stakeholder #5 - Local Authority

Stakeholder #6 – Local Authority

Stakeholder #7 – Local Authority

Stakeholder #8 – Local Authority

Stakeholder #9 – Local Authority

Stakeholder #10 – Local Authority

Stakeholder #11 - Local Authority

Stakeholder #12 – Local Authority

Stakeholder #13 – Local Authority

Stakeholder #14 – Local Authority

Stakeholder #15 – Regional Authority

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - Local public authorities

Stakeholder #2 – Local public authorities

Stakeholder #3 – Local public authorities

Stakeholder #4 – Local public authorities

Stakeholder #5 - Local public authorities

PP6 – GOLEA:

Stakeholder #1 - Local public authority

Stakeholder #2 – Financing institutions

Stakeholder #3 – Knowledgeable persons

Stakeholder #4 – Energy agencies

PP7 – MEI:

Stakeholder #1 - Development agency/expert advisor regarding RES and EE

Stakeholder #2 – Local Authority

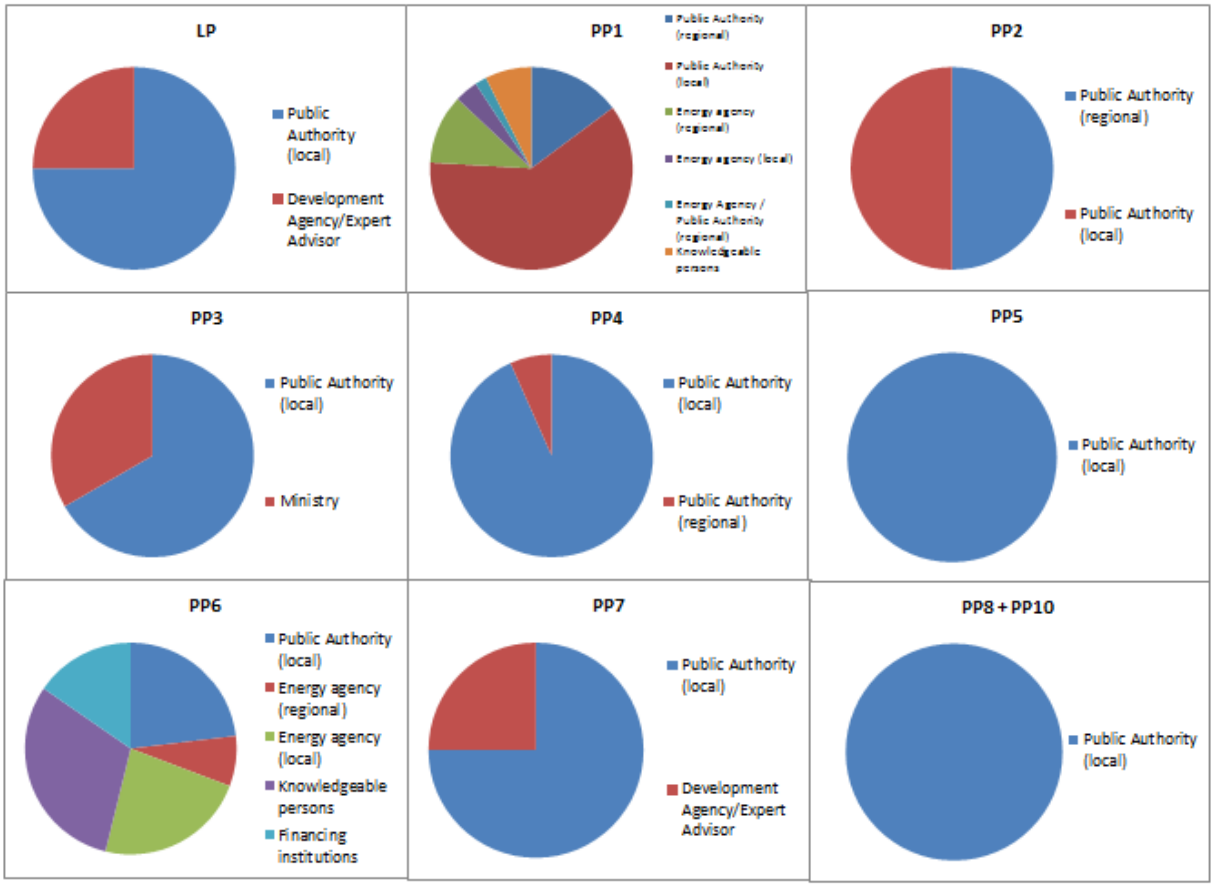
Stakeholder #3 – Local Authority

Stakeholder #4 – Local Authority

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - Local public authorities

Stakeholder #2 – Local public authorities



Graph 3: Stakeholder type structure by partner

Graph 3 shows that including Public Authorities is crucial for success, since all the partners have included local and sometimes regional authorities in their Joint Action and they are the majority of the interest share in the stakeholder structure. While FAMP and GOLEA have a more varied stakeholder structure consisting of five or six stakeholder types, other partners' have more simple structure consisting of one or two stakeholder types, mostly local and regional Public Authorities and Energy Agencies.

Stakeholder field of work / main activities

LP – ANATOLIKI S.A.:

Stakeholder #1 - Supporting Local Authorities, Supporting enterprises, Promotion of innovation and new technologies, Social economy, Human resources, Environment and infrastructures, Energy,

Sustainable mobility, Environmental education, Consulting support on school communities

Stakeholder #2 – Local Authority

Stakeholder #3 – Local Authority

Stakeholder #4 – Local Authority

PP1 – FAMP:

Stakeholder #1 - The Andalusian Energy Agency is a public agency attached to the Regional Ministry of Finance, Industry and Energy from the Andalusian Regional Government. Its main objective is to contribute to making Andalusia a reference region in the energy sector, both at national and community level, promoting a new energy culture among people, companies and administrations.

Stakeholder #2 – The County Energy Agencies belong to the Andalusian County Councils. Its main field of work and activities is related to collaborate in the management of the local activity, to manage the economic-administrative interests of the counties and specially its work is closer to those municipalities with less than 20,000 inhabitants. The County Energy Agencies are responsible for energy measures in the municipalities of each county.

Stakeholder #3 – ENDESA (Electric utility company), APADGE (Andalusian Professional Association of Energy Managers), AVRA (Andalusian Refurbishing and Housing Agency) and UCA-UCE (Andalusian Consumers' Association)

Stakeholder #4 – Government of the municipality

PP2 – IRENA:

Stakeholder #1 - Local authority, as regarding the project; participation in the focus groups, local conference

Stakeholder #2 – Local authority, as regarding the project; participation in the focus groups, local conference

Stakeholder #3 – Regional authority, as regards the project; participation in focus groups and local conference

Stakeholder #3 – Regional authority; determination of the property of a cultural property, legal protection and entry in the Register of Cultural Property of the Republic of Croatia; establishing measures for the protection and preservation of cultural property; establishing special conditions for the protection of the cultural property in the process of issue; location permits and decisions on construction conditions; inspection activities; authorizing the export and export of cultural property; preparation of conservation studies for the purposes of spatial planning; as regards the project, participation in focus groups and local conference.

PP3 – CEA:

Stakeholder #1 - Administrative

Stakeholder #2 – Administrative

Stakeholder #3 – Administrative

Stakeholder #4 – Administrative

Stakeholder #5 - Administrative

Stakeholder #6 – Administrative

Stakeholder #7 – Central Governement, Administrative

Stakeholder #8 – Central Governement, Administrative

Stakeholder #9 – Central Governement, Administrative

PP4 – GDA:

Stakeholder #1 - Mayor of Zebbug local council

Stakeholder #2 – Mayor of Qala local council

Stakeholder #3 – Mayor of Victoria local council

Stakeholder #4 – Mayor of Kercem local council

Stakeholder #5 - Mayor of Sannat local council

Stakeholder #6 – Mayor of San Lawrenz local council

Stakeholder #7 – Mayor of Fontana local council

Stakeholder #8 – Mayor of Ghajnsielem local council

Stakeholder #9 – Mayor of Ghasri local council

Stakeholder #10 – Mayor of Xeukija local council

Stakeholder #11 – Mayor of Gharb local council

Stakeholder #12 – Mayor of Nadur local council

Stakeholder #13 – Mayor of Xaghra local council

Stakeholder #14 – Mayor of Munxar local council

Stakeholder #15 – Ministry for Gozo, decision-maker, Director of the Eco-Gozo directiorate

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - Participation in the focus group, local conference

Stakeholder #2 – Participation in the focus group, local conference

Stakeholder #3 – Participation in the focus group, local conference

Stakeholder #4 – Participation in the focus group, local conference

Stakeholder #5 - Participation in the focus group, local conference

PP6 – GOLEA:

Stakeholder #1 - Municipalities play a key role in renewable energy and energy efficiency sector. Local authorities have capacities in raising of energy efficiency and in sustainable energy supply. They are energy consumers, service providers and buyers of various products and services entailing energy impacts

Stakeholder #2 – SID Bank is a national promotional development bank. The fundamental activity pursued by SID Bank is funding market gaps, such as: development of small and medium enterprises and entrepreneurship, research, development and innovations, environmental protection, energy efficiency and climate change, international business transactions and international economic cooperation, regional development, economic and public infrastructure.

PETROL company, the leading Slovenian energy company, is the principal strategic supplier of oil and other energy products to the Slovenian market. The principal development direction of the Petrol Group is the introduction of new energy activities, in particular the sale of gas, heat and electricity, but in the long run also renewable energy sources.

ECO FUND, the largest financial institution of the Republic of Slovenia, promotes investments that comply with the National Environmental Action Plan and the Environmental Policy of the European Union. Eco Fund is under the jurisdiction of the Ministry of Environment. Citizens, legal entities and individual entrepreneurs are eligible for the funding.

Stakeholder #3 – ENEKOM company - ENEKOM's principles are professionally independent advisory as well as transfer of know-how and applicational solutions to companies and institutions. Its main activities are: Energy Audits, Energy Information Systems Implementation, Energy Management Systems Building.

KLIMA 2000 - Bureau for architectural and engineering design and related technical consulting KLIMA 2000 d.o.o. is a company in which they plan and manage the most demanding projects in the field of infrastructure, engineering, high and low construction and other demanding structures.

The Institute for Innovation and Development (IRI UL) was founded in 2007 by the University of Ljubljana, together with 10 Slovenian companies, as a non-profit development and research institute. The Institute promotes the creation, transfer, dissemination and use of knowledge. Through the transfer of research results into practice and their commercial use the Institute facilitates the integration of the innovation triangle (research-education-innovation).

Stakeholder #4 – Local energy agencies were established to provide services both to users and public authorities, including: independent advice and guidance to energy users; technical support and policy advice to public authorities; they act as an information channel between EU policy makers and users and public authorities.

PP7 – MEI:

Stakeholder #1 - Analyzes energy needs, promotes RES and EE, monitors the implementation of the national and local level EE and RES programs

Stakeholder #2 – Local Authority

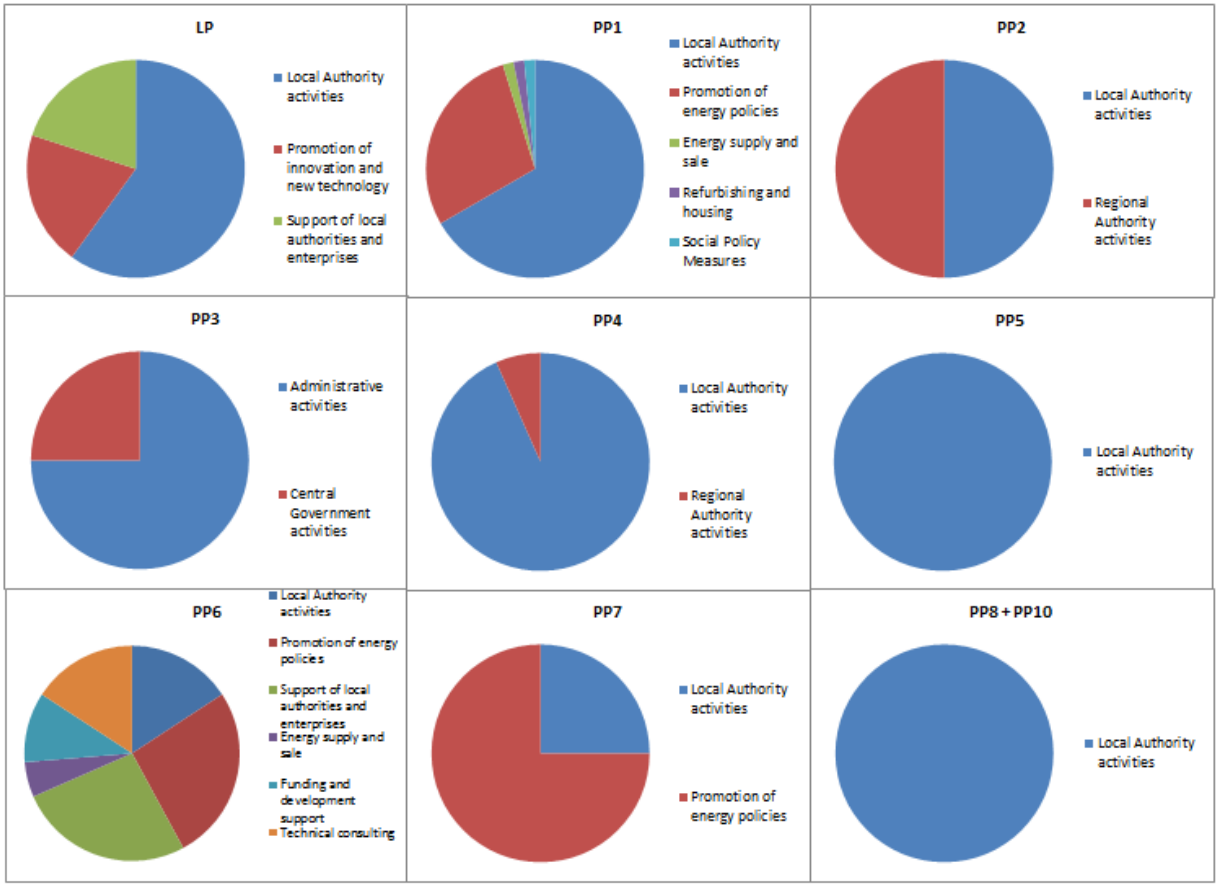
Stakeholder #3 – Local Authority

Stakeholder #4 – Local Authority

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - It is the municipal technicians who, knowing in detail the reality of the municipalities, who know in greater detail the difficulties felt and the needs of the municipality, providing the data necessary for the work of the energy agency.

Stakeholder #2 – Identification of problems or needs that can be worked out in the project; validation and definition of actions in conjunction with the energy agency.



Graph 4: Stakeholder field of work/activity structure by partner

Related to the previous graph, on Graph 4 we can also see that the main share of the activities for all partners involves 'Local Authority activities' followed by 'Promotion of energy activities' and 'Regional Authority activities'.

Stakeholder cooperation motives

LP – ANATOLIKI S.A.:

Stakeholder #1 - 0

Stakeholder #2 – Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community

Stakeholder #3 – Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy

Efficiency studies and measures for Municipal Buildings through the Energy Community

Stakeholder #4 – Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community

PP1 – FAMP:

Stakeholder #1 - The Andalusian Energy Agency is a key stakeholder because it is the regional and public management agency of the Low-Carbon Economy axis from the Andalusia ERDF OP 2014-2020, Thematic Objective 4.

Stakeholder #2 – The main conclusion drawn from the Focus Group meetings and the Local Conference for the Joint Action Implementation is that the Joint Action Plan should cover the following aspects or phases of an Action Plan, mostly among those municipalities with less capacity (with less than 20,000 inhabitants), so the collaboration with the main stakeholders who manage a lot of the local authorities issues in these small municipalities is essential for the REDEMA's success.

Stakeholder #3 – ENDESA (Electric utility company), APADGE (Andalusian Professional Association of Energy Managers), AVRA (Andalusian Refurbishing and Housing Agency) and UCA-UCE (Andalusian Consumers' Association) as key stakeholders during the Focus Groups development, will continuously provide support, expertise and knowledge to increase the effectiveness of REDEMA

Stakeholder #4 – The 33 Municipalities with which FAMP had already been working for the study of the audits and SEAPs to be included in the ENERJ web platform, as well as the municipalities where the 10 initial audits were carried out, have been choose as initial pilot area.

PP2 – IRENA:

Stakeholder #1 – Interest in participating in the joint action to share the obtained knowledge about procedures of local public authorities

Stakeholder #2 – Interest in participating in the joint action to share the obtained knowledge about procedures of local public authorities

Stakeholder #3 – Interest in participating in the joint action to share the obtained knowledge about procedures of local public authorities

Stakeholder #4 – Participation is necessary because 2 of 3 selected buildings are cultural heritage and under protection of Conservation Department. Any kind of upgrade or refurbishment of such buildings requires their permission.

PP3 – CEA:

Stakeholder #1 - Building user

Stakeholder #2 – Building user

Stakeholder #3 – Building user

Stakeholder #4 – Building user

Stakeholder #5 - Building user

Stakeholder #6 – Building user

Stakeholder #7 – Building owner

Stakeholder #8 – Financing of Communities

Stakeholder #9 – Implementation of the Action plan for reduction of CO2 emissions in public buildings

PP4 – GDA:

Stakeholder #1 - 14 - The local council's facilities and schools are included in the joint action plan, for which renovation / retrofitting / EE activities are forecasted

Stakeholder #15 - The Ministry for Gozo is the main authority in the Region. As representative of the Government and of all the ministries in the Region, including the Ministry of Education and the Planning Authority, it shall be involved so to get the permit to carry out renovation /restoration activities in public buildings, including schools.

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - Interest in participating in the joint action

Stakeholder #2 – Interest in participating in the joint action

Stakeholder #3 – Interest in participating in the joint action

Stakeholder #4 – Interest in participating in the joint action

Stakeholder #5 - Interest in participating in the joint action

PP6 – GOLEA:

Stakeholder #1 - To share the obtained knowledge about procedures of local public autorities. Refurbishment of indoor lighting in one of their buildings.

Stakeholder #2 – Their main cooperation motive was to share their knowledge and past experience on financing of different energy service projects.

Stakeholder #3 – To share obtained knowledge in energy efficiency interventions in public buildings.

Stakeholder #4 – Their motivation was to obtain additional knowledge on possible joint actions and possible solutions. In fact, energy agencies were established with the aim of co-operation, preparation and implementation of the common objectives in the local environment as well as efficient involvement in national and international frameworks agencies established a national consortium of energy agencies (LEAS Consortium). The aim of the consortium is the realization of the priorities based on three program pillars: energy management, energy data base and related information, promotion and dissemination of results.

PP7 – MEI:

Stakeholder #1 - Service of the Albanian energy sector governance and operational institutions for RES and EE

Stakeholder #2 – Monitoring and control of specific energy related EE projects

Stakeholder #3 –Preparation of regional and local programmes for sustainable energy production and consumption, Providing Electricity at

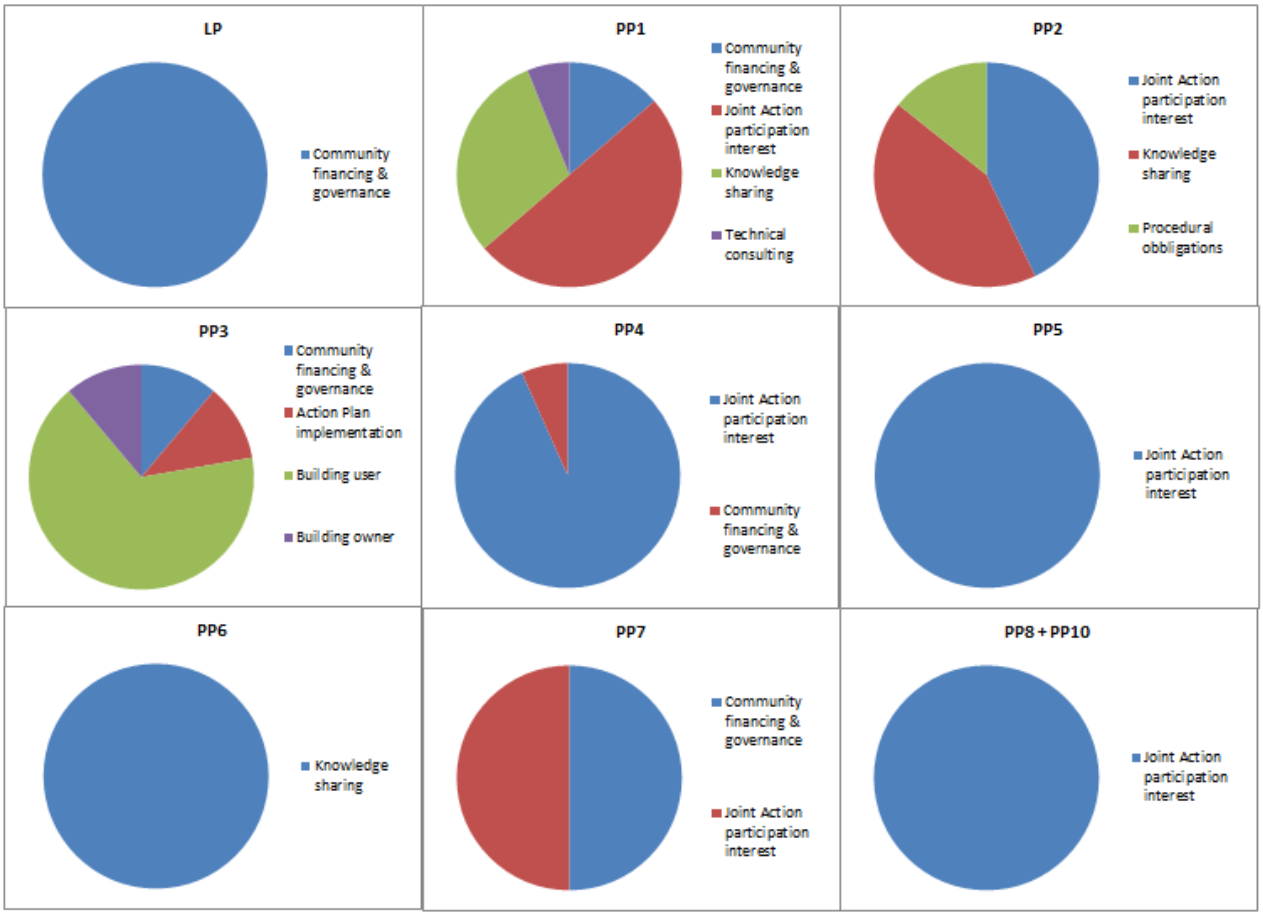
no cost for low income households and its own buildings. Provide energy efficiency found

Stakeholder #4 – Social Policy Measures, Providing Electricity at no cost for low income households and its own buildings. Energy Efficiency studies and measures for Municipal Buildings through the Energy Community

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - The reason for their participation results from the important involvement of the municipalities in these actions.

