



Action Plan

Part I – General Information

Project: **SUPPORT - Support Local Governments in Low Carbon Strategies**

Partner Organisation: **ANATOLIKI S.A.**

County: **Greece**

Region NUTS2: **Central Macedonia (Kentriki Makedonia)**

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Part II – Policy context

The Action Plan aims to impact: **X Investment for Growth and Jobs programme**

- European Territorial Cooperation programme
- Other regional development policy instrument

Policy Instrument: Operational Program of Region of Central Macedonia 2014-2020

Information about the Policy Instrument:

The Operational Programme (OP) of the Region of Central Macedonia was adopted on 18/12/2014 and revised at 6/12/2017 by the European Commission and is an important programmatic and financial tool for supporting the regional development policy in the programming period 2014-2020.

It includes resources totalling EUR 1,009 million in terms of public expenditure and aims to address the needs and problems and to exploit the potential and benefits of the Region. It is co-financed by the European Regional Development Fund (ERDF) and the European Social Fund (ESF).

The vision set out in the Operational Programme of the Region of Central Macedonia for the programming period 2014-2020 is the following: "The emergence of Central Macedonia in a dynamic development pole of international scope with distinct identity, competitive and innovative production base, quality environment, strong social and spatial cohesion".

The Priority Axis of the Programme that the Action Plan is called upon to influence is PA4: «Supporting the transition towards a low-carbon economy in all sectors», which specifies the strategy and interventions of the ROP in relation to the Thematic Objective 4 "Energy redeployment for a low pollutant economy".

In terms of energy savings, the experience of the programming period 2007-13 was particularly positive. It is estimated that from energy savings actions more than 11,000 homes have been upgraded and the reduction of greenhouse emissions is estimated at an equivalent of 11.78 kt CO₂ annually, of which 6.54 come from improvements in air conditioning and the rest of the improvements in buildings. It is obvious that there is a wide space for further improvements, since 78% of the buildings in the RCM are constructions before 1985. Also, the experience of RES utilization and the implementation of cogeneration projects in public buildings has been positive.

To fill gaps and further exploit the acquired experience in the field of RES and energy saving, the RCM sets the following priorities:

Reducing the consumption of conventional energy through the implementation of programmes to reduce consumption and increase energy efficiency, the utilization of RES and the promotion of cogeneration projects and

The promotion of integrated interventions for urban mobility with the ultimate aim of reducing CO₂ emissions, as well as other polluting factors such as PM₁₀, SO₂ and NO₂, in the metropolitan complex of Thessaloniki and other middle urban centres.

Overall, PA4 resources to support the transition to a low-carbon economy amount to €32,878,754.00, representing 3.5% of the ROP. Within this axis, policies aimed at reducing greenhouse gas emissions are funded and contribute to improving the urban environment and the quality of life of citizens in urban centres, focusing on the following Specific Objectives:

S.O.4.1. Increasing energy efficiency and exploiting renewable energies in public buildings and public infrastructures

The indicative actions are: Improvement of energy efficiency with renovation of public buildings, applications of bioclimatic design criteria in new and existing buildings, interventions in the shell, and the functional characteristics of the building, with

priority in large energy-intensive buildings such as: school buildings, gyms, swimming pools, promotion of demonstration projects promoting central thermal solar systems in public buildings and public infrastructures, promoting the use of other RES, such as shallow Low-enthalpy geothermal energy in public buildings etc. Promotion of High Performance CHP (e.g. in hospitals).

S.O.4.2. Promotion of Sustainable Urban Mobility in the Region of Central Macedonia

The main objective is that the cities of Macedonia are upgraded to free-flowing cities with a cleaner environment. With the implementation of interventions the expected result is the reduction of the consumption of conventional fuels and the reduction of pollutants and CO2.

The indicative actions are: Management of traffic with smart transport systems (e.g. Centre for Traffic Management), selective catalytic reduction and particulate filters in public diesel vehicles, introduction of gas into buses and other public heavy vehicles, promotion of the use of hybrid vehicles in the MMM, incentives for technologies of "clean" fuels with low sulphur content such as Biodiesel and Bioethanol, Creation of infrastructures for the development and expansion of urban maritime transport in the Thermaic Gulf, creation of bicycle lanes, pavements and roads of mild Information and awareness-raising programmes for urban dwellers for multi-modal urban mobility.

The quantified objectives set for energy efficiency and utilization of renewable energies in public buildings in the ROP are the following:

Indicator	Type	Unit	base value (2013)	target value (2023)
Reduction of the annual primary energy consumption of public buildings	Output	kWh/year		5.800.000
Consumption of final energy in all sectors, except in the transport sector	Result	ktOE	1.751	1.618

The SUPPORT Project for the Region of Central Macedonia intends to influence the indicator "Consumption of final energy in all sectors, except in the transport sector" of Priority Axis 4 of the Policy Instrument "Operational Programme of Region of Central Macedonia".

Part III – Details of the actions envisaged

Action 1: Financing building energy upgrade interventions of municipal SEAPs through Structural Funds

Identification of problem

The Local Support Group, from the beginning of the SUPPORT project tried to record the energy upgrade needs of the municipal buildings in the Region of Central Macedonia in order to identify suitable financial sources for the implementation of the interventions. The effort was based on the proposed interventions of the Sustainable Energy Action Plans of the Municipalities participating in the Covenant of Mayors. Of the 38 municipalities of the Region of Central Macedonia, 22 have joined the Covenant of Mayors and 19 SEAPs were submitted.

Overall in the aforementioned SEAPs, 115 interventions were identified with an aggregated cost of 151,780,687.17€, which correspond to energy savings of 83,325 MWh per year and a reduction of 47,788.12t of CO₂ emissions per year.

