



20160502– CITYnvest

Action Plan for Rhodope Region

2nd draft as of 2 May 2016

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In collaboration with:

ARM



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649730. The sole responsibility for the content of this website lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.

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Introduction

The present Action Plan has been developed under WP3 with the following main goals:

- to present the current situation in Rhodope Region regarding sustainable energy potential focusing on building retrofitting/RES incorporation and street lighting;
- to present available financing models of relevance to local sustainable energy actions in Rhodope Region;
- to tailor the Liege approach (RenoWatt experience to create a one-stop-shop) to Rhodope Region and to ensure it fits with Rhodope constraints and reality;
- to outline the necessary steps to be taken in order to put in place the infrastructure that will help Rhodope municipalities in securing funding, while taking into account organizational, administrative, legal and financial aspects.

Brief description of Rhodope Region

Rhodope Region is situated in the Southern/South-Western part of Bulgaria within the Rhodope Mountains. The terrain is mountainous with vast forests and suitable conditions for tourism and skiing; climate is mountainous with snowy winters and cool summers with a lot of sunshine.



Source: "Rhodopen Balkan topo de" by RosarioVanTulpe - based on the map Balkan_topo_de.jpg which bases on the map Balkan_topo_blank.jpg. Licensed under CC BY-SA 3.0 via Commons - https://commons.wikimedia.org/wiki/File:Rhodopen_Balkan_topo_de.jpg#/media/File:Rhodopen_Balkan_topo_de.jpg

The total population of the region is 612 220 inhabitants¹ located in 22 municipalities who participate in Association of Rhodope Municipalities (ARM) – the organization supporting CITYinvest. The following municipalities are members of ARM: Municipality of Devin, Municipality of Septemvri, Municipality of Rudozem, Municipality of Zlatograd,

¹ Data of National Statistical Institute census 2011

Municipality of Velingrad, Municipality of Asenovgrad, Municipality of Smolyan, Municipality of Bratsigovo, Municipality of Chepelare, Municipality of Kardzhali, Municipality of Banite, Municipality of Madan, Municipality of Laki, Municipality of Batak, Municipality of Rakitovo, Municipality of Nedelino, Municipality of Dospat, Municipality of Borino, Municipality of Rodopi, Municipality of Momchilgrad, Municipality of Kirkovo, Municipality of Strelcha. The six biggest municipalities are: Municipality of Kardzhali (105 993 inhabitants), Municipality of Rodopi (81 705 inhabitants) consisting of suburban areas of the town of Plovdiv, Municipality of Asenovgrad (71 465 inhabitants), Municipality of Smolyan (51 943 inhabitants), Municipality of Velingrad (42 103 inhabitants) and Municipality of Septemvri (33 845 inhabitants). The six biggest municipalities together make about 70 % of the population of the region.

Association of Rhodope Municipalities (ARM) is an NGO created with the main aim to provide general support to its participating municipalities but the Association lacks specific expertise in building retrofitting projects and in securing financing for them. There is no local development agency to provide this expertise so ARM has supported CITYnvest project in order to bring the knowledge about innovative financing schemes suitable for the local conditions.

Local awareness and past actions

There is a significant local potential for building retrofitting and RES incorporation within the Rhodope Region as well as awareness about sustainable energy issues at the local level. There are five municipalities that have joined the Covenant of Mayors. These are: Municipality of Asenovgrad, Municipality of Bratsigovo, Municipality of Smolyan, Municipality of Rudozem, and Municipality of Zlatograd. Two of those (Asenovgrad and Smolyan) have submitted their Sustainable Energy Action Plans while others have developed various municipal programs and plans for energy efficiency and RES utilization that foresee concrete actions for building refurbishment and RES incorporation as well as street lighting projects. More than a half of Rhodope Municipalities municipalities have made energy audits of their public buildings of which only 25% have been realized. The investigation made under CITYnvest project shows that energy efficiency improvements have been already implemented in 127 municipal buildings in Rhodope Region with total investment of almost 27 MEuro. The figures prove that there is high interest and commitment on behalf of local authorities towards energy efficiency refurbishment of the municipal building stock.

Role of CITYnvest

In spite of the achievements there are identified projects and actions that need funding in order to be implemented and contribute to the local targets for CO₂ emissions reductions and for achieving energy savings and RES utilization at the local level. The experience within the Region shows that generally there is not enough collaboration between municipalities to gain a critical mass for attracting funding for their sustainable energy projects. The foreseen role of the CITYnvest project is to provide expertise and knowledge to speed up energy retrofitting by setting up a suitable infrastructure (one-stop-shop) to act as a knowledge centre facilitating the cooperation among Rhodope municipalities in order to improve their access to funding. In this task GRE Liege will play an important role by bringing in their significant experience in similar initiatives and adapting it to the specific local conditions.

Legal aspects of local debt financing

In Europe, some of the Member States have troubles to launch large energy retrofitting projects due to the interpretation of the accounting rules by Eurostat (cf. Guidance Note of 07/08/2015), which creates a constraint for those authorities that cannot increase their debt level.

In Bulgaria, the figures of the Ministry of Finance as of May 2015 show that overall public debt/GDP ratio is 28,8 % (MoF bulletin data) which give a room for municipalities to employ debt financing when considering retrofitting of buildings and lighting systems. On the other hand, there are legally binding limits for municipal borrowing set in Public Finance Law, Art. 94, i. 3, as follows:

- Liabilities for expenses (*payments for accomplished public works*) at the end of the year cannot exceed 5 % of the average annual amount of accounted expenses for the last 4 years;
- Maximum amount of engagements for expenses (*contracts for future public works*) at the end of the year cannot exceed 30 % of the average annual amount of accounted expenses for the last 4 years

These limits should be taken into account within CITYnvest activities especially when smaller municipalities with limited own budgets are involved - in such cases it may be feasible to consider bundling of several neighbouring municipalities in order to gain critical mass for implementing retrofitting projects.