Stakeholder #2 – As politicians in the region, it is important to be involved both in identifying the needs of the region and in defining the actions to fill them.



Graph 5: Stakeholder cooperation motives structure by partner

Data in Graph 5 shows that the stakeholders involved generally share the same interest in participation in the Joint Action and that most partners' stakeholders' group structure has only one or two basic motivations for cooperating. Others, like FAMP, IRENA and GOLEA have a more complex motivational structure, consisting of 3 to 5 basic motivations for cooperation. The predominant motivations for cooperating are 'Joint Action participation interest', 'Knowledge sharing' and 'Community financing & governance'.

Stakeholder Joint Action role/tasks/commitment and contribution

LP – ANATOLIKI S.A.:

Stakeholder #1 - Acts as the Joint Action Coordinator among the three Local Authorities offering its expertise on Energy Efficiency measures. ANATOLIKI will also be the supervisor of the new PV park that will be established

Stakeholder #2 – Provide staff and/or Municipal land/buildings depending on the Consitutional Statement of the Energy Community

Stakeholder #3 – Provide staff and/or Municipal land/buildings depending on the Consitutional Statement of the Energy Community

Stakeholder #4 – Providing staff and/or Municipal land/buildings depending on the Consitutional Statement of the Energy Community

PP1 – FAMP:

Stakeholder #1 - The inter-institutional cooperation with the Andalusian Energy Agency, as the Andalusian Energy Strategy 2020 Managing Authority, would be key for the development the actions integrated in REDEMA. During this process of inter-institutional collaboration with Andalusian Energy Agency, FAMP and the Andalusian Energy Agency have both signed a Covenant with the aim of the promotion of energy efficiency and the use of renewable energy in Andalusian cities, and REDEMA is included between the actions to foster. FAMP is also looking for some financing sources with the Andalusian Energy Agency in order to start the Network with enough resources and staff.

Stakeholder #2 – The County Energy Agencies, the County Councils and the Local Energy Agencies would realize the energy audit campaign between the municipalities interested in the development of energy efficiency measures.

Stakeholder #3 – They will participate in the events and workshops related to the Network implementation and in case it would be necessary the development of additional Focus Groups, they will be invited as experts

Stakeholder #4 – These municipalities would be adhered to the Network and would be benefited for REDEMA actions: audits campaigns, trainings, events, energy data management tools, and so on. With all these actions, they will realize the energy efficiency measures included in their SEAPs and SECAPs

PP2 – IRENA:

Stakeholder #1 – The city provided one of the building (kindergarten) that is the subject of the JA, provides necessary documentation and information (such as energy audit...), participation on meetings

Stakeholder #2 – The city provided one of the building (building of city administration) that is the subject of the JA, provides necessary documentation and information (such as energy audit...), participation on meetings

Stakeholder #3 – The Istrian Region provided one of the building (healthcare center) that is the subject of the JA, provides necessary documentation and information (such as energy audit, technical documentation...),participation on meetings

Stakeholder #4 – Participation in focus groups, meetings and conferences, providing advices, suggestions and good practices.

PP3 – CEA:

Stakeholder #1 - Financing and procurement

Stakeholder #2 – Financing and procurement

Stakeholder #3 – Financing and procurement

Stakeholder #4 – Financing and procurement

Stakeholder #5 - Financing and procurement

Stakeholder #6 – Financing and procurement

Stakeholder #7 – Financing

Stakeholder #8 – Financing

Stakeholder #9 – Funding schemes, Legislation

PP4 – GDA:

Stakeholder #1-14 - The local council is a beneficiary of the Joint Action plan. Energy audits already carried out within the local councils facilities and schools, as well as other local action plans, if any, will be included in the Joint Action plan.

Stakeholder #15 - The Ministry for Gozo won't be directly involved in the implementation of the activites, but its support will be necessary for the development of the Joint Action plan.

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings

Stakeholder #2 – The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings

Stakeholder #3 – The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings

Stakeholder #4 – The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings

Stakeholder #5 – The municipality has indicated some buildings that could be the subject of the Joint Action, providing some energy data of the buildings

PP6 – GOLEA:

Stakeholder #1 - Municipal representatives shared their view on possibility of applying joint action. The municipal task is to plan the investment in their municipal budgets at the end of the year to perform the choosen action. Municipalities are requested to prepare the technical project documentation.

Stakeholder #2 – SID bank is constantly developing different financial products that help raising energy efficiency in large enterprises, SME's and municipalities. Their commitment is to follow the project activity development and to evaluate their possibility/availability to finance the identified joint action.

Stakeholder #3 – As they are technical experts their main role was to give support in the definition of suitable joint actions in the region and the identification of suitable type of equipment and feasibility steps to be implemented.

Stakeholder #4 – They committed to gather the data on their past experience and to share the information during the organized meeting.

PP7 – MEI:

Stakeholder #1 - National Agency of Natural Resources is the coordinator institution which offers its expertise on Energy Efficiency measures

Stakeholder #2 – Providing of staff and/or Municipal land/buildings depending on national programe for EE

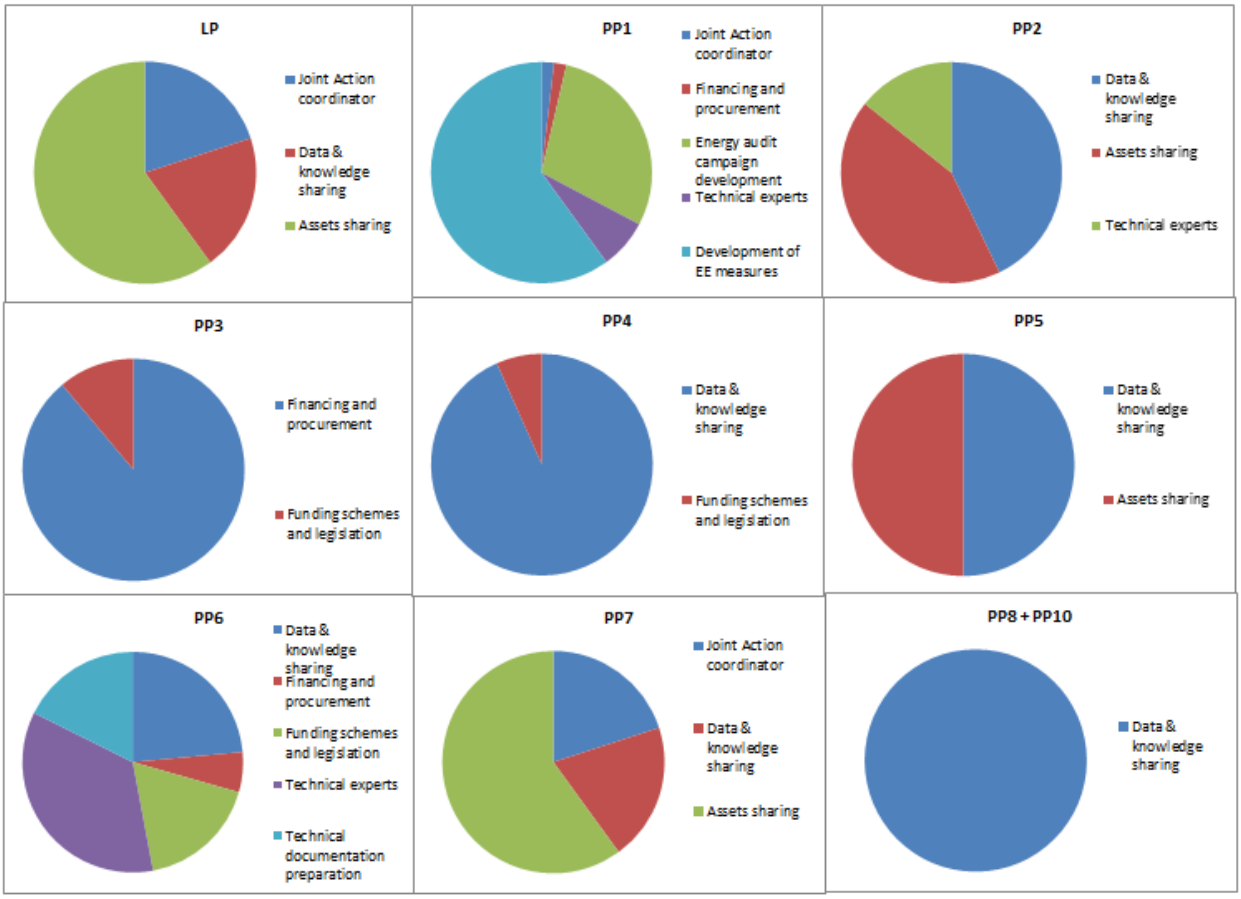
Stakeholder #3 – Providing of staff and/or Municipal land/buildings depending on national programe for EE

Stakeholder #4 – Providing of staff and/or Municipal land/buildings depending on the council of Municipality

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - Sending data requested by AREANATejo for the implementation of actions; to make known the reality of each one of the Muncipios and their needs and difficulties; streamline communication between AREANATejo and executive Organs (policy makers).

Stakeholder #2 – The reason for their participation results from the important involvement of the municipalities in these actions.



Graph 6: Stakeholder Joint Action role/tasks/commitment structure by partner

Graph 6 data shows that each partner has a different structure of Joint Action tasks and commitments, however certain tasks are repeated among partners. For example, 'Data and knowledge sharing' is found in all partners except for FAMP and CEA, and 'Assets sharing' is found in ANATOLIKI S.A., IRENA, CITTÀ METROPOLITANA ROMA and MEI partners' structure, indicating that some tasks have a higher frequency of repeating and are more important for Joint Action implementation.

Perceived risks/obstacles regarding stakeholder participation

LP – ANATOLIKI S.A.:

Stakeholder #1 - None

Stakeholder #2 – The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for, in the sense that a loan with a high interest rate will delay the amortization of the investment

Stakeholder #3 –The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for in the sense that a loan with a high interest will delay the amortization of the investment

Stakeholder #4 –The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for in the sense that a loan with a high interest will delay the amortization of the investment

PP1 – FAMP:

Stakeholder #1 - None

Stakeholder #2 – None

Stakeholder #3 – None

Stakeholder #4 – The adhesion to REDEMA by Local Authorities could be seen with non-added value.

PP2 – IRENA:

Stakeholder #1 - Since the kindergarten building in Poreč is protected as a cultural heritage, there are obstacles to its reconstruction and energy upgrade in the form of restrictions by the Conservation Department in Pula

Stakeholder #2 – Since the building administrations' building in Novigrad is protected as a cultural heritage, there are obstacles to its reconstruction and energy upgrade in the form of restrictions by the Conservation Department in Pula

Stakeholder #3 – None

Stakeholder #4 – None

PP3 – CEA:

Stakeholder #1 - Financial constraints, lack of technical personnel

Stakeholder #2 – Financial constraints, lack of technical personnel

Stakeholder #3 – Financial constraints, lack of technical personnel

Stakeholder #4 – Financial constraints, lack of technical personnel

Stakeholder #5 - Financial constraints, lack of technical personnel

Stakeholder #6 – Financial constraints, lack of technical personnel

Stakeholder #7 – Only one building that concerns the Ministry is involved, lack of strategy for school upgrading

Stakeholder #8 – Lack of strategy for financing energy upgrading projects

Stakeholder #9 – Low energy consumption of Community buildings

PP4 – GDA:

Stakeholder #1-14 - It is difficult to get technical data from the local councils, mainly due to a lack of expertise.

Stakeholder #15 - It is very difficult to get the Ministry of Gozo involvement, especially with regards to major activities to perform in public administrations.

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - The persistence of political commitment after the change of local government

Stakeholder #2 – Lack of economic resources and personnel for the activation of the necessary procedures, administrative and technical.

Stakeholder #3 – Difficulty in implementing energy efficiency measures in historic bound buildings, general lack on technical and administrative expertise

Stakeholder #4 – Difficulty to give continuity to the preparation of interventions on public buildings due to the complexity of the procedures, the long times needed and the scarce resources

Stakeholder #5 - Lack of administrative and technical human resources, no time and founds for those activities that need also a specific expertise.

PP6 – GOLEA:

Stakeholder #1 - Municipalities usually implement individual projects for energy efficiency improvement based on their own funds and available national grants. The most critical buildings with highest consumption were already rennovated in last five years, however, there is a large stock of buildings that still have need for certain rennovation measures (e.g. facade insulation). In general, municipalities would like to obtain more grants and other funding (e.g. installation of LED lightning, insultation of facade...) as their budget is limited or in most cases is not at disposal.

Stakeholder #2 – The concept of joint actions, where more than one municipality is a partner in the project is new and not tested yet in Slovenia

Stakeholder #3 – The main obstacle is having complete, accurate and reliable data that is a basis for a good decision.

Stakeholder #4 – None

PP7 – MEI:

Stakeholder #1 - None

Stakeholder #2 – Contrasting interests of power groups, economic lobbies, bureaucratic barriers, social, public and private stakeholders' misinformation

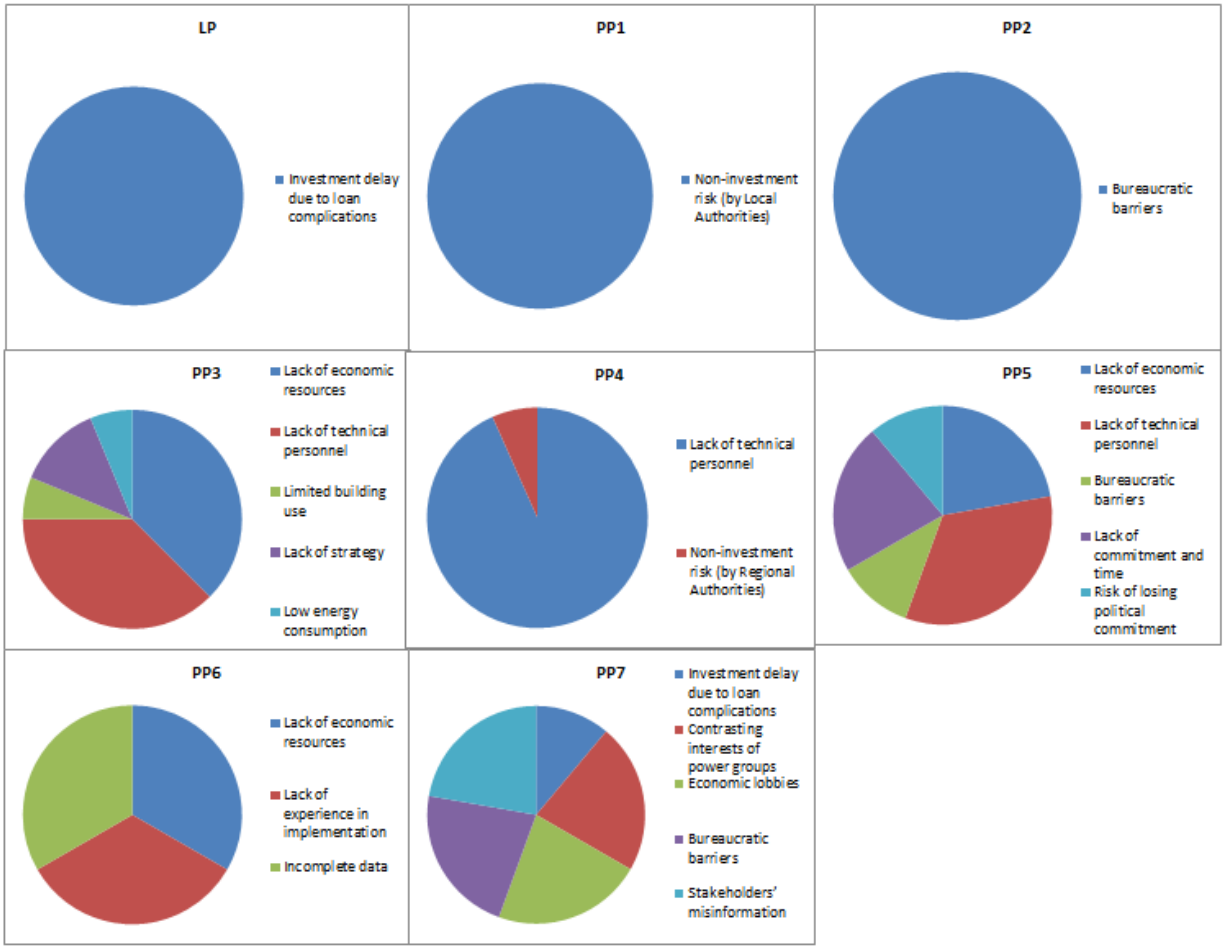
Stakeholder #3 – Contrasting interests of power groups, economic lobbies, bureaucratic barriers, social, public and private stakeholders' misinformation

Stakeholder #4 –The only issue with a considerable high likelihood of taking place has to do with the terms of the loan the Municipality will apply for in the sense that a loan with a high interest will delay the amortization of the investment

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - None

Stakeholder #2 – None



Graph 7: Perceived risks/obstacles structure share by partner

Graph 7 lists all perceived risks and obstacles associated with stakeholder participation in the Joint Actions, as noted by each project partner. Most of the risks noted are different for each partner, however 'Bureaucratic barriers' are noted for more than one partner (IRENA, CITTÀ METROPOLITANA ROMA and MEI), as well as 'Lack of economic resources' (CEA, CITTÀ METROPOLITANA ROMA and GOLEA), while 'Non-investment risk (by Local Authorities)' for the 33 municipalities involved in the Joint Action by FAMP is the most frequent percieved risk noted, followed by 'Lack of technical personnel' by GDA.

Possible solutions regarding perceived risks/obstacles regarding stakeholder participation

LP – ANATOLIKI S.A.:

Stakeholder #1 - None

Stakeholder #2 – Study carefully the loan terms and clauses

Stakeholder #3 – Study carefully the loan terms and clauses

Stakeholder #4 – Study carefully the loan terms and clauses

PP1 – FAMP:

Stakeholder #1 - None

Stakeholder #2 – None

Stakeholder #3 – None

Stakeholder #4 – It is crucial to provide to the Network with enough content and its communication so the municipalities would see its value. For that purpose, the process developed gradually and all the work for the implementation of measures to improve energy conditions at Andalusian Local Authorities up to the creation of the Network would be transmitted through the additional Conferences prepared for its launching, adhesion and implementation.

PP2 – IRENA:

Stakeholder #1 - Constant communication and contact with the Conservation Department in Pula to find the best solution for the energy renovation of the building without affecting its appearance too much

Stakeholder #2 – Constant communication and contact with the Conservation Department in Pula to find the best solution for the energy renovation of the building without affecting its appearance too much

Stakeholder #3 – None

Stakeholder #4 – None

PP3 – CEA:

Stakeholder #1 - The Ministry of Interior and the Ministry of Education, Culture, Sports and Youth could join the efforts for upgrading the school, the procurement authority could be one with more technical expertise

Stakeholder #2 – The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise

Stakeholder #3 – The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise

Stakeholder #4 – The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise

Stakeholder #5 - The Ministry of Interior could join the efforts for upgrading the building, the procurement authority could be one with more technical expertise

Stakeholder #6 – Funding by the Central Government

Stakeholder #7 – Inclusion of more school buildings in the joint action

Stakeholder #8 – Creation of an action plan for upgrading energy intensive Community buildings

Stakeholder #9 – Increase the amount of buildings involved in the joint action

PP4 – GDA:

Stakeholder #1-14 - GRC will train the local councils officials and will provide technical expertise for the data collection

Stakeholder #15 - It has been decided to leave the Ministry of Gozo out from the direct implementation of the activities. It will, instead, be included as main stakeholder and target group of the joint action plan.

PP5 - CITTÀ METROPOLITANA ROMA:

Stakeholder #1 - Bind the multi-year commitments undertaken with administrative documents

Stakeholder #2 – Ability to merge resources between multiple bodies, public and private

Stakeholder #3 – Assistance from Region and metropolitan city, to help municipalities find joint solutions to the problem of lack of experience and human resources and funds

Stakeholder #4 – Seeking collaboration with other municipalities to find common solutions to the problems of scarce resources

Stakeholder #5 - Using the expertise of one enery manager for different municipalities to easly work together on joint project

PP6 – GOLEA:

Stakeholder #1 - Generally, the municipalities favour the third-party financing mechanisms, but they would like to see bigger competition (more ESCO companies) in the energy services market. Municipalities find idea of joint action as interesting. A similar action is already established in Slovenia in energy (electricity, natural gas and fuel oil) procurement in a form of joint tenders which are implemented regularly by Association of municipalities and towns of Slovenia.

Stakeholder #2 – Important legal issues would have to be resolved in case of financing such a project by a third (private) party. The main question would be how to appropriately implement certification procedures in city councils and how to upgrade the savings calculation and imbursement.

Stakeholder #3 – Introduction of energy management database/software in public buildings, that ensure also data on energy consumption and costs.

