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STACCATO

Sustainable Technologies And Combined Community Approaches Take Off

Integrated project

Concerto

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D14 - Overview of the policy framework for energy efficiency in buildings in Hungary, Bulgaria and the Netherlands

Policy and legislation in the area of energy efficiency in buildings is a complex system of measures, regulations and complementary acts. It involves legislation in such fields as construction, environmental protection, finance and social interactions. STACCATO demonstration projects are being implemented in countries with different economic and political backgrounds, so it is of great importance to identify at an early stage of their realization what the possible barriers are from the regulatory point of view.

All three countries participating in the STACCATO initiative are member states of the European Union. This make them obliged to follow certain requirements on adoption of community directives. For the purposes of the policy research, implementation of the EU Directive on the energy performance of buildings in the encompassing states was put in focus. The legislative acts and regulatory documents that could affect the realization of the STACCATO demonstration projects were also studied and described.

At the current stage only the legislation that existed during the planning of the project was taken into account. This report can also serve as a complement to the analysis of the financial schemes of the demonstration projects, since it includes a brief description of current legislation in Hungary, Bulgaria and the Netherlands on legally supported national funding opportunities for energy efficient retrofitting, as well as financial sources available at the EU level provided through various programmes. Taking into consideration that the position of house associations and rights of the tenants can significantly influence the project result, legislation concerning the roles of residents and their representatives in the case of energy efficient renovation was analysed.

The report gives an overview of the situation in each of the 3 project countries (Hungary, Bulgaria, the Netherlands) in turn. In each case, there are separate sections on: EU programmes and directives and their implementation; strategic documents in the field; key features of the general EE legal framework; financing instruments; and regulations regarding house associations.

1 Overview of the policy on energy efficiency in buildings in Hungary

According to the ODYSSEE data during the last decade the energy efficiency index in Hungary improved by 8%. Mostly this is a result of a 35% decline in industrial energy consumption, while the level of energy consumption in the household sector remained stable during the period 1998-2006 (figure 1). The share of natural gas in the overall final energy consumption of dwellings increased from 25% in 1990 to 54% in 1998. This was caused by a massive switching away from tile stoves, coal and oil fuelled boilers towards more efficient gas fuelled boilers. At the moment the most important contributor to final consumption in the

country is related to stationary use (80%). This includes direct fuel use or indirect consumption in the form of heat and electricity. Around 40% of total final consumption is used for space heating.

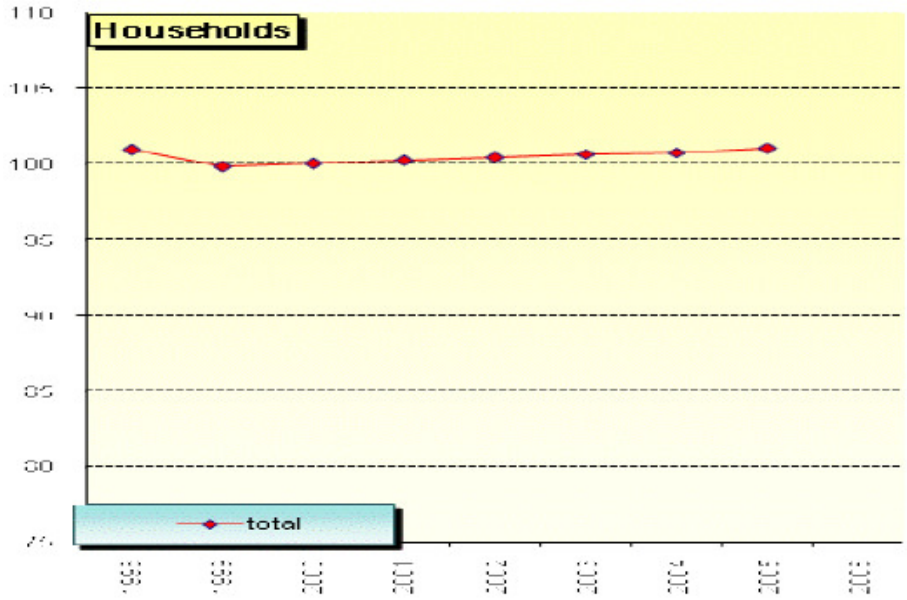


Figure 1. Household energy consumption in Hungary, 1998-2006 (base 100 = 2000). Source: ODYSSEE database

In Hungary, where the energy sector is highly dependent on imported sources, improvement of energy efficiency is one of the priorities of economic development. In order to decrease the dependence on imported energy and increase of international competitiveness of Hungarian companies government develops support programmes, creates funding opportunities and offers a various fiscal measures. In the national strategic documents reduction of energy consumption is recognized by the government as "the best, fastest and most efficient solution" for sustainable energy supply.

1.1 EU Programmes

After the EU accession in 2004 Hungary has indicated a positive policy change in terms of setting energy efficiency as a top priority for national development. Current national legislation on energy efficiency of Hungary follows the key European Union Directives, such as:

- Directive 92/42/EEC on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels
- Directive 2000/55/EC on energy efficiency requirements for ballasts for fluorescent lighting
- Directive 2002/91/EC on the energy performance of buildings
- Directive 2006/32/EC on energy end-use efficiency and energy services

In the framework of the Intelligent Energy for Europe Programme Hungary has become a member of a various activities and projects directed on the improvement of energy efficiency in the buildings sector and transposition of the EPBD provisions into the national legislation.