Facilitation structures under CITYnvest

Program authority/Program Delivery Unit roles and functions: The Program Authority (PA) and the Program Delivery Unit (PDU) are the two main stakeholders that will manage and implement the program or the model.

- Program Authority (PA): The Program Authority (PA) is the public entity or organization that is in charge of the program or that controls the Program Delivery Unit (PDU). This is typically a national or regional government, a provincial or local authority or council or a city or municipal council. The Program Authority (PA) define the vision and the program scope including the targeted beneficiaries, the level of ambition, the implementation model and the funding vehicle that will be put in place. The Program Authority also identifies within the stakeholders/parties who can play the role of Program Delivery Unit (PDU), and determines the services that it will offer to the beneficiaries. The Program Authority has also to secure the funding of the Program Delivery Unit (PDU).
- Program Delivery Unit (PDU): The Program Delivery Unit (PDU) is the organization that is specifically set-up (and/or entitled) to implement/execute the program. It is often a separate legal entity, but can also be a department or project team within an existing organization. It can be a public, a public-private or a private entity/organization, depending the local capabilities. In the most advanced models, the Program Authority (PA) has set-up a specific legal entity to play the role of Program Delivery Unit (PDU), either as a local public company or a mixed company (public-private).

Key questions to address:

Program Authority (PA)	
Who is/are the Program Authority (PA)?	21 municipalities in Rhodope region through the General Assembly of Association of Rhodope

	Municipalities
How can you help the Program Authority (PA) to have a clear vision of the issues?	Show them the summarized overview of existing potential in the Region, legal and administrative issues, available national/international sources of financing
How can you support the Program Authority (PA) to define the vision and the program scope?	After studying the different models presented in WP2, the approach to be adopted and proposed to ARM will follow the model and role of GRE Liege taking into consideration local conditions and the considerations of the Managing Director and the General Assembly of ARM (the governing body with decision making powers). Currently, the ARM is not staffed to take over such responsibilities. A dedicated team and budget would be needed.
How can you get from the Program Authority (PA) a clear commitment to the beneficiaries and the Program Delivery Unit (PDU)?	A Letter of Commitment to be used to apply for PDA at H2020 (next deadline: 15 September 2016). To be discussed with the General Assembly of ARM.
Program Delivery Unit (PDU)	
What are the capabilities and knowledge requirements to manage the Program?	Experience in SE project management and financing (e.g. energy efficiency retrofitting of public buildings or street lighting,) recruited by ARM or other suitable structure undertaking the role of facilitator and “one-stop-shop”
What are the tools and resources requirements to manage the Program?	Specific knowledge on methodology and tools for financial assessment of SE projects as well as expertise in public procurement and tendering procedures in Bulgaria. These will be a problem on a regional level due to lack of local expertise so additional training will be required.
What will be the staff requirements to manage the Program?	3-4 permanent staff
What will be the funding requirements to manage the Program?	0,5-1 MEuro
How long will be the Program?	Start with 36 months pilot phase and continue if successful
Who are the stakeholders/parties that have those capabilities, knowledge and resources to play the role of Program Delivery Unit (PA)? Are they willing to play it?	It is planned to establish a specific structure to play the role of PDU within ARM and recruit the adequate competencies. Training to the staff and study-tour to GRE-Liege will be provided. .
Is it desirable/necessary to set up a specific entity to play the role of Program Delivery Unit (PDU)?	Yes
If a specific entity is to be set up,	Public (as part of ARM)

should it be a public company or a mixed company?	
If a mixed company is suitable, who are the private stakeholders/parties that can be invited? Are they willing to play it?	N/A
How will the Program Delivery Unit (PDU) be funded?	Possible sources of funding: <ul style="list-style-type: none"> • H2020E22 2016-2017 Project Development Assistance • ELENA funding • BGEEF • National operational programmes/ERDF (to be investigated)
Could the Program Delivery Unit (PDU) apply for a technical assistance (e.g. Elena (EIB) technical assistance facility)?	Yes

Summary:

It is foreseen to create a PDU as a structure within ARM and recruit the necessary staff with technical and financial expertise by applying for PDA H2020 (or another suitable option). The recruited staff will receive training on economic aspects of project evaluation as well as on technical aspects of EE in buildings and in street lighting combined with a study-tour to GRE-Liege.

Actions to undertake

No	Action	Due	Owner	Status
1	General assembly of ARM to be presented the concept of PA and PDU and get first feedback	25.03.2106	SEC/ARM	completed
2	Collection of feedback from municipalities and spotting most promising ones	15.05.2016	SEC/ARM	On-going
3	Presentation to GA of ARM of detailed action-plan with concrete actions and the ways to finance PDU activities.	26.05.2016	SEC/GRE-Liege/ARM	On-going
4.	Signing a letter of commitment for establishing PDU and applying for financing by most promising municipalities (eg. Smolyan)	10.06.2016	SEC/ARM	On-going
5	Identify needs of training for PDU	15.07.2016	SEC/GRE-Liege/ARM	On-going
6	Writing the application to PDA H2020	15.09.2016	SEC/ARM	On-going

Beneficiaries, type of projects & Level of “ambition”

The beneficiary profile, the type of projects and the level of ambition will have a significant impact on the model:

- Beneficiaries: They could come from the public sector, the commercial sector, the residential sector and/or the industrial sector.