The most common interventions identified in the SEAPs were:

- Energy upgrade of municipal buildings
- Energy upgrade of school buildings
- Conversion of buildings into near zero energy consumption
- Green Roofs
- Energy upgrade of sports facilities
- Installation of photovoltaic systems on roofs
- Energy inspections
- Recording energy consumption
- Information, awareness of building users

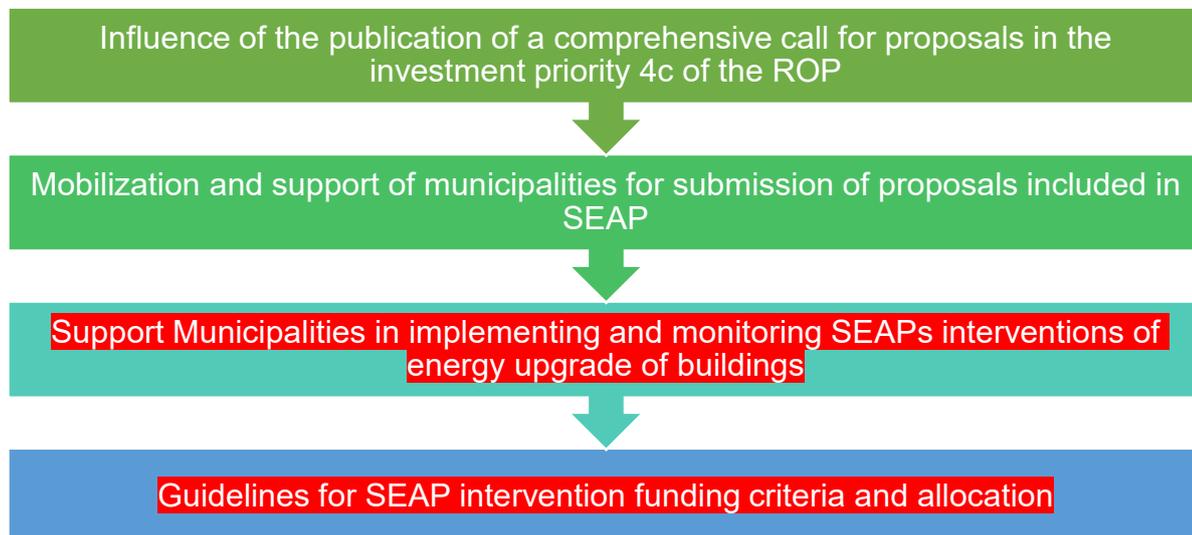
A basic problem arising was the high cost of the interventions regarding the energy upgrade of municipal infrastructures. Most of the Municipalities confirmed in the LSG meetings that they cannot cover these costs with their own resources. Thus, the financial sources mentioned in the SEAPs are usually EU funds and programmes.

Furthermore, another problem that was identified early by the LSG was the low level of preparedness and administrative and technical maturity of the proposed SEAP interventions. In fact, many interventions in the SEAPs were merely calculations of unit costs and not integrated and studied solutions.

In addition, Municipalities have significant additional financial needs for the monitoring of their adaptation to the Greek institutional framework comprising the “*National Action Plan for Energy Efficiency and Increase of the Number of Buildings with Almost Zero Energy Consumption*”.

Thus, the 1st Action of the project concerns the securing of financing from ERDF, and possibly other Structural Funds, for the implementation of energy upgrade interventions included in municipal SEAPs. The local support group ~~aims tried~~, given the time and regulatory constraints, to influence the Operational Programme of Region of Central Macedonia 2014-2020, as a financing source. At the same time, the action investigates ways of mobilizing Municipalities in order to cooperate and develop effective proposals for funding SEAPs from Structural ~~and other~~ Funds. ~~The results of the~~ Through this ~~the Local Support Group~~ will be used to formulate ~~suitable calls for a proposals~~ guidelines and for evaluation criteria ~~for and~~ the prioritization and optimal allocation of ~~available funding funds~~ for energy upgrade interventions for the implementation of SEAPs, ~~in the next programming period~~.

The following activities ~~were deemed~~ are considered as necessary for the implementation of the Action in the Region of Central Macedonia:



Interregional experience and best practice exchange

From the beginning of the project local stakeholders took part in the exchange of experiences in Rovinj (September 2017) and Seville (March 2018). From there, certain

inspiring good practices were transferred to the LSG in the Region of Central Macedonia as inspiration for this 1st Action.

Region of central Macedonia is in early stages of building energy refurbishment process. Only 7% of the public buildings have an energy class of B or better while classes C-F gather 84% based on the data of energy audits. With limited funds available in the OP for refurbishment of public buildings, it is essential to identify methodology for optimal funds allocation. Up to know, process of application for funding consisted of ad hoc applications with no clear priority methodology. ANATOLIKI and regional stakeholder presented this problem several times during exchange of experience events and tried to identify suitable solutions.

The action draws inspiration from several exchange of experience events and good practices.

The initial one constituting the core of the action came from study visit to City of Labin conducted during Interregional seminar in Rovinj, Croatia in 2017. During that visit, the model of building refurbishment in City of Labin was presented. The process is managed by public company that is responsible for maintenance of all the buildings in the city. Refurbishment is mostly funded with ERDF funds with cofinancing of the private owners. Two key elements were identified in this practice:

- Level of involvement of local community

Up to now, more than 70 multistore buildings were refurbished in this way with significant inclusion of local entrepreneurs and with more than 50% of population directly influenced. The number of applications for funding is steadily growing and around 7% of all buildings refurbished in Croatia through use of ERDF funds is in Labin, city of 12.000.

- Refurbishment workplan

Even if these buildings are private, ERDF application and later refurbishment process are managed by single public company. This company has decided that in initial phases, application will be made for largest buildings that have typical design. After that was completed, next in line were a bit smaller building etc. This was done like this as it was evident that, on the community level, optimal savings will be made with available funds.

