



Housing & EU Finance 2020 – 2027

**From Objectives to Action – Turning EU Social &
Environmental Policy
into positive change for citizens**

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The case of Bulgaria

Bulgaria's energy intensity

Bulgaria faces the challenge of reducing its high energy and carbon intensity levels to comply with European Union (EU) reduction targets.

- It is the most energy-intensive economy in the EU (about **4.3 times higher than the EU**).
- **Its greenhouse gas (GHG) emission intensity is twice the EU average** (coal accounts for about 38 percent of total primary energy supply)

To address these challenges, the government of Bulgaria has made **energy efficiency (EE) a cornerstone of its energy policy with** two specific targets for 2020:

- **increasing energy savings by 25 percent** (1.6 million metric tons of energy equivalent (Mtoe) in primary energy savings – and
- **reducing energy intensity by 41 percent** compared to 2005 levels.

Source: World bank report Bulgaria - Energy Efficiency Project July 2018

Bulgaria's existing housing stock

- Over 500,000 inhabited buildings and about 3.35 million dwellings.
- About 65,000 pre-1990 residential multifamily apartment buildings (MABs) made of cement and bricks, monolithic concrete construction, and prefabricated panel blocks.

Due to the **absence of energy efficiency norms in the building codes of the time, most of these buildings have little or no thermal insulation in their building envelopes.**

- **The energy consumption is at least twice as high as those built to current standards.**
- Many buildings are severely underheated, typically **about 13-16° C, well below the 20-21° C national standard.**

The MABs are also in very poor condition and structurally unsound due to **chronic lack of maintenance of the building envelopes.**

Since the buildings were built, **there have been no plans for maintaining and eventually replacing the common areas and**

Infrastructure

Source: National Statistical Institute (NSI), 2011 Census; World bank report Bulgaria - Energy Efficiency Project July 2018



Pilot renovation programs 2007-2015

- **Barriers to Residential Energy Efficiency**
 - Inefficient pricing signals and low energy efficiency returns, especially for power and DH.
 - Weak HOAs and an inability to take collective decisions on building refurbishment.
 - High transaction costs and lack of delivery mechanisms for thermal refurbishment.
 - Lack of financial resources by homeowners to undertake energy efficiency investments.
 - Skepticism about EE savings
- Since 2007 the MRDPW has implemented **several energy efficiency programs funded by IFIs, donors and EU structural funds** (but **not on a large scale** and faced difficulties tapping into private funding)
- **Commercially oriented initiatives**—mainly credit lines channeled through local commercial banks. **Individual loans typically small (an average of €1,550)** and fund individual energy efficiency measures, such as window replacements, rather than comprehensive thermal retrofits.
- Increasing levels of capital grant support have been needed to kick-start programs in MABs (up to 85 percent) – but despite this level of grant financing, **demand has been low and very few MABs have been renovated.**

Source: World bank report Bulgaria - Energy Efficiency Project July 2018

National program for energy efficiency (NPEE) in Multi-family buildings, 2015-on

- **NPEE supports the rehabilitation of MABs through the implementation of energy efficiency measures and structural retrofitting.**
- **Program budget: BGN 2 bln. (EUR 1.022 bln.) to provide 100% grant support to HoAs for eligible costs**
- **Objectives:**
 - **To improve the energy efficiency** of multifamily residential buildings and **reduce energy expenditures**
 - **To extend the life-time of buildings,** and
 - **To contribute to a reduction in local and global air pollution.**
 - **The renovated buildings shall correspond to Class C (EU energy performance level for buildings) or better.**
- **The Bulgarian Development Bank (BDB) acted as a paying agent and accepted applications from HOAs through the municipalities. BDB secured from IFIs the external financing needed for the implementation of the program until grants are paid (KfW and Council of Europe Development Bank)**
- **Decentralized program: municipalities undertook all procurement and oversight and acted as trustees of the HoAs in the relationship with BDB**

Source: World bank report Bulgaria - Energy Efficiency Project July 2018



**BULGARIAN
DEVELOPMENT BANK**

Key performance indicators

All buildings	All classes
Number of buildings	2,021
Area of buildings, m ²	11,433,922
Investment costs per building, BGN	973,534
Annual savings, BGN/year	118,459
Average payback period, years	8.2
Final energy savings, GWh/year	934,279
Final energy savings per m ² , kWh/m ²	85.00
Investment costs per saved kWh, BGN/kWh	1.04
Investment costs per m ² , BGN/m ²	88.57
CO ₂ emission reduction, thousand t/year	308,733
Investment costs per reduced CO ₂ , BGN/tCO ₂	3,153

