



(online) = ISSN 2285 – 3642

ISSN-L = 2285 – 3642

*Journal of Economic Development, Environment and People*

Volume 3, Issue 3, 2014

URL: <http://jedep.spiruharet.ro>

e-mail: [office\\_jedep@spiruharet.ro](mailto:office_jedep@spiruharet.ro)

## **Bulgarian Housing. Status and Prospectives.**

Georgi GEORGIEV, PhD, associate professor  
New Bulgarian University, Department of Architecture  
21 Montevideo Str., 1618 Sofia, Bulgaria  
tel: +359 888 452688 e-mail: [gngorgiev@nbu.bg](mailto:gngorgiev@nbu.bg), [www.nbu.bg](http://www.nbu.bg)

### **Abstract**

The article analyses the current condition of Bulgarian multistorey apartment housing and reveals the main obstacles towards sustainable energy efficient retrofit of existing condominium housing. Housing is an outstanding phenomenon that influences strongly social economic and environmental development of a country. Securing of energy efficient, affordable housing is of great importance for sustainable urban and social development. The article formulates proposals for necessary improvements and changes in the legal, institutional, and financial framework that would allow sustainable renovation of existing Bulgarian housing.

**Keywords:** sustainable housing, energy efficient retrofit, condominiums, ESCO, energy performance contracting, FRESH project

**JEL Codes:** R11, R12, R14, R21, R23, R31, R38

### **Introduction**

High energy consumption and deteriorated status of condominium housing are among the main common problems of the housing estates in all Eastern European big cities. In Bulgaria the situation is even more complicated by the extremely high share of the homeownership and the lack of any traditional practice and legislation concerning the maintenance and management of condominium buildings. About 97 % of the dwellings are privately owned and almost all of them owner occupied. As a result of the extremely distorted tenure structure more than 50% of the owner occupiers do not have sufficient income to cover the current costs of the services. This is proven by the many cases of disconnection from district heating service, the outstanding bills for consumables and the poor maintenance of the buildings. There is an acute disparity between the status of an apartment owner and the income level of the residents.

In most of the Eastern European countries after the World War II a large number of multistory apartment buildings were constructed and managed as rentals by the respective communist governments. Following the political changes in 90-ies of XX century this rental stock was largely privatized. Privatisation in most of EE countries was linked with imposing certain conditions for collective management and payment of running costs of newly emerged condominiums. Homeowners' associations were established according to privatization contracts. This is the case for example in Romania, Czech Republic, etc.

On the contrary, in Bulgaria the condominium property of multistorey apartment buildings has emerged immediately after the erection of the multistory buildings as far as the communist government used to transfer the property of the apartments to their future residents without creating any working rules for proper building maintenance. As a result nowadays we are facing the urgent necessity to introduce new rules but AFTER the ownership has been acquired and not at the moment of property acquisition. This is the crucial difference in comparison with the rest Eastern European countries that finally creates huge legal problem. This peculiarity could explain the lack of consensus in Bulgarian society in regard to the implementation of the new Condominium law that has been approved in 2009. In this specific situation in order to solve the problem with the management of the condominium property we need to tackle first the issue with strengthening the civil society starting at community level.

The very high owner occupancy share - currently almost 100% of the housing stock and the prevailing of multi-storey housing in big cities in Bulgaria imposes heavy obstacles for decision making process for renovation of such buildings. The fact that there is not a sound body representing the condominium building prevents also the contacts with institutions responsible for financing and subsidising of housing renovation activities.

## 1. Main features of Bulgarian housing stock [4] [11]

### 1.1 Structure

More than 91% of the housing stock in Bulgaria features steel-concrete framework structure, panel structure or brick framework structure with partial steel-concrete elements. Only 8.25 of the housing stock feature shanty framework structure. Despite the accelerated depreciation of the residential buildings due to failing maintenance, the majority of them are still susceptible to renewal. According to expert assessment, the group of buildings of three and more floors needing refurbishment intervention in the next 10-15 years comprises some 680,000 dwellings, of which about 360,000 are situated in panel buildings, 150,000 in steel concrete framework buildings and 170,000 is brick framework buildings.