Among the main EU initiatives related to energy saving in households in which Hungary has been taking part are:

1. The ***EU Concerted Action***. The project aims to facilitate an exchange of best practices and information with regards to transposition of Directive 2002/91/EC on the energy performance of buildings. The Concerted Actions are separated into 5 Core Themes that correspond with articles of the EPBD Directive: Certification procedures – Article 7; Inspection of boilers and air-conditioning systems – Articles 8 and 9; Specifications and training requirements for experts and inspectors – Article 10; Methods and procedural aspects for energy performance characterisation – Articles 3, 4 and 5; Information campaigns – Article 12.
2. ***Intelligent Energy Saving Measures for Municipal housing in Central and Eastern European Countries (INTENSE).*** The main goal of the programme is to disseminate the best practices and approaches for energy optimized housing planning at the level of municipalities. This will lead to increased awareness of municipal authorities about their capacities in the field of housing development and hopefully encourage change of consumer behavior.

1.2 Strategic documents

The document which defines the main principles and national targets for improvement of energy efficiency in Hungary is the ***Energy Efficiency Action Plan***. The Plan was adopted in 2007 in accordance with the EU Directive on energy end-use efficiency and energy services. Under the provisions of the Plan the national targets are set as follows:

- annual reduction of energy intensity by 3.5 % per year;
- decreasing primary energy demand by 1.79 Mtoe per year;
- annual reduction of CO2 emissions by 5 Mt.

According to the Plan national development in different sectors of the state economy should be consistent with the following objectives:

- alignment of Hungary's energy policy initiatives with those of the European Union;
- finding the most cost-effective solutions for utilising energy-saving potential;
- shaping consumer awareness and influencing the market in order to achieve long-term energy efficiency;
- informing market players of the structure and time frame of the plans;
- realisation of the EU's energy efficiency expectations of member states; and
- consideration of climate protection aspects.

1.3 Legal Framework

Energy efficiency standards for buildings, walls, floors, doors and windows as well as k insulation ratio are fixed in the Hungarian ***Insulation Standard MSZ140/1-2-3***. The Standard was approved in 1992 and contained very strict mandatory building norms with respect to EU standards. As practice showed, due to lack of enforcement and quality control standards were not respected and in 1994 the government made a number of requirements voluntary. At the moment the fulfillment of the requirements should be confirmed by the statement of an architect that the design of the building is correct.

The qualification requirements related to building materials and elaborated in compliance with the EU Directive on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products are fixed in the ***Act on the Formation and Protection of the Built Environment***.

To facilitate the integration of Hungarian electricity market into the converging electricity markets of the European Communities an ***Act on Electricity*** was approved by the government in 2007. The Act aims to set up conditions for efficient internal electricity supply based on secure and reliable network and transparent pricing. This is provided with a new "single buyer" market model where electricity is available for consumer under free-market circumstances with a variety of competing suppliers. Provisions of the Act are developed in the framework of sustainable development considering the aspects of energy efficiency and support of renewable energy development.

The implementation of the Electricity Act is supported by ***Regulation Nr. 105/2003*** which obliges energy suppliers to purchase electricity from producers with the share of renewable energy sources not less than 100kW of an installed capacity. The tariffs range from 27.06 HUF/kWh for solar, wind et al, to 34.61 HUF/kWh for combined heat and power systems.

The ***Decree on the establishment of energy characteristics of buildings*** (2006) is an act which transposed into the national legislation the main regulations of the EU Directive on the Energy Performance of Buildings. The requirements of the Decree apply to new and existing buildings as well as to buildings undergoing major renovation.

The Decree provides for:

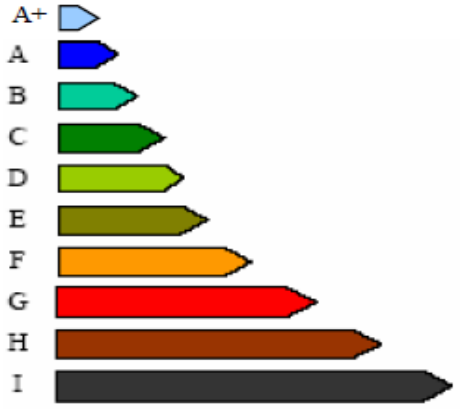
- methodology for calculating the integrated energy efficiency
- minimum requirements for the energy efficiency of new buildings with a surface area of over 1000m2
- minimum energy performance requirements for large existing buildings in case they are subject to major renovation

The realization of the Decree's provisions was supported with a number of specific regulations:

- Regulation on building permits 2006
- Regulation on inspection of boilers 2005

- Regulation on calculation procedures 2006
- Regulation on energy performance of existing buildings 2006
- Regulation on certification of buildings 2006
- Regulation on building energetic 2008

The responsibility for the implementation of legislation related to energy performance of buildings in Hungary is shared between two state authorities: the Ministry of Interior (Articles 3, 4, 5, 6, 7) and the Ministry of Economy and Transport (articles 8 and 9). Control of compliance with the building permit requirements is a duty of the Commune where the building is located.