Stakeholder #4 – None

PP7 – MEI:

Stakeholder #1 - None

Stakeholder #2 – Partnership cohesion and willingness to cooperate

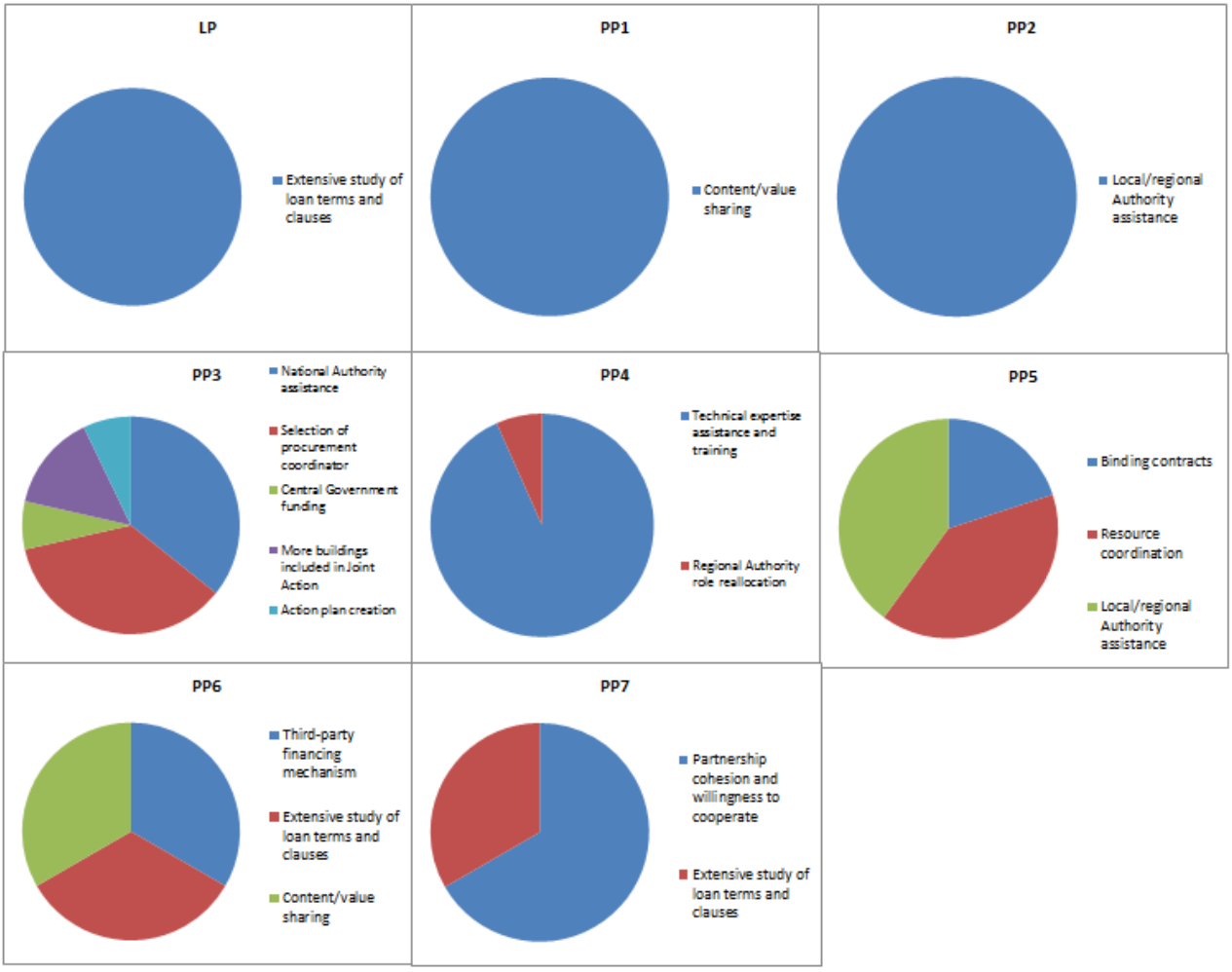
Stakeholder #3 – Partnership cohesion and willingness to cooperate

Stakeholder #4 – Study carefully the loan terms and clauses

PP8 + PP10 – AREANATEJO + CIMAA:

Stakeholder #1 - None

Stakeholder #2 – None

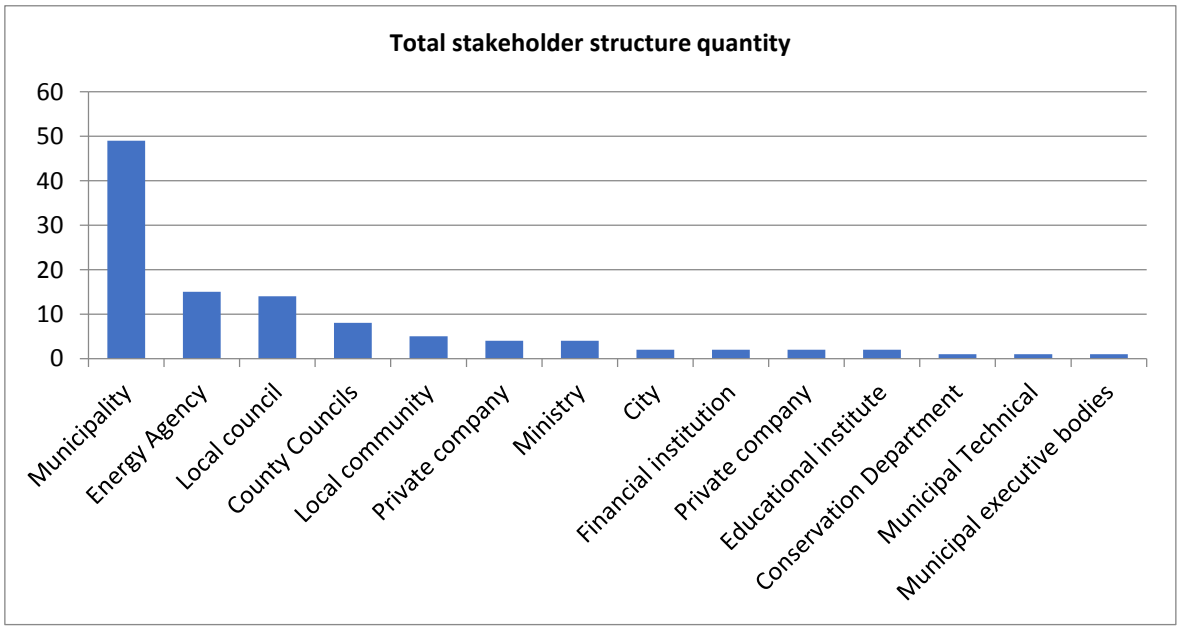


Graph 8: Possible solutions structure share by partner

Data in Graph 8 shows that the proposed solutions to the risk and obstacles associated to the Joint Actions are as varied as the data mentioned in the previous graph. Some proposed solutions are repeated, for example 'Extensive study of loan terms and clauses' is used by ANATOLIKI S.A., GOLEA and MEI, and ' Content/value sharing' is used by FAMP and GOLEA.

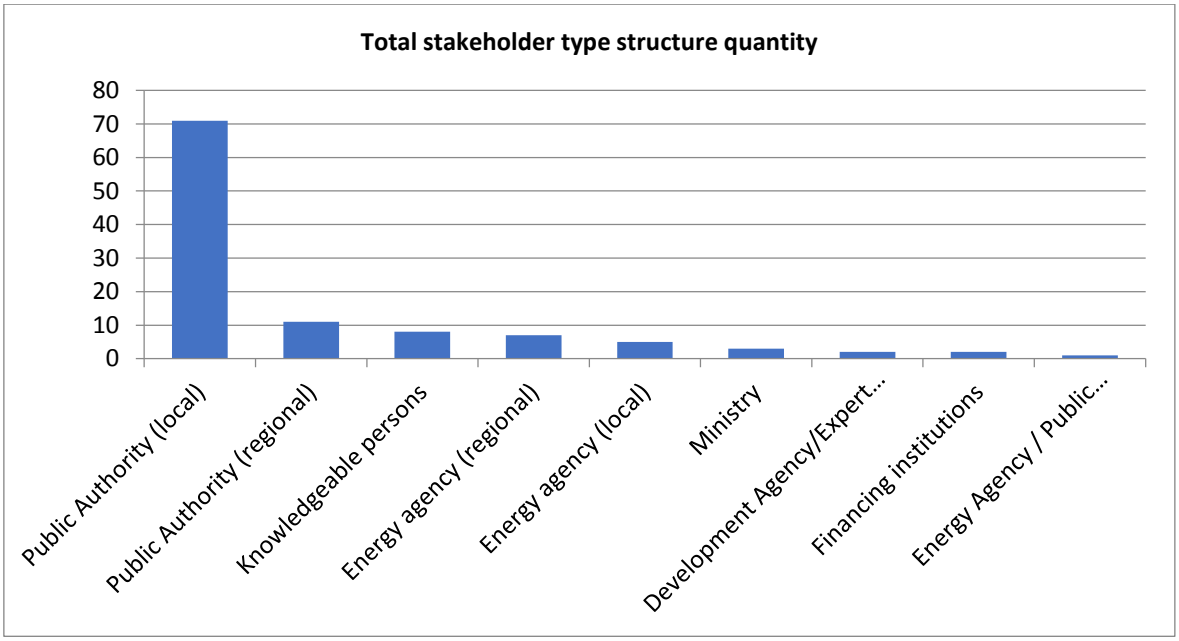
3.1.2. COMPARISON SUMMARY CONCLUSION

By stakeholder name/title as shown in Graph 9, we can see that the large majority of the interest group consists of various municipalities (49), followed by local and regional energy agencies (15) and local councils (14). The rest of the interest group consists of county councils (8), private companies and financial institutions (7), local communities (5), ministries (3) and cities (3) and various departments and technical/executive municipal bodies. We can conclude that involving municipalities and energy agencies was the primary achievement for most project partners.

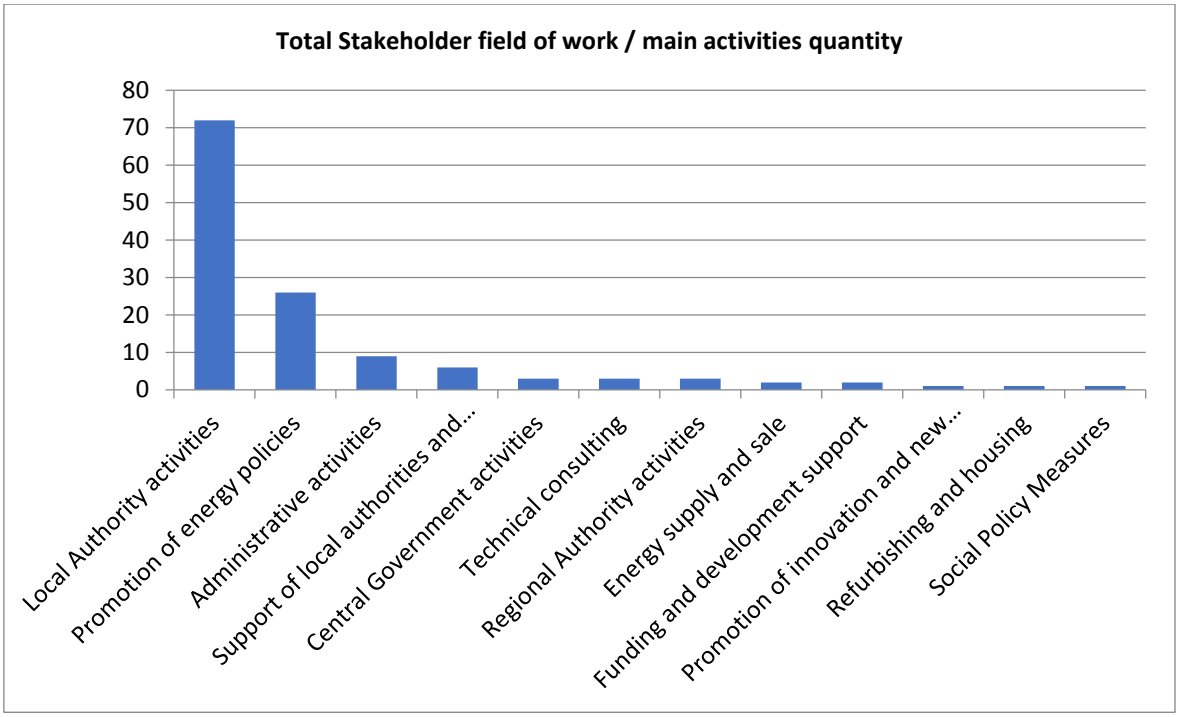


Graph 9: Total stakeholder structure quantity

Based on the type of stakeholders involved in the project, the apsolute majority of the total share is taken by Public Authorities, both regional and local, but mostly local (as seen in Graph 10). The rest includes knowledgeable persons, local and regional energy agencies, Ministries and various development agencies and financial institutions. This indicates that public authorities are apsolutely essential in implementing the Joint Action and should be used by all interested parties.

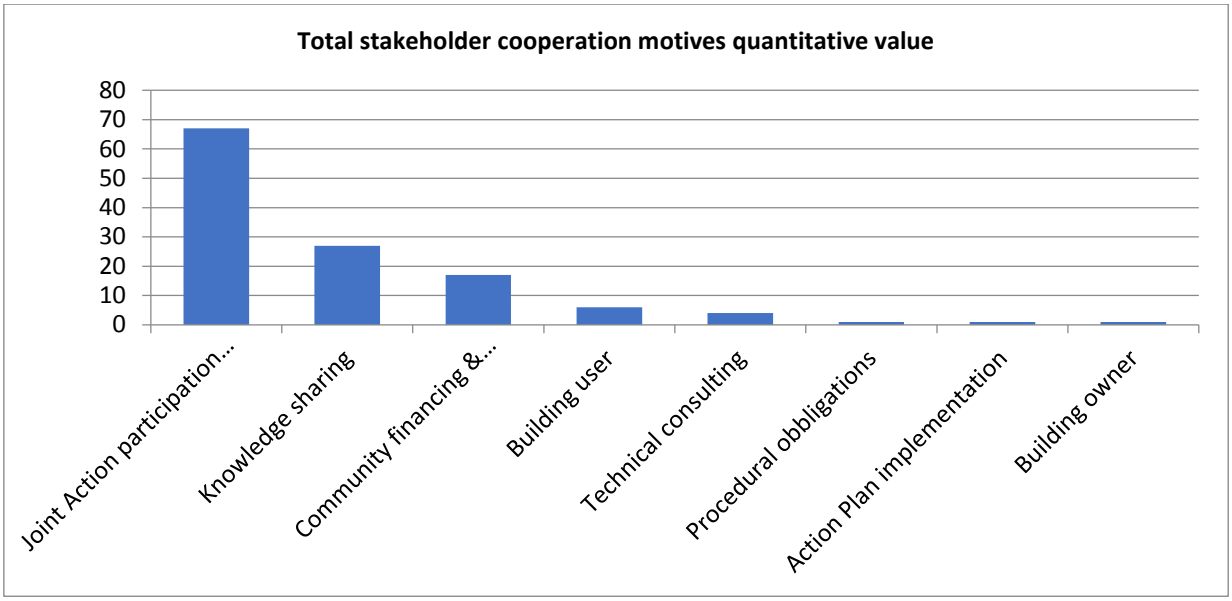


Graph 10: Total stakeholder type structure quantity



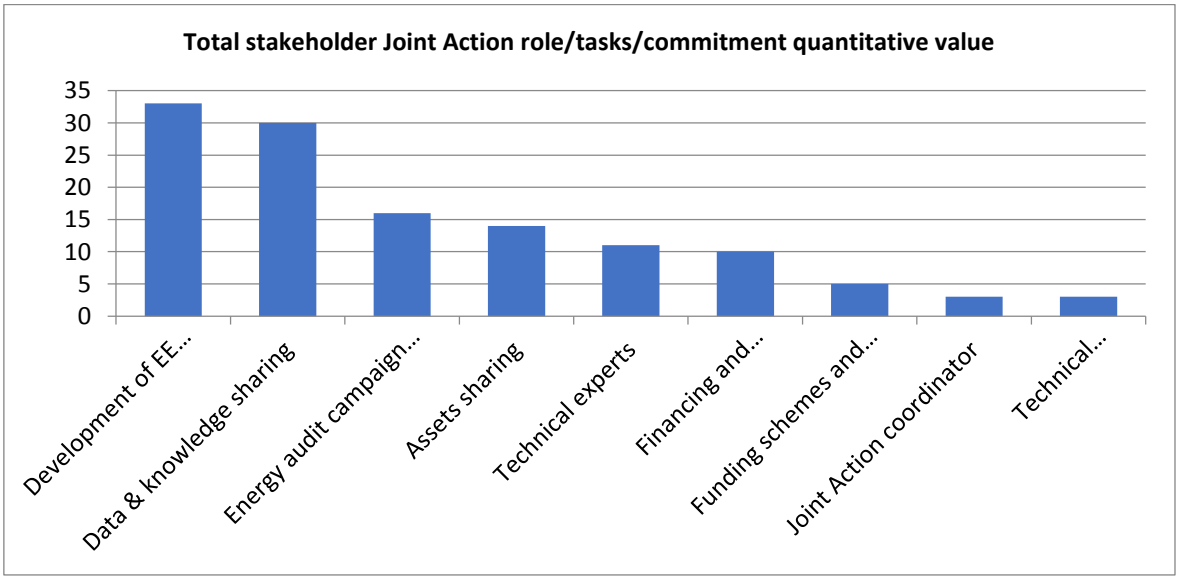
Graph 11: Total stakeholder field of work/main activities quantity

In close connection with the two previous graphs, on Graph 11 we can see that the predominant stakeholder main activities include activities related to the local authorities, followed by the promotion of energy policies. It should however be noted that only one activity type was used for every stakeholder to simplify the data gathering process, however many stakeholders have interlinked activities, so this graph should be viewed as a simplistic representation of the actual state.



Graph 12: Total stakeholder cooperation motives quantitative value

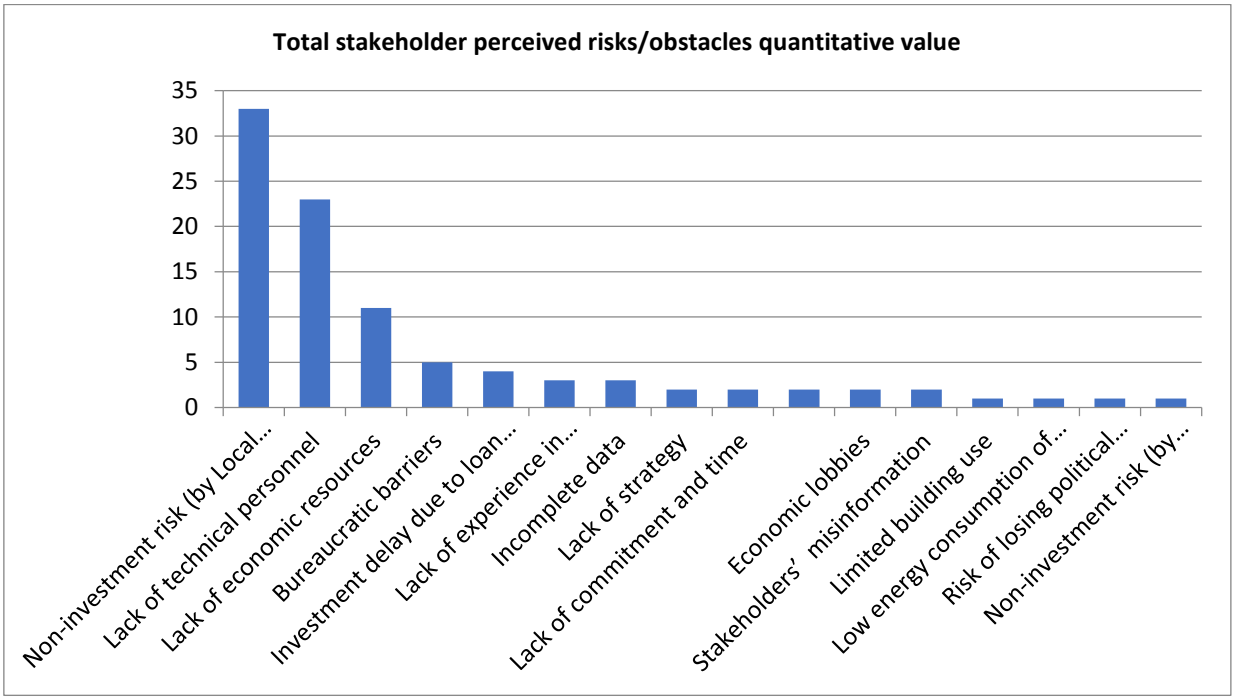
The cooperation motives in Graph 12 show that the Joint Action participation interest is the largest listed cooperation motive, followed by knowledge sharing and community financing & governance motives.