### 1.2 Age

The housing stock in Bulgaria is relatively young. About 30% of the buildings are below 30 years of age, almost the half is below 40 years of age and only 4% represent housing stock inherited from before 1919.

### 1.3 Infrastructure

Taking account of the statistical data about the availability of the major components – electricity supply, water supply, sewerage – the multi-family residential buildings are well equipped, however the reliability of the engineering networks and the financial accessibility of the respective services are low. On the average the standard of Bulgarian dwellings is low as compared to the EU standard benchmark.

### 1.4 Energy efficiency

The energy efficiency issue is recognized and institutionalized on the national scale. A new regulatory framework (the Energy Efficiency Act and the related by-laws) has been worked out, pilot projects and studies have been conducted, however the financial and organizational conditions for mass practical activities on energy efficient renewal of residential buildings have not been set in place as yet. The thus “forced” wastage of energy and money goes on. The inherited poor operating conditions of the housing stock and the inadequate management and maintenance system force residents to consume twice the needed amount of energy. The highest heat losses have been observed on the external walls (25-35%) and windows (55-65%).

### 1.5 Ownership

The high share of privately owned housing (about 91%) inherited by the period of transition is smoothly and permanently increasing (above 97% in 2012), however the trend of diminishing of the municipal rented

housing sector (currently below 3% - hardly 109,000 dwellings) seems to contradict the increasing social stratification and vulnerability. Besides, this stock is highly dispersed in the framework of the apartment blocks (there is almost not a single building consisting entirely of municipal dwellings), which makes the rented housing stock hard to manage and inefficient. The private rented housing stock that has emerged in the period of transition is increasing, which contributes to the residential mobility, however the price levels prevent it from being accessible to the mass consumers' purchasing power.

### 1.6 Solvency / vulnerability

More than 50% of the owners of the apartments do not have sufficient income to cover the current costs of the services. This is proven by the many instances of disconnection from the district heating service, the outstanding bills for consumables and the poor maintenance of the buildings. There is an acute disparity between the O&M costs for the own real estate property and the income levels. At the background of lack of public intervention in many cases there is a threat of one's losing the ownership rights.

### 1.7. Behaviour

The residents have a deeply rooted sense of and aspiration for possessing their own dwelling, however they are not fully aware of the market-based significance of the dwelling as an investment, they do not recognize the need of making efforts for maintaining and improving its market value, nor are they in a position to do so. The poor state of the environment and the predominance of poor flat-owners act as a barrier also for those, who recognize, wish and are able to (financially) maintain their flat and the living environment at an acceptable (standard) level.”

## 2. The status of condominiums and homeowners associations (HOA)

As mentioned above, during socialist times until 1989, like in most of other East European countries, new housing was built predominantly by the Government in a set of tight limits in size and quality, which gives us grounds to consider all housing provided during this period as social housing. Unlike other countries, during totalitarian government in the period 1945-1989, the State as a main developer used to build houses which property was immediately transferred to the residents. Due to this peculiarity, Bulgaria was among the few countries with totalitarian system characterised by an extremely high owner occupancy share (currently about 97%).

Due to the fact of very high share of private homes, the political and economic changes after 1989 influenced housing in much more severe extent than in other countries. Since there was almost nothing to privatize in housing sector, the ownership structure changed insignificantly (State-owned rental housing went from 10% to 3% currently). As a result, social housing in Bulgaria covers all the housing stock built by the State before 1989, which consists mostly of multi-family buildings managed by condominium associations. A major issue for housing policies is the lack of actors specialized in housing management. In 2004 a National Housing Strategy was adopted by the government aiming to stop the process of deterioration of the existing building stock and to introduce a mechanism for the provision of new accessible dwellings (owned and rented). In 2005, a National Program for Renovation of the Housing Stock was approved by the government foreseeing budget subsidies for large-scale renovation activities of condominium housing. However these documents were not followed by further actions.

The poor technical quality of the housing stock and the lack of investments in the past entail a high need for refurbishment in general, and energy retrofit in particular.