A+	<55	Low energy
A	56 - 75	Energy efficient
B	75 - 95	Better than required
C	95 – 100	Complying with requirement
D	101 – 120	Approaching requirement
E	121 – 150	Better than average
F	151 – 190	Average
G	191 – 251	Approaching average
H	251 – 340	Poor
I	341 <	Bad

Figure 2. Hungarian certification categories for energy efficiency in buildings. Source: ***www.buildingsplatform.eu***

The Hungarian system of certification represents a scale of 10 categories classified by a letter (figure 2). Each letter is explained in words and corresponds with certain efficiency requirements. Category C is applied to buildings which meet the new requirements adopted in 2006. Categories A+, A and B include buildings that are more efficient than the C category. The buildings that do not meet the new requirements, mostly existing buildings, belong to categories below the C level.

By 2009 the requirements for energy characteristics of buildings should be applied to all new buildings and public buildings over 1000 m2. From 2012 the regulations will be applied for existing buildings as well when they are subject to sale or renting out.

1.4 Financing instruments

In order to increase the level of energy efficiency of households and at the same time contribute to improvement of living conditions the Hungarian government has initiated a number of financial schemes.

In 2000, at the EU pre-accession stage, Hungary gained access to the ***Programme of Community aid to the countries of Central and Eastern Europe (PHARE)***. Through the PHARE financial mechanisms, small and medium-sized enterprises in the private sector and

municipally-owned companies and institutions had an opportunity to apply for a soft-loan credit geared towards supporting energy efficiency investment. According to the conditions of the loan, international and national financial institutions covered the market interest while the interest on the PHARE share was zero. In Hungary, funding was provided by two Hungarian commercial banks and by the European Investment Bank (EIB). The loans were provided for projects directed towards modernisation of district heating systems, installation of CHP units, and reconstruction of heating systems. The organization responsible for the project evaluation and coordination was the National Energy Center.

One of the earliest financial facilities providing support for energy efficiency improvement in Hungary was the ***German Coal Aid Revolving Fund,*** which started its operation in the country in 1991. The Fund was financed by the German government and provided support for energy efficiency investments and pollution reduction in the private sector. On the national level the Fund was administered by the Hungarian Credit Bank. The main goal of the Fund was to facilitate the replacement of traditional energy sources with renewable or waste-related energy sources, to enhance energy saving initiatives in the business sector and to reduce energy consumption. During its existence the Fund provided a total investment of HUF 3.53 billion (appr. EUR 1.27 mln), which resulted in 1.04 PJ energy savings.

The ***Environment Protection and Infrastructure Operative Programme*** was established in 2006 pursuant to provisions of Hungary's National Development Plan. The Programme is directed towards the promotion of energy efficiency and renewable energy sources, and has provided total subsidies of 280 billion HUF (app. EUR 1,014 mln). In the household sector the Programme finances projects in the field of modernisation of buildings, district heating systems, and the application of cogeneration.

The ***National Energy Saving Programme*** was launched in 2006 in order to provide direct grant support for the improvement and modernisation of residential buildings. The Programme aims to improve energy efficiency indicators and reduce greenhouse gas emissions in the household sector, and the financial support is provided in line with the provisions of the national strategy to reduce domestic energy use and costs. Initially the Programme was focused on three major types of activities, namely: additional heat insulation, modernisation of doors and windows, and modernisation or replacement of heating and hot water supply equipment. In 2008 the target areas for finance were extended and currently include 9 categories:

- residential energy conservation energy conservation of entrepreneurs,
- reduction of energy costs and energy consumption in municipalities and budgetary institutions,
- modernisation of public lighting and change of energy fuel in natural gas DH (district heating) systems,
- modernisation of DH systems,
- use of renewable energy sources by municipalities and private persons,
- use of renewable energy sources by enterprises,

- energy saving in SMEs,
- third party financing for energy conservation investments.

The targeted "***Panel Programme***" (2006) provides state financial support in the form of grants for renovation of prefabricated-panel residences or panel-blocks. This includes multistoried buildings with low thermal conductivity (U-value). The funding may be used not only for the renovation of the dwellings but for redevelopment of common areas (playgrounds, roads, parking areas) as well. The Programme functions on a post-finance basis; refunding of renovation expenses constitutes up to one-third of the total investment and can be maximum HUF 500,000 per residence. The rest of the project costs should be financed from the owner's contribution and/or from the municipal budget.

1.5 Regulations on house associations

All relationships between the residents of multi-apartment buildings and their house association are defined under the ***Act on Condominiums*** adopted in 2003. Article 1of the Act states that all buildings with "at least two independent units for residential or non-residential purposes or at least one independent unit for residential or non-residential purposes" should be regulated as a condominium. The condominium owners' association bears all responsibilities in relation with house maintenance and renovation, has a right to represent the house community and must attend to all matters related to common property. Specific issues such as the assessment of the maintenance fee and the appropriation of the renovation reserve should be clarified by the organizational-operational regulations developed for each house.

Important issues that can affect all residents are discussed at general meetings, regarding which the Act provides clear procedural instructions. Meetings should be organized by the common representative to adopt resolutions on such matters as renovation and allocation of the house budget.