Graph 13: Total stakeholder Joint Action role/tasks/commitment quantitative value

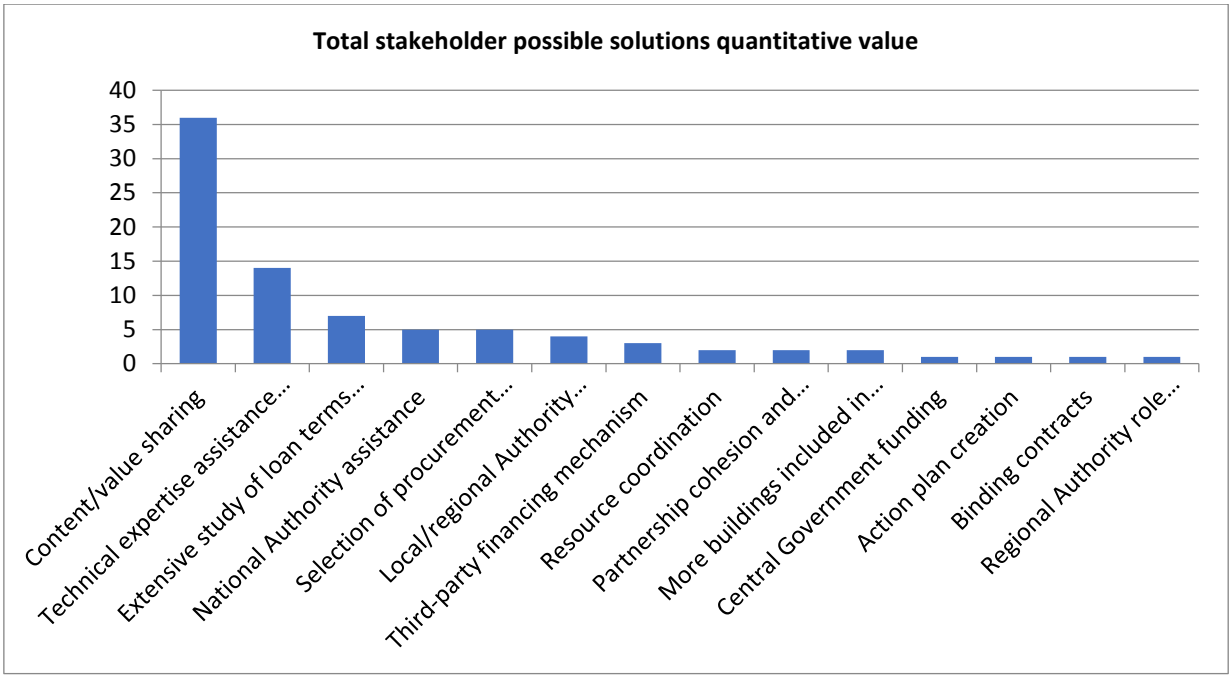
Development of energy efficiency measures and data & knowledge sharing are listed as the main stakeholder Joint Action roles in Graph

13, while other roles include energy audit campaign development, assets sharing, technical experts and others.



Graph 14: Total stakeholder perceived risks/obstacles quantitative value

Total percieved risks and obstacles in Graph 14 list non-investment risk by local authorities not recognizing the added value of participating in the Joint Action as the highest possible risk among the partners' Joint Actions. Lack of economic resources and technical personnel are specified as the second largest possible risk during Joint Action implementation. To prevent and alleviate these risks, content and value sharing and technical expertise assistance and training are noted as the main possible sollutions (as seen in Graph 15), as well as extensive study of loans and terms to combat bureaucratic barriers and investment delays.



Graph 15: Total stakeholder possible solutions quantitative value

3.2. JOINT ACTION

The Joint Action section examines each partners' Joint Action details, their definition process, the planned and implemented intervention details and the details of the structures involved in the project in order to find the similarities between the various projects initiated by the project partners and to assess their characteristics, the motives for selection of the action in question, their implementation process, their added value and possible risks associated with their implementation. This will enable a cross-reference of the data provided and an empirical view of the shared experiences of each project partner to be used by future users planning to use similar actions through a newly defined methodology, in order to possibly avoid the same obstacles or more efficiently recognize and use the potential opportunities before, during and after implementation. It can also potentially result in better management and prediction skills and serve as a general guideline or reference point for interested parties.

3.2.1. COMPARISON OF JOINT ACTION DATA BY PROJECT PARTNER

In the section regarding the Joint Action of the project partners, a detailed view of the information regarding the selection, implementation and finalization process, as well as potential risk factors will be presented. This will enable a better perspective on the partners' overall process and determine common operational and cognitive points to be exploited during potential future use.

Joint Action name/title

LP – ANATOLIKI S.A.:

Establishment of an Energy Community (En.Con.) consisting of three neighbouring Local Authorities for improving Public Buildings Energy Efficiency and establishing a 1MW PV investment

PP1 – FAMP:

REDEMA: Energy Network of the Andalusian Municipalities

PP2 – IRENA:

Defining the methodological approach to the restoration of protected and other complex public buildings

PP3 – CEA:

Joint Procurement for Energy Upgrading

PP4 – GDA:

Joint preparation of ELENA proposal for the energy retrofit of public buildings in Gozo

PP5 - CITTÀ METROPOLITANA ROMA:

Metropolitan energy efficiency actions on public buildings

PP6 – GOLEA:

Joint action to renovate indoor lighting in sports halls in the Primorska region.

PP7 – MEI:

Establishment of a group from four Albania Municipalities (Gjirokastra, Permeti, Vlora and Saranda) for improving Public Buildings Energy Efficiency and install solar panel for hot water.

PP8 + PP10 – AREANATEJO + CIMAA:

Static and Prospective Municipal Energy Matrices for the Sub-region of Alto Alentejo.

Joint Action type

LP – ANATOLIKI S.A.:

Establishment of an Energy Community (Greek Law. 4513/18, Law.1667/86), as a cooperative Initiative with the participation of Municipalities. The Energy Community can implement actions in the fields of local electricity production through virtual net-metering, as well as to undertake the energy upgrade of buildings among Municipalities with the potential of third parties participation. Elaboration of studies and actions' implementation by the Energy Community.

PP1 – FAMP:

A network as a cooperation tool to foster energy efficiency measures among local authorities

PP2 – IRENA:

Methodology know-how of energy restoration of cultural heritages' and complex buildings

PP3 – CEA:

Refurbishment, retrofitting, energy upgrading

PP4 – GDA:

Refurbishment

PP5 - CITTÀ METROPOLITANA ROMA:

Studies

PP6 – GOLEA:

Refurbishment

PP7 – MEI:

Establishment of an energy group from four municipalities (Energy Efficiency Law 124/2015) The energy group from four municipalities can implement actions in the fields of integrations of of energy efficiency measures, as well as to undertake the installation of solar panel for hot water. Elaboration of studies and actions' implementation by the energy group from municipalities.

PP8 + PP10 – AREANATEJO + CIMAA:

The characterization and quantification of the energy consumption in the region, by sector (domestic, industry and agriculture) and by type (electric energy and fuels), extrapolating its evolutionary tendency until 2050, all this through the elaboration of Municipal Energy Matrices. This task aims to create a valid local strategic planning instrument, combined with the promotion of energy intensity reduction by improving energy efficiency and the use of endogenous energy resources, by identifying measures and targets for sustainable local development of all the region involved.

There are five general types of Joint Actions undertaken by the project partners. Similar Joint Action structure type of establishment of an energy based community serving as a mechanism facilitating cooperation and implementation of EE measures is used by ANATOLIKI

S.A., FAMP and MEI, with additional investments in EE measures. Refurbishment type Joint Action is used by CEA and GOLEA. IRENA's Joint Action is the definition of a new methodology for restoration of protected public buildings, while CITTÀ METROPOLITANA ROMA is based on issuing a study on Metropolitan energy efficiency actions on public buildings, and AREANATEJO and CIMAA on establishing Municipal Energy Matrices hopefully serving as a strategic planning instrument.

Joint Action definition process

LP – ANATOLIKI S.A.:

Consultation with Local Authorities. Participation of the three (3) Municipalities of Thermi, Pilea - Hortiatis, Kalamaria. Common tender will be prepared by Anatoliki for the implementation of energy audits in buildings of the 3 Municipalities. Implementation of the energy audits for subsequent interventions. Specification of the specific common Joint Action scheme in contrast with a Contractual Agreement as an alternative.

PP1 – FAMP:

In the process of identifying a possible Joint Action for ENERJ, meetings were held by FAMP with a selected group of experts: the ENERJ Focus Groups. Also a Local Conference were held in this process, with the aim of the involvement of regional stakeholders into the implementation of the Joint Action identified. The generalized conclusion by all the participants revolved around the importance of unify efforts to foster EE initiatives in the municipalities, especially among those municipalities with less capacity (with less than 20,000 inhabitants). The main Good Practice considered during Focus Groups as potential solution was REDEJA (Andalusian Government Energy Network for Andalusian Government Public Buildings). REDEJA is an instrument created to promote within the Andalusian Administration principles of energy saving and diversification and to implement renewable energy facilities in its buildings. In conclusion, the Joint Action identified was the creation of an Energy Network of the Andalusian Municipalities, REDEMA (as a reflection of REDEJA but at local level).

PP2 – IRENA:

The County of Istria and local authorities in the area of the mentioned county are owners / managers of a large number of public buildings representing cultural heritage. For a significant part of this building fund, there is a need for a comprehensive, and also energy, renewal that, especially considering the fact that these buildings are under the protection of the Conservation Department, require complex procedures at the planning and implementation level. The complexity of the procedures, the technological approaches to restoration, the financial requirement and the long lead times of the investment and the lack of technical experience at the regional / local level cause a complete blockade of restoration of protected buildings and, consequently, their decay.

PP3 – CEA:

The energy audits provided the building owners with the knowledge on energy savings potential of their buildings and facilities. The legislation in Cyprus allows a group of public bodies to collectively procure with one public entity to be the procurer and therefore the joint action will take advantage of this and have one local authority with the technical capacity, to become the procurer. The procurements will be focused on one energy efficiency measure in more than one building. The measures will include installation of PV systems, lighting upgrading to LED and thermal insulation both rooftop and thermal.

PP4 – GDA:

The idea for the action plan is born after the activities of energy audits in the targeted public buildings. Due to (mainly) cultural issues and lack of expertise, most of the public buildings in Gozo lack of energy efficiency, insulation, etc. Furthermore, at the moment, there aren't any public funds available for financing retrofitting and refurbishment of buildings. it shall also be noticed that, due to the small size of the public buildings, and of the local councils, it is very difficult to attract private investments. Thus, during the workshops organized within the ENERJ project, and during bilateral meetings with the main stakeholders, it has been decided to join the efforts and apply for a unique financing for the restoration/renovation/refurbishment of all the

local councils' facilities in Gozo. After an in depth analysis of the financing instruments available at European level, it has been decided to apply for the ELENA programme. In order to reach the threshold set by the programme, public schools have been involved in the Joint Action plan.

PP5 - CITTÀ METROPOLITANA ROMA:

Currently real problems related to the implementation of the actions indicated on the SEAPs are common to most of the municipalities of the CMR as well as to some of the ENERGY partners. The reason mostly are:

-the elaboration of SEAPs is based on desires rather than real capacities by the municipalities;

-they do not take into account the feasibility of actions from the financial point of view;

-they do not take into account the feasibility of actions from the point of view of the actual capabilities of the municipalities' human resources. The ELENA initiative has been identified as the best possibility to implement some of the actions of local SEAPs and, in general, the energy retrofit of the public buildings, for the following reasons:

- availability of financial resources (both co-financing and bank loans), crucial for undertaking a comprehensive & coordinated energy retrofit of public buildings;

- possibility of establishing a centralized, co-financed Project Implementation Unit having the technical capacities to handle, manage and monitor the implementation of the actions, overcoming the technical and financial difficulties experienced by the Municipalities.

PP6 – GOLEA:

We were researching possible energy efficiency interventions and we had set few basic demands: technically simple intervention, low to moderate investment costs, an intervention interesting for EPC, easy to determine energy savings potential. Four focus groups were held in Slovenia with: local public authority, financing bodies, knowledgeable persons and energy agencies. In focus groups large potential on implementation of individual measures for energy efficiency and renewable energy sources in public buildings was found. Whereas a

significant number of public buildings were subject of deep energy renovation of public in past years, a large number of buildings exists where only one or few measures have to be done. These smaller projects are scattered and less interesting for third party financing (ESCO's). Combining these individual projects to one large joint action could have positive result of achieving an economy of scale, that would attract private capital and enable realization of the investment. For each individual building, a calculation of energy savings and investment cost was elaborated. The next steps are Preparation of technical project documentation, Test of private public partnership should be carried out, Preparation of public procurement for selection of ESCO company, Negotiations with the concessionaire (ESCO) and last signing the contract with the selected ESCO.

PP7 – MEI:

Consultation with Local Authorities. Participation of the four (4) Municipalities of Gjirokastra, Permeti, Vlora and Saranda. Common tender will be prepared by National Agency of Natural Resources for the implementation of energy audits in buildings' of the 4 Municipalities. Implementation of the energy audits for subsequent interventions. Specification of the specific common Joint Action scheme in contrast with a Contractual Agreement as an alternative.

PP8 + PP10 – AREANATEJO + CIMAA:

The motivation to initiate joint action is grounded in the mission of AREANATejo to contribute to local strategic planning combined with the promotion of energy intensity reduction by improving energy efficiency and the use of endogenous energy resources by identifying measures and targets for sustainable local development of the entire region concerned.
Despite the implementation of measures, its correct monitoring and control is very important, hence the need for the development of the Energy Matrix for the region, AREANATejo assessed the interest of the Municipalities of the region in the elaboration of the Energy Matrix and contracted the development of the work to a company specialized in the area according to all the technical specifications already defined by AREANATejo.

The Joint Action definition process shows the individual path taken by each partner for the motivation, recognition, and subsequent establishment of their Joint Action. All of the partners have organized either Focus Groups or consultations with Local Authorities in order to initiate and define the Joint Action needed for their community. We can conclude that the communities' feedback is very important in the Joint Action process since it directly or indirectly affects the community in the selected area. Another commonly used step during or after this is the involvement of local and regional stakeholders in the Joint Action, either as indirect participants providing information and support, or direct participants who are actively participating in the Joint Action and are an integral part of it. Other commonly used actions by partners include preparing common tenders and technical documentation, implementation of energy audits which provide experience and knowledge in the later Joint Action process, and finally the establishment and implementation of the defined Joint Action. Since the majority of the project partners decided on establishing Energy Matrices for multiple municipalities, implementing joint procurement and using a centralized system for financing, project implementation procedure and simplification and acceleration of the refurbishment process, it can be said that the end result and the connecting point of all the Joint Actions is the idea of practical collection of procedures in one centralized point in order to simplify the overall process. This collection is usually guided and monitored by an expert in the field of energy efficiency.

Pilot area/location selection

LP – ANATOLIKI S.A.:

The location of the PV installment will be at a Field of the Municipality of Thermi, capable of supporting a PV Park of 1MW of power.

PP1 – FAMP:

The 33 Municipalities with which FAMP had already been working for the study of the audits and SEAPs to be included in the ENERJ web platform, as well as the municipalities where the 10 initial audits were carried out, have been choose as initial pilot area.

PP2 – IRENA:

Pilot area/location is in Istrian Region; City of Poreč and Novigrad and Municipality of Motovun.

PP3 – CEA:

The pilot area is the Akamas Peninsula area that have elaborated Energy Audits in their buildings.

PP4 – GDA:

The pilot area covers the whole island of Gozo.

PP5 - CITTÀ METROPOLITANA ROMA:

Metropolitan area

PP6 – GOLEA:

On a basis of the document „selection criteria" 10 sports halls were identified. The selection critera were the following: - sports halls are owned by municipalities sports hall in statistical region of Goriška and Obalno-Kraška, - sports hall in use at least 5 days/week and 6 hours/day, - lighting system was not renovated in last 5 years, - absence of on-going energy contracting or other service that ensures energy savings from provision of lighting of the facility. The sport halls are all located in Primorska region.

PP7 – MEI:

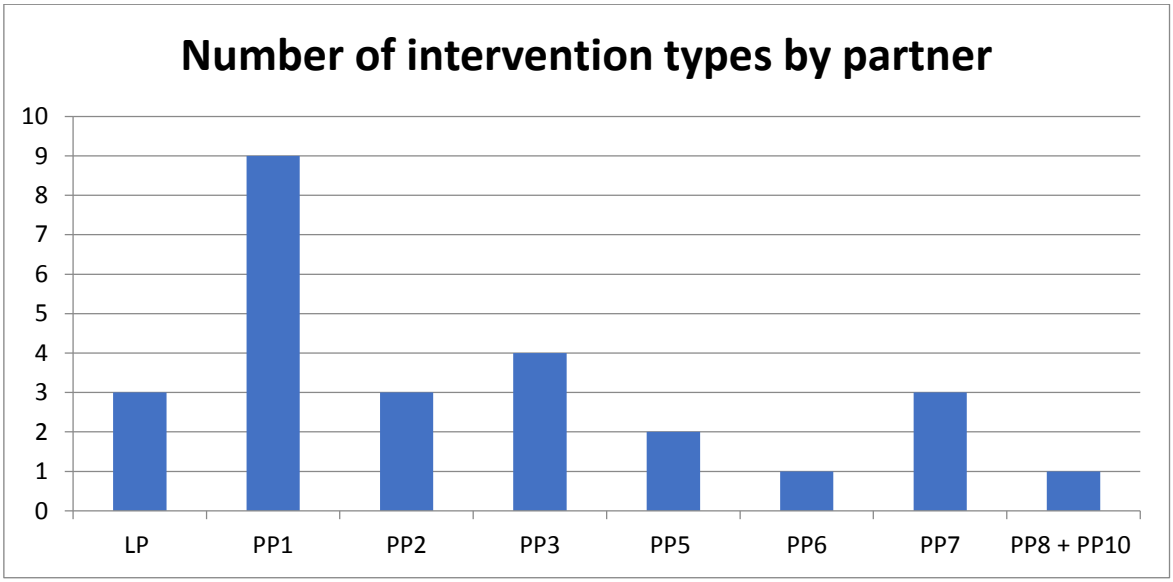
Investment for improved EE and Installation of solar panel for hot water in four municipalities (Public Buildings).

PP8 + PP10 – AREANATEJO + CIMAA:

Sub-region of Alto Alentejo

Foreseen number of interventions:

LP – ANATOLIKI S.A.:	3
PP1 – FAMP:	9
PP2 – IRENA:	3
PP3 – CEA:	4
PP4 – GDA:	Data not available
PP5 - CITTÀ METROPOLITANA ROMA:	2
PP6 – GOLEA:	1
PP7 – MEI:	3
PP8 + PP10 – AREANATEJO + CIMAA:	1



Graph 16: Number of intervention types by partner

Number of intervention types by partner is shown in Graph 16. It is visible that for most partners, the number of intervention types vary between 1 and 4, while FAMP has 9 types of interventions in their Joint Action.

Intervention type and description

LP – ANATOLIKI S.A.:

Intervention #1 – Elaboration of studies regarding Energy Efficiency

Intervention #2 – Electricity Production by the installment of a PV Park of a total power of 1 MW

Intervention #3 – Actions regarding Energy Efficiency Increase for 14 Municipal Buildings

PP1 – FAMP:

Intervention #1 – AUDIT CAMPAIGN
Type: Diagnosis: Work methodology - Audits
Description: The aim is to establish a work methodology related to the implementation of Energy Efficiency actions within the municipalities adhered to REDEMA, linked to the realisation of a first phase of diagnosis through energy audits and certifications and a second phase of development of actions through the different funding sources that are available to local entities

Intervention #2 – TRAINING COURSES
Type: Training / Tools - Technical assistance
Description: FAMP will design and carry out courses for the two identified profiles (technical and political, control and verification and secretariat). These courses will be opened to those municipalities that are members of REDEMA, other than availability of both, conferences and taught or online courses. The contents of the course will be aimed at bringing the work of the technical staff familiar with Energy Efficiency and Energy Managers role.
The contents of the course for political profiles, control and verification and secretariat, will be aimed at improving the empowerment and awareness of the efficient use of ERDF funds and the various voluntary commitments acquired by local administrations, through a strategic framework and of energy planning carried out.

Intervention #3 – CAPACITY BUILDING COURSES
Type: Training
Description: The aim is to create a network structure, so that County Councils and Local Energy Agencies serve as multipliers of these training courses at various levels.
FAMP will also elaborate and carry out training courses for the

multiplying organisations, in order for them to carry out future training courses at the Local Entities' level.

Intervention #4 – FAMP COLLABORATION AGREEMENT - COUNTY COUNCILS

Type: Governance and awareness

Description: The aim is to generate synergies between FAMP and the County Councils in order to empower local governments to access the available funds and their most profitable use for the development of energy efficiency measures in public buildings. For this, through different meetings with the County Councils and Local Energy Agencies, local governments capacities will be identified in order to offer them resources for them to develop different roles and actions through REDEMA.

Intervention #5 – EVENTS FOR THE VISIBILISATION OF LOCAL GOVERNMENTS IN THEIR EFFORTS TOWARD A LOW CARBON ECONOMY

Type: Governance and awareness

Description: The aim is to visibilise good practices and cases of success in Andalusia Local Governments related to Low Carbon Economy actions, in order to empower Local Governments to develop energy efficiency measures in their public buildings. For this, FAMP will hold conferences and establish a series of Awards that recognise the work carried out by Local Governments in Andalusia in various aspects related to the implementation of measures that promote the Low Carbon Economy and can be identified as good practices and solutions or success stories.
In addition, a specific section will be developed on FAMP website that will serve as a Bank or Database of Good Practices and Success Stories of Local Governments adhered to REDEMA.

Intervention #6 – ENERJ WEB PLATFORM AND BUILDING GUIDES (BOOK OF THE PUBLIC BUILDING IN ANDALUCIA)

Type: Tools - Technical Assistance

Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to tools developed by FAMP European projects.
To this end, the web platform created in the ENERJ project will be disseminated, as a tool that gathers and processes energy information related to public buildings in Andalusia. To facilitate its use, specific sections will be included in the different training sessions for municipal technical staff.

In addition, an update of the Guides made by the Andalusian Energy Agency will be proposed, with the data obtained from the data collection of the public buildings of the Andalusian local governments in ENERJ web platform, with the aim of generating a "Municipal Building Guide", so that it serves as a "manual" or guide for municipal strategic energy planning.

Intervention #7 – GUIDES FOR SUSTAINABLE AND INNOVATIVE PUBLIC PROCUREMENT

Type: Tools - Technical Assistance

Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to the tools developed during the participation of FAMP in different European projects. To this end, the guides generated in GreenS project will be disseminated to include green criteria in public tenders, adapted to the new LCSP (public service contracts law).