The existing practice of management of multistory apartment buildings that was mostly build in Bulgarian big cities in the period of sixties-eighties of the last century was related to lack of proper legislation and as a result – an increasing deterioration of the housing stock. The existing until 2009 legislation does not impose sound basis for creation of building based homeowners associations for adequate management of their property. In recent years, some “Ad Hoc” energy efficiency renovation activities for the insulation of separate

building parts by the apartment owners took place as a result of the pressuring permanent increase of energy prices and the lack of proper legislation in Bulgaria. Such badly understood renovation has led to the waste of the scarce resources and prevented further renovation activities at the scale of entire building. Lack of proper organizational status of homeowners in condominium buildings created permanent difficulties in day to day maintenance of the housing and prevent implementation of feasible renovation activities.

According to the new Condominium Law (in force since May 2009) homeowners from condominium buildings in Bulgaria are allowed to form Homeowners Associations (HOA) as legal bodies eligible for access to renovation funds and subsidies. The Law was targeted at creation of incentives for improvement of maintenance of condominiums and facilitating of the start of larger scale energy efficient renovation activities in multi-storey housing. The Law sets this as a voluntary option along with the existing form of Owners Assembly.

The existing legal norms do not support the development of energy efficiency activities in the housing sector. In some cases like the property taxation, the taxes are even higher after renovation of the building. The legal incentives that the Government started to introduce are not yet at the needed stage.

There is an urgent need to create properly working and sustainable legal and financial norms and models for stimulating the initiative of the homeowners and their associations to take their responsibilities as active subjects of the energy efficient renovation of existing condominium buildings. The tax incentives are still missing, thus preventing homeowners to invest in their property. The financial systems and financial engineering in the field of energy efficient housing renovation is impossible to be thought without appropriate and targeted tax incentives for the homeowners and their associations as the subject of this process. Any housing renovation policy at central level should be accompanied by such tax incentives.

The biggest problem of the institutional framework for housing in Bulgaria is the lack of coordination between stakeholders involved at different levels of governance.

The legal framework for condominium cohabitation is still not up to date in order to respond to the current economic, political and social circumstances in Bulgaria. The newly adopted Condominium Law (in force since May 2009) requires a long way to have it successfully implemented. Still there is no properly working legal and financial mechanism for the establishment and functioning of homeowners' associations in condominium housing that would take the responsibility for the energy efficient management, maintenance and renovation of their homes.

The institutional and organizational ambiguity causes additional amorphousness in the relations between homeowners and different levels of governance of the urban and housing development process. The residents of condominium housing are far from their mission to become proactive stakeholders in the urban renewal process to be started. There is lack of communication between different levels of public governance and the civil society organizations of homeowners.

The current situation in Bulgaria is characterized by the lack of knowledge about the energy efficient housing management and renovation of condominium housing for homeowners' associations. Still there is no special attention to the capacity building of homeowners and their organizations how to undertake initiatives in the field of sustainable management and maintenance of condominiums and surrounding areas. Sufficient professional expertise on energy saving techniques and energy efficient products for construction is missing. There is lack of permanent information centres and training opportunities for professionals in regard to the variety and diversity of rapidly developing energy saving techniques and energy efficient products for construction.

The current condominium housing in Bulgaria is characterized by:

- Poor housing stock management and maintenance;

- High energy consumption by the buildings – poor thermal insulation of the walls and physically worn out window frame insulations, which make the energy consumption increase;
- Inefficient building heating, except for the buildings furnished with central heating and gas;
- Increased share of house-owners, incapable of maintaining their property under the current market conditions;

### 3. Findings of FRESH Project - Possible EPC based solution for energy efficient retrofit of condominium housing in Bulgaria

#### 3.1 Project basics

FRESH – Financing energy Refurbishment for Social Housing – was a European co-operation project that aimed to investigate to what extent Energy Performance Contract can be used for energy efficient housing refurbishment on a large scale [7].