2 Overview of the policy on energy efficiency in buildings in Bulgaria

During the last decade energy efficiency of the household sector in Bulgaria has improved significantly. According to ODYSSEE data the overall indicator of the energy saving of private households has increased by 16%, and by 15% in the space heating category. These positive changes can be related to a complex approach applied through new legislation in the field of energy efficiency of households.

Under the requirements associated with the EU accession process and due to increased focus of the national government on energy security problems in recent years, Bulgaria has introduced a number of energy saving and energy efficiency measures.

2.1 EU Programmes and Directives

Through the EU accession process and after becoming an EU Member State, Bulgaria has been actively participating in EU actions and programmes with a major focus on energy efficiency, and a number of Bulgarian organizations at various levels, including municipal and regional energy agencies, NGOs, and educational institutions have been involved in EU funded projects. These projects were geared towards goals like raising the awareness of stakeholders, and developing capacity and regulations in the field of energy efficiency. On the state level PHARE financial mechanisms were used for the development of strategic and legal documents on energy efficiency in various sectors of the economy. A National Energy Efficiency Agency was established in Bulgaria with the support of a twinning-project between Bulgaria and Italy.

Bulgaria has taken part in a number of programmes specifically for the improvement of energy efficiency indicators in the residential buildings sector, notably:

1. SAVE II Programme
   - FRAMES – "Framework Innovations for Building Renovation", coordinated by the EVA (Austria)
2. The Concerted Action: supporting implementation and transposition of the Directive 2002/91/EC on the energy performance of buildings
3. "Securing the Take-off of Building Energy Certification through High Quality Energy Audit Schemes" (STABLE)

In terms of compliance with EU requirements in the field, the following EU Directives have been transposed into Bulgarian national legislation:

- Directive 92/42/EEC on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels
- Directive 2000/55/EC on energy efficiency requirements for ballasts for fluorescent lighting
- Directive 2002/91/EC on the energy performance of buildings
- Directive 2006/32/EC on energy end-use efficiency and energy services

2.2 Strategic documents

National energy efficiency planning in Bulgaria is implemented in conformity with several strategic documents. The fundamental principles for energy saving were introduced in the ***National Long-term Energy Efficiency Programme 2005–2015.*** The Programme defines the main targets for energy efficiency and formulates possible measures for energy saving in all sectors of the economy, with an overall aim of reaching the average European level of GDP energy intensity. The Programme set out national quantitative targets for enhancing energy efficiency expressed as a 17% reduction of primary energy intensity and an 8% reduction of final energy intensity by 2015.

The energy savings targets distributed by sector were set by the First ***National Energy Efficiency Action Plan for 2008 – 2010*** adopted in 2007 in line with the provisions of the 2006 EU Directive on energy services and energy end-use efficiency. The greatest potential for the reduction of energy consumption was indicated in the households and transport sectors (29% and 30% respectively). In order to fulfill the target of energy intensity reduction in the residential buildings the Action Plan defines a number of instruments that are supported with various regulative documents, e.g.:

- Renovation of residential buildings with a focus on large-panel and other multi-family residential buildings
- Conducting necessary inventories, energy auditing and certification of buildings
- Introduction of mandatory measures for efficient illumination
- Introduction of mandatory labelling of domestic appliances
- Introduction of minimum efficiency standards for electrical appliances
- Updating the provisions for individual metering of heat consumption, for individual regulation of heating and for the formation of individual bills for heat consumption
- Ensuring maximum and minimum indoor temperatures in the heating period
- Provision of mandatory insulation of pipes for transmission and distribution of heat
- Adoption of standards for the energy performance of buildings
- Ensuring reliable and efficient automation and control of heating systems in buildings
- Adoption of minimum efficiency standards for boilers

The key strategic documents directly related to improvement of energy efficiency in buildings are the National Programme for Renovation of Multi-family Buildings (2006-2020) and the National Strategy for Financing of Buildings Insulation for Energy Efficiency Improvement (2006 – 2020).

The ***National Programme for Renovation of multi-family buildings for the period 2006-2020*** was developed in order to provide state financial support for the energy efficiency renovation. The support is provided in the form of a direct subsidy and covers 20% of the total value of a retrofitting project. The state agency responsible for the Programme's implementation and for the coordination of relevant activities is the Ministry of Regional Development and Public Works. The ministry allocates funds annually for state subsidies in the state budget.

In accordance with the requirements of the national legislation, municipal authorities are actively involved in the renovation process. Through the Municipal Association, with participation of municipalities, condominiums, energy service companies and other encompassing stakeholders, technical and methodological support is provided for the renovation of residential buildings.

The ***National Strategy for Financing of Buildings Insulation for Energy Efficiency Improvement 2006–2020*** was planned as a source of additional state support for energy efficiency measures in existing public buildings. Within the Strategy buildings are grouped on the basis of their ownership (state, municipal, or private). State subsidies are provided for the

thermal insulation, audit and certification, with €330 million of public funding planned over the next 15 years.

In addition to funds allocated in the state budget for the National Programmes mentioned above, the government provides financial support for conducting energy audits and certification on an annual basis. The National Annual Target Programmes for Energy Efficiency in Buildings are implemented in conformity with the Naional Strategy for Building Insulation. The target group of the Annual Programmes includes state and municipal owned buildings which are subject to mandatory certification, and state-owned buildings in need of thermal insulation.