Intervention #8 – ACTION PLAN FOR ANDALUSIA REGIONAL OPERATIONAL PROGRAM 2021-2027

Type: Tools - Technical Assistance

Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to tools developed by FAMP European projects. SUPPORT project Action Plan for Andalusian ERDF Regional Operational Program 2021-2027 will be disseminated to address the difficulties and barriers of Local Entities in the application of sustainable energy policies.

Intervention #9 – SUPPORT TOOLS: GUIDES, RECOMMENDATIONS, PLATFORM CATALOGUES, ENERGY MANAGEMENT TOOLS

Type: Tools - Technical Assistance

Description: It intends to bring added value to municipalities adhered to REDEMA through a series of basic services related to tools developed in FAMP Participatory Energy Efficiency Laboratory’s collaborative work process. For this, different activities will be convened to participating actors with the aim of identifying the different tools that favour and support municipal energy management. To do this, actors will be asked to include information in a database (tools, documents, guides, sheet catalogues, etc.). In addition, the presentation of these tools and tool database will be promoted in

different activities related to the Low Carbon Economy promoted or carried out by FAMP.

PP2 – IRENA:

Novigrad: Exterior wall repair. Remediation of capillary moisture. Repair of the flat roof of the bell tower. Construction of thermal insulation by laying of steam dam and mineral wool on the attic floor and construction of walking paths. Replacement of exterior joinery. Dismantling of existing air conditioners, disposal of freons in accordance with the Rules of the profession. Introduction of a heating / cooling system into a building with a VRF type heat pump. 20 kW solar power plant construction. Measuring energy consumption and CNUS.

Poreč: Exterior wall repair. Roof remediation: dismantling of cover, thermal insulation performance, surfacing, air layer and roof covering. In the price, the performance of the tinplate hangs. Replacement of exterior joinery. Design of a system with hot water solar collectors for hot water preparation. Dismantling of equipment in the boiler room.
Supply and installation of a new heat pump. Reconstruction of heating distribution.
Reconstruction of the complete kitchen block with the installation of new energy efficient appliances. LED lightning implementation. 15 kW solar power plant construction.

Motovun: Rehabilitation of stormwater drainage and construction of drainage around the building with appropriate rehabilitation of waterproofing. Exterior wall repair. Replacement of exterior joinery. New cover design, roof reconstruction. Removal of suspended ceilings and associated necessary landscaping. Reconstruction of the heating system. 7,5 kW solar power plant construction. Measuring energy consumption and CNUS.

PP3 – CEA:

Intervention #1 – Lighting replacement, installation of LED lighting in 4 buildings (Drousia primary school, Pegeia sports arena, Pano Arodes Community offices and Kato Arodes community offices)

Intervention #2 – Installation of 5kW PV system on the roofs of the Primary School of Drousia Community and the Multipurpose building of Peyia Municipality

Intervention #3 – Installation of roof insulation at the Pano Arodes Community offices, the Kato Arodes Community offices, the Neo Chorio Community offices and the Multipurpose building of Peyia Municipality

Intervention #4 – Installation of external thermal insulation at the Pano Arodes Community offices, the Kato Arodes Community offices and the Multipurpose building of Peyia Municipality

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Intervention #1 – Energy retrofit actions that are suitable to this category and can achieve important results with limited investments and short payback time are:

Interventions on heating systems:
Replacing existing furnaces with condensing boilers
Replacing existing pumping systems with highly efficient ones
Insulation of distribution pipes
Installation of thermostatic valves
Installation of climate control systems
Replacement of lighting systems using energy efficient light bulbs or LEDs;
Installation of Building-integrated Photovoltaics on roofs.

Intervention #2 – Within the framework of its role as Covenant of Mayors Coordinator, CMR intends to involve the Municipalities that

signed the CoM in the promotion and implementation of initiatives for awareness raising and education on energy saving, both in public offices and schools.

PP6 – GOLEA:

10 interventions

Intervention #1 – Instalation of LED lightning systems

PP7 – MEI:

Intervention #1 – Elaboration of studies regarding Energy Efficiency

Intervention #2 – Hot water production (Public Buildings) and investment for EE

Intervention #3 – Actions regarding Energy Efficiency Increase for 12 Municipal Buildings

PP8 + PP10 – AREANATEJO + CIMAA:

Intervention #1 – The elaboration of the Static and Prospective Energy Matrices was structured around the following general objectives:

i. To allow the updating of the statistical inventory related to energy demand and greenhouse gas emissions, by sector of activity, year and energy vector with integration of the energy matrix and the other numerical, statistical, geographic and electronic platform documents A model of static characterization and simulation of decisions on regional public projects, plans and policies should be made available / developed;

ii. Provide reliable, up-to-date and reliable information for the exploitation of energy, economic, social and environmental indicators, for the promotion of energy and climate efficiency and for the mobilization of public, business and private agents;

iii. Support initiatives aimed at promoting the local and regional sustainability strategy and to boost their respective impacts on innovation, competitiveness, investment attraction, internationalization and economic growth.

The Static and Prospective Energy Matrixes characterize the energy

flows and consequent emissions of greenhouse gases in the territory involved. They determine the energy balance based on historical and recent data on the use of energy sources and vectors and their distribution and allocation by sectors of economic activity. This task is of high importance, taking into account the monitoring of energy efficiency improvement measures implemented in the region (monitoring and control), but also in the preparation of future interventions, in a planned and phased manner with all stakeholders.

Intervention activity/installation cost

LP – ANATOLIKI S.A.:

Intervention #1 – Costs depend on the type of studies to be implemented and the result of the tender

Intervention #2 – The total investment cost is estimated at € 1 / W, or € 1,000,000 (1MW).

Interest rate: 3,75%
Duration of loan 5 years
Monthly Amortization Amount (total for all 3 Municipalities): € 8,346.59
Annual installment of amortization installments: € 100,159.08
Protection against theft and vandalism service. Annual cost: € 1,000
Cleaning of the surfaces of PVs, mainly after rains. Annual cost: € 1,500
Cleaning the field from grass. Annual cost: € 800
Insurance service. Annual cost: € 3,000
Rent for the use of the field (23 ha x 100 € per acre): € 2.300
Total Annual Cost: € 9,600

Establishment costs for En. Com.: 6.160 € broken down as:
Fund raising capital: € 5.160
Legal assistance: € 1.000
The equity capital that the 3 Municipalities will invest amounts to € 60,000 (€ 20,000 per municipality) (Law 4513 / 2018) and will come from own resources.
The Municipalities will receive a loan from the Deposits and Loans Fund Mechanism amounting to 456,000 € (152,000 € per each

Municipality) to be paid as cooperative capital.
The investment will be subsidized by 50% by National Funds

Intervention #3 – Regarding the interventions specified in the context of the audits of the 14 Municipal buildings, the overall cost for upgrading them at least to energy class B, has been estimated to approximately 1,5 million euros, with an average payback period of 16,5 years.

PP1 – FAMP:

Intervention #1 - 9 – To be defined

PP2 – IRENA:

Intervention #1 – Novigrad (1. 20.300,00 €; 2. 34.000,00 €; 3. 4.700,00 €; 4. 5.400,00 €; 5. 38.700,00 €; 6. 700,00 €; 7. 40.500,00 €; 8. 60.800,00 €; 9. 20.300,00 €) (total 225.400 €)

Intervention #2 – Poreč (1. 110.000,00 €; 2. 71.000,00 €; 3. 85.700,00 €; 4. 6.000,00 €; 5. 1.600,00 €; 6. 51.300,00 €; 7. 18.900,00 €; 8. 40.500,00 €; 9. 42.500,00 €; 10. 2.900,00 €; 11. 7.500,00 €; 12. 4.700,00 €; 13. 12.100,00 €; 14. 40.500,00 €; 15. 20.200,00 €) (total 515.400 €)

Intervention #3 – Motovun (1. 40.500,00 €; 2. 40.200,00 €; 3. 5.400,00 €; 4. 37.500,00 €; 5. 1.300,00 €; 6. 40.500,00 €; 7. 16.800,00 €; 8. 10.100,00 €) (total 192.300 €)

PP3 – CEA:

Intervention #1 – 9.733,00 EUR

Intervention #2 – 13.000,00 EUR

Intervention #3 – 6.614,00 EUR

Intervention #4 – 17.436,00 EUR

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Intervention #1 – 35 million EUR: 1,350,000 (EIB through ELENA), 150,000 (CMR), 33,500,000 (private investments by ESCOs).

Intervention #2 – Not defined

PP6 – GOLEA:

10 interventions

Intervention #1 – 225.462,64 EUR (VAT excluded)

PP7 – MEI:

Intervention #1 – Costs depend on the type of studies to be implemented and the result of the tender

Intervention #2 – The total investment cost is estimated at € 3,104,025 Euro

Investment: Grant from EU project and donors (Swiss Government and KfW bank)

Contribution: 15 % Albania Government and 85 % EU and donors

Gjirokastra Municipality : 724,641 Euro
Permenti Municipality: 556,681 Euro
Vlora Municipality: 858,520 Euro
Saranda Municipality: 964,183 Euro

Municipalities will be supported by budget of Albania government.

Intervention #3 – Regarding the interventions specified in the context of the audits of the 12 Municipal buildings, the overall cost for upgrading them at least to energy class B, has been estimated to approximately 3.1 million euros, with an average payback period of 16.89 years.

PP8 + PP10 – AREANATEJO + CIMAA:

Intervention #1 – Not specified

LP	2.500.000 €
PP1	TBD
PP2	933.100 €
PP3	11.695 €
PP5	35.000.000 €
PP6	225.463 €
PP7	3.104.025 €
PP8+10	TBD

Table 38: Intervention cost by parter (in EUR)

In table 35 we can see the projected intervention costs for each partners' Joint Action from the data currently available. The highest estimated amount is 35 million EUR for CITTÀ METROPOLITANA ROMA's Joint Action. The total intervention cost amount sum from all the partners is 41,7 million EUR.

Intervention expected savings

LP – ANATOLIKI S.A.:

Intervention #1 – The energy savings will incur at a later stage after the implementation of the studies' findings.

Intervention #2 – The plant will produce 1.300 MWh (=1.300.000 KWh) of electricity per year, which will be distributed to each Municipality, in proportion to its participation in the Energy Community. Energy consumption saved: 0.1 € / KWh. Annual savings: 130,000 €. Part of this amount will be invoiced to the Municipalities (or their Legal Entities) which consume the electricity.

Intervention #3 – In case of the implementation of all the proposed interventions for the 14 buildings the maximum energy efficiency gain is expected to reach 58% compared to the situation before the interventions (i.e. energy gains of 1,678 kWh/year).

PP1 – FAMP:

Intervention #1 - 9 – The measures proposed with an energy consumption reduction goal of 7577.74Mwh/year, there are almost 4200Mwh/year not reached, since the actions proposed in the buildings have not been initiated.

PP2 – IRENA:

To be determined.

PP3 – CEA:

Intervention #1 – Energy Savings: 8,899 kWh, Money Savings: 1,334.92 EUR, Simple payback: 7 years

Intervention #2 – Energy Savings: 18,000 kWh, Money Savings: 2,700.00 EUR, Simple payback: 5 years

Intervention #3 – Energy Savings: 13,200 kWh, Money Savings: 1,980.00 EUR, Simple payback: 3 years

Intervention #4 – Energy Savings: 6,941 kWh, Money Savings: 1,041.00 EUR, Simple payback: 17 years

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Intervention #1 – Energy retrofit actions that are suitable to this category and can achieve important results with limited investments and short payback time are:
Interventions on heating systems: energy saving 15/20% - payback time 8/10 years;

Replacement of lighting systems using energy efficient light bulbs or LEDs: energy saving 40/60 % - payback time 3/5 years;
Installation of Building-integrated Photovoltaics on roofs: payback time 8-10 years.

Intervention #2 – Expected energy saving is 5-8 % for each office/school involved in the initiative.

PP6 – GOLEA:

Intervention #1 – 117 MWh, 26.800 €/year, ROI = 11 years (without subsidy), 9 years (25% subsidy)

PP7 – MEI:

Intervention #1 – The energy savings will incur at a later stage after the implementation of the studies' findings.

Intervention #2 – Energy Saving Municipality of Gjirokastra (3 public buildings) : 144,816 kwh/a
Energy Saving Municipality of Permeti (3 public buildings): 104,435 kwh/a
Energy Saving Municipality of Saranda (3 public buildings): 146,576 kwh/a
Energy Saving Municipality of Vlora (3 public buildings): 158, 487 kwh/a
Annual Saving: 554,314 Euro
IIR: 16.89 %

Intervention #3 – In case of the implementation of all the proposed interventions for the 12 buildings the maximum energy efficiency gain is expected to reach 55% compared to the situation before the interventions (i.e. energy gains of 46,192 kWh/year).

PP8 + PP10 – AREANATEJO + CIMAA:

Intervention #1 – Not specified

	MWh/year	EUR/year	Payback time
LP	1.301,67	130.000,00	5-17 years
PP1	7.577,74		
PP3	47,04	7.055,92	3-17 years
PP6	117,00	26.800,00	9-11 years
PP7	600,50	554.314,00	17 years

Table 39: Intervention total expected savings per partner

Table 36 shows the currently available data regarding total expected savings in MWh per year and Euros per year, as well as the estimated payback time for each project partners' Joint Action. The total annual savings listed equal to 9.643 MWh or 718.169 EUR.

Number of structures involved

LP – ANATOLIKI S.A.: 14

PP1 – FAMP: In a first approximation, a study was made of the state of implementation of 20 Andalusian municipalities, which had included in their SEAPs energy efficiency actions in 480 public buildings, of which almost 180 have not carried out their energy measures included in the audits.

PP2 – IRENA: 3

PP3 – CEA: 5

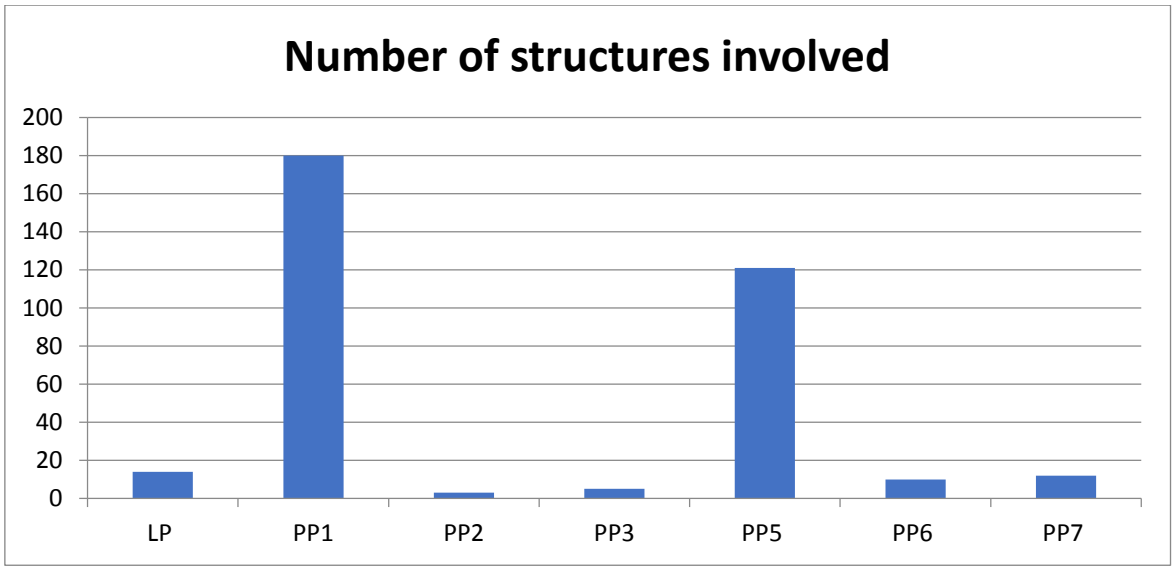
PP4 – GDA: Data not available

PP5 - CITTÀ METROPOLITANA ROMA: 121

PP6 – GOLEA: 10

PP7 – MEI: 12

PP8 + PP10 – AREANATEJO + CIMAA: In the elaboration of the Energy Matrices, the domestic, industrial, industry, services and transportation sectors are characterized, and the infrastructures that compose them are analyzed globally.



Graph 17: Number of structures involved by partner

Graph 17 shows the total number of structures involved in the Joint Action for each partner. It is visible that the number of structures is very different for each Joint Action, showing the different scope of the Joint Action effect for each partner. Partners whose numbers are yet undefined have not been included in the graph. The total number of involved structures is 345.

Structure details

LP – ANATOLIKI S.A.:

Structure #1 – Building type: Financial services Thermi

Municipality: Thermi

Type: Administrative

m^2: 3883,9

Class: C

Annual KWh: 876.596,2 0

Structure #2 – Building type: Town hall Thermi

Municipality: Thermi

Type: Administrative

m^2: 532,82

Class: C

Annual KWh: 119.831,2 0

Structure #3 – Building type: Administrative services Vasilika

Municipality: Thermi

Type: Administrative

m^2: 529,85

Class: C

Annual KWh: 134.740,9 0

Structure #4 – Building type: Administrative services – Social services for the elderly - Municipal medical office

Municipality: Thermi

Type: Administrative

m^2: 94,27

Class: C

Annual KWh: 36.982,12

Structure #5 – Building type: Administrative services - Trilofos

Municipality: Thermi

Type: Administrative

m^2: 560,91

Class: C

Annual KWh: 124.746,4 0

Structure #6 – Building type: High School

Municipality: Pylaia - Hortiatis

Type: School

m^2: 2733

Class: D

Annual KWh: 321.674,1 0

Structure #7 – Building type: 1st Elementary school

Municipality: Pylaia - Hortiatis

Type: School

m^2: 3726

Class: D

Annual KWh: 408.742,2 0

Structure #8 – Building type: 2ND High School Pilea

Municipality: Pylaia - Hortiatis

Type: School

m^2: 2910,32

Class: D

Annual KWh: 392.893,2 0

Structure #9 – Building type: 2nd Elementary school

Municipality: Pylaia - Hortiatis

Type: School

m^2: 2441

Class: D

Annual KWh: 289.258,5 0

Structure #10– Building type: 9 Elementary school

Municipality: Kalamaria

Type: School

m^2: 529,56

Class: F

Annual KWh: 131.595,7

Structure #11– Building type: 23rd High School

Municipality: Kalamaria

Type: School

m^2: 2792,74

Class: C

Annual KWh: 288.490

Structure #12– Building type: 3 High school

Municipality: Kalamaria

Type: School

m^2: 2.755,44

Class: D

Annual KWh: 348.012,1 0

Structure #13– Building type: 1 st Elementary school Neo

Municipality: Kalamaria

Type: School

m^2: 1.879

Class: D

Annual KWh: 235.062,9 0

Structure #14– Building type: 1st Elementary school Palio

Municipality: Kalamaria

Type: School

m^2: 596,11

Class: G

Annual KWh: 157.909,5

PP1 – FAMP:

Buildings of different types
Area of intervention: mainly on energy efficiency for lightning systems, renewable energy for space heating and hot water and/or integrated actions/varies

PP2 – IRENA:

Structure #1 – Kindergarten, Address: Otokara Keršovanija 14, Year: 1912, Size: 692,1 m2, floors: 3

Structure #2 – City administration, Address: Veliki trg br. 1, Year: 1609, Size: 590 m2, floors: 3

Structure #3 - Health centre, Address: Kanal 4, Size: 212,84 m2, floors: 1

PP3 – CEA:

Structure #1 – NAME: Drousia Community Primary School - TYPE: School building - ADDRESS: Lahis street no.5, 8700 Drousia, Pafos - YEAR: 2004 - SIZE: 492m^2

Structure #2 – Building type: NAME: Peyia Municipali Stadium - TYPE: Sport Facility - ADDRESS: Lahis street Demoticou Stadiou street, Pegia, Pafos - YEAR: 2004 (2008 refurbished) - SIZE: 1984 m^2 (2 floors)

Structure #3 – Building type: NAME: Kato Arodes Community Offices - TYPE: Administrative building - ADDRESS: 8702, Kato Arodes, Pafos - YEAR: UNKNOWN (refurbished in 2014) - SIZE: 99 m^2

Structure #4 – Building type: NAME: Pano Arodes Community Offices - TYPE: Administrative building - ADDRESS: Pano Arodes, 8703 Pafos, Cyprus - YEAR: 1930 - SIZE: 112.85 m^2

Structure #5 – Building type: NAME: Peyia Multipurpose Building - TYPE: Care Centre - ADDRESS: Evangelou Floraki street, no.20, Pegeia Pafos - YEAR: 1996 - SIZE: 410 m^2 (2 floors)

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

121 buildings from 5 municipalities

Structure #1 – Building type: 75 school buildings
20 public office buildings
8 sports buildings
18 other types of buildings (libraries, cemeteries, museums…)

PP6 – GOLEA:

Structure #1 : Sport hall (telovadnica OŠ Tolmin), address: Ulica padlih borcev 2, Tolmin, year: 1977, size: 2.858 m2 (2 floors)

Structure #2 : Sport hall (Modra dvorana Idrija), address: Lapajnetova ulica 48, Idrija, year: 1982, size: 2.455 m2 (2 floors)

Structure #3 : Sport hall (Telovadnica OŠ A. Žnideršiča), address: Rozmanova ulica 25b, Ilirska Bistrica year: 1989, size: 2.193 m2 (2 floors)

Structure #4: Sport hall (Telovadnica OŠ Livade), address: Livade 7,Izola, year: 1994, size: 1.300 m2 (2 floors)

Structure #5: Sport hall (Telovadnica v Kraški ulici), address: Kraška 1, Izola, year: 1982, size: 1.700 m2 (1 floor)

Structure #6: Sport hall (Telovadnica OŠ Hrpelje), address: Reška cesta 30, Hrpelje, year: 1991, size: 1.374 m2 (1 floor)

Structure #7: Sport hall (Telovadnica OŠ Deskle), address: Srebrničeva 10, Deskle, year: 2007, size: 816 m2 (1 floor)

Structure #8: Sport hall (Telovadnica Sežana), address: Partizanska cesta 4, Sežana, year: 1977, size: 1.767 m2 (1 floor)

Structure #9: Sport hall (Telovadnica OŠ Komen), address: Komen 61a, Komen, year: 1995, size: 855 m2 (1 floor)

Structure #10: Sport hall (Telovadnica OŠ Divača), address: Ul. Dr. Bogomira Magajne 4, Divača, year: 1970 size: / m2

PP7 – MEI:

Structure #1 – Building type: School Avni Rustemi

Municipality: Vlore

Type: School

m2: 2285

Class: G

Annual KWh: 429.951

Structure #2 – Building type: School Marigo Posjo

Municipality: Vlore

Type: School

m2: 2588

Class: G

Annual KWh: 288.577

Structure #3 – Building type: School Teli Ndini

Municipality: Vlore

Type: School

m2: 1824

Class: F

Annual KWh: 310.000

Structure #4 – Building type: School “Hasan Tahsini”

Municipality: Sarande

Type: School

m2: 3594

Class: G

Annual KWh: 640.218

Structure #5 – Building type: School “Adem Sheme”

Municipality: Sarande

Type: School

m2: 833,22

Class: F

Annual KWh: 251.760

Structure #6 – Building type: Kindengarten Nr. 3 "Cicerimat"

Municipality: Sarande

Type: Kindergarten

m2: 522

Class: F

Annual KWh: 115.052

Structure #7 – Building type: Koto Hoxhi

Municipality: Gjirokastra

Type: School

m2: 3726

Class: F

Annual KWh: 606.716

Structure #8 – Building type: Cicerimat

Municipality: Gjirokastra

Type: Kindergarden

m2: 2910,32

Class: F

Annual KWh: 215.511

Structure #9 – Building type: Bilal Golemi

Municipality: Gjirokastra

Type: School

m2: 2441

Class: G

Annual KWh: 140.670

Structure #10– Building type: High school Piskova

Municipality: Permet

Type: School

m2: 1335

Class: G

Annual KWh: 206.806

Structure #11– Building type: High school Sami Frasheri

Municipality: Permet

Type: School

m2: 2524

Class: F

Annual KWh: 379.048

Structure #12– Building type: Kindengarten nr.1

Municipality: Permet

Type: Kindergarten

m2: 636

Class: F

Annual KWh: 379.048

PP8 + PP10 – AREANATEJO + CIMAA: Not specified

The structure details show the different building types and characteristics used in the Joint Action process by the project partners. It shows the buildings' dimensions, energy class, administrative location and function and annual energy expenditure.