The LSG considered essential to incorporate in its Action these two elements in the domain of public buildings.

ANATOLIKI and the LSG tried to identify other good practices to help with this. Two of the practices brought in by the partners were outside of the participating Regions.

The presentation of the good practice of energy renovation in Paris schools through EPC (CPE – Ecoles)¹.

The example of Paris highlighted the targeting of public schools and also the uniform treatment of groups of buildings rather than individual buildings. It was also noted that the funding for the above came through modern financial instruments and ESCOs, rather than from classic grants.

The LSG considered that targeting public schools presents a good model because in Greece they fall in the responsibility of Municipalities and account of a substantial energy consumption of municipal buildings. Furthermore, this category of buildings secure a broad level of local community involvement through the exposure of pupils to the process and large daily people circulation. Thus, public schools could be part of separate calls for proposals from the ROP RCM and/or be grouped spatially proposal with one Contracting Authority and one Contractor.

Additional inspiration for selection of public schools came from the presentation of the action Energy Efficiency Milan Covenant of Mayors. The problem in this case was also that the energy audits programme had not resulted in a significant uptake of investments in energy efficiency, basically due to constrained budgets, reduced or absence of borrowing capacity and the lack of technical capacity to develop projects from the Municipalities. The action was designed to facilitate and finance energy efficiency retrofits for mainly public school buildings located in selected small municipalities. Inspiration and potential for transfer was identified by ANATOLIKI and the LSG as follows:

- The province of Milan has the role of Territorial Coordinator of the Covenant of Mayors, representing many small municipalities. Thus, a dedicated Project Implementation Unit was established within the Province that provides staff, procedures, tools and services for the program, offers program delivery unit services such as marketing and engagement, project assessment, aggregation services, project facilitation and financial advice, with its own budget (1,8M €).
- The implementation of the project is based on calls for tenders for groups of buildings for designated amount of investments financed by ESCOs.

This practice was considered by the LSG as a basis for the cooperation and common guidance of Municipalities for specific categories of buildings by a third “Coordinating” body and also for establishing selection criteria. Similarly, to the practice in City of Labin, typical school constructions will be targeted first in application for group of buildings instead for single ones in order to optimize energy savings that can be obtained with available allocation of ERDF funds.

¹ <https://www.interregeurope.eu/policylearning/good-practices/item/1658/energy-renovation-in-paris-schools-through-epc-cpe-ecoles/>

Improvement of the policy instrument addressed

Participants in the Local Support Group of the Region of Central Macedonia worked together to exert timely influence on the policy instrument "Operational Programme of the Region of Central Macedonia 2014-2020", in order to support the objectives of the project and the Action Plan for the effective use of available financial instruments, the development of extensive and cost-effective actions and ultimately the increase of energy efficiency and the parallel use of RES in municipal/public buildings.

The initial projected budget of the Investment Priority 4c of the ROP was 20.980.081€. In the specialization of the Programme, the implementation of a single intervention in the Investment Priority was identified, with the aim of "Energy upgrading of public buildings in the Region of Central Macedonia" and estimated budget 22.378.754€, i.e. 7% above the initial budget breakdown in Priority 4c.

With the influence of the LSG and the mobilization of the Municipalities to declare their needs for funding Covenant of Mayors interventions, the available budget of the call was raised to 26.700.000€, i.e. 27% above the estimated budget of its specialisation.

The relevant call for funding proposals for Action 4c. 1: "Energy upgrading of public buildings in the Region of Central Macedonia» was issued, in 1^o Quarter of 2018. The invitation was addressed to bodies of the General Government and offered a funding rate of 100% for the implementation of interventions for the improvement of energy efficiency of public buildings.

Through the influence of the LSG and the SUPPORT exchange of experiences the available funding the priority of the funding was given to large energy-intensive buildings (such as schools) and to applications of bioclimatic design criteria in existing buildings, interventions in the shell and the functional characteristics of the building (thermal insulation, replacement of frames, Replacement of cooling/heating systems, etc.).

Finally, Investment Priority 4c included 39 projects for the energy upgrade of public and municipal buildings, with a total budget of €39,795,573, that is to say almost twice the initial allocation of public expenditure.

The participation of potential beneficiaries in the Local Support Group of the SUPPORT, either directly or through institutional representatives, has created increased preparedness as well as increased interest in submitting proposals to structural funds in order finance energy upgrade projects for municipal buildings included in SEAPs.

The following table lists these changes by stage of activation and implementation of the invitation.

IP 4c	Public expenditure	% of previous step	% initial allocation
Initial allocation	20.980.081		
Action specialization	22.378.754	6,7%	107%
Initial invitation	26.700.000	19,3%	127%
Approved projects	39.886.212	0,2%	190%

The beneficiaries were 19 Municipalities of the Region of Central Macedonia and three other Public bodies. Of the Municipalities that joined, SEAP on the platform of the Covenant of Mayors had 9 of them, i.e. almost 50%.

In the final meeting of the Local Support Group of the first phase of the project participants confirmed the contribution of SUPPORT project to the awareness and mobilization of public bodies in the preparation of their proposals and participation in the invitation of the OP RCM 2014-2020 policy instrument. In the next diagram becomes evident the extent of influence in the increase of the public expenditure available for the implementation of public/municipal buildings energy upgrade projects.



Players involved

The involved actors in the implementation of the Action are part of the Local Support Group. In the context of the meetings of the Local Group and utilizing the experience of corresponding good practices that emerged in the Interregional Seminars of the SUPPORT project, the initial roles of each actor involved in the implementation have been distributed in accordance with the table below.

