

BULGARIA

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The municipality is located on the lower northern slopes of the Balkan range (*Figure 2*). Its altitude varies from 350 to 700m above the sea level.



Figure 2 – Gabrovo municipality – administrative borders, transport and settlement network, and land cover. Based on CLC (EEA, 2012).

1 OVERVIEW OF THE REGION

Characteristics of the Region

Gabrovo Municipality, with an area of 555.57 km², and a population of 65,268 people (01/02/2011), is one of the 264 municipalities in Bulgaria, which are the main administrative units of local self-governance. It is the largest of four municipalities in Gabrovo District, located in the central part of the country¹ (*Figure 1*).



Figure 1 – Location of Gabrovo District in the North-Central Planning Region of Bulgaria

Gabrovo Municipality belongs in the North-Central Planning Region (NUTS2) of Bulgaria. Overall 134 settlements are located within the administrative boundaries of the municipality.

The region has a moderate continental climate, with prevailing winds from north and north-west and annual temperature range from -26°C to +40°C. According to the national bio-climatic ranking it belongs to a zone with predominantly comfortable climatic conditions. The snow cover lasts for about 120 days annually. The natural environment is estimated to be among the best preserved and non-polluted ones in the country (Gabrovo Municipality, 2008).

The area is one of abundant cultural heritage from the period of the National Revival when important economic but also educational and cultural development was focused there. The textile industry developed in the mid-19th century and contributed to the image of Gabrovo as ‘Bulgarian Manchester’. Modern industrial development in the socialist period focused on textile, chemistry, machinery production, etc. Gabrovo is also famous as the ‘Bulgarian Capital of Humour’.

The North-Central Planning Region has the second lowest GDP per capita in Bulgaria, €3,495 EUR in 2011, which compares to the mean national value being €5,240. These are

among the lowest figures in the EU. Despite its currently low GDP per capita Gabrovo district has an employment rate of 45.2 % for 2012, compared to 46.6% for Bulgaria and 42.9% for the North-Central Region, and the lowest unemployment rate – 9.6% in 2012 (14.3% for North-Central Region and 12.3% for the country) (NSI, 2012). It is also among the 8 districts in the country reported in early 2013 to be of decreasing unemployment and increasing annual salaries, although at a slower pace than the average for the country (Aleksiev, 2013) .

Energy demand and supply

According to latest national reports for Bulgaria (NSI, 2014), the gross inland consumption in tons of oil equivalent in 2012 was 18,305,000 toe; with 11,321,000 primary energy production; and 6,799,000 net energy import. The energy intensity for 2012 was reported to be 0.671 goe/€1000. The share of electricity generated from renewable energy sources (RES) was 16.3%.

The country had the highest energy intensity in EU (four times higher than EU-27 average) with a lot of possibilities for savings across the whole economy and energy chain (EC Finding Mission, 2014). Transport had the largest share at 31.7% in the structure of final energy consumption by sectors in 2012, as illustrated in *Figure 3*.

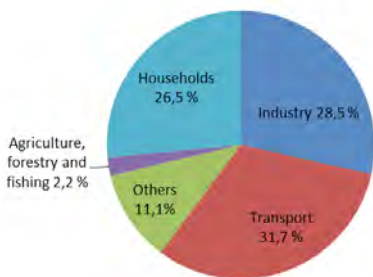


Figure 3 – Structure of final energy consumption in 2012, % by sector (NSI, 2014)

Petroleum products and electricity had a major contribution in the final energy consumption (*Figure 4*).

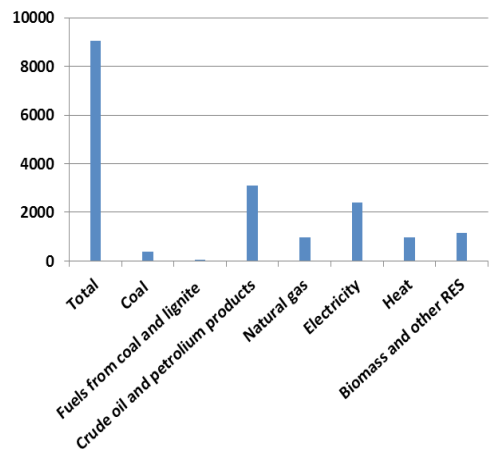


Figure 4 – Energy consumption (thousand tons of oil equivalent) by energy products in 2012 (NSI, 2014)

2. CURRENT SITUATION: TARGETS RELATED TO ENERGY POLICY

The National Energy Strategy of Bulgaria until 2020 (2011) formulated the three major energy targets of the country: (i) increase of no more than 20% of national CO₂-equivalent emissions by 2020 compared to 1990; (ii) an 11% share of electricity produced from RES in the gross domestic consumption by 2010 (already reached in 2009); and (iii) a 16% share of final consumer energy from renewable energy sources (RES) by 2020.