Foreseen implementation timeline period

LP – ANATOLIKI S.A.:

The Establishment of the Energy Community will be completed within the first month of the operating schedule. Once it has been established a tender will take place within the second month in order to assure the most suitable offer regarding the energy upgrade of the 14 buildings. Regarding the supply and installment of the 1MW PV park, its construction will take place simultaneously and it can be completed amd connected to the electricity grid within the third month of the Energy Community's operation.

PP1 – FAMP:

Intervention #1: Short-Mid Term (2019-2021)
Intervention #2: Short Term (2019)
Intervention #3: Short-Mid Term (2019-2021)
Intervention #4: Short-Mid Term (2019-2021)
Intervention #5: Short-Mid Term (2019-2021)
Intervention #6: Short Term (2019)
Intervention #7: Short Term (2019)
Intervention #8: Short Term (2019)
Intervention #9: Short-Mid Term (2019-2021)

PP2 – IRENA:

Interactive workshops that will stimulate the exchange of experience and knowledge of the focus groups' stakeholders and ultimately, as a consortium, to enable the process management to be carried out through the preparation of the technical documentation of the energy reconstruction is planned to be finished by the end of September 2019.

PP3 – CEA:

3 months for finalising procurement documents, 2 months for procurement selection process, 1 month to initiate contract, 8 months for implementation. Total of 14 months for the implementation.

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

The estimated time needed for the implementation of the joint action is 4 years: 1 year to present the proposal to the ELENA Programme, 3 years for the tendering procedures and the implementation of the interventions.

PP6 – GOLEA:

2020/2021

PP7 – MEI:

Municipalities energy group will be completed within the second month of the operating schedule. Once it has been established a tender will take place within the third month in order to assure the most suitable offer regarding the energy upgrade of the 12 buildings.

PP8 + PP10 – AREANATEJO + CIMAA: Not specified

LP	Short term (2019)
PP1	Short term (2019) Short-Mid term (2019-2021)
PP2	Short term (2019)
PP3	Short-Mid term (2019-2021)
PP5	Long term (2019-2023)
PP6	Short-Mid term (2019-2021)
PP7	Short term (2019)

Table 40: Implementation timeline period by partner

Most of the parters' Joint Action implementation timeline period is either short or short-mid term, as seen in Table 37, with only one partner implementing their Joint Action long term, over the span of 4 years. This means that most of the Joint Action could be completed in a relatively short period, allowing them to generate a useful effect sooner, rather than later.

Joint Action promotion

LP – ANATOLIKI S.A.:

Promoting through press releases as well as the shareholders' websites and social media platforms.

PP1 – FAMP:

The main way to promote the adhesion of municipalities to the Network will be through communication with the municipalities adhered to FAMP, such as letters, circulars, announcements, emails, and so on; or through events where the Network is presented and the possibility of its adhesion is offered. A specific Regional Conference will be developed to promote the adhesion to REDEMA June of 2019. In addition, the work through FAMP Commissions, especially with Urbanism and Environment Commissions, will multiply the dissemination effect among Andalusian municipalities. FAMP already has the Participatory Energy Efficiency Laboratory, which includes several municipalities working on Low Carbon Economy, as well as a Network of Cities with Sustainable and Integrated Urban Development Strategies, shaped by those municipalities with more than 20,000 inhabitants which have obtained funding to develop their strategy. Therefore, the objective will be these

municipalities already working in another Networks related with FAMP, as well as the dissemination of REDEMA among municipalities with less than 20,000 inhabitants.
In addition, for the ENERJ project, as for other European projects related to low carbon economy, work is being carried out with a number of municipalities, carrying out audits, identifying good practices, analysing SEAPs, and so on. Through the recognition of these municipalities through conferences, prizes or their inclusion in databases or banks of good practices, by example, will encourage the adhesion to the Network, to producing a higher recognition of the work developed in a Low Carbon Economy by Andalusian Local Authorities. This option is included as an operation within REDEMA's Governance work line, since one of the Network's objectives is to gradually increase the number of municipalities involved in it, achieving higher quality in the exchange of information and practices as well as increasing the number of beneficiaries and potential improvements in municipal management.

PP2 – IRENA:

Further meetings with stakeholders, dissemination of information via social media and IRENAs' and stakeholders' institutional website

PP3 – CEA:

Promotion through the Local authorities' websites and the Cyprus Energy Agency Newsletter.

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Further meetings with stakeholders, dissemination of information via social media and CMR institutional website.

PP6 – GOLEA:

Through the project activity 4.2 several activities were implemented and events were organised with the aim of promotion of joint action as follows: - on 24/08/2018 the Borzen meeting was organised in order to strengthen the networking between key stakeholders and to design the conference starting point (on 18/09/2018). To this end the selected key stakeholders and representatives of state bodies were invited to take part at meeting. In addition, participants discussed about the present situation in energy field and possibilities of spreading best practices in relation to innovative measures for financing joint measures. - on 18/08/2018 the technical conference was organised by Borzen in the city of Ljubljana. The event was intitled »Sustainable Energy Locally 18 – how to finance and implement RES and EE interventions through municipal networking«. There were two main event topics: 1. Cooperation and netwoorking increments the financing possibilities to realise the RES and EE investment projects (Rajko Leban director of GOLEA, mayor of Novo Mesto municipality and mayor of Idrija municipality presented the existing joint projects in energy field (one of it was also a joint action that was defined by GOLEA within ENERJ project – refurbishment of indoor lightning within sports halls) and the topic n.2 was Interactive discussion between participants. - On 14/09/2018 GOLEA organised a workshop "Joint actions for energy refurbishment and increase of RES in public buildings" in order to transfer the knowledge about the local joint action identified by GOLEA. - a supporting tool at planning process of joint action investments for increasing EE of buildings was developed by GOLEA on a basis of SISMA SET tool. - on 07/06/2019 the upgraded tool was presented at the "XXIV. meeting of entrepreneurs and businessmen of the Posočje region".

PP7 – MEI:

Promoting through press releases as well as the shareholders' websites and social media platforms.

PP8 + PP10 – AREANATEJO + CIMAA: Not specified

The majority of the promotion of the Joint Actions will be done through social media platforms and partners' and stakeholders' institutional websites, while the other, less frequent forms of promotion include e-mails and other forms of communication with the stakeholders, promotional events, workshops and conferences, newsletters, networking systems and future collaboration with the stakeholders. These forms of promotions should be sufficient in effectively and positively promoting the Joint Actions and ensuring its operational longevity.

Perceived risks/obstacles regarding Joint Action implementation

LP – ANATOLIKI S.A.:

None

PP1 – FAMP:

The Network must be provided with sufficient economic and human resources. 'Soft measures' related to the coordination and governance and the training courses should be the priorities to be developed and offered within the Network in the initial steps, because several municipalities have not carried out energy efficiency actions in public buildings mainly due to the obstacles of lack of technical personnel and the difficulty that bureaucracy issues represent for them as bottle neck, so it would overcome these situations. The adhesion to REDEMA by Local Authorities could be seen with non-added value.

PP2 – IRENA:

None

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

A problem could be due to the lack of interest on the part of the ESCOs to finish the prepared projects.

PP6 – GOLEA:

Summarizing the main obstacles/risks regading JA implementation: - the municipalities expressed concern about the length of ESCO selection process, number of ESCOs bidding for public projects is low and consequentlly there is a low competition, planning ahead - investments must be planned in municipal budgets (end of the year), lack of municipal own founds.

PP7 – MEI:

None

PP8 + PP10 – AREANATEJO + CIMAA: None

The main perceived risks from the partners can be summarized to lac kof interest and problems during ESCO selection process, as well as possible lack of economic resources and possibility of the Joint Action end value not being recognized, therefore not being transferable and usable.

Possible solutions regarding perceived risks/obstacles regarding Joint Action implementation

LP – ANATOLIKI S.A.:

None

PP1 – FAMP:

For the possible risks regarding sufficient economic and human resource, the collaboration with key stakeholders as the Energy Agencies (at Regional and County level) is essential. Without their collaboration, the initial actions that could be developed by FAMP own resources are limited without considering the possibility to submit and

get new EU cooperation projects funds.
It is crucial to provide to the Network with enough content and its communication so the municipalities would see its value. For that purpose, the process developed gradually and all the work for the implementation of measures to improve energy conditions at Andalusian Local Authorities up to the creation of the Network would be transmitted through the additional Conferences prepared for its launching, adhesion and implementation.

PP2 – IRENA:

None

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Building interventions packages that are actually interesting and sustainable from an economic-financial point of view.

PP6 – GOLEA:

Establishment of presence of joint coordinators or strenghtening the role of energy agencies is important in order to shorten the preparation time and to accelerate in order to accelerate the realisation. GOLEA which is an energy manager of 23 municipalities in Primorska region already overtook this role in different past occasions as it already implemented some joint actions in the field of EE and RES.

PP7 – MEI:

None

PP8 + PP10 – AREANATEJO + CIMAA:

None

The possible solutions regarding perceived risks and obstacles to Joint Actions include emphasis on collaboration with key stakeholders, providing them with sufficient content and strengthening and maintain communication in order to demonstrate the Joint Action value, producing interesting and sustainable intervention options and establishing the Joint Action coordinators for better implementation effectiveness.

3.2.2. COMPARISON SUMMARY CONCLUSION

The Joint Actions set by the project partners, although varied in type and size, have connecting points that show the similarities in structure and implementation process. Although the data is incomplete because of procedural delays and other reasons, with a detailed analysis it is possible to show these similarities in different sections and project periods from the existing data.

ANATOLIKI S.A.'s Joint Action includes the establishment of an Energy Community consisting of three neighbouring Local Authorities for improving Public Buildings Energy Efficiency and establishing a 1MW PV investment, a structure similar also to FAMP's Joint Action which will use REDEMA Energy Network in order to connect Andalusian Municipalities and ease the energy refurbishment process, and similar to the Joint Actions of MEI and AREANATEJO and CIMMA who will also both use this approach for their respective communities. The goal of this kind of Joint Action is the same for all the partners – establish a common platform to facilitate the communication, preparation, action and monitoring process of the energy efficiency measures in the community. The Joint Action process for IRENA includes defining the methodological approach for the restoration of protected and other complex public buildings, effectively facilitating the whole process. CEA's Joint Action consists of joint procurement for energy upgrading, which will enable a more effective supply chain and leverage for implementing energy measures in the community. CITTÀ METROPOLITANA ROMA will use the

Metropolitan energy efficiency actions on public buildings as their Joint Action, while GOLEA will renovate the indoor lighting in sports halls in the Primorska region.

The partners also have multiple intervention types which are different for each partner. The number of intervention types for the partners vary between 1 and 4, with FAMP having the highest number of interventions in their Joint Action (9). Also, the projected intervention costs for each partners' Joint Action are very different and vary from 11.695 EUR up to 35 million EUR. This shows the different energy efficiency and financial goals set by each partner, as well as the scope of commitment and intervention effect. The total intervention cost amount sum from all the partners is 41,7 million EUR. The savings in MWh/year are predicted in the range from 47,04 MWh/year to 7.577,74 MWh/year, with the payback time period from 3 to 17 years. The total annual savings listed equal to 9.643 MWh or 718.169 EUR.

Each partner has also selected a certain number of structures to be included in the Joint Action, ranging from 3 to 180. The total number of structures involved in the Joint Action show the different scope of the Joint Action effect for each partner. The total number of involved structures from all the partners is 345.

Most of the partners' Joint Action implementation timeline period is either short or short-mid term, with only one partner implementing their Joint Action long term, over the span of 4 years. This means that most of the Joint Actions will be completed in a relatively short period, allowing them to generate a useful effect sooner, rather than later. This will also effect the promotional process, that will be in effect in the short period since there will be concrete and visible results, so the value of the Joint Actions will be more approachable, measurable and understandable .

Since, according to the partners' reports, the majority of the promotion of the Joint Actions will be done through social media platforms, partners' and stakeholders' institutional websites, e-mails, promotional events, workshops and conferences, newsletters, networking systems and so on, the promotional value of the project and the Joint Actions, if all the partners adhere and dedicate themselves to promotional

activities, should be substantial and should provide a solid foundation for enabling future Joint Actions.

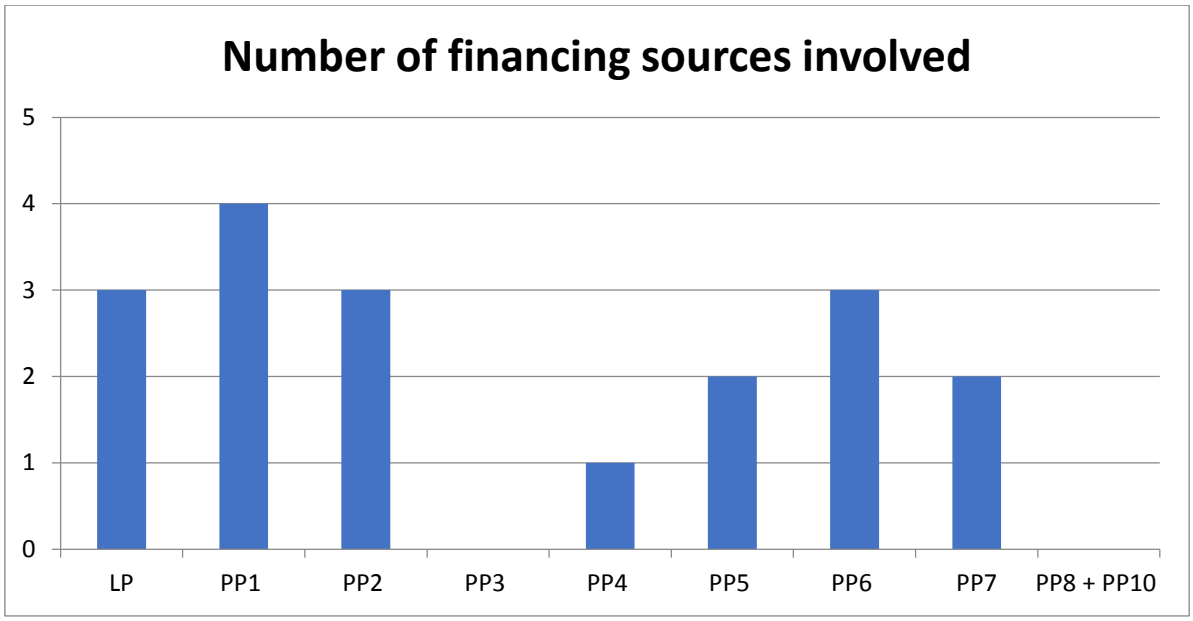
3.3. FINANCING AND MARKET RISKS & OPPORTUNITIES

The section regarding the financing and market risks & opportunities takes into consideration the financial sources used and their details, as well as the estimation of the overall value of investment and of potential savings. This can be used to demonstrate the available financing options associated with the Joint Action as well as the potential financing and market risks and opportunities that can occur during the implementation process.

3.3.1. COMPARISON OF FINANCING AND MARKET RISKS & OPPORTUNITIES DATA BY PROJECT PARTNER

Number of financing sources involved

LP – ANATOLIKI S.A.:	3
PP1 – FAMP:	4
PP2 – IRENA:	3
PP3 – CEA:	None
PP4 – GDA:	1
PP5 - CITTÀ METROPOLITANA ROMA:	2
PP6 – GOLEA:	3
PP7 – MEI:	2
PP8 + PP10 – AREANATEJO + CIMAA:	None



Graph 18: Number of financing sources involved per partner

In Graph 18 we can see the number of financing sources used by each partner for Joint Action financing. The number of financing sources varies between 2 and 4, but the data provided by the partners is still incomplete.

Financing source name/title

LP – ANATOLIKI S.A.:

Financing source #1 – Municipalities' own Funding

Financing source #2 – Loan

Financing source #3 – National Funds through Investment Law

PP1 – FAMP:

Financing source #1 – Interreg Europe - Pilot Action

Financing source #2 – Regional, County and Local Energy Agencies + County Councils own funds

Financing source #3 – ERDF OP for Andalusia 2014-2020 / Andalusian Energy Agency Order of Incentives

Financing source #4 – FAMP's Lifelong Learning

PP2 – IRENA:

Financing source #1 – Public

Financing source #2 – Public

Financing source #3 – Public

PP3 – CEA:

None

PP4 – GDA:

Financing source #1 – ELENA fund

PP5 - CITTÀ METROPOLITANA ROMA:

Financing source #1 – Public

Financing source #2 – Private

PP6 – GOLEA:

Financing source #1 – 10 involved municipalities

Financing source #2 – Not defined private company

Financing source #3 – ECO Fund

PP7 – MEI:

Financing source #1 – EU Programe (IPA Cross Border Greece Albania)

Financing source #2 – Swiss Government Fund

PP8 + PP10 – AREANATEJO + CIMAA:

None

Financing source organization structure

LP – ANATOLIKI S.A.:

Financing source #1 – Municipality

Financing source #2 – Each Municipality will obtain a loan from the Deposits and Loans Funding Mechanism amounting to 152.000 € (A total of 456.000 € for the three Municipalities involved

Financing source #3 – National Funds

PP1 – FAMP:

Financing source #1 – Cooperation project

Financing source #2 – Regional, county and local public entities

Financing source #3 – Regional Energy Agency from the Regional Government of Andalusia

Financing source #4 – Local Entities Federation

PP2 – IRENA:

Financing source #1 – City of Poreč

Financing source #2 – City of Novigrad

Financing source #3 – City of Motovun

PP3 – CEA:

None

PP4 – GDA:

Financing source #1 – EU funding

PP5 - CITTÀ METROPOLITANA ROMA:

Financing source #1 – Municipality

Financing source #2 – Bank, Esco

PP6 – GOLEA:

Financing source #1 – Municipality

Financing source #2 – Private company (ESCO)

Financing source #3 – Financial institution of the Republic of Slovenia, promotes investments that comply with the National Environmental Action Plan and the Environmental Policy of the European Union.