Stakeholder	Role
Region of Central Macedonia	The Region is the owner of the action, as a funding and programming body of the policy tool and responsible for monitoring the action.
Anatoliki S.A.	<p>ANATOLIKI undertakes the mobilization of municipalities and their support for cooperation and readiness to prepare proposals for funding to calls for proposals of the ROP.</p> <p>ANATOLIKI will act as a SEAP coordinator to create groups of buildings.</p> <p>Also undertakes the exchange of know-how and experiences from the implementation of the projects in order to prepare a proposal for project prioritization and selection methodology.</p>
Municipalities in RCM	The municipalities are the beneficiaries of funding, as well as responsible for the utilization of their SEAP in the prioritization of buildings to be submitted to calls for energy upgrade.

Timetable

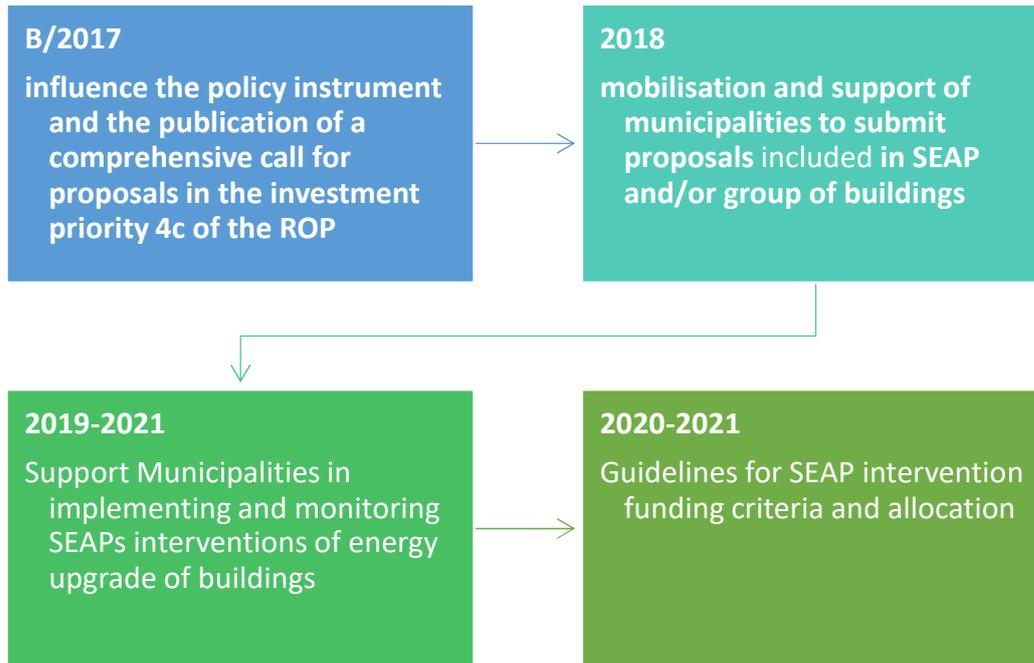
The implementation of the action started in July 2017 and will carry on to 30 June 2021. This choice was made by the LSG in the first meeting where the Region of Central Macedonia informed the stakeholders and especially the participating Municipalities and their Union about the Investment Priority 4c of the ROP of Central Macedonia Programme and the plan to implementation an intervention regarding the "Energy upgrading of public buildings in the Region of Central Macedonia".

All stakeholders agreed that SUPPORT project presented an opportunity to better steer and raise awareness and preparedness for the planned IP 4c intervention by using the exchange of experiences from other EU regions.

During the first phase of implementation, coinciding with the first phase of the project, the aim was the specialization of the call for the energy upgrading of municipal buildings in investment priority 4c of ROP of Central Macedonia and the mobilisation and support of municipalities to submit proposals included in their SEAPs.

During the second phase of the implementation of the project, takes place the monitoring

of the results of the [projects-energy upgrade projects](#) and the [exchange of know-how and experiencesupport of Municipalities](#) for the best possible utilization and the assurance of functionality and sustainability, providing useful [results-insights](#) and the [drafting guidelines for of relevant interventions of ERDF funds utilization of the next programming period 2021-2027 for evaluating, prioritizing and funding energy upgrade projects interventions](#) of SEAPs.



Costs and funding sources

The total cost for the implementation of the action was estimated at €21 million in the specialization of the ROP of Central Macedonia and €26.7 million from the publication of the call for proposals of action 4g1 of the ROP.

Action 2: Observatory for the energy consumption of municipal buildings

Identification of problem

In the Region of Central Macedonia there is no established single regional or national platform-information system or process for recording the data of energy consumption of public and municipal buildings. The only sources of information are the Energy Audits carried out in selected buildings and the SEAPs of Municipalities. However, the above are only static snapshots for a give moment or a given year.

Thus, in the absence of updated and comparable data, policy formulation and funding allocation are hindered. Furthermore, the LSG identified that there is also a discrepancy between the overall energy saving targets set in calls for proposals and/or individual projects and the actual savings realized after the construction phase.