Energy Efficiency (EE) issues are also among the targets of the practical implementation of National Strategic Reference Framework (NSRF) for the period 2007 – 2013 (EC, 2007). The NSRF was based on the national Regional Development Plan and the Operational Programme on Regional Development (OPRD) 2007 – 2013.

The Methodological Guidelines on Updating the Active Regional and Local Development Strategies and Plans, published by the Ministry of Regional Planning and Public Works (MRDPW, 2009), were meant to support the development of an integrated system for regional planning. The guidelines aimed at promoting an integral approach to regional and spatial planning and could be considered an effective instrument for integrating EE

considerations at all the planning levels (Dimitrova & Nakova, 2012).

Two EC finding missions undertaken in 2013 estimated significant improvements in energy use in industry. The high share of RES (13.8% in 2010; 16% targeted for 2016) was considered a success. Yet, pending challenges of inefficient energy transformation and energy use in the residential, service and transport sectors were outlined. Slow modernisation of the district heating companies (resulting in high energy bills), the type of ownership (leading to patchy insulation of individual apartments) and inappropriate regulatory framework on prices were identified alongside a missing comprehensive energy policy, low consumer confidence, and ineffective protection of vulnerable consumers.

Recommendations were made for implementing a combination of short – and long-term reforms in the electricity, heat and gas sectors, and measures to spread burden equitably between all stakeholders. The major factors to be considered important to improve the national energy system performance included:

- the delayed and incomplete reform of the electricity sector;
- the hybrid model of the electricity market (regulated segments strongly dominating over freely negotiated ones);
- the retained central position of the state-owned energy company despite the partial privatisation of the generation assets and the distribution system;
- The current structural overcapacity of the system – partially because of shrinking consumption (EC finding mission, 2013).

Gabrovo District Plan for Energy Efficiency 2011 – 2020 (2010) strongly aims at increasing energy efficiency and at the development of renewable energy sources. As declared by the plan, this is to be achieved through:

(a) a decrease of energy consumption in state-owned buildings, (b) a better coordination and methodological support to the municipalities with regard to energy efficiency and renewable energy sources, and (c) promotion activities and measures in the field of energy efficiency and renewable energy sources. (Gabrovo District, 2010).

The SWOT analysis, on which the Plan was based, outlined important peculiarities of the process towards energy efficiency at the district level. Estimated *strengths* of the district are related to the already undertaken private initiatives, the availability of photovoltaic elements, the existing experience of the administration in energy efficiency projects, the good potential for solar and biomass-based energy production, and the Energy Efficiency Information Centre established and working in Gabrovo municipality. *Weaknesses* stem from outdated energy technologies, minor experience in the implementation of renewable energy, administrative barriers to building public-private partnerships, only partial refurbishment of state-owned and municipal buildings. It was acknowledged that only complex energy efficiency measures could result in meaningful social and economic effects. The lack of energy efficiency units and relevant experts in the district and municipal administrations was also considered an important weakness. Major *opportunities* are seen in the availability of EU funding support, the growing popularity of energy efficiency policy and the investment interest in the sector by Bulgarian and foreign companies.

Estimated *threats* comprise political instability, State policy failing to stimulate business development, bureaucratic national and EU administration; delayed decentralisation and restructuring of strategic sectors. Demographic collapse, the emigration of young people and the concentration of human and financial resources in the larger municipalities are also considered important threats to the successful implementation of the District Plan.

Based on the analysis results, an overall energy saving potential of 35,000 kW/h of the district until 2016 was defined and particular energy saving targets for public and private institutions were set.