Energy performance contracting (EPC) is a concept that is widely used in the public sector to implement energy efficiency for buildings and building systems[5]. The energy service company (ESCO) performs a detailed feasibility study. The result is a package of recommended upgrading measures, their aggregated costs and their aggregated savings. In contrast to other outsourcing contracts EPC is a guarantee to achieve the energy savings. Since operation and maintenance are essential to realise the projected savings they are essential part of the contract. The term of a standard contract that is mostly used is between 5 to 10 years. Investment costs are covered within the contract period by the energy savings. EPC for large buildings with high energy consumption and a high peak load is more cost effective allowing for shorter payback periods and contract terms. In addition to the mentioned characteristics the advantages of EPC are:

- EPC is service-oriented; apart from operation and maintenance it may include information and motivation programmes, hot lines, etc.
- Capital cost and operation costs are optimised together, resulting in a best prize offer.
- The risk of non-performance of the measures is carried by the ESCO. This is especially valuable if innovative technologies are implemented and specialist skills are necessary for operation and maintenance.

EPC is most often used for upgrades of building systems (heating, ventilation, cooling, air conditioning, lighting, etc.) and for control and management measures. Guaranteed savings range from 15 to 25 % of the previous energy consumption. Although insulation of the building envelope is often in the list of EPC-adequate measures, there are only few realised projects or case studies. The majority show individual and rather simple measures, like replacement of windows. Comprehensive renovations of buildings are combined with EPC in rare cases.

#### 3.2 Main obstacles for energy performance contracting (EPC) implementation in the condominium sector - a feedback from the Bulgarian experience:

Having in mind the existing tenure structure of Bulgarian housing stock, FRESH was targeted at investigation of opportunities for sustainable energy efficient renovation of existing condominium buildings based on EPC and involving an ESCO partner.

Regardless the continuous efforts of the Bulgarian Housing Association (BHA) – the local partner in the FRESH project - implementation of a pilot ESCO renovation scheme in Bulgaria proved to be impossible [6]

It was problematic and risky issue based on the existing tenure structure of housing. In Bulgaria there are no social housing operators which is similar to most New EU Member States (except for Poland and to a smaller

extent the Czech Republic and Hungary). Currently over 97% of the residential building stock in Bulgaria is privately owned and most is owner-occupied. Nearly 40% of the dwellings are situated in large-panel apartment blocks. Still, no adequate legal basis for association of home owners exists, and this has led to low levels of management of the buildings and has hindered the attainment of a 100% agreement among the owners on the implementation of energy efficiency measures at the level of entire building. Governance of condominiums is actually the major obstacle to energy refurbishment in above mentioned countries.

For the time being there are few registered building based homeowners associations in Bulgaria. The very first of them - HOA for block 10 in Zaharna Fabrika estate in Sofia was promoted by BHA during the first ever condominium renovation project in Bulgaria [1] [2] [3] [12] [13]. Although great efforts has been undertaken to start implementation of a National Bulgarian Renovation Program, the large scale renovation activities in condominium buildings are still not a fact.

### 3.3 Main barriers encountered in ESCO based housing renovation

Implementation of a pilot renovation activity for a condominium building based on EPC contract signed with ESCO partner in Bulgaria proved to be a problematic and controversial task due to following obstacles:

#### 3.3.1 Tenure structure

High percentage of owner occupancy in Bulgarian housing stock – over 97% currently; all multistory apartment buildings are owner occupied – condominiums. Having the fact that actually EPC is not used for residential buildings in Europe and FRESH project is promoting this activity dealing with the condominium pilot building is the most complicated option to be chosen because of the diversified properties within the building.

