



Preparatory Report Capacity Building Program

Focus Country Bulgaria

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Preface

The aim of this preparatory report is to enable the organisation of a national capacity-building workshop in Bulgaria. It serves as a guiding document for any involved stakeholder and as a steppingstone towards the Bulgarian long-term strategy.

The aim of the national workshop is to bring together the entire value chain of decision makers and stakeholders to seize the energy efficiency market in Bulgaria: from interested individuals, to SMEs such as local ESCOs, to financiers and project developers. In order to implement innovative financing models for energy efficiency, local authorities play a decisive role. Following the successful examples in different European countries, such as the 24 best practice case studies across Europe analysed in the framework of CITYnvest and from early 2016 on available in 4 languages [here](#).

Art.4 of the European Energy Efficiency directive required all member states to develop a National Building Renovation Strategy (as part of the National Energy Efficiency Action plan) by April 2014. This document aims at building further from that strategy to see which innovative financing models could help realizing Bulgarian EE objectives. Simultaneously this document wants to provoke further debates amongst stakeholders after the CITYnvest national workshop. It provides an opportunity to remain active and in contact with peers and experts. For further information how to get involved please visit www.CITYnvest.EU or contact info@citynvest.EU.

Summary of strategy in Bulgaria

Legislative framework

Common for all European member states are the long-term climate and energy frameworks. Concerning the building sector, at least 88%-91% of CO₂ emissions should be reduced in residential and service (collectively buildings) sectors to achieve the *2050 Roadmap moving to a low-carbon competitive economy*. Furthermore, the building sector positions itself in the top 3 of sectors with the biggest potential (environmental impact of 70-80%) to contribute to reaching the *Roadmap for a Resource Efficient Europe*. Europe is developing slowly but steadily a policy framework to encourage Members States legislative processes: notably the EPBD and EED. The EPBD (European Energy Performance of Buildings Directive) includes e.g. the energy performance certificates and nearly zero energy standards for new buildings. The EED (Energy Efficiency Directive) requires e.g. member states to renovate at least 3% of their public building stock each year (art. 5) and develop a National Building Renovation Strategy as integral part of the National Energy Efficiency Action plan (NEEAPs, art.4).

The Bulgarian legislative framework has been fully harmonized with that of the EU. The main legislative acts governing the energy sector of Bulgaria are:

- Energy Law governing the activities related to production, transport and sales of all forms of energy and energy sources)
- Law on Energy Efficiency governing the activities related to the implementation of the state policy for energy efficiency
- Law on Energy from Renewable Energy Sources governing the activities related to production and use of renewable energy sources

Relevant to the issues of energy efficiency and/or RES are also Law on Territory Planning and Law on Public

National context

Bulgaria is a post communist country with many buildings from this era that will continue to be used in the coming decades and therefore will need major energy refurbishment. In terms of sector profile the major part of the energy use has moved from the centrally-planned industrial sector to the building sector.

There are two levels of decision making power in Bulgaria:

- National level - parliamentary republic with the National Assembly in charge of law making and a Cabinet headed by a Prime Minister with executive power. The National Assembly Members are elected and the Prime Minister is appointed from the party with the biggest number of votes. There is a Ministry of Construction and Public Works responsible for the buildings refurbishment programmes and initiatives at national level as well as the Ministry of Energy.
- Municipal level - 265 municipalities with municipal councils as decision making power and a Mayor with executive power. The Mayors are elected at local elections as well as the municipal council members. The Mayor proposes and the Municipal Council approves of investment decisions and loans for the municipality.

Given the above information the National workshop in Bulgaria should be focused on the representatives of the two ministries responsible for the buildings energy issues at a national level as well as representatives of the 265 municipalities (Mayors and their staff) at local level. Other potential attendees include representatives of municipal associations, energy agencies, consultancy centres, etc. who can convey the message of the workshop to their members and collaborators.

Procurement. All the above stated laws have a number of Orders supporting their implementation.

Further to the above there are a number of statutory legislative acts complementing and facilitating the application of those laws.