- Type of projects: It could be Energy Efficiency building retrofit project, Energy Efficiency public lighting retrofit project, Energy Efficiency industrial retrofit project or renewable energy project.
- Level of ambition: the level of ambition could be classified as following:
 - Up to 35% reduction of energy consumption and/or GHG emissions: this level of ambition could be reached with short and middle term contract durations (average 10 years) based on technical installations (HVAC, lighting, electrical...) retrofits and managed energy services. As basic indicator, the price per square meter in case of a building retrofit could be less than 50€. Typically the ESCO market based offer target this level of ambition. The market is also able to offer ESCO and TPF financing options for this level of ambition.
 - Up to 50% reduction of energy consumption and/or GHG emissions: this level of ambition could be reached with middle and long term contract durations (between 15 and 25 years) based on technical installations (HVAC, lighting, electrical...) retrofits, envelope retrofits (insulation), renewable energy generation and managed energy services. As basic indicator, the price per square meter in case of a building retrofit could be less than 200 €. There are various examples in Europe of EPC/ESC models that have addressed such a level of ambition. ESCO financing and/or TPF financing will be more difficult to find for this level of ambition.
 - Up to 75% reduction of energy consumption and/or GHG emissions: this level of ambition could only be reached with long or very long term contract durations (min. 25 years) based on deep retrofits. As basic indicator, the price per square meter in case of a building retrofit could reach up to 800 €. There are a few examples in Europe of EPC/ESC model that have addressed such a level of ambition. This level of ambition will require a mix of financing solutions (conventional financing, ESCO financing, PDU financing, Investment fund).
 - Carbon neutral: this level of ambition could only be reached with deep retrofit and renewable energy generation projects. This level of ambition will require a mix of financing solutions (conventional financing, ESCO financing, PDU financing, Investment fund).

Key questions to address

Beneficiaries	Comments
Who will be the beneficiaries of the program?	Public authorities (for EE/RES in public buildings and street lighting) Private households (for residential buildings retrofitting at a later stage)
How many are they and what is their potential in terms of number and size of projects?	Public buildings:² Identified projects of 180 municipal buildings with 226 967 sq.m. in the municipalities of Bratsigovo, Madan, Rodopi, Septemvri, Smolyan, Strelcha and Zlatograd. Calculated savings: 20 427 000 kWh/annum (at 300 kWh/sq.m/annum average consumption for different types of buildings – schools, kindergartens, hospitals, etc., and 30 % savings after retrofit) Cost of investment in retrofitting: 23MEuo (at about 100

²The data have been derived from the available municipal programmes and strategies for energy efficiency development and from Sustainable Energy Action Plans submitted to CoM

	<p>Euro/sq.m)</p> <p>Street lighting³:</p> <p>Potential for refurbishment of street lighting for all 22 municipalities in Rhodope region:</p> <p>Investment costs: 270 millions–if all components (lamps, fixtures, poles) are changed which is about 440 euro/inhabitant; 7,35 MEuro- if only lamps are changed with more efficient (which is the preferred option in view of big investments otherwise) which is about 12 Euro/inhabitant; 15,3MEuro if an ESCO contract is included with replacement, maintenance and control (about 25 Euro/inhabitant).</p> <p>Residential buildings:</p> <p>Overall potential: 133 736 buildings with over 16 million sq meters residential area,</p> <p>402 large concrete buildings with 14 000 dwellings (given priority under the National Programme for Residential Building Energy Retrofitting) with total building area of 1 036 000 sq.m. area.</p> <p>Investment costs: 72,5 MEuro</p> <p>Calculated savings: 83 916 000 kWh/annum (at average consumption of 270 kWh/sq.m/annum for large concrete buildings before retrofitting and 30 % savings from retrofitting)</p>
What is the estimated funding need to finance the beneficiaries projects (depending of the level of ambition)?	<p>Public buildings: 23 MEuro</p> <p>Street lighting: 7,35 MEuro</p> <p>Residential buildings: 72,5 MEuro</p>
Are those potential and funding needs addressable within the program?	<p>Yes, the identified potential can be addressed by the different units within the programme although the first focus will be on street lighting and/or public buildings. After a proven successful programme operation it will focus on residential buildings at a later stage.</p>
Type of projects	Comments
What will be the type of projects?	<ul style="list-style-type: none"> • EE/RES in public buildings; • Street lighting; • EE retrofits in large concrete multifamily residential buildings
What will be the knowledge and resources requirements to realize this type of projects?	<p>Experience in project management;</p> <p>Knowledge on methodology and tools for financial</p>

³ Same as previous

	assessment of SE projects; Expertise in public procurement and tendering procedures in Bulgaria
Are there experienced ESCOs, contractors and/or suppliers to realize that type of projects?	Only limited capacity of ESCO activities is available in Bulgaria as there are isolated cases of ESCO eg. Ulichnosovetlenie in street lighting and ENEMONA in public building refurbishment
Level of ambition	Comments
What will be the level of ambition for the project?	30 % of savings and 30%GHG emissions reduction.
Is it coherent with the beneficiaries potential?	Yes
Are beneficiaries able or willing to contract on very long term?	To be defined although not usually due to political constraints
Is it addressable within the program?	Yes

Summary:

The identified potential in street lighting and public buildings refurbishment will be initially tackled because it is achievable within municipal decision making process while residential buildings involve also agreement of private owners and will be focused at a later stage when the programme has gained momentum and it is easier to show its usefulness and results.

Actions to undertake

No	Action	Due	Owner	Status
1.	Collect data from Rhodope Municipalities about building stock (public and residential) and street lighting systems	31.08.2015	SEC/ARM	completed
2	Identify types of potential projects and necessary expertise to implement them	21.12.2015	SEC/GRE-Liege/ARM	completed
3	Calculate potential savings and investment needed	20.03.2016	SEC/GRE-Liege/ARM	completed

Implementation model

The implementation model is the method by which the projects are technically and operationally implemented in the field, most often by using contractors or subcontractors. Typical implementation models are Energy Performance Contracting, Energy Supply Contracting and Separate Contractor Based.

- EPC/ESC model: Energy Performance Contracting (EPC) or Energy Supply Contracting (ESC) is a method by which an ESCO (Energy Services Company) acts as a unique contractor and assure all the technical risks of the contract. The ESCO delivers to the contracting beneficiary performance guarantee on the energy savings (EPC) or “useful” energy to a contractually agreed price (ESC) that secures the stream of revenues to reimburse the investment. In the EPC/ESC model, the Program Delivery Unit (PDU) can act either as a project facilitator or

project integrator but do not takes on the technical risks of the project (neither the beneficiary). The EPC/ESC model is the key condition to access to ESCO and/or Third party financing (TPF).