#### 3.3.2 Legal issues

Existing legal framework in Bulgaria does not create incentives for proper management, maintenance and energy efficient renovation of condominium buildings:

- Regulations regarding management and maintenance of condominium buildings does not oblige apartment owners to form homeowners associations (HOA). According to the new Condominium Law that was approved in 2009 there is a provision for voluntary registration of HOA but this is still not supported by sufficient incentives for the homeowners and subsequently this provision is practically not used by them. Since the approval of this law very few HOA were registered. Except the legally established HOA facilitated by the Bulgarian Housing Association for the pilot renovation project implemented in 2004 (block 10 – Zaharna Fabrika estate in Sofia) there are just about ten NOA, established in the period 2009-2011.
- According to the legal consultations done by BHA under FRESH project, signing of EPC contract for building renovation without sound legal body, representing the building owners, will be hard to achieve. A voluntary created legal entity formed by the residents from the pilot building under the new Condominium Law is a prerequisite for implementation of EPC.
- There is no specific legislation/incentives regarding use of EPC in residential buildings in Bulgaria. The only existing regulation in the form of reference guidelines are issued by the Ministry of Regional Development and the Ministry for Economy and Energy in regard to public buildings energy efficient renovation.

#### 3.3.3 Financial issues

Low payment capacity of tenants (homeowners in condominium buildings) and lack of sufficient financial tools supporting renovation of existing residential buildings:

- Level of household income is insufficient to allow participation of residents in covering part of the costs for renovation – the average level of household income is the lowest among all EU member states and due to the global recession has further decreased after 2009 [11]
- The National Housing Renovation Program which is supposed to subsidize up to 100% of the costs for renovation of condominium buildings [10] is actually blocked due to the mismanagement and lack of institutional capacity within the managing authority (Bulgarian Ministry for Regional Development and Public Works)
- The Bulgarian Energy Efficiency Fund – BGEEF is not offering subsidies to condominium buildings but only loans or partial guarantees with market level interest with additional requirement for payback of investment in five year period – since the start of operation of BGEEF in 2005 no condominium building was renovated with such financing.
- Bulgarian banks are not interested to finance owners or ESCO companies for energy efficient renovation of housing. It is hard to obtain financing for EPC for public buildings either – therefore the few existing energy service companies in Bulgaria are looking for capital from EBRD loans, from BGEEF and from the stock exchange (a FEEI REIT company for securitization of ESCO projects has been established [9]). The situation is further worsened due to protracted economic recession.

### 3.3.4 Institutional Capacity

Few energy service companies exist currently in Bulgaria and their scope of activities is limited to ESCO services for public buildings – schools, kindergartens, and hospitals. These are Enemona ([www.enemona.com](http://www.enemona.com)); Erato ([www.erato.bg](http://www.erato.bg)); Overgas ([www.overgas.bg](http://www.overgas.bg)); Dalkia Bulgaria ([www.dalkia.bg](http://www.dalkia.bg)). BHA investigated the interest of most of them – mainly Overgas and Dalkia Bulgaria. The last company has shown biggest interest in participation in FRESH although this interest is still limited in scale and insufficient in financial commitment.

As concluded by DALKIA Bulgaria CEO in March 2010: “... we believe that applying the ESCO scheme at this moment for residential building in Bulgaria does not meet favorable environment. The fact that today apartment owners are not organized in condominium or association of homeowners makes very difficult communication, decision making process. We do experience it at the moment with our heating network here in Varna. Under this reason putting on effort on this matter without strong development of condominium is not adequate” [6].

## 4. Conclusions and possible alternative approaches for ESCO based housing renovation in Bulgaria

The obstacles that prevented selection of a pilot object for EPC based renovation in Bulgaria could be systematised as follows:

- Distorted ownership structure of the housing stock
- Lack of sufficient legal framework
- Lack of financing infrastructure
- Lack of institutional capacity

Most of the obstacles discovered by the Bulgarian Housing Association under FRESH project were inherited from long time negative evolution of Bulgarian housing situation. Subsequently additional increase of the negative impact of these obstacles has been observed in line with the extended recession and its growing implication on local funding opportunities and affordability of homeowners.