2.3 Legal framework

Reform of the basic legislation related to energy efficiency of buildings was initiated in 2003 with the adoption of the ***Energy Law***. Provisions in chapter 10 of the Law introduced a new approach to the billing of district heating: in the case of use of devices for shared distribution, heat meters or individual allocators, the heat energy is charged on the basis of a shared distribution system. In other cases the calculation of the heat energy consumption is based on installed capacity of the heating radiators multiplied by the maximum specific consumption for the building.

The ***Energy Efficiency Act*** was adopted by the Parliament in February 2004. The Act introduced general provisions for energy audit, energy performance standards and certification, and defined such notions as "Energy comfort" and "Certificate of energy characteristics of a building". Furthermore, according to Article 9 of the Law “The municipal councils shall adopt programmes for energy efficiency…, as well as for: … renovation of the building stock, administrative and business buildings on the territory of the municipality for the purpose of implementing energy efficiency measures”. The main executive body assigned by the act and responsible for the regulation and implementation of national programs in the field of energy efficiency and renewable energy sources programmes is the National Energy Efficiency Agency (EEA).

In support of the energy performance standards for buildings introduced by the EU, Bulgaria has adopted national technical norms in respect of thermal building regulation. This includes control systems for heating, heating pipe insulation, maximum indoor temperature limits, and minimum thermal insulation standards.

The realization of the Energy Efficiency Act was supported by a number of regulations including:

- Regulation N°18/12.11.2004 for energy performance of facilities;
- Regulation N°19/12.11.2004 for building certification for energy efficiency;
- Regulation N°21/12.11.2004 for investigation for energy efficiency;
- Regulation N°18/12.11.2004 for energy performance of facilities;
- Regulation N°19/12.11.2004 for building certification for energy efficiency;
- Regulation N°21/12.11.2004 for investigation for energy efficiency;

- Regulation N°20/12.11 2004 on order and conditions for entering of persons to perform building certification and investigation for energy efficiency and obtaining information.

It is important to notice that since 2004 in accordance with the acting legislation every energy consumer could be audited for energy efficiency. For producers with overall energy consumption over 3,000 MWh, energy investigation and auditing is mandatory. Energy audit must be conducted every third year.

Building certificates can be issued for new, reconstructed and existing buildings. The resolution of the accredited organization is based on a detailed audit which is conducted in compliance with the ordinance for heat retention and energy conservation. The energy certificate can be issued after obtaining building permission for use or if the house is put up for sale or for rent. The period of validity of the certificate is 10 years.

There are two types of energy certificates that can be obtained (figure 3):

1. Category "A" allows owners to be free of taxes for 10 years. This category is assigned when:
   - the value of energy performance characteristics of building is equal to or less than the reference value defined by the requirements of the ECHRB-2005 (2005 norms)
   - the value of energy performance characteristics is equal or less than the reference value according to the requirements of the norms from 1999 concerning buildings erected before 1990
2. Category "B" allows owners to be free of taxes for 5 years. This category is assigned when the value of energy performance is equal to or less than the reference value determined by the building standards that applied during the period 1980-1987 (1987 norms), when large numbers of multi-family apartments were built. Properties that do not meet at least the 1987 norms cannot gain a certificate.

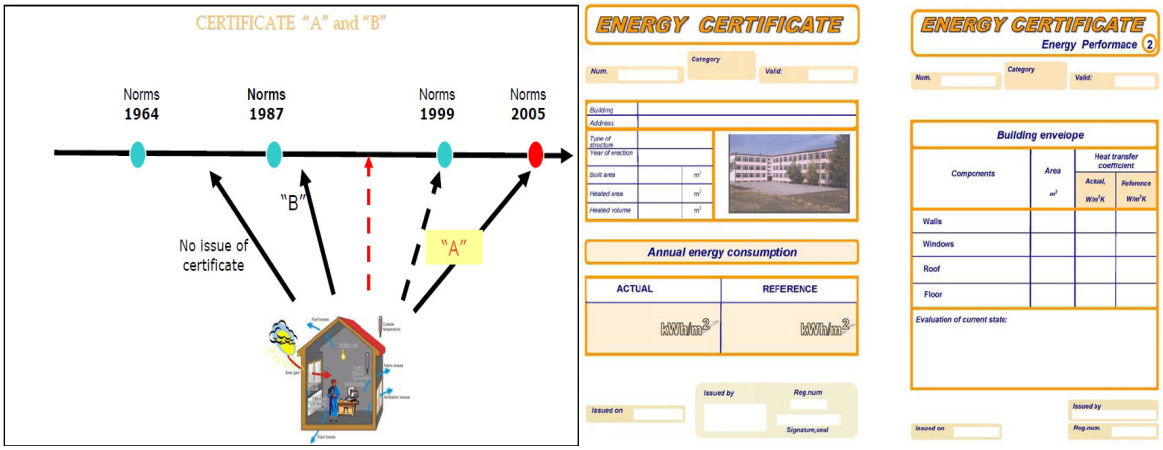


Figure 3. Bulgarian energy certification. Source http://www.epbd-ca.org/Medias/Pdf/6_BULGARIAN_LEGISLATION.pdf?OpenDocument

In order to facilitate the implementation of regulations related to building certification, the government has undertaken important steps to increase the number of certified national

organizations that are eligible for the issue of energy passports. The ordinance for registering persons who implement energy efficiency audits and buildings certification provides specific requirements for persons who are authorized to perform audits and certification.