- **Separate contracting:** Separate contracting is a method to implement multi-technique energy efficiency or renewable energy projects, by which each step of the process is dealt with by a separate party (energy auditor, engineering company, installer or contractor, maintenance company) and by which individual projects (e.g. boiler replacement, relighting, isolation, etc.) are executed by separate contractors for each technique. In this model, the Program Delivery Unit (PDU) can act either as a facilitator of integrator, but it can be useful to have the Program Delivery Unit (PDU) or another organization to act as an integrator to ensure an end-to-end delivery of the energy efficiency program and provide a consistent level of service from the different contractors. In the Separate contracting model, the Program Delivery Unit (PDU) and/or the beneficiary takes on the technical risks of the project. In this model, there is also little room to access to Third party financing (TPF).

Key questions to address:

EPC/ESC vs. Separate contracting	Comments
Are there local ESCO's on the market to organize competitive tenders? (= Condition for EPC/ESC)	The market is not mature enough but there are isolated cases eg. in street lighting and also ENEMONA in public buildings
Do local ESCO market practices meet the program level of ambition (e.g. in case of deep retrofit)? (= Condition for EPC/ESC)	No, but the programme does not target deep retrofit
Are the beneficiaries able or willing to sign long term contracts with suppliers/private ESCO's? (= Condition for EPC/ESC)	Not usually, due to political constraints: long-term contracts don't match with the political cycle/mandates as the new elected mayors tend to reject old mayors' decisions solely on political grounds.
Is there a standard and robust EPC/ESC tendering model available locally? (= Condition for EPC/ESC)	No
Is there local expertise and resources in EPC/ESC tendering process? (= Condition for EPC/ESC)	No
Is it desirable to integrate "operating and maintenance services" within the contractual scheme for the projects? (= Suitable for EPC/ESC)	Yes, in street lighting mainly as there is a suitable ESCO in this sector. The situation with ENEMONA (active in public buildings) is unclear as they experience financial difficulties. It is possible, however, to contract only the operating/maintenance services as there are ESCOs (like DALKIA) doing only this part of the project while the funding part is undertaken by the municipality itself.
Is it important/necessary to manage the technical risk of the projects by performance	Yes, in street lighting mainly Only limited capacity of ESCO activities is

guarantees? (= Suitable for EPC/ESC)	available in Bulgaria as there are isolated cases of ESCO eg. Ulichnosovetlenie in street lighting and ENEMONA in public building refurbishment
Is it important/necessary to manage and control transaction costs of the projects? (= Suitable for EPC/ESC)	No , as the Programme is not directed to full ESCO involvement but mainly to operating/maintenance services.
Is it important to enhance financial predictability of the projects? (= Suitable for EPC/ESC)	Yes, as in any case the financial viability of the project is crucial to secure funding no matter if it is a bank loan or ESCO, or revolving fund.
Are ESCO and/or TPF financing desirable or necessary? (= Suitable for EPC/ESC)	No The experience of GRE-Liege shows that it is financially more favourable for municipalities to secure funding from other sources and contract ESCO only for operating/maintenance services.
Are the "time to invest" and "time to savings" decisive factors for the program? (= Suitable for EPC/ESC)	No as the Programme is not directed to full ESCO involvement but mainly to operating/maintenance services

Summary

Separate contracting is the preferred model of implementation for Rhodope Region as the market for ESCO services is not mature enough and there are only isolated cases eg. in street lighting and also ENEMONA in public buildings. This means that each step of the process is dealt with by a separate party (energy auditor, engineering company, installer or contractor, maintenance company) and by which individual projects (e.g. boiler replacement, relighting, isolation, etc.) are executed by separate contractors for each techniques. Under this model the Program Delivery Unit (PDU) will act as a facilitator (one-stop-shop) to support public authorities to launch refurbishment of public buildings and/or street lighting on their territories. It helps them in establishing audit schemes, choosing technical solutions, finding financing solutions and performing tendering processes. The PDU develops the economic and technical assessments on behalf of the municipalities and applies it to the available operational programmes/revolving and/or grants as the market is not mature enough for EPC (although this possibility will be considered by the PDU)

Actions to undertake

No	Action	Due	Owner	Status
1.	Investigate local TPF/ESCO market	31.12.2015	SEC/ARM	completed
2.	Assess different operation models and present to GA of ARM to be considered	25.03.2016	SEC/ARM	completed
3.	Define operational model for the programme and get approval by GA of ARM	26.05.2016	SEC/GRE-Liege/ARM	On-going

Operating Services

The Operating Services are the kind of services that are delivered by the Program Delivery Unit (PDU). They can be Marketing, Aggregation, Integration, Facilitation, Financial Advisory, Financing and Assessment (or a combination of):

- Marketing: Marketing covers the commercialization of the services of energy efficiency to the beneficiaries. This covers the whole range of communication and commercial development services that are necessary to inform the beneficiaries of the types of offerings that are available to them. It also covers the pricing policy and product/services development.
- Aggregation: see below
- Facilitation: Facilitation means that the Program Delivery Unit (PDU) does not sign the contract with the beneficiary, but coordinates or “facilitates” the whole process of project delivery on behalf of the beneficiary. The contracts are signed directly between the beneficiary and the contractors. This role is often played by the Program Delivery Unit (PDU) in case of EPC/ESC implementation model, where the contract is signed directly between the beneficiary and the ESCO. Managing the tendering process is typically part of facilitation services offered in case of EPC or ESC projects.
- Integration: Integration means that the Program Delivery Unit (PDU) acts as an intermediary between the beneficiary on one hand and the contractors or subcontractors on the other hand. This means that the contract for the delivery of the energy efficiency is signed between the integrator and the beneficiary and that the integrator signs contracts with the (sub)contractors. This role is often associated with the Separate Contractor Based implementation model, although it can also be applied to EPC or ESC. In the integrating model, the Program Delivery Unit (PDU) takes on the technical risks of the project, except to have back-to-back agreements with the beneficiary on one hand and the ESCO on the other hand (in the case of EPC/ESC model).
- Financial Advice: see below
- Financing: see below
- Assessment: Assessment is the role by which the PDU evaluates the technical and financial viability of an energy efficiency project and decides whether or not the project gets implemented and/or financed. The PDU will typically use a number of criteria to judge whether the project is acceptable or not

