



European Construction Sector Observatory

Policy measure fact sheet

Bulgaria

Energy Renovation of Bulgarian Homes

2012-2015

Thematic Objectives 1 & 3

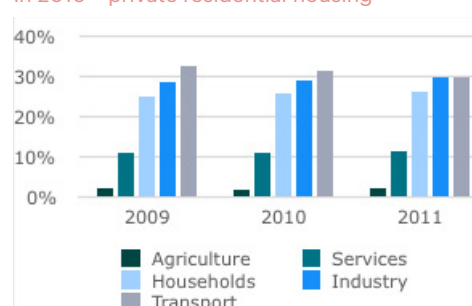
January 2018

In a nutshell

Implementing body:	Ministry of Regional Development and Public Works (MRDPW), Directorate General 'Programming of Regional Development'
Key features & objectives:	A strategic measure to reduce energy consumption in multi-family residential buildings through the implementation of energy efficiency measures.
Implementation date:	July 2012 – July 2015
Targeted beneficiaries:	Individual home owners and associations of flat owners in the 36 largest cities in Bulgaria.
Targeted sub-sectors:	Residential buildings constructed prior to 26 th April 1999 and which consist of at least 3 floors and 6 apartments.
Budget (EUR):	EUR 25.5 million (BGN 50 million)

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Figure 1: Use of renovation vouchers by type of renovation in 2016 – private residential housing



Source: Environmental Support Report (Umweltförderungsbericht) 2016⁴

In comparison with other EU Member States, the Bulgarian economy is one of the most energy intensive. Due to its energy dependence, the economy of the country relies on other economies. In 2009, the residential housing sector accounted for a quarter of the total energy consumption in Bulgaria. Whereas consumption in sectors such as transport showed a decreasing trend between 2009 and 2011, the amount of energy consumed by households increased over that period, as shown in Figure 1¹. The main reason was the deteriorated condition of a large number of prefabricated multi-family buildings – 12,000 buildings containing 800,000 dwellings in 120 residential estates.

Almost 65% of the Bulgaria's residential housing stock was built between 1950 and 1990, with the renovation rate amounting to under 1% in 2012². As a consequence of the housing stock being insufficiently maintained, the average energy consumption varied between 150–300 kWh/m² in the same year. The biggest problems were found in the large panel buildings that are inhabited by more than 1.8 million people. These buildings account for nearly 50% of the residential housing stock in Bulgaria³.

The mass renovation of multi-family buildings in Bulgaria is needed to address a number of important and related challenges:

- The high and rising energy consumption in households;
- The poor maintenance of the housing stock;
- The steady increase in energy prices; and
- The increasing share of households affected by energy poverty.

Policy measures began to target improvements in residential energy efficiency in 2005, but they did not prove to be very effective (e.g. the National Programme for Renovation of Residential Buildings)⁵. The experience led the MRDPW, supported by the United Nations Development Programme (UNDP), to implement a pilot project for the renovation of multifamily buildings in 2009-2012. Unfortunately, the project was not subsequently rolled out across the country. The small scale of the project and the need for additional policy measures (e.g.

New Energy Strategy of Republic of Bulgaria to 2020, National Action Plan on Energy Efficiency 2011-2013) were cited as issues that limited the project's impact.

To achieve greater impact, the MRDPW launched the **“Energy Renovation of Bulgarian Homes” (ERBH)** programme in 2012. Financed through the Operational Programme Regional Development 2007-2013, the programme aimed to support large-scale energy efficiency improvements in multi-family residential buildings, covering a range of energy saving measures, including the installation of renewable energy solutions, such as solar thermal systems or biomass heating.

The ERBH programme faced a number of challenges which ultimately limited its success, compared to its intended objectives. Nevertheless, the overall perception of stakeholders was positive, as the programme proved to be an effective tool to reduce energy consumption by Bulgarian households. Furthermore, the programme demonstrated that improved energy efficiency in residential buildings not only enhances the quality of life of household members (direct economic and social benefits), but also substantially reduces greenhouse gas emissions, making it an important instrument for combating climate change.