2.4 Financing instruments

Financial schemes and funding sources for energy efficiency measures have been considerably developed in recent years in Bulgaria, though they still run behind the coverage in Hungary and the Netherlands. Instead of the donor programmes that played an important role in previous years, Bulgaria has moved towards providing finance from the state budget. Unfortunately, due to the 2008 financial crisis the Bulgarian Government was forced to drastically cut or freeze funding for public programs, including state support for energy efficiency. Given the limits of available public funds, an important role has been played by the EU structural and cohesion funds.

The ***Bulgarian Energy Efficiency Fund (BgEEF)*** was established in line with the provisions of the Energy Efficiency Act, with a total estimated budget of $17 million and a main goal of supporting development and financing of energy efficiency projects and capacity building. The BgEEF is a multifunctional instrument which provides for lending opportunities, credit guarantees and consulting in relevant fields.

The ***Residential Energy Efficiency Credit Facility (REECL)*** is currently the main active funding source for energy efficiency in buildings. It was founded as a collaboration between the European Commission, the European Bank for Reconstruction and Development and the Bulgarian Energy Efficiency Agency. The main idea of REECL is to help households reduce their energy bills and consumption. The total value of REECL is €50 million. Householders can obtain incentive grants up to 30% of the credit - from €350 to €2,000. Funding can be provided in the form of loans and incentive grants through local participating banks for specific energy efficiency measures, such as: doubleglazing, thermal insulation, installment of efficient boilers, solar water heaters and heat pump systems.

The ***Kozlodui Fund (KIDSF)*** was established as a supportive mechanism in this area, which provides grants (up to 50 %) for energy efficiency projects in public buildings. The Kozlodui Fund can be used as a source of co-finance in addition to other funds and credit lines.

2.5 Regulations for house associations

It has to be admitted that the regulations providing a legal basis for activities of house associations and their cooperation with home owners and authorities are not well developed in Bulgaria. The main legal act in this field is the Condominium Law adopted in 2009, which states that a house association can be created on a voluntary basis and requires 100% agreement by the owners.

In Bulgaria, 40% of the dwellings are situated in large-panel apartment blocks, and the large number of residents in one panel block makes it very complicated to get 100% agreement. Besides this, the owners of some apartments are often absentees (e.g. working abroad) and thus not available to give their consent. For these reasons the government is working on the amendment of the Condominium Law in order to reduce the number of owners required for the establishment of house association to 67%.

A further issue is that secondary legislation in this field has not been adopted yet. The lack of specific regulations can result in difficulties regarding communication between the apartment owners for refurbishment of the entire building, and the absence of an official representative is a barrier for developing projects and hampers communication between the owners and the municipal authorities.

3 Overview of the policy on energy efficiency in buildings in the Netherlands

In the Netherlands, energy efficiency indicators have improved considerably since 1990, with the greatest advances achieved in the household and manufacturing industry sectors. During the last decade the overall energy savings of end-users has improved by 17% and by 28% for households. In the Energy Report of 2008 the Dutch government considers improved energy efficiency as a necessary tool to approach global challenges, such as CO2 emissions reduction and rising energy demand. Developments in this field should aim at a clean, smart and diversified energy supply. The government currently sees the tertiary sector as one of the major targets for fundamental change.

At the moment the Dutch residential sector can be characterized as one of the most successful sectors in terms of realization of energy efficiency measures compared to other European countries. A comprehensive approach which includes a complex legislative system supported with regulatory and fiscal instruments has led to a substantial decrease of energy consumption in new and existing dwellings, especially in the area of district heating.

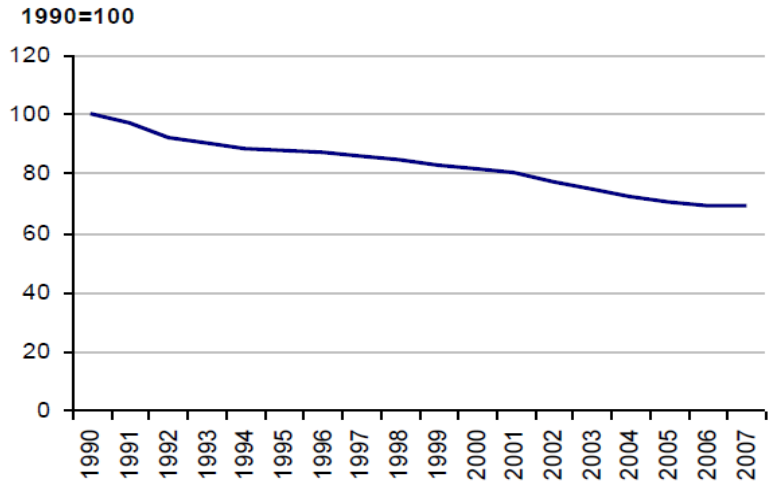


Figure 4. Energy efficiency for space heating in households. Source: Energy research Centre of the Netherlands, 2009

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4.1 EU policy

European Union policy in the field of energy efficiency in buildings did not affect the legislation of the Netherlands significantly. After the adoption of EPBD the number of new policy measures introduced in the country increased, but even before the realization of the Directive the Netherlands had already implemented various energy efficiency measures for buildings. The only significant transformation that has occurred is that the character of the labeling system for existing buildings was changed from voluntary to mandatory. Otherwise, the Dutch policy in the field had already been constructed in line with the EPBD provisions.