Gabrovo municipality is one of the leading municipalities in Bulgaria for energy efficiency (EE) policy implementation. National and local capacity building in the country in the field of energy efficiency started in 1998 through a project named *Energy Efficiency Strategy to Mitigate GHG Emissions, Energy Efficiency*

Demonstration Zone in the city of Gabrovo, Republic of Bulgaria (1998 – 2004), and a funding grant of US \$ 2.5 million by the Global Environmental Facility (GEF). The project was developed by the Centre for Energy Efficiency EnEffect² in active collaboration with the Ministry of Environment and Waters, the United Nations Development Programme (UNDP), the US Agency for International Development (USAID) and the Municipality of Gabrovo. It had two major components: (a) Local capacity building; and (b) Demonstration projects.

The main pillars of the project comprised the development of the Municipal energy efficiency network *EcoEnergy*, the establishment of municipal EE offices, appointment of energy efficiency managers and development of energy database, training local experts in community-level energy planning and management, streamlining communication mechanisms and information sharing among municipalities, identification of the barriers to efficient energy use and promoting adequate financing mechanisms for EE projects.

Demonstrations were targeted at the most energy-intensive sectors of the municipal economy – street lighting, district heating, and energy efficiency of buildings. Apart from the technical lessons learned and the direct economic benefits, the demonstration activities were part of building the overall municipal policy aimed at efficient use of energy resources. They mobilised public support for EE policy and stimulated important changes in public behaviour. A model for integrating public policies with investment activities was successfully tested (EnEffect, 2004). These efforts resulted in a broadly shared understanding at the municipal level in Gabrovo that energy efficiency should be part of the overall municipal policy.

Gabrovo municipality is truly ambitious about its own assets and works extensively through national and international networking. Many initiatives have been undertaken by the municipality in the last 17 years with the support of *EcoEnergy* network and international donor organisations, the pre-accession instruments of the EU and the EU funds available for the programming period 2007 – 2013³. Thus the municipal public authorities

in partnership with the Technical University of Gabrovo, local experts and NGOs has implemented important innovations, being nation-wide pioneers in technical approaches, decision making, planning, capacity building and communication. Yet, the efforts had rather limited impact because of the enormous amount of investment needed for achieving a transition to overall energy efficient performance. The problem of availability and access to investment capital in energy efficiency has been a persistent barrier not only for the municipality but also for local business and households. Although both the Operational Programme on Regional Development 2007 – 2013 and the Operational Programme on Competitiveness 2007 – 2013 covered energy efficiency measures for public institutions, industrial plants and multifamily housing, often the principle of co-financing and the principle of providing the grant after the investment has been made was a considerable obstacle to applying for grants.

The municipality has been one of the 23 co-founders (in 1997) and is still a leading member of the Municipal energy efficiency network *EcoEnergy*, which unites the efforts of Bulgarian municipalities for achieving a better energy efficiency and finding solutions for important national tasks.

During the recent two decades Gabrovo municipality has repeatedly undertaken and successfully accomplished ambitious projects in the EE field. It has been a pilot municipality in numerous international projects, such as GEF/UNDP project on *Building the Local Capacity for Promoting Energy Efficiency in Private and Public Buildings* (2006 – 2010) (UNDP, 2010); and MODEL Project on energy management in municipalities within the *Intelligent Energy Europe* Programme (2007 – 2010). The MODEL project activities resulted in establishing a municipal Energy management unit, an Energy Programme and an Action Plan. *Annual Information Energy Days* were launched in the municipality. A number of events and information campaigns were also organised to promote energy efficiency. The MODEL Award 2008 was a recognition for the active commitment and achievements of the municipality.

Gabrovo municipality is an active participant in several EU funded projects on energy efficiency:

- the Covenant capaCITY Project, supporting the development of sustainable energy municipalities in Europe through capacity building and action plans implementation;
- the NET-COM Project, building national platforms for dialogue in support of the Covenant of Mayors
- passREg Project (Passive House Regions with Renewable Energy), aimed to trigger the successful implementation of Nearly Zero Energy Buildings (NZEBs);
- the EuroPHit Project, training in ‘step-by-step’ EE retrofitting of buildings.
- the MORE4NRG project, INTERREG IVC program, through which the solar energy production potential of Gabrovo district was assessed, based on existing database and photovoltaic GIS (PVGIS).