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General description

Energy Renovation of Bulgarian Homes (ERBH) was a three-year government initiative to make multi-family residential buildings in 36 cities / seven planning regions in Bulgaria more energy efficient. For this purpose, the MRDPW appointed project managers for every planning region in Bulgaria to decide which buildings were suitable for energy-efficient renovations and supported applicants in realising their projects.

Between July 2012 and July 2015, individual flat owners and associations of flat owners could apply for grants and loans to fund energy saving renovations to their homes.

The ERBH supported a range of renovation measures, including:

- Replacement of joinery (e.g. windows and doors);
- Thermal insulation (external walls, roofs and ceilings);
- Construction of installations for the utilisation of renewable energy efficiency sources;
- Repair or replacement of internal heating / cooling / ventilation installations, including radiator thermostatic valves and distributors in the common areas of the building;
- Repair of electrical installations in common areas and the introduction of energy-saving lighting in a building;
- Attendant construction assembly works related to the implementation of energy efficiency measures and recovering the common areas of the building as a result of the implemented measures with an energy saving effect⁶.

The programme received EUR 25.5 million in grant funding from the MRDPW through the EU Structural Fund Operative Programme 'Regional Development'. To co-finance low-interest loans, the Corporate Commercial Bank also committed another EUR 6.5 million.

Initially, for each residential building, the programme provided a grant of up to 50% of the total renovation cost.

Grants were provided to cover the cost of construction works, conformity assessments, preparation of technical / business projects, copyright and construction supervision, as well as costs associated with the introduction of the facility and to obtain the required authorisation documents⁷. The remaining 50% was to be paid by individual flat owners or associations of flat owners who were entitled to take a loan from the Housing Renovation Fund, set up as a part of the initiative.

In April 2013, the size of the grant was increased to 75% of the total renovation cost in response to a lack of interest from flat owners⁸.

To be eligible to receive funding, applicants were required to demonstrate that the building was:

- Located in one of 36 Bulgarian urban centres: Blagoevgrad, Burgas, Varna, Veliko Tarnovo, Velingrad, Vidin, Vratsa, Gabrovo, Gotse Delchev, Dobrich, Dupnitsa, Kazanluk, Karlovo, Kardzhali, Kyustendil, Lo-Lom, Montana, Pazardjik, Panagyurishte, Pernik, Petrich, Pleven, Plovdiv, Razgrad, Rousse, Svishtov, Si-Lystra, Sliven, Smolyan, Sofia, Stara Zagora, Targovishte, Haskovo, Shumen and Yambol;
- Constructed before 26th April 1999;
- A multi-family residential building intended for permanent residence and consisting of at least 3 floors and 6 apartments;
- A structurally stable building with a positive seismic evaluation.

Figure 2: Renovated large panel building in Bulgaria



Source: Get Warm Homes⁹

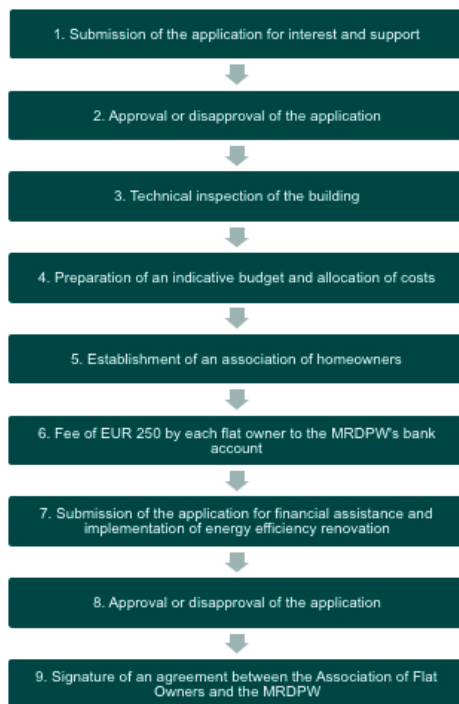
The application process involved 9 main sequential application steps, from an initial expression of interest, through different project specification and approval stages (technical, financial), and concluding with signing of an agreement between the association of flat owners and the MRDPW.

The application process is shown in Figure 3. In addition, there are a couple of conditions to mention in relation to two of the

process steps. Step 5 requires that an association of flat owners be established and registered during the application process and before submitting the application for financial assistance. Step 6 requires each flat owner to pay the MRDPW the fee of EUR 250, as part of their 25% contribution towards the total cost of the renovation.