In case of **CITYnvest Rhodope PDU** the following operating services have been considered:

The PDU will be one-stop-shop to support public authorities to launch refurbishment of buildings and/or public lighting on their territories. It helps them in audits, technical choices, financing solutions and tendering process. The structure has following main activities:

- Marketing and communication: to inform the beneficiaries of the types of offerings available to them. It also covers the pricing policy and product/services development.
- Facilitation and client support: Facilitation means that the Program Delivery Unit (PDU) does not sign the contract with the beneficiary, but coordinates or “facilitates” the whole process of project delivery on behalf of the beneficiary. The contracts are signed directly between the beneficiary and the contractors – due to legal constraints the municipalities prefer to launch tenders by themselves. .
 - ✓ Play as a knowledge centre;

- ✓ Gather competences and resources in one place (audits, works to be realized, financial viability calculations, define tendering specifications and assess received offers against pre-defined criteria).
- ✓ Helps identify financing solutions applicable to different municipalities/clients – as Rhodope municipalities are of different size they are eligible for financing under different national Operational programmes. The PDU will investigate the opportunities and will identify suitable financing sources depending on client's profile.
- ✓ Assist in finding and negotiates the terms and conditions with ESCOs;
- ✓ Monitor project results
- Project Bundling
 - ✓ Bundle projects across different clients / municipalities which allows to diversify the risks, get better financing mechanisms, makes synergies across the retrofit projects and attract professional companies
 - ✓ Increase the size of the projects and the investment size
 - ✓ Create more attractive investment opportunities for building contractors, ESCOs, maintenance companies, financial Sector

The goal is to start with first with Municipality of Smolyan, and to attract 4-5 smaller municipalities. Smolyan has shown supportive attitude towards CITYinvest initiative, it is one of the biggest in terms of inhabitants, it is the centre of the Smolyan District, and therefore is influential for the smaller municipalities around like Zlatograd, Chepelare, Devin, etc. The funding will be sought from H2020 (Project Development Assistance or), ELENA facility or the Operational Programmes 2014-2020.

Financing & Funding Vehicle

The Funding Vehicle is the entity that is used to finance the projects. Typically, the models/programs that were analyzed make use of the following funding vehicles (or a combination of) :

- Investment fund: the Program Authority (PA) or the Program Delivery Unit (PDU) set-up a public, public-private, public-citizens fund to provide total or partial project financing of the program. The fund can work on a stand-alone basis, in cooperation with the Program Delivery Unit (PDU) or be integrated into the Program Delivery Unit (PDU). In this case, the fund takes on the financial risk of the project.
- PDU financing: the Program Delivery Unit (PDU) acts as the funding vehicle, providing financing, either through an own fund (or the Investment fund) or by packaging external financing solutions into an integrated financing service. In this case, the Program Delivery Unit (PDU) takes on the financial risk of the project.
- ESCO financing: the ESCO or contractor acts as the funding vehicle, providing financing through either EPC financing or ESC financing. In this case, the ESCO takes on the financial risk of the project. The Program Delivery Unit (PDU) can support the beneficiary with financial advice and financial engineering services providing guidance and consultancy on ESCO financing for these projects.
- Conventional financing: the beneficiaries pack internal (own funds) and external financing (financial institutions, utility funds, etc.) solutions in order to finance his projects. In this case, the beneficiaries take on the financial risk of the project. The Program Delivery Unit (PDU) can support the beneficiary with financial

advice and financial engineering services providing guidance and consultancy on available funding for his project.

Key questions to address

Main topics	Comments
What is the funding need of the program	30 MEuro without residential buildings 100 MEuro with residential buildings
Are there existing local, regional or national financing instruments to fund the program (e.g. ERDF)	Yes, Operational programme “Regions in Growth” and Operational Programme “Rural Development”
Is it eligible for EU funding (e.g. EIB)?	Yes
Who can bare the financial risk?	Municipalities themselves
What is the bearable impact on public balance sheet and/or beneficiary balance sheet (debt capacity)?	Public debt/GDP ratio in Bulgaria is 28,8 % (MoF bulletin data as of May 2015) Legal constrains for municipal borrowing: Public Finance Law, Art. 94, i. 3: 1. Liabilities for expenses (<i>payments for accomplished public works</i>) at the end of the year cannot exceed 5 % of the average annual amount of accounted expenses for the last 4 years; 2. Maximum amount of engagements for expenses (<i>contracts for future public works</i>) at the end of the year cannot exceed 30 % of the average .annual amount of accounted expenses for the last 4 years.

Conventional financing	Comments
Are financial advice and financial engineering services to the beneficiary sufficient?	Yes
Can beneficiaries count on their own funding (own debt capacity)?	Yes
Can beneficiary take the financing risk on?	No
Is bank financing available for the kind of projects?	There is no special bank facility (eg. credit line or programme) for these type of projects but if the project is financially viable loan can be secured

	on common terms of the bank.
Can the Program Authority (PA)/Program Delivery Unit (PDU) set up an agreement with financial institutions (public and private) on a structural funding scheme for your program?	Yes, with national operational programmes. National operational programmes 2014-2020 are financing mechanisms operated in Bulgaria with EU funds like ERDF, Cohesion Funds, etc., plus national co-funding. Information on this financing vehicle is provided on page 20
Does the beneficiary need partial credit guarantee or portfolio guarantee to finance his projects?	No
Can the Program Authority (PA)/Program Delivery Unit (PDU) set up a credit guarantee fund to support the program funding through beneficiaries?	No
ESCO Financing	Comments
Does local private ESCO's (market) provide funding?	The market is not mature and it is limited to isolated cases for street lighting and public buildings
Is the ESCO financing competitive compared to conventional (or PDU) financing?	ESCO guarantees the resulted savings which reduces the technical risks of the project (technology or technical solution involved) that otherwise lies upon the project owner/financier. Anyway, the experience of GRE-Liege shows that ESCO funding is not competitive to other types of funding eg. bank loans.
Could the local private ESCO's market meet the program size (funding volume)?	No
Can the Program Authority (PA)/Program Delivery Unit (PDU) set up an agreement with financial institutions (public and private) on a third party structural funding scheme for your program?	Yes, with national operational programmes National operational programmes 2014-2020 are financing mechanisms operated in Bulgaria with EU funds like ERDF, Cohesion Funds, etc., plus national co-funding. Information on this financing vehicle is provided on page 20
Does the ESCO need partial credit guarantee of portfolio guarantee?	Yes
Can the Program Authority (PA)/Program Delivery Unit (PDU) set up a credit guarantee fund to support the program funding through ESCO's?	No, but BGEEF (Bulgarian Energy Efficiency and Renewable Energy Fund) can provide partial guarantees for ESCOs for public retrofitting
PDU Financing	Comments