The completion of the *Sun* kindergarten to Passive House (PH) standards (developed with the support of EcoEnergy) was a key element of the overall policy of Gabrovo to promote energy efficient buildings and to keep a strong and visible focus on social issues (Figure 5). The project concept was to attain energy class ‘A’ for net energy demand according to Bulgarian regulations while complying with the PH standards for provision of year-round comfort at minimum exploitation costs.

The *Matevs* complex in *Etara* quarter in the city of Gabrovo (capacity of 26.81 kW; amount energy sold in 2010 – 11,907 kWh) is the largest photovoltaic system in the district and among the important private initiatives in implementing renewable energy sources (Gabrovo District Plan for EE 2011 – 2020).



Figure 5 – The *Sun* kindergarten in Gabrovo – the first passive public building in the country: (source: *Passive House Buildings*, 2013)

3. CASE STUDY: THE INTEGRATED PLAN FOR URBAN REGENERATION AND DEVELOPMENT OF GABROVO

Despite the considerable experience accumulated by Gabrovo Municipality in approaching energy efficiency issues through sector plans, integrating energy efficiency aspects in an urban plan for the whole city was a new type of activity to undertake. There was no such previous experience elsewhere in the country either. Such an EE-sensitive urban planning was undertaken within the recently developed and already enacted Integrated Plan for Urban Regeneration and Development (IPURD) for Gabrovo, the administrative centre of the municipality, a city with an area of 1,878 ha and population of 58,367.⁴

IPURDs are classified as medium-term documents developed in accordance with the long-term strategic documents – the general development plans, in order to support the EC funding policy in Bulgaria. The plans aim at identifying urban areas that are lagging behind or have specific potential. They should define necessary strategic interventions and practical action – implementation programs with sets of projects envisaged to have synergistic effects, which could be funded under various operational programmes or by other sources. Systems of indicators concerning the positive change with regard to impacts on the regional and local development and particular practical results are on the part of monitoring and evaluation. The expected IPURD influence on the development of the major urban city centres up to 2020 stems from the requirement that any further funding of urban development projects under EU Structural and Cohesion Funds in the period 2014 – 2020 should be in line with the enacted integrated plans.

The IPURD elaboration for 36 Bulgarian municipal and agglomeration centres was funded by the European Regional Development Fund (ERDF) through the Operational Programme for regional development. The contracts signed in June 2011 between the Ministry of Regional Development and Public Works, in its capacity of a managing authority of the Operational Programme, and the Mayors

of 36 municipalities in the country, provided an overall funding of 21.2 million (about €10.5 million,) under the *Support for Integrated Plans for Urban Regeneration and Development scheme* (BG161PO001/1.4-07/2010).

The city of Gabrovo project (BG161PO001/1.4-07/2010/031-02) was registered in the national management and monitoring information system as BG161PO001-1.4.07-0030-C0001.

The Methodological Guidelines on IPURD development, published by the Ministry of Regional Development and Public Works (MRDPW) in 2010, were to frame and unify the process by defining the steps of a holistic approach and the minimum of required procedures in the development and approval of integrated plans – including analyses, evaluation criteria, strategic aspects, implementation programmes for the intervention zones, feasibility studies, public participation, etc. The aim was to increase the overall urban planning efficiency at the local level and to provide for synergy through the spatial and temporal coordination of policies, resources and actors. Up to three intervention zones had to be defined in each of the municipal centres – at least one zone with prevailing social character, and also zones with economic development potential and with public functions of high general importance to the city. Among the priorities to be achieved (economic development, social integration, environmental protection and risk prevention, high quality urban environment, accessibility and self-governance), energy efficiency was mentioned mainly with regard to environmental protection measures. The EE aspects to be explicitly addressed by the plans concerned buildings with poor energy efficiency in the zones with prevailing social character and with public functions of general importance to the city.

The Municipal Council of Gabrovo approved the requested three intervention zones for the IPURD to address. The zones cover more than 60% of the city area (*Figure 6*).