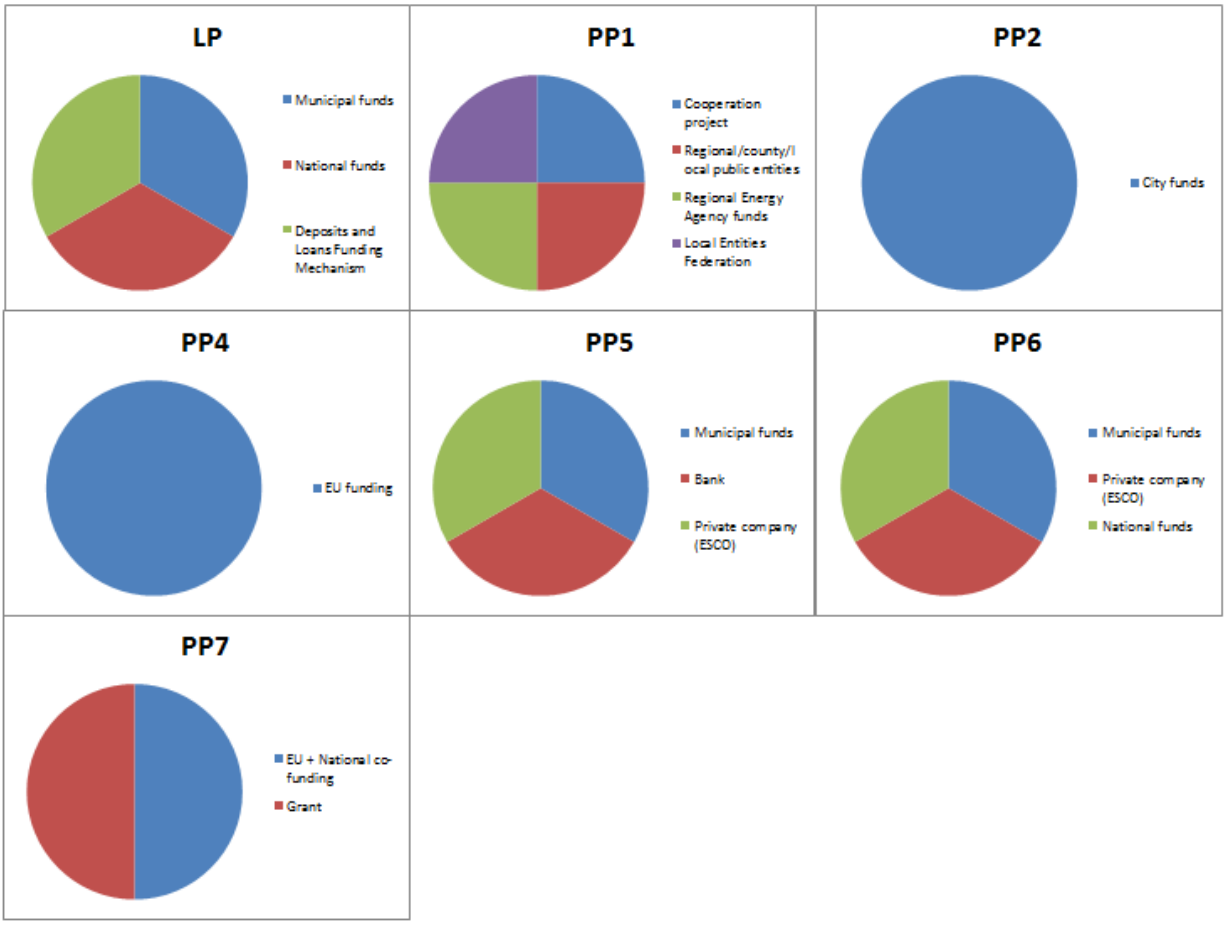
PP7 – MEI:

Financing source #1 – Co-financing EU and Albania government

Financing source #2 – Each Municipality will obtain a grant Gjirokastra 350178 Euro, Permeti 269012 Euro, Saranda 414874 Euro and Vlora 465935 Euro

PP8 + PP10 – AREANATEJO + CIMAA:

None



Graph 19: Financing source organization structure by partner

Available information provided by the project partners in Graph 19 indicates the potential financing structure recognized during Joint Action preliminary phase. The structure is different for each partner, although Municipal funds are used by ANATOLIKI S.A., CITTÀ METROPOLITANA ROMA and GOLEA, National funds are used by ANATOLIKI S.A., GOLEA and MEI, ESCO model is used by CITTÀ METROPOLITANA ROMA and GOLEA, and EU funding is used by GDA and MEI.

Financing source type

LP – ANATOLIKI S.A.:

Financing source #1 – Own Funding

Financing source #2 – Loan from the Deposits and Loans Mechanism

Financing source #3 – National Funds through Investment Law since Energy Communities have priority over other private Investments regarding financing through the Greek Investment Law

PP1 – FAMP:

Financing source #1 – ERDF Funds

Financing source #2 – Own funds

Financing source #3 – ERDF Funds

Financing source #4 – Own funds

PP2 – IRENA:

Financing source #1 – City of Poreč funds

Financing source #2 – City of Novigrad funds

Financing source #3 – City of Motovun funds

PP3 – CEA:

None

PP4 – GDA:

Financing source #1 – EU funding (ELENA funds)

PP5 - CITTÀ METROPOLITANA ROMA:

Financing source #1 – EIB Program ELENA funds, municipalities funds

Financing source #2 – Public private partnership, other financing solutions

PP6 – GOLEA:

Financing source #1 – Municipality budget (own funds)

Financing source #2 – Public private partnership

Financing source #3 – State subsidy - the financial assistance is offered mainly through soft loans from revolving funds and since the year 2008 through grants. In comparison with commercial banks, Eco Fund's principal advantages in the market for environmental financing are that it provides soft loans at lower interest rates than prevailing commercial market rates and it is able to lend for significantly longer periods than commercial banks.

PP7 – MEI:

Financing source #1 – Grant

Financing source #2 – Grant

PP8 + PP10 – AREANATEJO + CIMAA:

None

The financing source type is correlated with organizational structure, therefore the structure is almost identical.

Financing source description

LP – ANATOLIKI S.A.:

Financing source #1 – Each Municipality will contribute with 20.000 € as equity capital for the establishment of the Energy Community

Financing source #2 – Each Municipality will obtain a loan from the Deposits and Loans Funding Mechanism amounting to 152.000 € (A total of 456.000 € for the three Municipalities involved. The interest rate will be 3,75% and for a duration of 5 years

Financing source #3 – National Funds financing through Investment Law since Energy Communities have priority over other private Investments regarding financing through the Greek Investment Law. The total eligible amount will be 500.000 €.

PP1 – FAMP:

Financing source #1 – FAMP is looking for funding tools through cooperation projects such as Interreg programme (Interreg Europe Pilot Action, POCTEP, SUDOE, Med…), so the development of the Network could be progressive, increasing its resources and capacities to develop the activities and actions it undertakes. As a first step, FAMP has presented a "Pilot Action" in the framework of the SUPPORT project of the Interreg Europe programme, with the aim to seek the possibility of financing a concrete action in the framework of REDEMA: the Regional Energy Observatory.
The development of a Regional Energy Observatory, within REDEMA's group of activities, will contribute to start the process of comparison of certain parameters of public buildings (energy consumption, emissions, costs…) according to their characteristics (surface, number of workers, number of users, hours of operation, type of public equipment…).

Financing source #2 – To carry out audits campaigns and energy efficiency actions in buildings, FAMP will look for the collaboration and resources managed by the County and Local Energy Agencies, belonging to the County Councils, and the Andalusian Energy Agency through the signature of collaboration covenants.

Financing source #3 – The audit campaigns are carried out in those municipalities adhered to REDEMA on the buildings included in their SEAPs / SECAPs that have not yet been implemented, with the commitment that local entities subsequently present the actions defined in this diagnosis through the funds of the Order of Incentives of the Andalusian Energy Agency.
The Andalusian Energy Agency, as the managing body of the ERDF OP, makes available the Incentive Programme for the Sustainable Energy Development of Andalusia 2020 "Andalusia is more".
It has 3 lines of incentives and a total of 76 measures, through which energy refurbishment actions will be financed in three lines:

- SUSTAINABLE CONSTRUCTION incentive line
- SUSTAINABLE SME Incentive Line
- INTELLIGENT NETWORKS incentive line

The Local Entities would submit their proposal in the "SUSTAINABLE CONSTRUCTION" incentive line.

Financing source #4 – For the development of trainings, FAMP has a specific Department on its organization called "FAMP's Lifelong Learning" which has a specific budget to develop trainings for their

municipalities adhered. The trainings that will be developed within REDEMA measures will be fund by "FAMP's Lifelong Learning" own resources.

PP2 – IRENA:

Financing source #1-3 – Details are not yet known, but it has been said that the city of Poreč will provide funds in the budget for the reconstruction of the mentioned buildings

PP3 – CEA:

None

PP4 – GDA:

Financing source #1 – EU funding (ELENA funds)

PP5 - CITTÀ METROPOLITANA ROMA:

Financing source #1 – EPC or other contractual forms with ESCOs for a duration that will go from 4 to 10 years depending on the type of interventions that will be carried out.

Financing source #2 – EPC with ESCOs

PP6 – GOLEA:

Financing source #1 – If the joint action would be implemented with ESCO company 9% of investment costs should be covered by the municipalities. The money comes from municipality budged, so the investment must be planned in advance. If the municipality wants to implement the action without ESCO company they have to provide 100% of the investment cost from municipal budget. If the municipality would like to apply for ECO found subsidy, they also have to provide 100% of investment cost, of which 20% are refunded by ECO Fund.

Financing source #2 – If the joint action would be implemented with ESCO company 71% of investment should be covered by the ESCO

company. ESCO companies use their own money or they take a loan by the bank. Normal duration of the financing plan is 15 - 20 years.

Financing source #3 – The municipalities can apply for ECO Fund subsidy (20 % of the investment).

PP7 – MEI:

Financing source #1 – None

Financing source #2 – Each Municipality will obtain the grant with % interest

PP8 + PP10 – AREANATEJO + CIMAA:

None

Financing source total value of investment

LP – ANATOLIKI S.A.:

Financing source #1 – Equity Capital equals 60.000 € (20.000 € per Municipality)

Financing source #2 – The total value of the loan will be 456.000 € (152.000 € for each participating Municipality)

Financing source #3 – 500.000 €

PP1 – FAMP:

Financing source #1 – 35.000 €

Financing source #2 – To be defined

Financing source #3 – To be defined

Financing source #4 – 10,000 - 15,000 €

PP2 – IRENA:

Financing source #1-3 – This information will be known upon completion of the project documentation

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Financing source #1 – 1.350,000 (EIB through ELENA), 150.000 (Municipalities)

Financing source #2 – 33.500,000 (private investments by ESCOs).

PP6 – GOLEA:

Financing source #1 – 20.292 € (without VAT) - with ESCO

Financing source #2 – 160.078 € (without VAT)

Financing source #3 – 45.093 (without VAT)

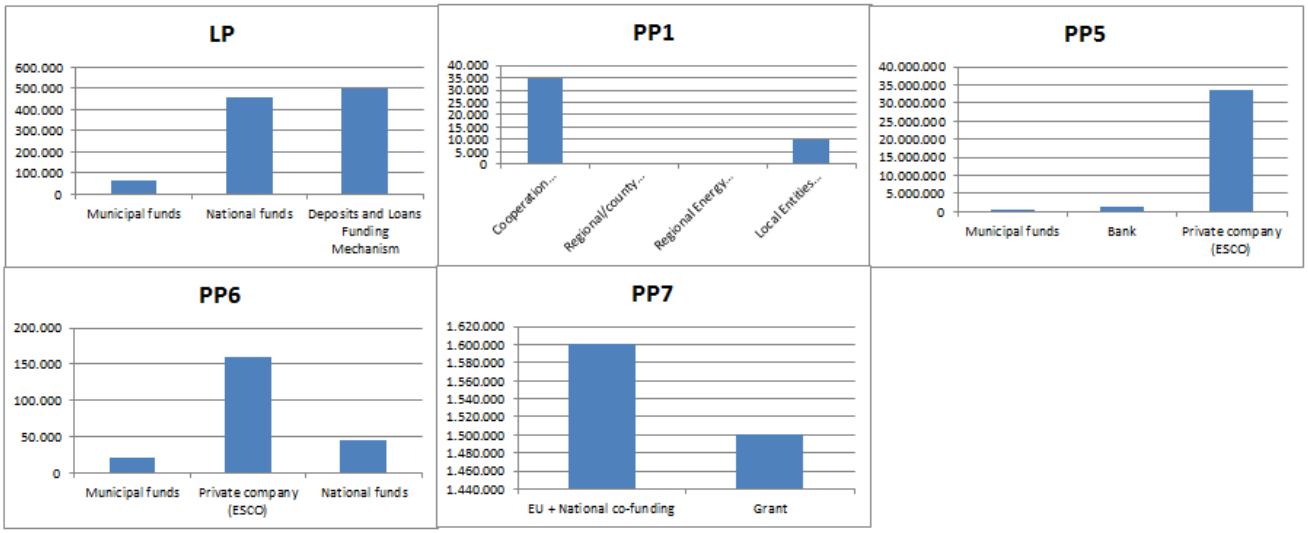
PP7 – MEI:

Financing source #1 – 1.360.000 Euro from EU and 240.000 Euro from Albania

Financing source #2 – The total value of the grant will be 1.500.000 EUR

PP8 + PP10 – AREANATEJO + CIMAA:

None



Graph 20: Financing source total value of investment by partner

Graph 20 shows the financing source values of investment for all project partners for which data is currently available. Proportions of investment values and relative shares between the financing sources used can be seen in the Graph. Data is currently unavailable for PP1 – FAMP, so their graph portion is incomplete. For ANATOLIKI S.A. Deposits and Loans Funding Mechanism is the biggest source of financing (49%), followed closely by National funds (45%), while Municipal funds are last (6%). For CITTÀ METROPOLITANA ROMA biggest source of financing is Private company (ESCO) (96%), the rest (4%) is divided among Bank and Municipal funds. Private company (ESCO) is also the biggest financing source for GOLEA (71%), National funds are second (20%), and Municipal funds third (9%). MEI financing source value of investment is equally divided between EU + National co-funding (51%) and grant funding (49%).

Projected estimate of savings from Joint Action implementation

LP – ANATOLIKI S.A.:

The first 5 years, during which the 3 Municipalities will repay the loan, the En.Com. will invoice the 3 Municipalities 20,000 € per year. After the 5th year, the En.Com. will invoice its services for 120,000 € per year. So, the 3 Municipalities will have a benefit of approx. € 10,000 per year (based on 130.00 Euro savings from the PV plant, paying loan installments, amortization costs etc.), while at the same

time they will have created an investment tool capable of intervening independently in the exploitation of RES and in energy saving.

PP1 – FAMP:

To be defined

PP2 – IRENA:

To be defined

PP3 – CEA:

47,000 kWh/year

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

The value of the total amount of the planned investment is 35 million euros.
Energy retrofit actions that are suitable to this category and can achieve important results with limited investments are: Interventions on heating systems: energy saving 15/20%; Replacement of lighting systems using energy efficient light bulbs or LEDs: energy saving 40/60 %. The monetary value and percentage of saving depending on the type of interventions that will be inserted in the real Joint action plan.

PP6 – GOLEA:

26.800 EUR

PP7 – MEI:

EU program will start in 2020 in two municipalities (Gjirokastra and Vlora) with a fund of 1.6 million Euro. Program will continue for 2 years. Swiss Government Fund is 1.5 million Euro and program will start in the second period of 2020 for 4 municipalities. The objective of

the program will be the integration of energy efficiency measures and promotion of RES in public buildings.

PP8 + PP10 – AREANATEJO + CIMAA:

None

Perceived financing and market opportunities

LP – ANATOLIKI S.A.:

This initiative will serve as Good Practice for other Local Authorities and will attract market actors.

PP1 – FAMP:

To be defined

PP2 – IRENA:

This initiative will serve as Good Practice for other Local and Regional Authorities since it is a metter of energy upgrade of cultural heritage and complex buildings which, in most cases, represents slight difficulties because Conservation Deparment is very strict in case of cultural heritages' building restoration. Completing successfully this kind of action will attract market actors.

PP3 – CEA:

ESCO partial financing

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

None

PP6 – GOLEA:

None

PP7 – MEI:

This initiative will serve as Good Practice for other Local Authorities and will attract market actors.

PP8 + PP10 – AREANATEJO + CIMAA:

None

Perceived financing and market risks/obstacles

LP – ANATOLIKI S.A.:

None

PP1 – FAMP:

The Network must be provided with sufficient economic and human resources. Without the regional and county energy agencies collaboration, the initial actions that could be developed by FAMP own resources are limited without considering the possibility to submit and get new EU cooperation projects funds.

PP2 – IRENA:

None

PP3 – CEA:

Lack of interest by ESCOs, ESCO market not mature enough in the building sector

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Administrative and financial barriers

PP6 – GOLEA:

It is necessary that all involved municipalities have own founds in their budgets – this enables the implementation of public procurement (planning ahead) also without involvement of ESCO companies.

PP7 – MEI:

None

PP8 + PP10 – AREANATEJO + CIMAA:

None

Possible solutions regarding perceived financing and market risks/obstacles

LP – ANATOLIKI S.A.:

None

PP1 – FAMP:

It is crucial to seek collaboration with key stakeholders as the Andalusian Energy Agencies and the County Energy Agencies and County Councils

PP2 – IRENA:

None

PP3 – CEA:

Governmental funding

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

None

PP6 – GOLEA:

Investments must be planned in municipal budgets ahead (at end of the year).

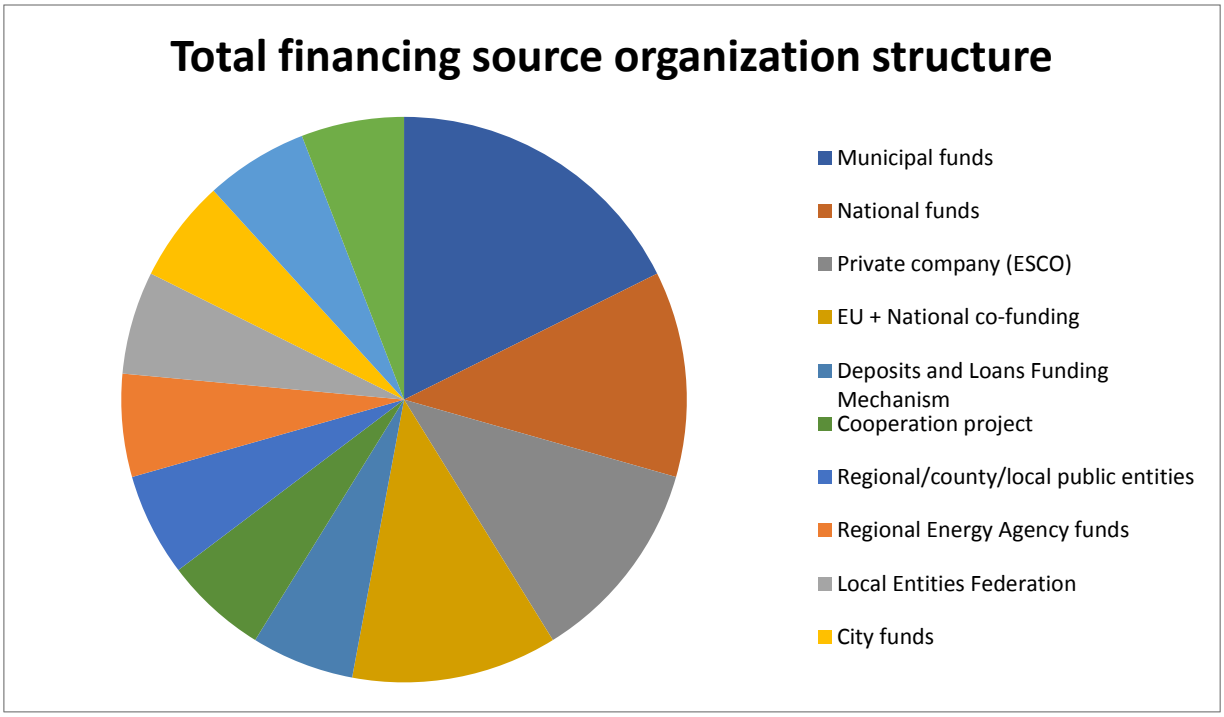
PP7 – MEI:

None

PP8 + PP10 – AREANATEJO + CIMAA:

None

3.3.2. COMPARISON SUMMARY CONCLUSION



Graph 21: Total financing source organization structure

Graph 21 shows that the most frequently used financial sources by the partners are municipal and national funds, private companies (ESCOs) and EU + national co-funding. Various other financing sources listed indicate that there are many potential channel of financing that can be used if used properly.

Private company (ESCO)	33.660.078
EU + National co-funding	1.600.000
Grant	1.500.000
Bank	1.350.000
National funds	501.093
Deposits and Loans Funding Mechanism	500.000
Municipal funds	230.292
Cooperation project	35.000
Local Entities Federation	10.000
Regional/county/local public entities	TBD
Regional Energy Agency funds	TBD

Table 41: Total financing source value of investment

Taking into consideration the summation of all the individual amounts of partners' financial sources by type, we can see that the largest collective sum amount (85%) belongs to ESCO model companies, meaning the biggest share of the Joint Actions is planned to be financed through this financial source. Three largest financial sources after ESCOs are EU + National co-funding (4%), grant (3,8%) and bank funding (3,4%). The collective sum of all the partners' investments is 39.386.463 EUR, however this is not taking into consideration the other financing source amounts that have yet to be listed.

3.4. EE IMPLEMENTATION EFFECTIVENESS

The energy efficiency implementation effectiveness section focuses on the methodology and used indicators for applying and measuring energy efficiency, overall efficiency of the Joint Action, monitoring plan and transferability and can be used as a strategic guideline or reference point for interested parties during and after the implementation process of their selected Joint Action.

3.4.1. COMPARISON OF EE IMPLEMENTATION EFFECTIVENESS DATA BY PROJECT PARTNER

Joint Action efficiency methodology

LP – ANATOLIKI S.A.:

The PV plant will produce 1.300 MWh (=1.300.000 KWh) of electricity per year, which will be distributed to each Municipality, in proportion to its participation in the En.Com. Energy consumption saved: 0.1 € / KWh, Annual savings: 130,000 €. Part of this amount will be invoiced to the Municipalities (or their Legal Entities) which consume the electricity. The first 5 years, during which the 3 Municipalities will repay the loan, the En.Com. will invoice the 3 Municipalities 20,000 €. After the 5th year, the En.Com. will invoice its services for 120,000 €. So, the 3 Municipalities will have a benefit of approx.€ 10,000 per year, while at the same time they will have created an investment tool

capable of intervening independently in the exploitation of RES and in energy saving.

PP1 – FAMP:

In a first approximation, a study was made of the state of implementation of 20 Andalusian municipalities, which had included in their SEAPs energy efficiency actions in 480 public buildings, of which almost 180 have not carried out their energy measures included in the audits.

PP2 – IRENA:

The calculation of energy usage and CO_2 emissions before renovation an after renovation. Energy audits provide such data but also the ISGE which is energy management information system. Through ISGE we can monitor electricity, water and heating fuel spending so it is easy to compare usage and spendings before and after energy restoration.