More information on the legislative framework can be found on:

<http://www.seea.government.bg/en/documents-en>

Responsible bodies

On a national level the main bodies relevant to the energy, energy efficiency and RES issues in Bulgaria are:

- Ministry of Energy – responsible for the execution of the national energy policy in a transparent way with the recognition of the market values in the energy sector and ensuring of the energy independence of the country, in order to protect the state and the public interests. Another body of interest, subordinated to the Ministry of Energy, is Sustainable Energy Development Agency - a legal entity at state budget support with headquarters in Sofia and has the status of an executive agency within the Ministry of Energy.
- Energy and Water Regulatory Commission (EWRC) pursuant to art.21 of Law on Energy, responsible for a number of activities related to: issuing of licenses for energy generation, transmission, distribution, storage and import, issuing guidelines for these activities, adoption of secondary legislative acts, approving the common conditions of the contracts, approving the rules on the work with energy services consumers; regulating the energy prices and pricing methodologies, rules for accessing the energy grids (electricity and gas). EWRC are responsible for the conditions of grid connection of RES producers and for feed-in tariffs for co-generation and RES energy production.

There are a number of **strategic policy documents and action plans** on a national level relevant to the issues of energy, energy efficiency and renewable energy sources such as:

- The Energy Strategy of the Republic of Bulgaria till 2020: a fundamental document of the national energy policy that is approved by the Council of Ministers and passed by the National Assembly of the Republic of Bulgaria in 2011. The present National Energy Strategy till 2020 reflects the political vision of the Government for the energy development of Bulgaria pursuant to the up-to-date European energy policy framework and the global trends in the development of energy technologies. The main issues in the Strategy are related to energy security, reduction of greenhouse gas emissions, increase of RES share in FEC, increase of energy efficiency and establishment of independently regulated and competitive energy market in Bulgaria.

- National Energy Efficiency Action Plan 2014-2020 in accordance with the EED (Directive 2012/27/EU) with the main aim to set the framework for promoting energy efficiency in the Bulgaria in order to reduce primary energy consumption by 20 % by the year 2020 and establish conditions for improving energy efficiency thereafter. The requirements of Directive 2010/31/EU on the energy performance of buildings are also taken into account.
- National Action Plan for Renewable Energy Sources till 2020

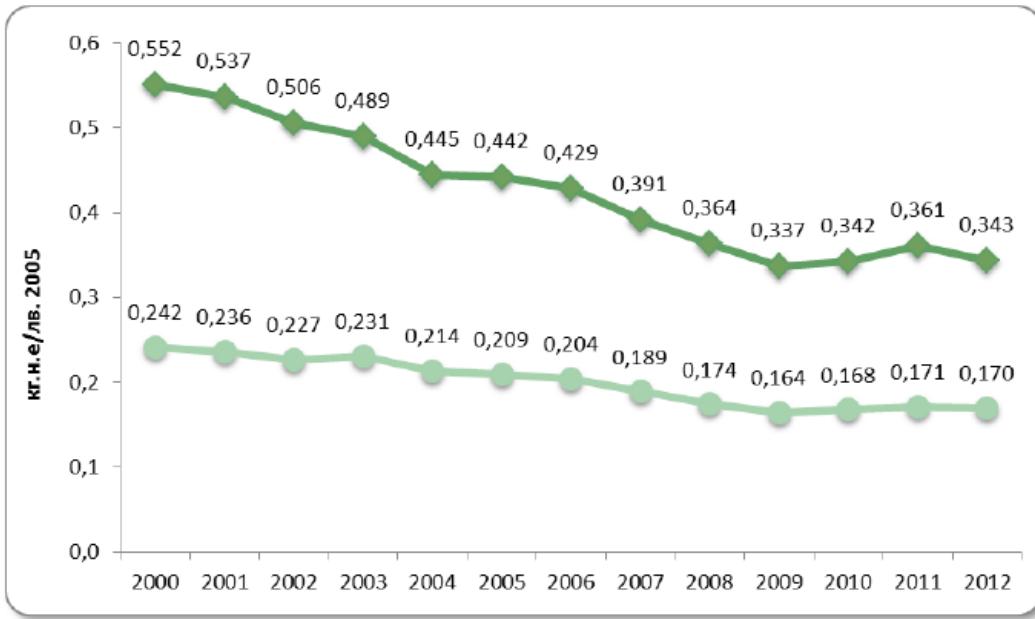
On a local level: municipal authorities develop energy efficiency plans, plans for utilisation of local RES or other policy documents like Sustainable Energy Action Plans – SEAPs, related to energy efficiency and RES utilization on their territories.