4.2 Strategic documents

The ***Long Term Voluntary Agreements for Energy Efficiency*** (Meerjarenafspraken) programme was established in 1989 and has proved to be a successful approach to energy efficiency improvement. The programme is structured around 4 major areas: production processes, utilities and logistics, buildings, and the product chain. After the first covenant ended in 2000 with a 22.3% improvement in energy efficiency, the programme was revised and prolonged until 2012.

The long-term strategic goals for emission reductions for the period up to 2030 are set in the ***Fourth National Environmental Policy Plan 2001.*** The plan introduced drastic targets of 40% to 60% to be reached through the creation of a sustainable and low-carbon energy system. Improved energy efficiency and development of renewable energy sources are identified as the main directions for structural changes in economic development and consumption patterns.

The ***Energy Efficiency Action Plan*** was adopted in 2007 in line with the EU Directive on energy end-use efficiency and energy services. Along with targets for energy efficiency improvement in all sectors of the economy the action plan defines specific measures for the residential sector. The goal of the policy is to increase energy saving on the level of the final consumer through raising awareness of households and helping home owners to implement energy efficiency measures in dwellings. The document provides new regulatory standards for new buildings and contains provisions for energy management, financial incentives and long-term voluntary agreements.

The ***Clean and Efficient programme*** was approved in 2007 and introduced a comprehensive system of measures in all sectors aiming to reduce greenhouse gas emissions by 30%, increase the share of renewables to 20% and increase of energy efficiency improvement by 2% per year up to 2020. In order to achieve these objectives the programme puts forward measures in the fields of:

- energy taxation
- financial incentives
- the European emission trading scheme
- support of innovations
- state subsidies
- international cooperation

The programme forms a general foundation for the intensification of the existing energy efficiency policy. Under the programme a number of voluntary agreements directed towards continual energy efficiency improvement were made in the industrial, transport and household sectors. In the buildings sector the programme introduced measures for new and for existing buildings with the main accent on the efficient use of heat.

4.3 Legal framework

The Netherlands have a long regulatory practice in the field of energy efficiency of buildings. The legal system covers various issues of residential energy use, such as: information support, simulative mechanisms and providing conditions for self-regulation on the level of particular dwelling. In order to increase energy efficiency concern at the level of house associations and construction companies the legal acts provide for energy performance standards, energy management, energy tax, long term voluntary agreements and state financial support.

The application of energy performance requirements has been practised in the Netherlands for a long while. Regulations adopted in 1995 contained product-oriented technical measures aiming at better energy performance in buildings. They included provisions for improvement of thermal insulation, lighting systems so that less installed power is needed, efficiency of condensing boilers, efficiency of heat recovery systems of ventilation, etc. During the last decade the requirements were gradually tightened with the main focus on heating and overall indoor climate including air quality. According to current energy performance regulations a new building has to meet the requirements of: minimum insulation, minimum air tighteness, ventilation capacity, daylight and view accessibility. The listed requirements do not apply to existing buildings.

The ***Energy Performance Standard (EPN)***, which came into force in 2006, was introduced in compliance with the EPBD. The EPN is issued on a compulsory basis for buildings that are under the construction process or subject of lease or sale. The regulation is applied to both residential and non-residential buildings. The aim of the standard is to inform the new users about the level of energy consumption.

The fulfillment of energy performance requirements is checked by the local authority and is a condition for issuing building permits. The building permit has to be taken into consideration on the each step construction process by all parties involved. The local authorities have a right to stop the construction process or forbid the occupation of the constructed house in case of non-compliance with energy performance requirements.