Is it necessary and/or cheaper to integrate the project financing within the model?	No
Can the Program Delivery Unit (PDU) take the financing risk on?	No
What is the desired level of integration of the program funding in the role of aggregator/facilitator/integrator?	Aggregator + facilitator
Does the Program Delivery Unit (PDU) have the financial expertise and resources to fund the program?	No
Can the Program Delivery Unit (PDU) have access to sufficient funding to meet the program size?	Yes, through national Operational programmes
Can the Program Authority (PA)/Program Delivery Unit (PDU) set up an agreement with financial institutions on a third party structural funding scheme for your program?	Yes, through national Operational programmes

Summary:

Because the market for ESCOs is not mature enough it is considered that the Programme for EE in Rhodope Region will start with conventional funding focusing mostly on National operational programmes 2014-2020 (combined public subsidies with revolving mechanisms). Additionally ESCO funding possibilities (like ESCO for street lighting) matching the needs of the Programme and possibilities for direct bank loans will also be investigated and considered.

Existing financing instruments for the retrofitting in Bulgaria

BGEEF

Bulgaria has created a revolving fund (Bulgarian Energy Efficiency Fund – BEEF) that can be used as a financing option to launch an ambitious energetic retrofit program in the Rhodope Region. The Fund was established pursuant to the Energy Efficiency Act, with intergovernmental agreements between the Global Environment Facility (through the World Bank), the Government of Austria and the Government of Bulgaria. The fund operates according to the provisions of the Energy Efficiency Act, the Energy from Renewable Sources Act and the agreements with the Donors, and is not part of the consolidated state budget. The initial capital of the fund was 22 million Leva (11 MEuro) which is considered low compared to the existing needs. The Fund combines the functions of financing/guaranteeing institution and a consultancy center. The fund offers loans, partial credit guarantees (PCGs) and ESCO portfolio guarantees opportunities for municipalities:

Loans:

BGEEF provides loans to municipalities with maximal tenor of 7 years which is rather low given the usual paybacks of EE projects⁴, interest rates within the range of 4,5-8 % and minimal equity contribution of 10 to 25 % depending on co-financing source. The minimum equity contribution from the Project Developer for the proposed project shall be, as follows:

- At least 10% for co-financing mode "BGEEF - commercial bank"
- At least 25% for EERSF (BGEEF) stand-alone financing.

There are no additional credit conditions (taxes) and the repayment schedule is structured according to the need of the Project Developer. The conditions are the same for BEEF direct financing and for co-financing with a commercial bank.

Partial Credit Guarantees (PCGs)

PCGs against an annual fee of 0,5-2 %, while individual project guarantee commitments shall not exceed **BGN 800 000 (400 000 Euro)** with a maturity of maximum 7 years.

The fund also provides ESCO portfolio guarantees and residential portfolio guarantees.

ESCO portfolio guarantees:

If ESCO's financing is required, **ESCOs** would bid for a project and then go to a bank to secure finance for it, or have a line of financing ready and fill it in with projects. The shortcoming of this approach is that typical ESCOs rely heavily on raising debt to fund their performance contracts. This requires that the cash flow of their business is very accurately timed and budgeted. Delayed payments from clients, or defaulting clients may severely disrupt the servicing of the debts of the ESCO itself. With our ESCO portfolio guarantee, BGEEF undertake some of the risk of the ESCO and guarantee that it will cover such disruptions in the flow of receivables of the ESCO. BEEF has had several project cooperation under this scheme with the Bulgarian ESCO ENEMONA.

Apart from ESCO guarantees for refurbishment of public buildings BGEEF also provides Residential Portfolio Guarantees being developed as a partnership with commercial banks.

⁴In some cases, they make exceptions and extend the maturity of the loan for municipal projects (only on case-by-case basis)

Up to date BGEEF fund has financed 170 projects of which 98 have been municipal projects. Municipality directed funding amounts to 24,3 million Leva (about 12 MEuro) representing 66 % of the overall municipal project costs. As for the ESCO portfolio guarantees, so far 32 projects have been financed amounting to 22,9 million Leva (about 11,5 MEuro) of which BEEF guarantee represents 16,6 %.

Measures in the following areas are eligible to be financed by BGEEF:

- Rehabilitation of buildings in all sectors;
- Improvements to the heat source and distribution system;
- Street lighting;
- Other energy end-use applications like energy management systems (EMS), power factor correction measures, air compressors, fuel switching, projects with utilization of renewable energy sources (RES)

In view of the significant RES potential in Rhodope region especially interesting can be projects that combine retrofitting of public buildings with fuel switch from heavy fuel oil and/or electricity to biomass. Other promising areas can be introduction of EMS and projects for utilization of solar or geothermal energy (there is significant potential for these RES in the Region).

The **main constrain to municipalities** observed so far comes from the rather short tenor of loans provided by BEEF which are not applicable for deeper renovation projects or for RES projects usually requiring longer pay-back periods but nevertheless providing significant social and environmental benefits.

National Program for Residential Building Energy Retrofitting in Bulgaria

Bulgaria has created a National Program for private building targeting the energy retrofitting of multi dwelling residential buildings. The program is managed by the Ministry of Regional Development and public works.