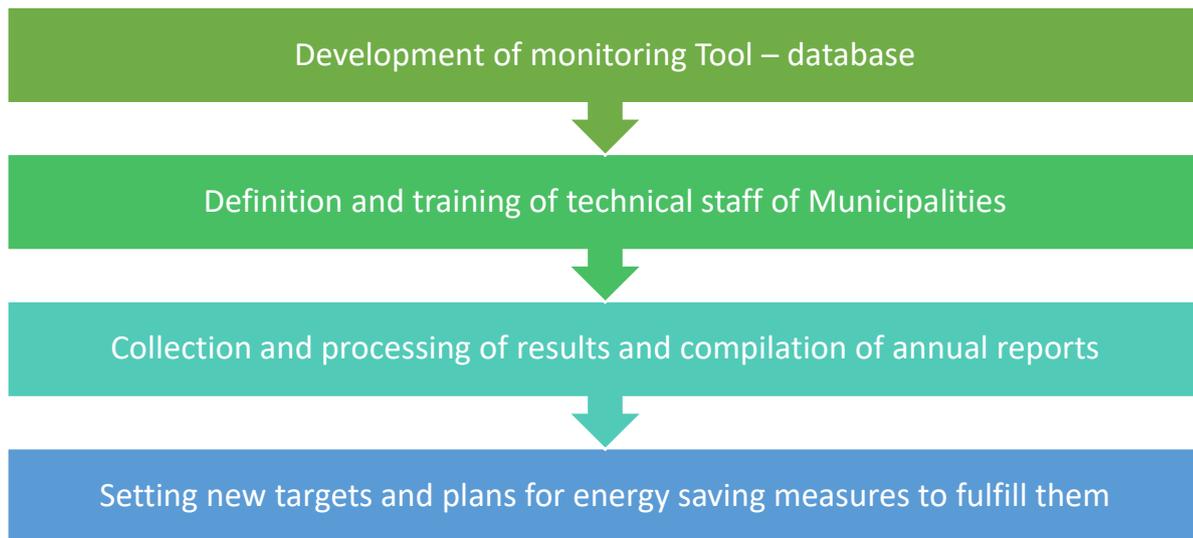
An additional problem arising is the need for public authorities to comply to the new institutional framework in Greece for Energy Efficiency, specifically the Energy Observatory will enable the implementation of measure 18 of the 4th Energy Efficiency Plan of Greece as well as article 5 of the Energy Efficiency Directive. Those framework documents prescribe the need for the elaboration of energy efficiency plans under the responsibility of the regional authorities and mayors for their buildings of competence, which contain specific objectives and actions for energy savings and energy efficiency improvement. In addition, they prescribe the need for the establishment of an energy management system.

Thus, the 2nd Action of the plan concerns the implementation of an "Observatory for the energy consumption of municipal buildings" during the 2nd phase of the SUPPORT project.

As a pilot sample of buildings for participation in the initial basis of the energy consumption monitoring system it is proposed to use the approved projects of the Invitation 4c1 of the OP RCM 2014-2020 policy instrument. In this way, the action will further contribute to influencing the policy instrument, offering a more thorough monitoring of the energy savings targets set, and their degree of achievement enabling the relevant stakeholders to design corrective measures, and courses to improve the design of similar calls for proposals for buildings energy upgrade in the next programming period. With the actual monitoring of energy consumption in municipal buildings, before and after the implementation of energy efficiency interventions, the policy instrument OP RCM will be influenced as to allocate funding where there are more effective (i.e. where the higher energy saving per € is achieved).

At the same time the action will contribute to the preparation of the institutions in the implementation of measure 18 of the 4th Energy Efficiency Plan as well as article 5 of the Energy Efficiency Directive, which provide for the designation of energy managers and the elaboration of action plans in public buildings.

The following activities are required for the implementation of the action in the Region of Central Macedonia:



Interregional experience and best practice exchange

An inspiration for this action was the Alba Iulia Energy Observatory in Romania. As mentioned earlier, Region of Central Macedonia doesn't have a system or process in place to gather public buildings energy consumption data. This represents a significant problem because it hinders the efficient allocation of public funds in projects that will have the higher efficiency and/or energy savings. Also, it poses challenges for local authorities to comply with the needs of the institutional framework for energy efficiency in Greece.

ANERGO presented a centralized methodology of data gathering through spreadsheet system on the Google Docs platform. This is universally adoptable and easy to use system which enables manual collection of public building energy consumption data with various access rights per user level. The system is based on the cooperation and mobilisation of the relevant executives and bodies participating. The system structure and data are compatible with both the Covenant of Mayors and the provisioning and reporting needs of Romania's National Energy Efficiency Programme.

This whole system and methodology of its implementation will be transferred to Region of Central Macedonia as it will provide updated and comparable data and analysis of energy consumption in municipal buildings, before and after energy upgrades. The common methodology and the open source of the system and the data will enable the uptake of the system by more authorities and buildings. Finally, it will increase the cooperation between municipalities and support the joint proposals for funding and also provide a basis for the compliance to the provisions of national Energy Efficiency Plan and the Energy Efficiency Directive.

Players involved

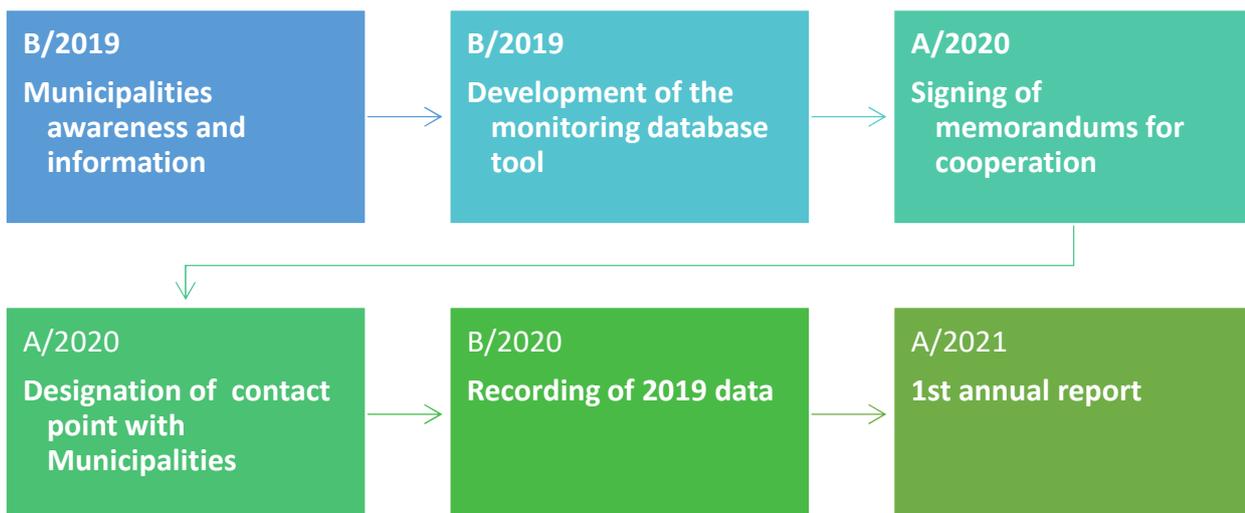
The involved actors in the implementation of the Action are part of the Local Support Group. In the context of the meetings of the Local Group and utilizing the experience of corresponding good practices that emerged in the Interregional Seminars of the SUPPORT project, the initial roles of each actor involved in the implementation have been distributed in accordance with the table below.