The formulation of plans and programmes is crucial to the achievement of the individual energy-saving targets assigned to central and local government bodies in their capacity as owners of buildings with a TFA of more than 1 000 m². These plans and programmes must provide for the fulfilment of another obligation set out in Article 36 of the Law on Energy Efficiency, namely the management of energy efficiency in public buildings with a TFA of more than 1 000 m² (buildings with TFAs of more than 500 m² after 2013 and 250 m² after 9 July 2015). Formulating energy-efficiency improvement plans and programmes and managing energy efficiency does not have a direct energy-savings impact, but is the main mechanism for helping the owners of state and municipal buildings achieve their individual energy-savings targets.

Current main energy indicators and projected targets¹

Energy Intensity of Bulgaria

¹ Source: Bulgarian National Energy Efficiency Action Plan



Final and primary energy efficiency, 2000–2012, kgoe/BGN 2005
 (source: Bulgarian National Energy Efficiency Action Plan)

The energy intensity of Bulgarian economy in the pre-crisis period from 2000 to 2009 was characterised by a sustained and relatively fast decrease. In 2010 and 2011, energy intensity increased as a consequence of the economic crisis. In 2012, both PEI and FEI resumed the downward trend, but still were unable to return to the lowest levels they reached in 2009.

Energy imports and exports

Favourable conditions for the export of electricity have been created and continue to exist due to the following factors:

- relatively stable electricity consumption during the past five years;
- production capacity that significantly exceeds demand;
- a rapid increase in the amount of electricity produced from RES.

These preconditions have driven a sustainable increase in electricity exports, which have risen by 32 % over the past 10 years.

Structural changes

The most significant change in the Primary Energy Consumption resulting from the shifts in the FEC mix over the 12-year period is the relative decrease in coal use as compared to that of nuclear energy and energy from RES.

There were two significant changes in the Final Energy Consumption mix during the 12 years from 2000 to 2012:

- a considerable proportion of coal was replaced by biomass and heat;
- electricity increased its share at the expense of liquid fuels and natural gas.

Projections and forecasts

The updated GDP growth, energy consumption and energy intensity forecasts² are as follows:

- GDP is expected to grow by an average of 2.2 % per year by 2020;
- Primary energy consumption will see a marginal increase from 17.8 Mtoe in 2010
- to 18.5 Mtoe in 2020;
- Between 2010 and 2020, primary energy intensity is forecasted to decrease by
- 1.9 % p.a. on average;
- Consumption of energy from RES is expected to rise from 1.45 Mtoe in 2010 to
- 1.95 Mtoe in 2020.

National energy saving targets

Bulgaria sets the following indicative national energy-saving targets for the period to 2020:

- Energy savings at FEC level: **716 ktoe/y**;
- Energy savings at PEC level: **1 590 ktoe/y**, including **169 ktoe/y** in energy transformation, transmission and distribution processes.

Additionally Bulgaria has adopted an indicative energy-saving target for 2016 of at least 9 % of the average FEC value for the period 2001-2005, i.e. the target covers a period of 9 years.

In accordance with the ZEE, the national energy-saving target is allocated in the form of individual energy-saving targets to three groups of obligated parties:

- energy traders;
- owners of public services buildings in use with a total floor area of more than 500 m² up to 9 July 2015 and a total floor area of more than 250 m² after that date;
- owners of industrial systems consuming more than 3 000 MWh of energy per annum.

Energy efficiency in Buildings

The main measures for the improvement of EE in the buildings sector are set out in the following regulatory and strategic documents:

² As indicated in the document of National Technical University of Athens with updated Bulgarian scenario ‘Bulgaria: Reference scenario — Detailed Analytical Results’ (7 January 2013).