Legal basis:

Decree of Ministerial Council № 103 от 07.05.2013 (IMC № 103/07.05.2013 г.) for approving a mechanism for additional financial assistance through the budget of the Ministry for Regional Development to ensure the participation of owners of single dwellings in multi-family buildings approved in the framework of Project BG161P0001-1.2.01-0001 „Energy Retrofitting of Bulgarian Homes“ under Operational Programme “Regional Development” 2007-2013 (published State Gazette, Issue. 81 of 2014 г., in force since 30.09.2014)

A grant of 100 % (non-repayable funding) is provided to the owners.

Criteria to receive the funding:

- The multi-dwelling building to have approved “Application for interest and support” (*Заявление за интерес и подкрепа -ЗИП*)
- To have prepared **indicative budget** by the Project Manager (for the whole buildings) responsible for the respective planning region/Sofia-capital (*remark: Bulgaria is divided in 6 planning regions and Sofia capital city, i.e seven in total, and each region has been assigned through a tender a Project Manager – organization to undertake administrative and logistic tasks related to the initiative – these PMs have been functioning since mid-2012 and have been funded by the initiative itself*).
- Recipients: physical persons – owners of single dwellings in multifamily residential buildings in case the monthly income of the household (**per person** – all inhabitants of the dwelling irrespectively if they are related or not), does not

exceed 310 Leva (155 Euro)/person, and the owner or the co-inhabitant does not possess another dwelling except the one they are applying for, or commercial property, with the exception of the case when the other property (residential or commercial) is co-owned outside the household/co-inhabitants and/or cannot be used to generate income (*Remark: the purpose of the programme is to assist socially vulnerable households that in Bulgaria happen to owe their dwellings, this rather sophisticated formulation aimed at avoiding subsidizing owners/household member who possess other property and can increase their income in that way*). There are several exceptions: handicapped people, single parents, when the threshold is set to 400 Leva/month (200 Euros):

Important issues:

- Prior to applying the owners should have established an Association of Owners as a legal person according to the Bulgarian Law;
- A special application-declaration is to be submitted and the size of the requested funding cannot exceed the funding allocated with the indicative budget of the building (prepared by PM as indicated above). There is a set of required documents to be submitted and after approval of application, a contract is signed between the Ministry and the owner-applicant meeting the conditions.
- The financial assistance is provided solely for participation of the building in the project BG161PO001-1.2.01-0001 „Energy Retrofitting of Bulgarian Homes“. In case the Association of Owners does not conclude the Contract with the Ministry for financing assistance for implementation of energy retrofitting measures or cancels its participation in the programme or the building is not refurbished at the end, the funding will not be provided.
- The funding is not provided to the Owner in the form of cash. The sum will be transferred by the Ministry of Regional Development on behalf of the Owner to provide the requested co-funding under the Project BG161PO001-1.2.01-0001 „Energy Retrofitting of Bulgarian Homes“ according to the indicative budget.
- By signing the contract for this additional funding the owners are obliged not to transfer the ownership over the property they received the additional funding for, within the next five years from the signature of the contract and are obliged to inform the Ministry upon any change of the circumstances within one-month period from their occurrence. In case of breach of these conditions, the financial assistance is due to be reimbursed by the owner.

Additional information:

- Available fund: 1 billion Leva (500 million Euro)
- Territorial coverage: nation-wide, all 264 municipalities
- <http://www.mrrb.government.bg/?controller=category&catid=117>
- Eligibility criteria changed with Decree № 23/04.02.2016 and since 01.01.2016 all multifamily buildings with more than 3 storeys and 6 dwellings are eligible but priority is given to large concrete buildings with minimum 36 independent dwellings in the building.
- Measures eligible for funding:
 - Constructive repairs, reinforcement and major overhaul depending on the damages occurred throughout building use;
 - Retrofitting of common spaces: roof, façade, staircases, etc.);
 - Windows and doors replacement;
 - Thermal insulation of the building shell (walls, roofs, floors, etc.);

- Major overhaul, retrofitting or replacement of local heating production units or their piping or other equipment, owed by the owners, including fuel switch at proven energy saving and environmental effect;
- Construction of systems to use RES to meet the building own energy needs (not for sale);
- Repair and replacement of obsolete parts of common heating/ventilation/sewerage systems of the building in order to increase its energy efficiency;
- Re-design and re-construction of the vertical heating system piping into horizontal one in order to ensure individual metering and control on heating consumption of each dwelling;
- Repairs and replacement of electrical installations in common building spaces and energy saving lighting in common spaces;
- Installing a system for central management and control of heat supplies in case of local heating sources owned by the building;
- Installing a system for central management and control of lighting in the common spaces;
- Gas supply provision to the building (mounting of gas-fired boiler and connecting to the city gas supply network close to the building);
- Energy efficiency measures of the lifts;
- Building works complement to the energy saving measures;

The economically most efficient measures package will be financed by the programme which achieves Energy Efficiency Class C in compliance with Order №7 of 2004 for energy efficiency, heat energy savings and cost savings in buildings.

Municipalities are engaged in the program for Residential Building Energy Retrofitting (especially the one who have signed the Covenant of Mayors) and should select contractors to do the retrofitting according to the Public Procurement Law. There is also an opportunity for the municipalities to use the available 200 million leva (20 % of the overall program budget) allocated to a common public procurement for the technical auditing (both energy and construction) of the building and its technical passportization. It is also recommended that the municipalities bundle in a common public procurement the retrofitting and building works, and the offers to be evaluated according to least costs criteria.

The program will run until year 2020.

Public subsidies

Energy retrofitting is currently financed mainly through national operational programmes that comprise of EU Funds plus national co-funding. The general policy in the next programme period 2014-2020, though, is to shift the balance towards more schemes of revolving funds (i.e. loans) and less direct subsidies (stated on page 12 of the new programme Regions in Growth) which reflects the general EU policy is to redirect the efforts of local authorities towards securing commercial funding for their sustainable energy actions.