PP3 – CEA:

Creation of baseline from the data of previous years and monitoring the electricity consumption of the next years monthly.

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Consumption survey of the last three years and energy audit of the buildings included in the project.

PP6 – GOLEA:

The calculation of energy usage and CO2 emissions before renovation and after renovation.

PP7 – MEI:

The total investment cost is estimated at € 3,104,025 Euro (EE and RES)
Energy Saving Municipality of Gjirokastra (3 public buildings) : 144,816 kwh/a
Energy Saving Municipality of Permeti (3 public buildings): 104,435 kwh/a
Energy Saving Municipality of Saranda (3 public buildings): 146,576 kwh/a
Energy Saving Municipality of Vlora (3 public buildings): 158, 487 kwh/a
Annual Saving: 554,314 Euro; IIR: 16.89 %; the project will start in 2020 for 2 years

PP8 + PP10 – AREANATEJO + CIMAA:

None

Efficiency indicator description

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – kWh of Electricity produced per annum and tCO_2 reduction

PP1 – FAMP:

Efficiency indicator #1 – Mwh/year

PP2 – IRENA:

Efficiency indicator #1-2: kW, CO2

PP3 – CEA:

Efficiency indicator #1 – kWh

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 - kW

PP6 – GOLEA:

Efficiency indicator #1 - 2 - kWh, CO2

PP7 – MEI:

Efficiency indicator #1 - tCO2

PP8 + PP10 – AREANATEJO + CIMAA:

None

The information above shows that kWh and tCO_2 are the efficiency indicators used to measure the energy efficiency of the partners' Joint Actions. kWh is used by all partners except MEI, while tCO_2 unit is used by ANATOLIKI S.A., IRENA, GOLEA and MEI.

Efficiency indicator selection motive

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – The specific indicator is crucial for the monitoring procedure of the Energy Community as a Joint Action Scheme since the electricity produced can be utilized by the three Municipalities for supporting low income households as well as for replacing energy produced by coal with electricity from RES for their Public Buildings.

PP1 – FAMP:

Efficiency indicator #1 - It is the main indicator included in the SEAPs for energy efficiency actions in public buildings.

PP2 – IRENA:

Efficiency indicator #1-2: By implementing selected energy efficiency measures most savings will be accomplished in electricity and CO2 emission.

PP3 – CEA:

Efficiency indicator #1 - To be included in the energy efficiency targets of the Local authorities

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 - kW is the reference unit of measurement of the energy classes indicated in the energy performance certificate required by the regulations in force.

PP6 – GOLEA:

Efficiency indicator #1 - 2 - With these indicators you can compare the conditions before and after renovation.

PP7 – MEI:

Efficiency indicator #1 - The specific indicator is crucial for the monitoring procedure of the energy group as a Joint Action Scheme since the electricity produced can be utilized by the three Municipalities for supporting low income households as well as for replacing energy produced by coal with hot water from RES for their Public Buildings.

PP8 + PP10 – AREANATEJO + CIMAA:

None

Efficiency indicators used were selected as crucial and reliable indicators for enabling a proper monitoring procedure and are to be used during all stages of analysis as a dependable reference point.

Efficiency indicator measurement source and time

- **Ex-ante**

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – ANATOLIKI S.A. as the Joint Action Coordinator

PP1 – FAMP:

Efficiency indicator #1 - Local Authorities in their SEAPs

PP2 – IRENA:

Efficiency indicator #1 – 2 - ISGE / technical expert

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 - Municipality Technical expert

PP6 – GOLEA:

Efficiency indicator #1 – 2 - Building manager with cooperation of energy manager, 2018

PP7 – MEI:

Efficiency indicator #1 - Ministry of Infrastructure and Energy

PP8 + PP10 – AREANATEJO + CIMAA:

None

- **Post-ante**

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – ANATOLIKI S.A. As the Joint Action Coordinator

PP1 – FAMP:

Efficiency indicator #1 - Local Authorities in their SEAPs

PP2 – IRENA:

Efficiency indicator #1 – 2 - ISGE / technical expert

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 - Municipality Technical expert

PP6 – GOLEA:

Efficiency indicator #1 – 2 – Not specified

PP7 – MEI:

Efficiency indicator #1 - Ministry of Infrastructure and Energy

PP8 + PP10 – AREANATEJO + CIMAA:

None

The information above shows that ANATOLIKI S.A. and MEI will be directly in charge of ex-ante and post-ante measurements, FAMP's Joint Action will include local authorities in the measurement process, while IRENA, CITTÀ METROPOLITANA ROMA and GOLEA will use designated technical experts and building and energy managers during and after the Joint Action implementation period.

Efficiency indicator data and quantity measurement

- **Ex-ante**

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – 0

PP1 – FAMP:

Efficiency indicator #1 - The SEAPs include only the savings, not the ex ante / post ante situation

PP2 – IRENA:

Efficiency indicator #1 – 2 – electricity and oil consumption

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 - Gas and electricity consumption

PP6 – GOLEA:

Efficiency indicator #1 – 2 - The consumption data was not measured, it was calculated by the type and number of installed indoor lights

PP7 – MEI:

Efficiency indicator #1 - 0

PP8 + PP10 – AREANATEJO + CIMAA:

None

- **Post-ante**

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – 1.300.000 KWh per annum equivalent to approx. 1,5 tCO_2

PP1 – FAMP:

Efficiency indicator #1 - The SEAPs include only the savings, not the ex ante / post ante situation

PP2 – IRENA:

Efficiency indicator #1 – 2 – electricity and oil consumption

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 - Gas and electricity consumption

PP6 – GOLEA:

Efficiency indicator #1 – 2 – Not specified

PP7 – MEI:

Efficiency indicator #1 - 2.162.877KWh per annum equivalent to approx. 3.2 tCO2

PP8 + PP10 – AREANATEJO + CIMAA:

None

- **Difference**

LP – ANATOLIKI S.A.:

Efficiency indicator #1 – 1.300.000 KWh per annum equivalent to approx. 1,5 tCO_2

PP1 – FAMP:

Efficiency indicator #1 - 4200Mwh/year

PP2 – IRENA:

Efficiency indicator #1 – 2 – Reduction of consumption

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Efficiency indicator #1 – Reduction of consumption

PP6 – GOLEA:

Efficiency indicator #1 – 2 – Not specified

PP7 – MEI:

Efficiency indicator #1 - 2.162.877KWh per annum equivalent to approx. 3.2 tCO2

PP8 + PP10 – AREANATEJO + CIMAA:

None

Information regarding the EE indicator data and quantity measurement above shows that the partners have different approaches to ex-ante and post-ante measurements. FAMP will only use savings recorded in SEAPs, GOLEA calculated the ex-ante data by measuring the number and type of installed indoor lighting, while IRENA and CITTÀ METROPOLITANA ROMA use energy consumption measured by technical experts to measure the difference in consumption in the later stage of the Joint Action. ANATOLIKI S.A. predicts a savings difference at 1.300 MWh annually (approx. 1,5 tCO_2), FAMP predicts 7577,74 MWh annually, and MEI 2.162 MWh annually (approx. 3,2 tCO_2).

Joint Action end target (efficiency score)

LP – ANATOLIKI S.A.:

The plant will produce 1.300 MWh (=1.300.000 KWh) of electricity per year, which will be distributed to each Municipality, in proportion to its participation in the En.Com. Energy consumption saved: 0.1 € / KWh. annual savings: 130,000 €. Part of this amount will be invoiced to

the Municipalities (or their Legal Entities) which consume the electricity.

PP1 – FAMP:

The measures proposed in the SEAPs of the Municipalities included in the Pilot Area, have an energy consumption reduction goal of 7577.74 Mwh/year, there are almost 4200Mwh/year not reached, since the actions proposed in the buildings have not been initiated. Through improving governance in municipalities, with specific training for municipal technicians and facilitating their access to funding from the Andalusian Government for these actions through the Order of Incentives of the Andalusian Energy Agency, a substantial improvement could be achieved in these municipalities.

PP2 – IRENA:

Not available at this moment

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Preparation of a full feasibility study to submit to ELENA, taking into account also the management, administrative and procedural aspects of the joint action implementation, or an Energy Performing Contract (EPC) with ESCO.

PP6 – GOLEA:

Energy use decrease by 117 MWh; 57,2 tons CO2 emission saved

PP7 – MEI:

Energy Saving Municipality of Gjirokastra (3 public buildings): 144,816 kwh/a
Energy Saving Municipality of Permeti (3 public buildings): 104,435 kwh/a
Energy Saving Municipality of Saranda (3 public buildings): 146,576 kwh/a
Energy Saving Municipality of Vlora (3 public buildings): 158, 487 kwh/a

PP8 + PP10 – AREANATEJO + CIMAA:

None

Joint Action energy consumption reduction targets for the partners vary greatly in response to different Joint Action approaches and end goals. ANATOLIKI S.A. predicts a savings difference at 1.300 MWh annually (approx. 1,5 tCO_2), FAMP predicts 7.577 MWh annually after the completion of SEAP measures, GOLEA predicts 117 MWh and 57,2 tCO_2 saved with 11 year ROI and MEI 2.162 MWh annually (approx. 3,2 tCO_2) with 2 year ROI. The data for the other partners is currently unavailable.

Joint Action monitoring plan

LP – ANATOLIKI S.A.:

The Joint Action Scheme will be continuously monitored by ANATOLIKI as the Joint Action Coordinator. It will be responsible for Audit of output. Guarding and protection against theft and vandalism, cleaning the surfaces of PVs, mainly after rains containing dust, works to clean the field for installation for PVs & after.

PP1 – FAMP:

There is no specific monitoring plan developed for the Joint Action, but there are some additional indicators related to the development of REDEMA that will be monitored during its development during the next months and years:

- Number of Andalusian Municipalities adhered to the Network
- Number of documents developed: projects, studies, reports, dissemination materials, and so on
- Events
- Impacts: Dissemination actions and trainings
- Buildings that will optimise power and/or modify its facilities

PP2 – IRENA:

The effectiveness of these actions will be monitored through the ISGE system which is a national energy management information system.

PP3 – CEA:

Recording of electricity consumption per month

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

Post operam consumption detection and new energy audit of the building that certifies the transition to more efficient energy classes

PP6 – GOLEA:

Joint Action monitoring plan and methodology have not been defined yet.

PP7 – MEI:

The Joint Action Scheme will be continuously monitored by Ministry of Infrastructure and Energy as the Joint Action for Albania. Monitor Energy Consumption in 12 buildings.

PP8 + PP10 – AREANATEJO + CIMAA:

None

Although for some partners the monitoring plan has not yet been defined, others have a standard approach and will follow the effectiveness of the Joint Action through monthly energy consumption and in some cases using a new building energy audit certification proving the transitioning process to a more efficient energy class. ANATOLIKI and MEI have designated themselves as the coordinators in charge of the monitoring process.

Joint Action transferability

LP – ANATOLIKI S.A.:

The transferability of the Joint Action is assured due to its win-win characteristics

PP1 – FAMP:

REDEMA would serve as a linked cooperative and technical assistance workspace for the adhered municipalities in order to bring together and show the different possibilities of financing EE measures to local entities, improving the implementation of the local authorities' energy planning. The practice shows that it is important to not only provide local authorities with an energy management tool (metering device, software, etc.) but to support them to establish a structure of actually managing energy consumption and climate protection. Also meaning to implement efficiency measures. With this process, it is possible to support municipalities in their political decision-making processes. The establishment of networks based on transferring and capitalization actions, disseminating outcomes by demonstrating a wide range of opportunities at a glance, promoting new investments, supporting teaching/learning processes (with experts, researches, citizens…) and improving the collection and processing of energy data at local level through an innovative tool in the region with specific training for its use for municipal technicians and facilitating their access to funding for energy efficiency actions, in different regions would foster a

substantial improvement with the municipalities involved, especially with the smaller ones.

PP2 – IRENA:

The idea of this Joint Action is transferable to other project since it represents a methodology on how to define the methodological approach to the restoration of protected and other complex public buildings. Since region of Istria along with Croatia has a significant number of cultural heritages' buildings, methodology defined through this project could be of use in some other project that is dealing with this kind of problem.

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

The methodology used to finance the project can be applied for the development of other Joint Action project with other municipalities of the territory.

PP6 – GOLEA:

The joint action is transferable to all projects of energy renovation of buildings that don't have EPC yet.

PP7 – MEI:

The transferability of the Joint Action is assured due to its win-win characteristics

PP8 + PP10 – AREANATEJO + CIMAA:

None

Most of the partners have defined their Joint Actions as transferable and suitable for future use. However some partners have noted that for their Joint Actions certain criteria has to be met in order for the Joint Action to be transferable and usable. For example, GOLEA' Joint Action can be used for building without EPC, and IRENA' Joint Action is suitable for cultural heritage buildings which are often connected to complex bureucratic barriers and need a specific guideline and know-how in order to facilitate the often slow and complicated implementation process.

Other potential added value from Joint Action

LP – ANATOLIKI S.A.:

None

PP1 – FAMP:

None

PP2 – IRENA:

None

PP3 – CEA:

None

PP4 – GDA:

Data not available

PP5 - CITTÀ METROPOLITANA ROMA:

None

PP6 – GOLEA:

Added value: contribution to EU and national objectives, establishment/reinforcement of networks between municipalities, strenghtening local/regional economies.

PP7 – MEI:

None

PP8 + PP10 – AREANATEJO + CIMAA:

None

The only added value, noted by GOLEA, is in the possible contribution to EU and national objectives, establishment/reinforcement of networks between municipalities and strenghtening of local and regional economies.

3.4.2. COMPARISON SUMMARY CONCLUSION

The partners' energy efficiency end results are currently incomplete and lack concrete data and therefore not completely comparable and susceptible for a more detailed analysis. However, from the data gathered it is visible that energy efficiency end results are very varied, but the methodology of data gathering is similar and includes using kWh and tCO2 units of measurement as the efficiency indicators used to measure the energy efficiency of the partners' Joint Actions (kWh is used by all partners except MEI, while tCO2 unit is used by ANATOLIKI S.A., IRENA, GOLEA and MEI), while the ex-ante and post-ante measurements will be done directly by ANATOLIKI S.A. and MEI, who will be in charge of the measuring process. IRENA, CITTÀ METROPOLITANA ROMA and GOLEA will use designated technical experts and building and energy managers during and after the Joint Action implementation period.

Different approaches in measuring EE indicator data and quantity are visible - IRENA and CITTÀ METROPOLITANA ROMA will use energy

consumption measured by technical experts to measure the difference in consumption in the later stage of the Joint Action, GOLEA used ex-ante data calculations by measuring the number and type of installed indoor lighting and FAMP will only use savings recorded in SEAPs. From the existing data received from the partners, ANATOLIKI S.A. predicts a savings difference at 1.300 MWh annually (approx. 1,5 tCO2), FAMP predicts 7577,74 MWh annually, and MEI 2.162 MWh annually (approx. 3,2 tCO2).

Regarding the monitoring and transferring phase, a standard approach will be used by most partners and will follow the effectiveness of the Joint Action through monthly energy consumption and in some cases using a new building energy audit certification proving the transitioning process to a more efficient energy class, while for some partners the monitoring plan has yet to be defined. ANATOLIKI and MEI have designated themselves as the coordinators in charge of the monitoring process of their respective Joint Actions. Most of the Joint Actions have been defined by the partners as transferable and suitable for future use. Some partners however have noted that for their Joint Actions certain criteria has to be met in order for the Joint Action to be transferable and usable. For example, GOLEA' Joint Action can be used for building without EPC, and IRENA' Joint Action is suitable for cultural heritage buildings which are often connected to complex bureaucratic barriers and need a specific guideline and know-how in order to facilitate the often slow and complicated implementation process. The potential contribution to EU and national objectives, establishment/reinforcement of networks between municipalities and strengthening of local and regional economies has been noted by GOLEA as a potential added value from Joint Action to the project.

4. FINAL VERSION OF JOINT ACTIONS METHODOLOGY AND TRANSFERABILITY POSSIBILITIES

This section will take into consideration the data examined in the previous section and combine the results of the examination in order to determine general connecting points between all subsections in order to establish a final version of the Joint Action methodology to be used by potential interested parties in the future. This will serve as a guideline and reference point that will hopefully assist in the preparation, implementation and evaluation of the future Joint Actions.

Developing the methodology

During the initial stages of the project, the project partners participated in local and regional events, held focus groups meetings and commitees in order to better assess the situation in their community and on the market in general and to evaluate the context in which the operational activities were to be done. Energy audits were also done on local buildings which provided additional data and outlook on the current state of energy efficiency in the selected area. This, together with constant communication between partners and feedback from the community and the involved stakeholders, enabled a better perspective of the project and the subsequent Joint Action planning. It was agreed that relevant information regarding the partners' Joint Actions will need to be collected in order to compare and analyze the activities regarding the Joint Actions and the methodology used for the implementation. This stage of the project also enabled a better view of the data needed in order to properly address the issues regarding the Joint Actions.

Identifying and selecting data

After the initial stage, the process of data identification and collection was initiated. Through a series of meetings and digital communication aimed at identifying the required data and connected to the Joint Action planning by each partner, the partners agreed on the data which would be collected by each partner and consolidated by the responsible partner. This data and the relevant sections in the data were revised during the project in correlation to the evolving plans for the Joint

Actions and are meant to encompass all the Joint Actions from all the partners in order to create a common ground for enabling easier comparison and analysis in the later stages of the project.

Data acquisition and management

In order to collect the necessary data, the partners agreed on the method of collection proposed by the responsible partner via initial drafts of the data collection form. The method evolved during the transnational meeting, taking into consideration the feedback from the partners, and was finally confirmed in the later stages of the project. This enabled the responsible partner to develop an appropriate data collection form that was distributed to all of the partners who were given the task of filling out the form for their selected Joint Action area. The subsequently collected filled-out forms were then processed and consolidated in this report.

Data assessment

After the collection stage, the responsible partner was tasked with performing data harmonization and consolidation of the available data provided by the project partners. The questionnaire distributed to the partners was meant to collect unified and comparable data, however certain differences in the Joint Action approach were unavoidable, so a broader consolidation of certain parts was necessary in order to provide a better comparison. Data provided included information about the stakeholders involved in the Joint Action, the Joint Action implementation process, the financial and market risks and opportunities and energy efficiency implementation effectiveness, however these categories could be adjusted to better suit the demands of future projects.

The stakeholder category focused on the active and passive participants and data regarding their general information, field of work, cooperation motives, their Joint Action commitment and contribution and perceived risks and possible solutions regarding their participation in the Joint Action. The Joint Action category focused on the data regarding the Joint Action definition process, the type of Joint Action to be

implemented, the location of the pilot area, the number of implemented interventions and their type and description, the intervention cost and expected savings, details of the structures involved in the Joint Action, the promotional activities related to the Joint Action and the perceived risks and possible solutions of the Joint Action. The financial and market risks and opportunities category focused on the data regarding the possible financing sources, their quantity, type and organizational structure, description, value of investment in the Joint Action, the projected estimate of savings from Joint Action implementation and perceived financial and market risks and opportunities. The energy efficiency implementation effectiveness category focused on the methodology used, the description, selection motives and measurements of the selected efficiency indicators, the efficiency score of the Joint Action end target, the monitoring plan, transferability of the Joint Actions and the potential added value from the Joint Actions.

With the abovementioned catergories, it was easier to divide the existing data for a more detailed analysis, and easier for the partners to fill out. The conclusions from the data were written and compiled by the responsible partner and included in this report.

Outcome and transferability possibilities

The conclusions mentioned indicate that there are certain correlations between the project partners' Joint Actions which can be used as a general guideline for implementing and facilitating future energy plans. A general strategy for the process involves a preliminary collection of data from the local and regional authorities, initial gathering of the focus group and an active approach and involvement of the community. Their feedback ultimately enables a better view of the possible actions to be undertaken, as well as possible obstacles during the process. Energy audits on local structures can be used as an initial stage for determining the later Joint Action. Constant and active communication in all stages of the process is also critical, both internal and external. With the initiation of the Joint Action, it is important to predetermine which data will be collected and collect the data before, during and after the Joint Action implementation. Possible deviations from the plan are

to be noted in order to avoid or alleviate the effects in future actions. Joint Action plans are evolving during the project and can be changed during the project duration if required. They also require feedback and active participation from the stakeholders involved. Joint Actions are determined by each project partner individually during the course of the project based on the needs of the local and regional community, the knowledge and expertise of the project partners and stakeholders, the limitations and opportunities of the financial market and the structure and the demands of the project. A finalized Joint Action has to be feasible and reach the set goals. The partners also have to conduct a detailed analysis of the financial market and other sectors connected to the Joint Action and determine the possible positive and negative influences on the implementation process and feasibility of the Joint Action. The final stage includes data synthesis and promotional activities which should prolong the longevity of the action and serve as a best practice example for future planning.

CONCLUSION

During the course of the project, the project partners participated in transnational meetings which served as an initial starting point for the project development, as well as a good platform for later introduction to other project activities, analysis, feedback and revision. This was in correlation with the Focus Groups organized by the partners to involve local and regional stakeholders in the project and receive their feedback regarding the current issues of energy efficiency in the community. Joint Actions were planned and revised during the project based on the feedback from the Focus Groups, the partners' analysis and expertise and various other factors. In the later stage of the project, the method of data collection was agreed upon by all the partners and relevant data from the formed Joint Actions was gathered and analysed for the compilation of this report. Seeing as the different approaches of Joint Actions with different energy efficiency goals and methods have connecting points in certain areas and during certain stages of the process, it can be concluded that an overall implementational structure to serve as a guideline can be made. Certain conclusions made from the similarities in project partners' Joint Actions can hopefully serve to facilitate the possible Joint Actions in the future and serve to promote ENERJ project, energy efficiency practices and the energy retrofitting market.

LIST OF PICTURES AND TABLES