After the approval of the application and signing of an agreement, the preparatory activities for the realisation of renovation works comprised: (1) technical inspection of a selected building, (2) energy audit, and (3) payment to cover management costs.

Figure 3: Main application steps



Source: Energy Renovation of Bulgarian Homes 2012-2015¹⁰

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Achieved or expected results

The primary objectives of the programme were to support energy saving renovations in residential buildings to reduce energy consumption and improve the quality of living conditions. More specifically, ERBH aimed to enable households to achieve energy cost savings of up to 40%.

The **expected results of the programme** were:

- Completion of energy efficiency upgrading construction works of at least 180 residential buildings;
- 6,100 renovated homes;
- Approximately 426,550 m² area renewed;
- 13,500 inhabitants with improved living conditions;
- Increased awareness of more than 3.9 million inhabitants (the population of 36 cities) on the possibility of taking saving energy measures and increasing habitation comfort through the implementation of energy efficiency measures in existing building stock;
- Energy savings achieved through renovations equal to 21,500 MWh/per annum;
- Reduction of greenhouse gas emissions (CO₂ and equivalent) equal to 15 kt per annum¹¹.

299 residential buildings have been approved for renovation under the programme and agreements with associations of flat owners have been signed. However, as a consequence of the accumulated delays during the implementation of the programme's activities, the **actual results of the programme** are:

- Technical audits completed and approved for 299 residential buildings;
- Energy efficiency audits completed and approved for 299 buildings;
- Investment projects with issued building permits approved for 299 buildings;
- 158 buildings were renovated and put into exploitation, which equates to 88% of the expected total;
- 2,292 renovated homes, which is only 38% of the expected total (6,100 homes);
- Approximately 265,947m² area renewed, which amounts to 62% of the expected total;
- 5,730 inhabitants with improved living conditions, which is only 42% of the expected total;

- Energy savings achieved through renovations are equal to 17,500 MWh/per annum, which is 81% of the expected total;
- Reduction of greenhouse gas emissions (CO₂ and equivalent) equal to 9.4 kt per annum, which equates to 63% of the expected total;
- 137 buildings have been transferred to the Energy Efficiency National Programme for implementation of construction assembly works¹².

The programme failed to reach its original goal – 180 renovated residential buildings over its three-year duration.

There are two major factors that have been cited as the reasons for the limited success of the programme. The first reason is that the programme was viewed by stakeholders as being too centralised in its design and too ineffective in its execution. The second reason is that it was viewed by many potential applicants as being too inaccessible, because the requirement to fund 50% or even 25% of the total renovation costs made the available funding support unobtainable.

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The programme modifications seem to be producing much better results. The programme is run by municipalities and has achieved the following results in its first year of operation:

- 4,228 buildings have signed contracts with municipalities;
- 2,022 buildings have signed renovation financing contracts;
- 261 buildings have already been renovated;
- 1,943 buildings are currently being renovated.

The new National Programme for Energy Efficiency of Multi-Family Buildings, which was launched by the MRDPW in 2015 as the successor to the ERBH, appears to address the key issues that affected the ERBH. For example, the new programme provides 100% grant funding to applicants, backed by a total of EUR 1 billion in public funding.

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Perspectives and lessons learned

From a **government perspective**, the Director of the Housing Policy Directorate at the Ministry of the Regional Development and Public Works¹³ says that the primary strengths of the ERBH include:

- Solid proof of energy savings, impacts and potential;
- Increased awareness among flat owners of the need to renovate to increase energy efficiency and achieve energy and cost savings; and
- Confidence in the department's ability to manage the process.

The main weaknesses of the programme were the insufficient involvement of the local authorities and a lack of adequate financial mechanisms to help flat owners to co-finance renovation projects, for example, to facilitate access to loans and provide support to insolvent flat owners.

In addition, prior to its launch, the programme faced challenges related to the complexity of the action, which required professional legal, technical and organisational knowledge and skills. To address this challenge, the Bulgarian Regulations on Condominium Management, Order and Supervision were changed to

enable the establishment of associations of flat owners, which resulted in more simplified decision-making.