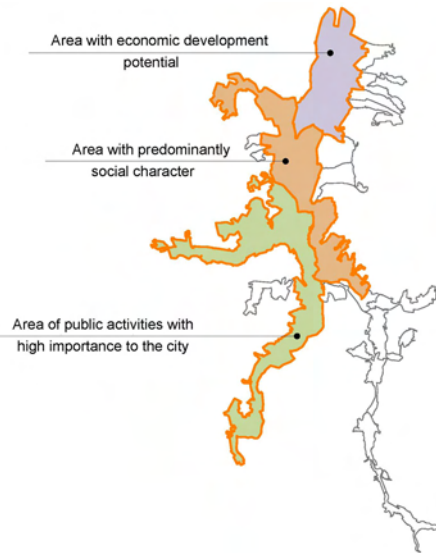


Figure 6 – The three intervention zones defined by the IPURD of Gabrovo (Gabrovo Municipality & Urban Vision, 2013)

The large number of actors involved in the IPURD elaboration and implementation responded to the complexity and scale of the urban processes addressed by the plan:

- a Management Team (the chief architect of the municipality and two experts in project management) and a Workgroup (the deputy mayors, the chief architect of the municipality, the Heads of the specialised departments at the municipality, technical experts);
- the *Urban Vision* Consultancy Consortium - built by three companies, specialised in (i) urban planning and legislation, (ii) statistics and econometrics, and (iii) spatial data and geodesy. The multidisciplinary team covered many specific fields related to planning and design, governance and development, infrastructure and environment;
- managers, experts and civil servants from the state agencies at the regional and district level, the municipal administration, municipal and utility companies;
- the Technical University Gabrovo;
- professional and sector business organisations;
- non-governmental networks and local non-governmental organisations, civil activists;
- the political parties represented in the Municipal Council.

The Management team and the Work group were responsible for guiding and supporting the process of preparation and approval of the plan, and for communicating with the consultancies and the general public. The Consultancy consortium had to develop the structure and content of the document and to lead the process towards a broad agreement on the vision, priorities and specific interventions as part of the public procurement for the services included in the IPURD preparation. The municipal managers and experts took part in various phases associated with their responsibilities and tasks. The representatives of the business, civic, educational and political organisations took part in two public hearings, three thematic round tables, focus groups, communication events, interviews and field study visits.

The stakeholders to be involved in the plan implementation are all those who took part in its preparation plan and many more who would undertake interventions at various sites in the city. The main target groups and beneficiaries in the intervention zones included most of the city residents, and many users of public services, facilities and spaces from the municipality, the district, and the region, as well as visitors from the country and abroad.

Gabrovo Plan was developed with the presumption that considerable potential could be mobilised for a more comprehensive approach to estimated energy efficiency challenges. Possible EE-sensitive urban interventions were taken into consideration. Appropriate conditions for overcoming key constraints and practical steps to guide the transition in the supply and demand models were envisaged. Relevant energy efficiency measures and the implementation of renewable energy sources were recommended where appropriate in the intervention zones.

The stakeholders directly involved in the initiatives and projects contributing to greater energy efficiency, were the managers of public institutions and facilities, utility companies and operators, etc. Potential public-private partnerships in designing, building and operating of various business and public assets or in providing public services were

also envisaged by the plan. Their potential involvement aimed at building smart energy networks, organising small-scale co-generation facilities and retrofitting or providing new buildings with excellent energy performance.

Energy management issues that were considered particularly important at the regional and local level comprised:

- supply – the privately owned power generation plants (district heating in particular) working in a non-competitive environment of protectionism or with ineffective control and sanctions for low environmental performance;
- distribution – the established regional monopolism (the only concessioner company in the region applying non-transparent criteria for grid access, thus hampering community planning efforts);
- demand – the shrinking population of the municipality (resulting in a growing share of uninhabited flats and single-family houses); the fragmented EE measures by individual households to insulate their apartments (resulting in the ‘patchy’ view of the facades); the outdated rolling stock of the urban and suburban public transport services, which had stimulated a growing motorisation rate and high share of private car trips.

Some of the industrial enterprises in the region had implemented energy saving measures and invested in technological modernisation, including highly efficient co-generation facilities through available EU funding.

Objectives and methods

Four main goals were outlined in the strategic part of the integrated plan:

- i. guaranteeing access to environment, services and opportunities for a life of full value and dignity;
- ii. effective use of resources contributing to the mitigation and adaptation to climate change;
- iii. introducing technological, social and governance innovations at the urban level to provide new opportunities;
- iv. encouraging citizens’ and business activity for the development of civil society in Gabrovo.

The specific EE-related objectives addressed under the second main goal comprise:

- large-scale implementation of energy efficiency measures, encouragement for using renewable energy sources and for reasonable energy savings;
- flexible public infrastructure that would effectively meet all the local needs;
- clearance and/or conversion of non-functioning buildings and sites;
- risk prevention with regard to natural disasters and climatic extremes.