New programming period 2014-2020 for Operational Programmes has already been established and specific programmes and priority areas have been defined. Further information can be obtained from the following web-site:

<https://www.eufunds.bg/programen-period-2014-2020/operativni-programi-2014-2020>

OP Regions in Growth and Rural Development Programme are of most relevance and will be mostly considered for the first stage of the Programme for EE in Rhodope Region.

Third party financing (TPFs) and ESCOs

There is limited experience in ESCOs/TPF in Bulgaria:

For street lighting: Ullichnoosvetlenie EAD (Street Lighting Ltd.) – private shareholder company performing an ESCO contract for street lighting refurbishment, maintenance and operation with SaparevaBanyaMunicipality since October 2015.

Other financing sources for street lighting include: National operational programmes (EU funds, Kozloduy Fund of EBRD), municipal own funding

For public buildings:

ENEMONA Ltd. (not very active recently due to financial shortfalls)

Dalkia (only for building energy management contracts, not investing in retrofits)

Small conclusion to summarize the financial sources: to investigate with banks to be able to finance

Actions to undertake

No	Action	Due	Owner	Status
1.	Investigate abilities to borrow from banks	25.05.2016	SEC/ARM	On-going

PDU establishment budget estimates:

Direct staff costs

Categories of staff to work on the project	Monthly salaryincl.social securitycharges (EUR)	Number of workmonths on project	Total direct staff costs
<i>Technical Expert</i>	1600	36	57600
<i>Technical Expert</i>	1600	36	57600
<i>Administrative support</i>	1000	36	36000
<i>Administrative support</i>	1000	36	36000
Total direct staff costs			187200

External experts / subcontracts

Type of activities / support	Description of tasks to be carried out	Total [EUR]
<i>Project Implementation Unit</i>	<i>Support to manage and provide project development services, of which:</i>	15 000
	• <i>Training on basic economic and technical aspects of EE in street lighting and in buildings;</i>	10 000
	• <i>Travel to GRE-Liege on a study-tour</i>	5 000
<i>Design contractual basic scheme for</i>	<i>Legal and contractual framework</i>	15 000

<i>EE and street lighting</i>	<i>external advice</i>	
<i>Street lighting scheme design</i>	<i>Design technical review of energy audits scheme for street lighting systems (contract developing, public procurement)</i>	10 000
<i>EE in Buildings schemedesign</i>	<i>Design technical review of energy audits scheme for EE in public buildings(contract developing, public procurement)</i>	10 000
<i>Feasibility studies</i>	<i>Feasibility studies of projects for street lighting and EE in public buildings (85 approx.)</i>	170 000
Subtotal external experts / subcontracts		220 000
Total costs		407 200

Conclusions

Under the Programme for EE in Rhodope Region it is foreseen to create a PDU as a structure within ARM and recruit the necessary staff with technical and financial expertise by applying for PDA H2020 (or another suitable option). The PDU will act as a one-stop-shop and will provide the following main services:

- Marketing and communication:
- Facilitation and client support:
 - ✓ Act as a knowledge centre;
 - ✓ Gather competences and resources in one place (audits, works to be realized, financial viability calculations, define tendering specifications and assess received offers against pre-defined criteria).
 - ✓ Help to identify financing solutions applicable to different municipalities/clients – as Rhodope municipalities are of different sizes they are eligible for financing under different national Operational programmes. The PDU will investigate the opportunities and will identify suitable financing sources depending on the client's profile.
 - ✓ Assist in finding and negotiating the terms and conditions with banks (in case of direct loans) or ESCOs (if applicable);
 - ✓ Monitor project results
- Project Bundling
 - ✓ Bundle projects across different clients / municipalities, which allows to diversify the risks, get better financing mechanisms, makes synergies across the retrofit projects and attract professional companies
 - ✓ Increase the size of the projects and the investment size
 - ✓ Create more attractive investment opportunities for building contractors, ESCOs, maintenance companies, financial sector

Because the market for ESCOs is not mature enough the Programme for EE in Rhodope Region will start with conventional funding focusing mostly on National operational programmes 2014-2020 (combined public subsidies with revolving mechanisms). Additionally ESCO funding possibilities (like ESCO for street lighting) matching the needs of the Programme and possibilities for direct bank loans will also be investigated and considered.

Action plan summary

Actions:

No	Action	Due	Owner	Status
1.	Collect data from Rhodope Municipalities about building stock (public and residential) and street lighting systems	31.08.2015	SEC/ARM	completed
2	Identify types of potential projects and necessary expertise to implement them	21.12.2015	SEC/GRE-Liege/ARM	completed
3	Calculate potential savings and investment needed	20.03.2016	SEC/GRE-Liege/ARM	completed
4.	Investigate local TPF/ESCO market	31.12.2015	SEC/ARM	completed
5	Assess different operation models and present to GA of ARM to be considered	25.03.2016	SEC/ARM	completed
6	General assembly of ARM to be presented the concept of PA and PDU and get first feedback	25.03.2106	SEC/ARM	completed
7	Collection of feedback from municipalities and spotting most promising ones	25.05.2016	SEC/ARM	On-going
8	Define operational model for the programme and get approval by GA of ARM	26.05.2016	SEC/GRE-Liege/ARM	On-going
9	Presentation to GA of ARM of detailed action-plan with concrete actions and the ways to finance PDU activities.	26.05.2016	SEC/GRE-Liege/ARM	On-going
10	Investigate abilities to borrow from banks	25.06.2016	SEC/ARM	On-going
11	Signing a letter of commitment for establishing PDU and applying for financing by most promising municipalities (eg. Smolyan)	10.07.2016	SEC/ARM	On-going
12	Identify needs of training for PDU	15.08.2016	SEC/GRE-Liege/ARM	On-going
13	Writing the application to PDA H2020	15.09.2016	SEC/ARM	On-going

Actions' expected impact

The present Action plan is expected to result in investment projects launched in Rhodope Region with cumulative investment of 8.3 MEuro leading to 17.6 GWh of primary energy savings.