Stakeholder	Role
Anatoliki S.A.	<p>ANATOLIKI S.A. is the owner of the action, and given its role as the Regional Energy Centre of Central Macedonia, it undertakes the coordination of the action.</p> <p>In the premises of ANATOLIKI will be located the database, as well as the personnel who will undertake the collection and processing of data for the production of annual reports.</p> <p>ANATOLIKI undertakes the organization of information and training workshops for those involved in the use of the monitoring system and the technical staff of Municipalities.</p>
Region of Central Macedonia	<p>The Region of Central Macedonia is the funding and programming body of the policy instrument and responsible for the utilization of the data of the energy consumption monitoring system.</p> <p>Therefore, it undertakes the signing of memorandum of cooperation with the Municipalities for the utilization of data, as well as the design of new actions for the energy upgrade of public buildings and installations.</p>
Municipalities participating in the CoM	<p>Municipalities are the beneficiaries of the policy instrument, as well as responsible for implementing local energy efficiency plans.</p> <p>They undertake to provide data on the energy consumption of their buildings.</p> <p>At the same time they sign a cooperation memorandum with the Region and ANATOLIKI for the systematic recording of energy consumption data.</p>

Technical Chamber of Greece – Central Macedonia Department	<p>The Technical Chamber – Department of Central Macedonia will support the training of the technical staff of the Municipalities.</p> <p>At the same time, it will undertake the technical support for the correct recording of the energy consumption data.</p>
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Timetable

The overall timetable of the Action Plan is two (2) years, from 1st July 2019 to June 30, 2021. At 1st year of implementation the stakeholders will create the necessary structures and infrastructures for the operation of the energy consumption monitoring system of public/municipal buildings, while in 2nd year the first pilot recordings and the compilation of the 1st Annual implementation report will take place.



Costs and funding sources

The total cost for the implementation of the action is estimated at €30,000 and includes costs of personnel, equipment, promotion and education.

ANATOLIKI will use a Web-Platform developed by the INTERREG MED project “ENERJ”-Joint Actions for Energy Efficiency of Public Buildings” as a tool to provide data of municipal buildings uploaded in the platform.

The Region of Central Macedonia and the Municipalities participating in the CoM will provide own human resources needed to collect the data for energy consumption. Finally, ANATOLIKI S.A. will provide own expert human resources for the compilation of

implementation reports.

Action Plan monitoring

The following system of quantitative indicators of outputs and results is proposed for monitoring the implementation of the action.

Indicator	Type	Activities	Source	Target
Number of Municipalities' staff trained	Output	2. Observatory for the energy consumption of municipal buildings 1st Workshop 2nd Workshop	list of participants	40
Number of Municipalities signing the memorandum	Result	2. Observatory for the energy consumption of municipal buildings	Anatoliki	19
Expenditures for energy upgrade of municipal buildings	Output	1. Financing of energy upgrading of municipal buildings	SMS RCM (certified expenditure)	26.700.000€
Number of municipal buildings energy upgraded	Result	1. Financing of energy upgrading of municipal buildings	SMS RCM	37
Annual energy savings (Kwh/year)	Result	energy consumption monitoring tool	annual report	5.800.000

The estimate of the target value for the number of bodies to sign the cooperation memorandum comes from the number of Municipal beneficiaries who have been approved and receive funding for the implementation of energy upgrade projects for buildings of Action 4c1 of ROP RCM. The estimate for the energy upgrade expenditures of municipal buildings comes from the budget of the call for proposals of action 4c.1 of the ROP of Central Macedonia. The estimate for municipal buildings energy upgraded comes from the projects approved in the call of action 4c.1.

Respectively, the estimate for the target value of the annual energy savings comes from the target value of the relevant indicator for 2023 of ROP Central Macedonia.

Date: September 25, 2019

Signature: 

ΑΝΑΤΟΛΙΚΗ Α.Ε.
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ANNEX

Good practices for the RCM Action Plan

During the implementation of the actions for the exchange of experience of the SUPPORT project various good practices were recorded in the project partner regions related to the implementation of policies and projects for sustainable energy and the implementation of energy saving projects in municipal (public) buildings.

Some of these good practices have characteristics that can be transferred and applied in Greece. Below are presented these practices from various areas of the project, which mark the possibility of supporting similar solutions in Central Macedonia and/or the extension of existing ones.

Example 1: Energy Efficiency Milan Covenant of Mayors

It is a pilot project implemented by the Province of Milan in 2009 in order to improve the energy performance of a group of public buildings in the province and to achieve significant primary energy use reductions based on the principle of Energy Performance Contracting (EPC). The programme is designed to facilitate and finance energy efficiency retrofits for mainly public school buildings located in selected small municipalities (<30.000 inhabitants) in the Province of Milan and the Municipality of Milan participating in the Covenant of Mayors initiative.

The programme found its origin in a big scale energy audit programme, funded by Cariplo. The foundation concluded afterwards that the energy audits programme had not resulted in a significant uptake of investments in energy efficiency, basically due to constrained budgets, reduced or absence of borrowing capacity and the lack of technical capacity to develop projects.