A number of horizontal projects were proposed to interconnect the four main goals (Figure 7). These include the development of systems for monitoring and evaluation of the material and energy flows associated with the implementation of the projects envisaged by the Plan (the *Urban Metabolism* horizontal project) and the evaluation of their water, carbon and general ecological footprint (the *Green City* horizontal project).

Connecting households to decentralised and smart energy production and distribution networks was considered appropriate in more than 40 small localities all over the intervention zones (the *Energy Nearby* model project) and within the Gabrovo Gas project.



Figure 7 – Extract, Program for Horizontal projects (Gabrovo Municipality & Urban Vision, 2013)

Improved access to a more energy efficient built environment with basic social goods (safer public open spaces with energy efficient lighting; more efficient water, sewage,

heating and gas provision infrastructure) is envisaged through 4 groups of rehabilitation projects (*People and Streets*, *Life-giving Water*, *the Town's Gardens*, *The Heart of the Neighbourhood*) in all the intervention zones (Figure 8).

Guaranteeing the thermal comfort in multi-family residential houses and public facilities is the main focus of ten project groups (Renovation of Homes, Cultural Edifices, The Municipal Centre, Efficient Institutions, My Favourite School, Contemporary Education, Sporting Gabrovo, Home for Everybody, Fairy Childhood, Healthy Community). The step-by-step implementation of these projects until 2020 is expected to provide energy efficiency measures and renewable energy sources to 50 pre-fabricated panel blocks of flats and to 50 municipal and state-owned buildings.

Transport infrastructure and services demotivating car use and providing improved urban mobility are the focus of two projects - *Mobile Town* and *Pedelec (e-bikes)*. Six groups of co-working and retrofitting oriented projects (Brownfields, Global Gabrovo, Flexible Business, Dispersed Tech-Park, Labour is a Song, Added Value) were planned in the intervention zone with economic development potential and in the one with public functions of high general importance.



Figure 8 – Extract, Program for the intervention zone with prevailing social character (Gabrovo Municipality & Urban Vision, 2013)

Expected social benefits from the focus on the energy perspective stem from providing the city households with effective know-how in the field of domestic resource and energy efficiency and independence, sustainable lifestyles and behavioural patterns (the Neighbourhood Steward Partnership project in the intervention zone with prevailing social character). The envisaged positive economic benefits are related to the incentives and opportunities available through EU funding for energy and cost savings by households, companies and public institutions. The positive environmental outcomes are expected to result from the ubiquitous energy efficiency measures and the use of alternative (renewable) energy sources. These are expected to decrease both energy demand and input in production, and the final energy consumption at the city level, also resulting in lower GHG emissions.

The plan aims at guaranteeing the continuity of action and the integrity of EE-aimed approaches for all the numerous interventions to be undertaken in the city. It provides an open framework to accommodate conventional measures in parallel with possible future innovations in urban planning and management, monitoring and evaluation, construction and maintenance, mobility, etc. The IPURD is sensitive to system interactions and provides for effective information management, communicating benefits and learning by doing. The methods applied in developing the plan comprise content analysis of official documents, field studies, empirical descriptions and expert assessments, factor and indicator analysis, multi-criteria assessment, scenario approach.

The Integrated Plan was officially adopted by the Municipal Council on June 20, 2013, and its implementation challenges are still ahead. Expected barriers are related to unsolved problems with energy distribution at the national level and the lack of continuity in energy policy implementation due to strong external and internal pressures. There is also a general lack of confidence in the effectiveness of long-term measures due to considerable political uncertainty, the contested energy market, the demographic decline and the ongoing impoverishment of large social groups.

The potential investments anticipated by the IPURD of Gabrovo through its 74 projects are about €160 million. Considerable influence is therefore possible through the plan in support of smart energy solutions in future urban development.

The strong focus of Gabrovo plan on EE considerations and innovative smart energy approaches was due to the matching understanding of the municipality and the expert consortium about the major importance of the energy aspects for development. The previous experience of the municipality in the EE field contributed for building confidence in all stakeholders about the policy relevance.