Source: World bank report Bulgaria - Energy Efficiency Project July 2018



Social and economic benefits of the Program

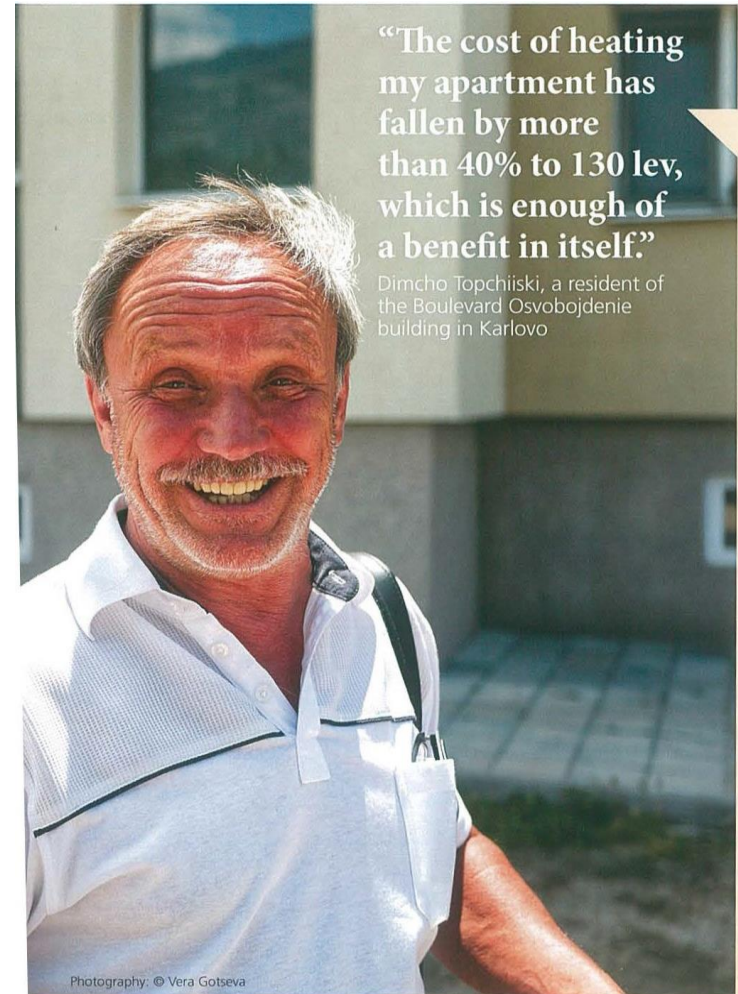
Based on a 2017 survey:

- > 95% of the participants noted **an increased thermal comfort level in their apartments**, typically by 3-5° C, during the winter months;
- > 80% mentioned that **their utility bills have gone down**, and about 60% said they went down significantly (avg decrease 25%);



My apartment used to be below zero. Now the temperature in my home is very good. I almost don't need to have the stove burning in winter?"

Anka Georgieva, resident



Social and economic benefits of the Program

- **Less dust accumulation on the premises, lower noise levels, and increased buildings' "life";**
- **Increased valuation of the apartments**
- **64% indicated that they would "certainly" recommend the Program to other apartment owners;**

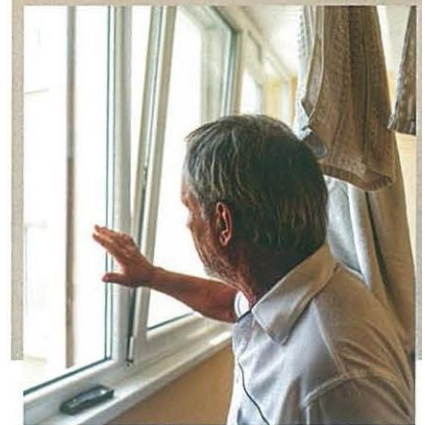
The residents also state that the Program has enabled **the homeowners to become more connected to one another** for a more effective HOA/maintenance in the future.

Impact on employment and capacity building:

- Created possibilities for additional employment of consultants and MSMEs at local level
- Increased **capacity of the local authorities for the implementation of energy efficiency programs**

Impact on environment: cleaner environment; lower emissions and air pollution and increased energy savings at national level

Societal impact: Raising public awareness on how to improve the energy efficiency and the resulting benefits



The way forward

Building type	Number of MABs built before 1990*	Number of MABs to be renovated	Number of MABs completed in NPEE Phase 1	Number of remaining MABs to be renovated
Panel	11,004	9,664	1,419	8,245
Brick	41,910	27,949	135	27,814
MCC	11,778	6,266	467	5,799
Total	64,692	43,879	2,021	41,858

- Housing stock in need of renovation **remains high**
- Government **committed to prolong the program**, different options are analyzed (e.g. reduced grant component, private sector involvement, sustainability, etc.)