Based on a joint study with the EIB a potential investment of 90M € in energy efficiency measures was identified for its realisation a Project Implementation Unit (PIU) was set-up in 2009. From the 90M€ the EIB was willing to make 65M € available to the ESCOs in the form of loans through an intermediary commercial bank in the region.

To date the Energy Efficiency Milan Covenant of Mayors programme has put in total three calls for tender in the market, of which two have been awarded: the first one, for an investment amount of 13M €, related to 98 buildings in 16 municipalities, the second one concerned an investment of 5,1M € and it included 38 buildings in the Municipality of Milan. The total amount of the investments are around 18M €.

Though the initial investment ambition of 90M€ has not been achieved this programme has had the merit of being the first in Italy covering investments in energy efficiency

measures solely based on EPC contracting on a regional level.

The project has up-scaled the dissemination and recognition of EPC models in Italy, providing guidance to other public administrations involved in other ESCO projects.

Example 2: “The Kulturhaus Hainholz (Hainholz House of Culture)” demonstration projects in Hannover

The Kulturhaus Hainholz (Hainholz House of Culture) is located in a specially designated area as part of the German government’s programme entitled “Urban areas with special development requirements – cities with a social spirit” (Stadtteile mit besonderem Entwicklungsbedarf – die soziale Stadt). Built in 1905 the building was used by the Hannover Region as a school until 2005. It was even considered the most attractive primary school in Hannover. Afterwards, the long-term usage of the building was uncertain until a decision was taken to carry on using it for this part of the city, at the beginning of 2007.

The extensive conversion and redevelopment of the building, as well as the redesign of the facades, were carried out between March 2009 and August 2010. The building shell was fully insulated, all of the technical installations were replaced, the toilets refurbished and all storeys were altered to offer access to people with special needs. An outdoor lift was also added to the northern end of the building. After consulting local interest groups and Hainholz Kulturgemeinschaft e.V., which has been operating the Kulturhaus Hainholz together with the City of Hannover since 1985, a cultural centre was created for cultural activities and voluntary work, as well as for a range of educational and training courses. An outside patio was added to the western side to enhance the appeal of the building and larger windows were added to the rooms on the ground floor and basement to increase brightness.

The refurbishment of the cultural centre was one of the first objects included in the redevelopment of that area of the city. As a result, it served as a role model for other redevelopment phases. From the very beginning, it attracted a great deal of interest from the local population, therefore helping to generate publicity.

The project shows that urban redevelopments provide a good opportunity for top-level, ambitious projects. On the one hand, it is easier to acquire funding and on the other, there is willingness from all the people involved to adopt practices which are above and beyond the call of duty. Local residents’ key focus is to maintain and revive the overall appearance of the area.

Example 3: The shared energy advice service for public authorities in the Rhône-Alpes region

Amongst the energy advice services offered by different structures in the Rhône-Alpes region, the shared energy advice service consists of offering small municipalities, which do not have energy managers in their internal teams, the services of energy specialists, who spread their work over areas that vary in size.

In the framework of the shared energy advice service, different organisations such as associations, local authorities in charge of energy supply and associations of local authorities provide energy management assistance and guidance to municipalities. This guidance takes the form of advice and monitoring in several fields: energy consumption, efficiency tools and financing methods. The service offered is mainly advice and monitoring of energy consumption, the tools used, the financing method (free or a fee per inhabitant) and the duration of the agreement with municipalities.

RAEE (Rhône-Alp Energy Environment) has been coordinating the network of shared energy consultants in the Rhône-Alpes region. This consists of encouraging discussion and increasing skills of consultants by sharing tools and practices amongst consultants, at the regional level (meetings every three months, monthly newsletters) and national level (via the network of ADEME the shared energy advice service). These actions are aimed at increasing the skills of the advice services and moving towards convergence of practices.

RAEE provides assistance in setting up new shared energy advice services and participates in the organisational strategic thinking of the advice services in order to ensure regional, Départements (county) and local consistency, in coordination with ADEME and the Rhône-Alpes Region.

ADEME (Agency for the Environment and Energy Management) participates in the implementation of public policies in the fields of environment, energy and sustainable development. It puts its expertise and advisory capacities at the disposal of companies, local authorities, public authorities and the general public, in order to enable them to make progress in their environmental approach. The Agency also helps finance projects, from research to implementation, in the areas of waste management, soil conservation, energy efficiency and renewable energy, materials saving, air quality, noise abatement, the transition to a circular economy and the fight against food waste.

The “Shared Energy Council” (sharing of an expert between several municipalities) can be carried by different kind of structures (natural regional park, energy agency, association of municipalities, ...). This cost is estimated around 1,5€/inhabitant. In the department of Loire, the energy savings made (8%) cover the cost of the expert.

In 2015, 16 organisations were providing this type of advice to over 640 municipalities (which represent 1.3 million inhabitants) and were employing 32 technicians dedicated to

this activity, i.e. a 19% increase in staff compared with February 2014. At the end of 2016 in Auvergne-Rhône-Alpes, more than 1000 municipalities were serviced by 53 technicians.

In 2016, with partner Région Rhône-Alpes and OSER, the EEEF funds financed the start of public buildings retrofits in some of the 271 public senior high schools. Current status is characterized by a successful tender for the renovation of 8 schools in the Rhône-Alpes region with a total investment volume of €20 million and an on-going tender for a library and a city hall with additional investment volume of more than €5 million.

Example 4: Andalusian Government Administration Energy Network

The Andalusian Government Administration Energy Network (REDEJA) is the instrument designed to promote, within the Andalusian administration, principles of efficiency in the contracting of energy supplies, energy efficiency and saving actions, as well as the implementation of renewable energy installations in its buildings.