Having in mind the above conclusions the development of EPC based energy efficient refurbishment of Bulgarian housing stock will be possible under following prerequisites:



## 4.1 Availability of a subsidy component

Potential EPC partner is ready to get involved in covering only a part of the total renovation costs of a comprehensive refurbishment program based on EPC (building systems plus insulation of building envelope). Companies would like to cover the building system costs (1/3 to maximum of 50% of the total costs). In this situation provision of a subsidy component must exist at a rate not less than 50% of the total refurbishment costs. Subsidy can be transferred directly to ESCO company. Investigations has to be made in order to identify and secure subsidy conveyance. The remaining costs in EPC scheme to be covered by:

- Own resources/loans available for homeowners – in the majority of cases it is hard to expect that homeowners will secure the necessary own funds/loans due to a great diversity of income level of residents in condominiums – non-realistic assumption
- Subsidy – several subsidy programs are targeting refurbishment of condominiums– the only potentially working scenario

## 4.2 Creation/adjustment of a set of legal regulations in regard to:

- Existing Condominium Law
- Utilization of EU Structural funds for renovation of housing – specific arrangements promoting subsidizing homeowners willing to enter ESCO schemes must be introduced
- A decisive step towards introduction of EPC in residential sector will be establishment of financial incentives for ESCO companies in form of preferential bank loans and guarantees and possibility to act on behalf of Homeowners Associations in receiving refurbishment subsidy
- Introduction of general and specific taxation incentives for renovated buildings

## 5. Sustainable housing renovation

The main conclusions that were drawn from the FRESH project regarding the obstacles for EPC refurbishment could be extended and generalised as obstacles for sustainable housing renovation in Bulgaria:

- Lack of necessary regulatory framework for organizing and financing the renovation activities – legal norms are needed in regard to creation of institutional and financial infrastructure for large scale projects implementation
- Lack of institutional capacity – currently, the central and local authorities have not sufficient expertise to cover the overall scope of required activities
- Lack of sound legal entity representing the apartment building to be refurbished

There is no tradition of properly functioning HOAs that are supposed to be the targeted subsidy beneficiaries. The newly introduced Condominium Law (2009) has not been applied in full potential and does not provide yet a sound practice for the establishment of HOA as a legal body at building level capable to manage refurbishment activity.

The problem of energy efficiency is a part of the (social) housing problem. Energy efficiency can be seen in the same time as an important tool to solve the housing problem. The project approach in retrofitting of existing housing has be flexible, bottom up oriented, tenants friendly and managed by decentralized structures.



## References:

- [1] Building the Local Capacity for Promoting Energy Efficiency in Private and Public Buildings (EE Project Bulgaria) (2010) UNDP-GEF Medium Size Project
- [2] EI-Education guidebook on energy intelligent retrofitting (2006) Energy Center Sofia, Available at: <http://www.sec.bg/userfiles/file/EI-Education/Guidebook%20EN%203.pdf>
- [3] European Parliament (2008) Energy/emission saving policies in urban areas – sustainable cities: Best practices. Available at: [http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL-JOIN\\_ET\(2008\)404906](http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL-JOIN_ET(2008)404906)
- [4] Georgiev, G. (2006) Financial Possibilities for Energy Efficiency in Residential Housing Stock; International conference “Removing *Barriers to Residential Energy Efficiency in Central and Eastern Europe*”, Kiev
- [5] Georgiev, G. (2011) Possible EPC based solution for refurbishment of condominium housing in Bulgaria
- [6] FRESH (2011) Deliverable D7bis. Main barriers for EPC implementation in the condominium sector
- [7] FRESH (2012) Social housing comprehensive refurbishment through energy performance contracting. Available at: <https://ec.europa.eu/energy/intelligent/projects/en/projects/fresh>
- [8] FRESH (2012) Bulgarian Handbook.
- [9] FEEI (2015) Available at: <http://www.eesf.biz/>
- [10] Ministry of Regional Development and Public Works (2014) Housing Renovation. Available at: <http://www.mrrb.government.bg/en/?controller=category&catid=5>
- [11] National Statistical Institute (2012-2015)
- [12] SHARE (2007) Social Housing Action to reduce Energy Consumption. Case Study 23.
- [13] Wassenberg, Frnak, Annelien van Meer and Ronald van Kempen (2007) Strategies for upgrading the physical environment in deprived urban areas. Examples of good practice in Europe. Nicis Institute, Berlin