Contact

Thank you very much for your attention

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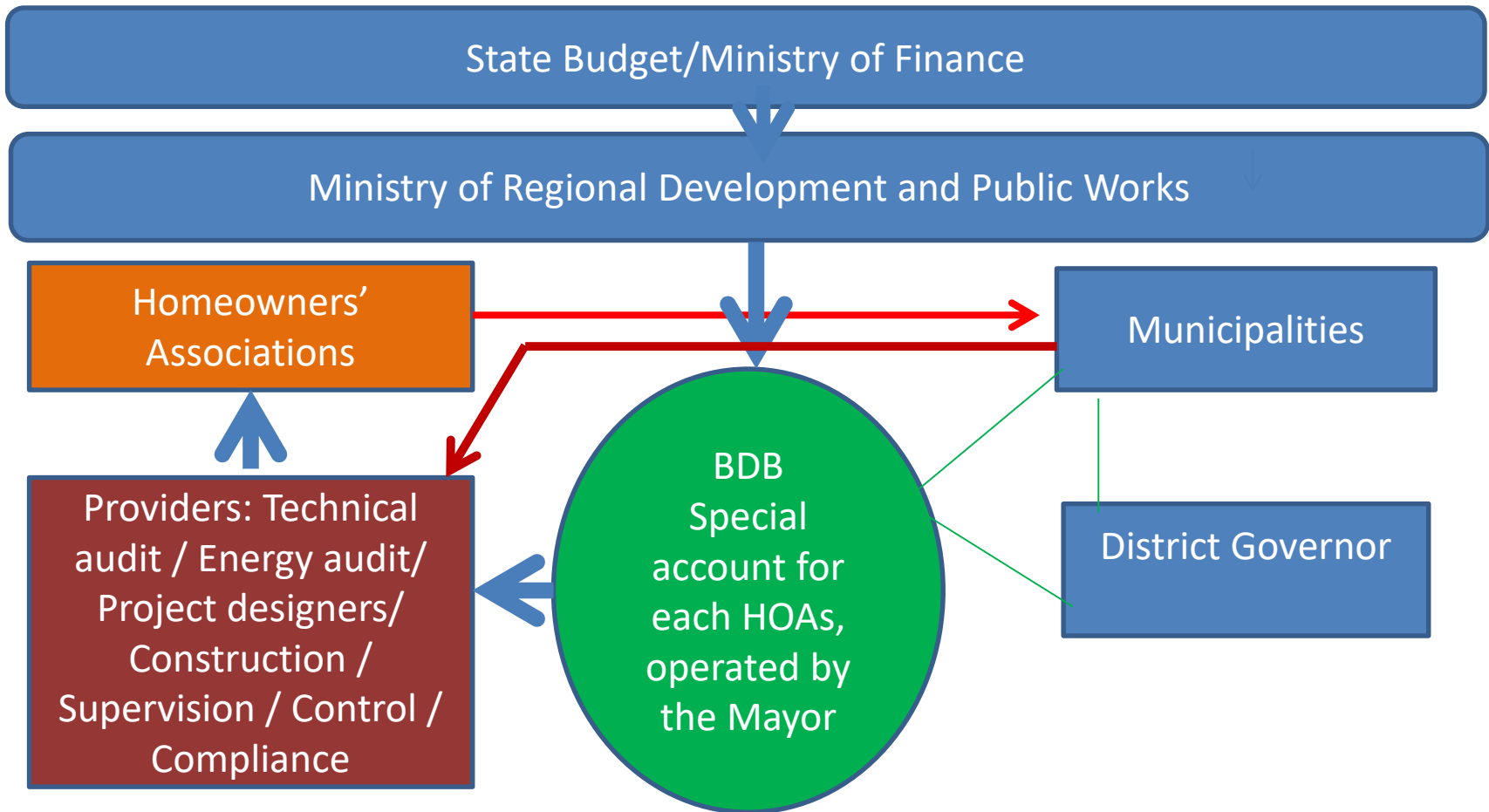
www.eltia.eu

Back-up

Eligibility criteria

Parameters	
Final beneficiaries	Final beneficiaries are the inhabitants of the targeted and eligible multi-apartment buildings (MABs) in 265 municipalities in Republic of Bulgaria.
Target MABs	Buildings built prior to 1990 (prefabricated panel ones, brick and monolithic concrete). Instructions to municipalities to prioritize the most dilapidated ones.
Eligible costs	<ul style="list-style-type: none">- Technical audits: energy efficiency audit and audit to determine the technical characteristics in accordance with Spatial Planning Act (technical passport)- Improvement in energy efficiency: thermal insulation of roofs, walls, facades, basements, ceilings; installation of new windows and doors; installation of new heating system or renovation of the existing ones, installation of systems for the use of energy from renewable sources; replacement or renovation of the ventilation system; replacement of electrical system and installation of energy efficient lighting in common areas; connecting building to the urban gas distribution network and installation of gas heat boiler where possible; measures to increase energy efficiency of elevators (technical characteristics of the motor and/or systems for automated management of the elevators)- Improvement of structural soundness of the buildings if needed based on the technical audit and renovation of common parts- Costs for conformity assessment and construction supervision- Administrative costs related to applications for legal authorizations including fees payable to relevant authorities

Program arrangements



Energy performance class before and after implementation of the energy efficiency measures

	A	B	C	D	E	F	G
Before EE measures	0	2	9	152	819	713	326
Before EE measures, total area in m ²		1,158	14,186	796,900	4,579,738	4,112,556	1,587,021
Before EE measures, av. area in m ²		579	1,576	5,243	5,592	5,768	4,868
After EE measures	1	170	1,848	2			
After EE measures, total area in m ²	630	552,532	10,435,677	2,716			
After EE measures, av. area in m ²	630	3,250	5,647	1,358			

Source: World bank report Bulgaria - Energy Efficiency Project July 2018