In the energy model promoted by the Andalusian Government and included in successive plans, the public administrations must assume a catalytic and exemplary role aimed to a greater sustainability in the use of energy.

Previous analysis detected a high potential for energy and economic savings that could be obtained in the different public centres, in many cases higher than 40%, through a specific, coordinated and effective management of the energy bill of the Andalusian Government buildings.

REDEJA is currently working on four main lines of action: The optimization of electrical supply contracts and unified management; the development of sectorial studies and energy audits; the realization of investments in equipment and infrastructure and advice and training to adhered entities.

The Network is made up by the consumption centres of the General Administration of the Andalusian Government and all of its instrumental entities.

There are 116 adhered entities with 4000 buildings and 4900 electrical supplies. It has achieved an accumulated saving of 110 million €, stop emitting into the atmosphere an annual average of 13200 tCO₂. In 2017-2020 the investment is more than 30 million €, with the intention of carrying out 60 actions, 14MW of new renewable power, 2700 TOE/year of energy savings, an additional reduction of 80 million € of public expenditure and 24800 tCO₂/year emissions avoided, with the creation of 2500 jobs.

Example 5: Alba Energy Observatory

Alba Energy Observatory - ANERGO was established in the framework of a European project, as a structure within Alba Energy Agency - ALEA. The role of the Energy Observatory is to fulfill the need for aggregate energy consumption data at local and regional level, per sectors for territorial-administrative units. Municipalities and energy data providers have signed partnership agreements with ANERGO to facilitate the exchange of energy data between municipalities and energy services providers, public transport, and other sectors.

The creation of the Observatory was supported by the Intelligent Energy Europe DATA4ACTION project, which provided the necessary financial resources for its establishment and operation. Under the EU-funded DATA4ACTION project, ALEA benefited from the guidance provided by the Rhône-Alpes Regional Energy Agency. ALEA and ANERGO are currently supporting more than 15 Covenant of Mayors signatories from Romania in the development and implementation of their SEAPs.

ANERGO was created through a process of replicating examples of existing observatories at European level through the IEE DATA4ACTION project. The experience of setting up an energy observatory has also been replicated at national level for the purpose of creating a similar energy data center in the Bucharest region, by providing templates of agreements for cooperation between the observatory and municipalities /data providers and other information for necessary resources (human skills, soft tools, hard infrastructure).

Objectives of the Action Plan

The Action Plan aims to diagnose actions that will affect and/or introduced in the Operational Programme of the Region of Central Macedonia and will be implemented by the end of the SUPPORT project, i.e. 30/6/2021.

The Local Support Group recognised the main obstacles preventing the implementation of sustainable energy policies and in particular the implementation of Sustainable Energy Action Plans in the public sector building stock in the region of Central Macedonia through a participatory process and exchange of experience and knowledge during the first phase of the project implementation. In particular, the representatives of the stakeholders participated in Interregional Seminars and work visits to the partner countries of the SUPPORT project, where they were given the opportunity to experience the level of implementation of sustainable energy policies and projects and good practices in the field of energy saving. At the same time, four (4) workshops took place in the region of Central Macedonia, during which the stakeholders were informed by analyses of experts on the project's issues and recorded their views. All of the above were reflected in the deliverables –reports of the meetings, in a unified way. From the review of these

deliverables the strengths, weaknesses, opportunities and threats for the increase of energy efficiency and the parallel use of RES in public buildings and facilities were identified.

Strengths

- 22 Municipalities of the Region of Central Macedonia are included in the Covenant of Mayors.
- The relevant SEAPs include 115 interventions in municipal buildings with €151,780,687 cost and 680,806.869 MWh annually saving energy.
- Implementation of project EMPOWER in support of the Covenant of Mayors ' SEAP
- From the Energy Efficiency Certificates issued in public buildings in the Region of Central Macedonia, 75% are from H up to D class.

Weaknesses

- Difficulties in energy efficiency interventions in preservable buildings.
- Funding needs of public and municipal buildings for energy upgrade projects
- High cost of the necessary studies for the energy upgrading of buildings of local authorities
- Lack of information to local authorities on sources and tools for financing energy saving projects

Opportunities

- Utilization of funding tools and resources beyond ESI funds, such as EIB loans and banks and ESCO use.
- Implementation of packages of interventions that include groups of buildings of various Municipalities.
- High rates of energy savings and corresponding funds from cogeneration of heat generation in wastewater treatment plants.
- Existence of new opportunities to finance energy upgrading of public sector buildings through:
 - Infrastructure Fund
 - Deposits and Loan Fund
 - Competitiveness OP (244mil. €)

Threats

- Existence of significant obligations to comply with the legislation and the National Action Plans for Energy Efficiency and Increase of the Number of Buildings with Almost Zero Energy Consumption such as:
 - Building Energy Managers
 - Energy efficiency action Plans for each building
 - Public sector service Buildings should be nearly zero energy consumption from 1/1/2019 (existing and new)

Based on the above organization of the conclusions that emerged from the framework analysis and the work of the Local Support Group, taking into account the exchange of experience in the Interregional Seminars and the good practices presented in study visits and the project website in Interreg Europe, stakeholders determined as key Priority Axes of the SUPPORT Action Plan in the Region of Central Macedonia, the following:

1. The safeguarding and increase of funding for Municipalities for energy-saving and energy-efficient projects.
2. The joint action of Local Authorities to achieve economies of scale and to fill gaps in financial and human resources.

The Priority Axes of the Action Plan SUPPORT is specialized in Specific Objectives as follows:

1. Improvement of Municipalities' access to finance – financial instruments for the implementation of SEAP interventions in municipal buildings and installations.
2. Strengthening cooperation and exchange of know-how between Municipalities to adapt to energy efficiency legislation requirements.
3. Effective ways of evaluating, monitoring and prioritising energy upgrade projects for municipal/public buildings and facilities in regional level.