Measures based on the Law for Energy Efficiency:

- Develop a national plan to increase the number of nearly zero-energy buildings (NZEB), including a national definition of NZEB and the criteria they must meet, time span, national targets aimed at increasing the number of NZEB in the various classes of buildings, as well as policies and mechanisms, including financial ones, to promote the construction of this type of buildings.
- Individual energy-savings targets for owners of buildings with a total floor area of more than 1 000 m² within the aggregate amount of 521.03 GWh.
- Mandatory certification of public services buildings with a total floor area of more than 500 m²; after 9 July 2015 the certification threshold will be reduced to 250 m².
- After reconstruction, rehabilitation or major renovation of a building in use, the energy performance of the building or of its renovated parts must be improved to a level that corresponds to the minimum energy performance requirements insofar as this is technically feasible and economically justified. Conformity with the energy-efficiency requirements is deemed to have been achieved in the following cases:
 - ✓ New buildings under design or construction: when the calculated values of the indicators correspond to Class B in the energy consumption scale;
 - ✓ Existing buildings: when the calculated values of the indicators correspond to:
 - at least Class C in the energy consumption scale for buildings commissioned between 1991 and 2009 inclusive;
 - at least Class D in the energy consumption scale for buildings commissioned in 1990 or earlier.
- The energy-saving measures recommended for each reconstruction, rehabilitation or major renovation of a building in use or parts thereof will be assessed in respect of the technical and economic feasibility of the use of alternative high efficiency systems.
- When a building or individual parts of a building are sold or let, the seller/lessor must provide the buyer with the energy performance certificate of the building. The owners of apartments in multi-family buildings are entitled to receive a notarised copy of the energy performance certificate of the building, while the original certificate is kept by the building manager.
- Inspections of heating systems that use water boilers with a rated heating capacity of more than 20 kW and of air-conditioning systems with a rated electric capacity of more than 12 kW in public services buildings, the objective being to establish how efficiently they are operated and to identify efficiency improvement measures.

Measures based on the Law for Implementation of Renewable Energy Sources

The ZEVI requires the introduction of systems for the production of energy from RES, when this is technically feasible and economically justified, as part of the construction of new buildings or the

reconstruction, major renovation, rehabilitation or rebuilding of existing buildings. This requirement applies to public services buildings as from 1 January 2012 and will apply to all other buildings after 31 December 2014. The analysis of the options for the use of renewable energy is part of the estimation of the annual energy consumption of the building. In this case, at least 15 % of the building's overall demand for heating and cooling energy must be met by renewable sources through the introduction of:

- a central heating source using biomass or geothermal energy;
- individual biomass combustion equipment with transformation efficiency of at least 85 % in residential or commercial buildings and at least 70 % in industrial buildings;
- solar heat systems;
- heat pumps and ground-connected geothermal systems.

Financial framework

Overview of financial support schemes

Type of financing instrument	Type of projects covered by the instrument	Name and description of the instrument	Links
Non repayable subsidies (state loan from EBRD)	Energy efficiency in residential buildings, household refurbishment	National programme for energy efficiency in multifamily residential buildings: 100 % financing of certain types of residential pre-fabricated concrete buildings	http://mrrb.government.bg/?controller=category&catid=117
Non repayable subsidies (EU structural funds)	Energy efficiency and RES in municipalities	Operational programme Regions in Growth 2014-2020 – especially applicable for municipal buildings Usually around 70-80 % of project costs the rest is covered by municipal own funding	https://www.eufunds.bg/en/programming-period-2014-2020/operational-programmes-2014-2020/operational-programme-regions-in-growth-2014-2020
Non	Energy efficiency	Operational programme	http://www.opcompetitive