The plan was also an important practical step in applying an innovative approach to the overall urban planning process in the country. The experience gained in Gabrovo could be effectively transferred to other municipalities in the country within the ongoing process of IPURD elaboration for other municipalities. The important drivers for positive change in the field comprise:

- the overall EU policy and particular documents on energy efficiency and RES, providing a consistent framework to work towards the national targets in the field;
- the growing awareness at the national level about the importance of integrating action aimed at higher EE into regional development and spatial planning documents;
- the proactive attitude and innovative thinking of a growing number of local and regional actors – municipalities and municipal networks, NGOs, business organisations.
- the systematic interactions becoming more visible and influential at both the national level (through the National municipal energy network EcoEnergy) and the European level (the Covenant of Mayors).

4. CONCLUSIONS

Spatial planning policy in Bulgaria tries nowadays to establish the background for a greater sensitivity to energy efficiency aspects in urban development, which has to be further focused upon and supported at the national level. The elaboration of the Integrated Plan for Urban Regeneration and Development (IPURD)

of the city of Gabrovo illustrates an effective effort for integrating EE considerations and for developing smart energy solutions at the urban planning level.

The IPURD elaboration also outlined the difficulties staying ahead in the process due to the lack or insufficiency of relevant database and of more explicit requirements for EE monitoring and assessment in the planning process. The ongoing process of IPURD development throughout other cities and towns in the country could be a good chance for transfer of the innovative practice of Gabrovo to other Bulgarian municipalities – yet only if the knowledge and skills for implementing the methodological approach are timely and convincingly disseminated.

The process needs holistic and strategic thinking and a much higher level of interdisciplinary expert support. Despite the growing awareness, the broadening policy framework and the increasing institutional capacity at all levels, there is still a gap to overcome – the minor sensitivity of urban planning to energy losses and the lack of effective interdisciplinary approaches to promote energy efficiency as a key factor at the urban level. Further consistent monitoring of urban processes and analyses of changes during the plan implementation period would provide for the capacity-building to enable the development of context-specific smart energy approaches in the urban planning field.

FOOTNOTES

1. The 28 districts ('oblast' in Bulgarian language) are the administrative divisions of the national government, also corresponding to level 3 of EU hierarchical system for socio-economic analysis NUTS (Nomenclature of Territorial Units for Statistics).
2. EnEffect is a non-profit expert NGO working in the field of energy management.
3. Especially the European Regional Development Fund (ERDF) through the Operational Programme for Regional Development (OPRD), 2007 – 2013.
4. The reported shrinking rate of the city is 12.1%. (MLSP, 2011).

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COST DESCRIPTION

THE ORGANISATION OF COST

COST - European Cooperation in Science and Technology is an intergovernmental framework aimed at facilitating the collaboration and networking of scientists and researchers at European level. It was established in 1971 by 19 member countries and currently includes 35 member countries across Europe, and Israel as a cooperating state.

COST funds pan-European, bottom-up networks of scientists and researchers across all science and technology fields. These networks, called 'COST Actions', promote international coordination of nationally-funded research.

By fostering the networking of researchers at an international level, COST enables breakthrough scientific developments leading to new concepts and products, thereby contributing to strengthening Europe's research and innovation capacities.

COST's mission focuses in particular on:

- building capacity by connecting high quality scientific communities throughout Europe and worldwide;
- providing networking opportunities for early career investigators;
- increasing the impact of research on policy makers, regulatory bodies and national decision makers as well as the private sector.

Through its inclusiveness, COST supports the integration of research communities, leverages national research investments and addresses issues of global relevance.

Every year thousands of European scientists benefit from being involved in COST Actions, allowing the pooling of national research funding to achieve common goals.

As a precursor of advanced multidisciplinary research, COST anticipates and complements the activities of EU Framework Programmes, constituting a "bridge" towards the scientific

communities of emerging countries. In particular, COST Actions are also open to participation by non-European scientists coming from neighbour countries (for example Albania, Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Jordan, Lebanon, Libya, Moldova, Montenegro, Morocco, the Palestinian Authority, Russia, Syria, Tunisia and Ukraine) and from a number of international partner countries.

COST's budget for networking activities has traditionally been provided by successive EU RTD Framework Programmes. COST is currently executed by the European Science Foundation (ESF) through the COST Office on a mandate by the European Commission, and the framework is governed by a Committee of Senior Officials (CSO) representing all its 35 member countries.

More information about COST is available at www.cost.eu.



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