Overall, the MRDPW recorded a positive feedback from targeted beneficiaries and involved stakeholders who expressed their support for the continuation of the programme or similar programmes in the coming years.

Looking forward, there are lessons to be learned. For example, the housing charity '**Habitat for Humanity Bulgaria**' has expressed enthusiasm about the programme, but has also recommended three important improvements for future programmes:

1. De-centralisation of decision-making and operational management from the Ministerial to the municipal level¹⁴;
2. De-centralisation of financial mechanisms of the programme;
3. Ensure that maintenance services continue after the renovation in order to preserve changes¹⁵.

The proposal made by Habitat for Humanity Bulgaria was accepted and adopted in the National Programme for Energy Efficiency of Multifamily Buildings, which was launched by the MRDPW in 2015¹⁶.

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From the **perspective of home owners**¹⁷, 80% stated that heating bills had dropped compared to the previous heating season.

Another 10% stated that they did not experience any cost reduction, but noticed that a higher ambient temperature has been maintained in their homes during the winter season, while a cooler temperature was preserved in the summer. It may be stated that the renovation of the buildings under ERBH resulted in higher occupancy comfort by improving the thermal environment.

The flat owners believe that the outcomes of the programme could be improved if:

- Information campaigns are conducted for a longer period of time;
- Applicants are better aware of the precise conditions for applying, as well as the subsequent steps to be taken for a successful implementation of the project;
- Adequate policy measures are introduced to improve the programme model and financial mechanisms to make renovation projects more affordable.

Endnotes

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- 2 E. Gaydarova, Energy Saving Measures in Residential Buildings in Bulgaria, Financing Energy Efficiency Seminar, Bulgarian Housing Association, November 2012: http://bpie.eu/wp-content/uploads/2015/10/E-Gaydarova_Bulgaria.pdf
- 3 Get Warm Homes, Residential Energy Efficiency in Bulgaria: Brief Overview: <https://getwarmhomes.org/policy/residential-energy-efficiency-bulgaria-brief-overview/>
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- 5 In 2005, the Bulgarian Ministry of Regional Development and Public Works, supported by UNDP, piloted a project for energy renovation of 50 multifamily residential buildings.
- 6 Ministry of Regional Development and Public Works, Energy Renovation of Bulgarian Homes: <http://www.mrrb.government.bg/en/energy-efficiency/energy-renovation-of-bulgarian-homes/>
- 7 BG 1: National Program for Renovation of Residential Buildings in Republic of Bulgaria, 2010 – 2020, September 2014: http://www.measures-odyssee-mure.eu/public/mure_pdf/household/BG1.PDF
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- 9 Get Warm Homes, Residential Energy Efficiency in Bulgaria: Brief Overview: <https://getwarmhomes.org/policy/residential-energy-efficiency-bulgaria-brief-overview/>
- 10 Energy Renovation of Bulgarian Homes 2012-2015, Makter Consult: http://makterconsult.bg/bg/news/energiino-obnovyavane-na-balgarskite-domove_l.n_id.98
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- 12 Ministry of Regional Development and Public Works, Energy Renovation of Bulgarian Homes: <http://www.mrrb.government.bg/en/energy-efficiency/energy-renovation-of-bulgarian-homes/>
- 13 Interview with Ms Gergana Blagieva, the Director of the Housing Policy Directorate, Ministry of the Regional Development and Public Works, January 2018
- 14 Get Warm Homes, Residential Energy Efficiency in Bulgaria: Brief Overview: <https://getwarmhomes.org/policy/residential-energy-efficiency-bulgaria-brief-overview/>
- 15 Europe Housing Forum, Energy efficiency in residential buildings, September 2015: <http://ecahousingforum.eu/2015/09/bulgaria-energy-efficiency-in-residential-buildings/>
- 16 Get Warm Homes, Residential Energy Efficiency in Bulgaria: Brief Overview: <https://getwarmhomes.org/policy/residential-energy-efficiency-bulgaria-brief-overview/>
- 17 Interview with Ms Gergana Blagieva, the Director of the Housing Policy Directorate, Ministry of the Regional Development and Public Works, January 2018