repayable subsidies (EU structural funds)	and RES in municipalities	Innovation and Competitiveness competitiveness - new programming period 2014-2020 Priority axis 3 "Energy and resource efficiency", Usually around 70-80 % of project costs the rest is covered by municipal own funding	ness.bg/module0.php?menu_id=278
Low interest credit	Energy efficiency in buildings	Energy Efficiency Fund Revolving fund: provides soft loans to municipalities; acts as a guarantee fund for ESCO projects	www.bgeef.com
Energy Efficiency Certification	Energy efficiency projects	Tradable white certificate scheme (forthcoming)	http://www.seea.government.bg/bg/component/content/article?id=9374%20
Feed-in tariff	Energy Generation from renewable energy sources, incl. RES based CHP	Act for the Energy from RES, published in State Gazette, Issue 35 from 03.05.2011. Establishment of feed-in tariffs depending on the RE sources used and priority connection to the grid	http://dv.parliament.bg/DVWeb/showMaterialDV.jsp?idMat=48899
Feed-in tariff	Electricity generated by CHP	Energy Act, published in State Gazette, Issue 107 from 09.12.2003	http://lex.bg/laws/Idoc/2135475623

		Establishment of feed-in tariff and priority connection to the grid.	
ESCos	Energy efficiency and RES integration in buildings	Provision of ESCO services and guaranteed results contracts by private companies; Implemented mainly in public/municipal buildings	Erato Company http://erato.bg/otoplenie/en/news_details.php?news_id=186 ENEMONA Company http://enemona.bg/english/index.php?97 Dalkia Company
Private Capital	Energy Efficiency and RES	Public-Private Partnerships (PPP) – e.g. renting municipal roofs for PV installation to private sector, concession for biomass fueled DH, etc.	

Energy Efficiency market

The potential or energy efficiency investments is so large in Romania that the private sector should be mobilized in order to provide adequate levels of capital. In order to leverage substantially private capital, the market has to grow in order to realize large investments with low transaction costs at an acceptable ration of risk to return within a reasonable payback time. At date, not so many private investors enter the energy efficiency market because dedicated sources of financing are scarce and Romanian local banks are still quiet unfamiliar with this type of investments. Furthermore, at present, more institutional and legislative support is needed to scale-up the investments rates. Local authorities should gain further expertise and capacities to tap into their local potential and develop bankable energy efficiency projects.

The concept of Energy Performance Contracting was introduced in 2008, but the public procurement law has no specific provisions on this issues. In this context local authorities are reluctant in using a model contract for EPC. The rules regarding attribution of concession contracts for public works and services clearly stated the importance of the feasibility study in starting a concession contract. In this context local authorities understood that the feasibility study is also mandatory for preparation of tender procedure for ESCO selection.

The cost of such a study is very high and this a barrier for local authorities to start an ESCO project in the public sector.

- Comment on ELENA demanding prerequisites: either the cities were too small and had too small projects for the structure of ELENA, thus being unable to ensure the leverage (minimum leverage factor of 20) for the implementation, either, in the case of association of cities – metropolitan areas, regions, the administrations do not have a single legal entity form, in order to apply as a singular common body.

Relevant best practices

The Covenant of Mayors, Europe's mainstream initiative on sustainable urban development, has 26 signatories from Bulgaria, of which there are 23 SEAPs submitted. Among them there are some outstanding examples in the field of energy efficiency on local/municipal level (EE in public buildings, street lighting, RES incorporation in public buildings .

CITYnvest project – Rhodope Pilot Region

Presentation of the concept and results of CITYnvest project in Rhodope Pilot Region

Smolyan Municipality (part of Rhodope Region)

CoM signatory, SEAP submitted, SEAP targets: 20 % GHG emissions reduction

Project for street lighting system improvements

Year of execution: 2009

Street lighting system characteristics

- Number of street lighting luminaries – 7518, of which in parks 1175 and in streets - 6343
- Installed capacity – 819 kW
- Annual energy consumption – 1 408 000 kWh

Project activities:

- Replacement of 3729 luminaires of which 700 in parks;
- Digging of 3170 meters of ditch and placement of cabling in PVC tube
- Installation of automatic system for management and control of street lighting based on GPRS signal (General Packet Radio Service) incl. equipped control and information centre to visualize and on-line monitor system performance.

Project costs: 824 000 Euro

Project results:

- 25 % increase of the illumination reaching 100 % of the standard norms
- 13,66 % electricity savings
- 31 % cost savings (having in mind higher illumination levels and 13,33 % electricity price increase)

Asenovgrad Municipality (part of Rhodope Region)

CoM signatory SEAP approved and being monitored; SEAP target: improving energy efficiency in public building by at least 30 % by 2020

Selected projects: Energy Efficiency in Public Buildings: Refurbishment and Energy Improvements in nine educational buildings (schools and kindergartens).

Year of realization: 2013

Project costs: 2 725 000 Euro

Sofia Capital Municipality

CoM signatory, SEAP submitted,

Selected projects: TBD

Long-term recommendations

The potential for energy efficiency investments in Bulgaria requires the private sector mobilization in order to provide adequate levels of capital. In order to leverage substantially private capital, the market has to grow in order to realize large investments with low transaction costs at an acceptable ratio of risk to return within a reasonable payback time. To date, there is a limited number of private investors that enter the energy efficiency market because the risk is considered relatively high as dedicated sources of financing are scarce and Bulgarian local banks are still quite unfamiliar with this type of investments. Furthermore, at present, more institutional and legislative support is needed to scale-up the investments rates. Local authorities should gain further expertise and capacities to tap into their local potential and develop bankable energy efficiency projects.

Examples of different measures to be taken at respective policy levels (National, County, Local):

- Example of Rhodope Pilot Region and its results within CITYnvest Project – blending ESCO approach and operational programmes approach with provision of technical assistance to local authorities (PDA) and project bundling in order to facilitate application for funding.

- There is a national EE investment fund where local authorities can apply to: Bulgarian Energy Efficiency and Renewable Energy Fund (BGEEF) providing soft loans (below market interest rates) to municipalities and partial credit guarantees. BGEEF support the starting ESCO sector by providing portfolio guarantees.

National Workshop

Format

The orientation of the workshop is to show evidence of innovative financing models that successfully have been applied in different Member States with a focus on its replicability aspects. The objective of the workshop is to trigger concrete discussions between key decision makers and the entire value chain of the Bulgarian energy efficiency market. Emphasis will be on exposing local and regional decision-makers on the important facilitating role they can play in the take-up and scale-up of innovative financing for energy efficiency in the Romanian context. The workshop will work as steppingstone to accelerate necessary collaboration between stakeholders, to be inspired from successful examples and to discuss on a step-by-step approach.

The National Workshop will follow the Regional Workshop in Rhodope Region (under WP3) with focus on broader dissemination of findings and results of CITYnvest throughout Bulgaria.

Schedule

	Topic	Organisation
20 minutes	Introduction	CITYnvest (10 minutes) Host local authority Sofia Capital Municipality (10 minutes)
1 hr	Inspiring presentation 1	SEC/ARM
	Inspiring presentation 2	GRE/Liege

	Inspiring presentations on local examples	Examples from Benchmarks of Excellence, CoM
30 minutes	Panel debate with Bulgarian Decision makers and experts	Bulgarian National Association of Municipalities + Agency for Sustainable Development + Ministry of Energy
2 hrs	Roundtable discussions (4 times 25 minutes)	Organised on different themes such as 'ESCO services', 'EPC', 'Housing Institutions', 'Financiers', TBC
20 minutes	Bulgarian Roadmap for Innovative Financing Models on Energy Efficiency	CITYnvest together with local expert

Expert mobilisation

Local Authorities representatives:

- Smolyan Municipality
- Asenovgrad Municipality
- Sofia Capital Municipality
- Representative of Bulgarian National Association of Municipalities

Other potential speakers (add justification)

SEC/ARM presenting the pilot results in Rhodope Region

GRE Liege presenting the results in Liege Province of Belgium

Invitees, target audiences:

- Main target group: Local and regional authorities; Bulgarian National Association of Municipalities
- Local ESCOs and other businesses
- Energy distributors and local energy agencies
- National energy authorities Ministry of Energy, Commission for Energy and Water Regulation, Agency for Sustainable Development