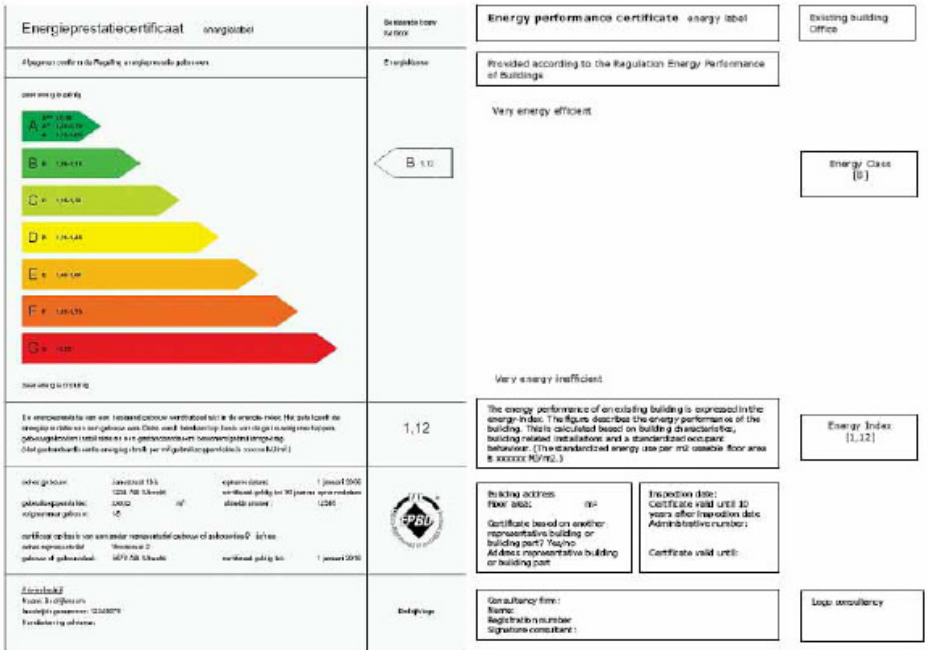

Figure 5. Dutch energy performance certificate. Source: BMVBS-Online-Publikation Nr. 03/2010

The regulation related to the ***energy performance certificate*** (figure 5) obliges all buildings that are subject to rent, sale or buildings process to have a certificate. The certificate can be issued by a licensed advisor accredited by the special organization. At present there are a few hundred accredited organizations that have a right to provide energy certificate. In case of introduction of a new building the certificate is a requirement for issuing a building permit. For existing buildings that are to be sold or rented the certificate is rarely issued. This can be explained by the absence of sanctions for the lack of a certificate.

4.4 Financial instruments

The practice of energy taxation has been in force since 1996. The ***Regulatory Energy Tax*** was introduced to encourage households and medium-small enterprises to implement measures for energy efficiency improvement and decide on renewable energy use by increasing prices of fossil energy. The tax is levied on electricity and gas and aimed at reducing greenhouse gas emissions.

In 1999 the Regulatory Energy Tax was doubled and accounted for 6.8 billion guilders (c. EUR 3.1 bln) per year in 2001. 85% of the revenue was used to lower direct taxes of households and the remaining 15% were allocated for financial incentives promoting energy efficiency. In the

framework of the programme about 300 million guilders (c. EUR 136 mln) per year were provided for investment in household energy efficiency appliances and 200 million guilders (c. EUR 91 mln) for investments in energy saving equipment.

"More with Less" is a programme which unites government, social associations, construction companies and energy distributers for joint actions in the field of energy efficiency for buildings. The programme's goal is to increase energy efficiency by 30% in 500,000 buildings in the period 2008 – 2011. By 2020 the number of houses involved should rise to 2.4 million. One of the major ambitions of the programme is to ensure participation and support of all encompassing stakeholders. Through the "More with Less" actions it is planned to overcome the barriers to energy saving in each target group.

The programme offers a scheme whereby energy efficiency measures and programme support are applied to the regular renovation cycle, enabling house owners to save energy with the least possible effort. Project implementation is coordinated through the contact person assigned by the house community.

Preferential loan rates are available for energy efficiency projects developers within the framework of the ***'regeling groen projecten'*** (Green Projects Scheme) programme. The programme offers organizations of different types the possibility to approach credit facilities with a lower interest rate. In order to get the favorable loan conditions the project developer has to request from the government a green label which certifies the "green" context of the project. This programme is run by most of the banks in the country.

4.5 Position of house associations

The practice of social housing in the Netherlands started over a century ago. A significant number of dwellings were built with governmental support provided in the form of subsidies and loans to housing associations, and currently the share of social housing in the country is about 44%.

Before the 1990's the social housing stock was assigned to the responsibility of the municipalities, but today social housing institutions are legally independent entities with a right to implement financial operations. Their functioning is supported by a guarantee structure created on three levels:

- Central Housing Fund (a solidarity fund)
- Social Housing Guarantee Fund (a voluntary fund)
- and the government, both central and local.

The Dutch government intentionally transferred its responsibilities to the house associations in order to make them active entrepreneurs on the market. The necessity to invest in their own activities and bear all risks related to self-finance encourage house associations to enlarge entrepreneurship skills. The only task which is still assigned to the government is rent pricing,

which is regulated by the Residential Rent Legislation: the Dutch Parliament sets the maximum rates for rent annually.

5 Conclusions

As can be seen from the report, in all countries there is a significant legislative base for the implementation of energy efficiency retrofitting in the residential sector. In Hungary and Bulgaria policy development in the field was largely influenced by the EU accession process. The adoption of various EU Directives supported with national complementary legislation has indicated a positive policy change in terms of setting energy efficiency as a major priority for national development. Both countries have enacted strategic documents on energy efficiency that contain provisions on measures for increasing energy savings in buildings, and by using the opportunities offered by various EU initiatives, in particular by the Intelligent Energy for Europe Programme, Bulgaria and Hungary have become members of various activities facilitating implementation of the EPBD provisions. By now all substantial provisions of the Directive have been transposed into national legislations, including buildings standards and energy efficiency certification. Meanwhile, the Netherlands has a long and successful experience in energy efficiency legislation, most of which had already been constructed in line with the EPBD regulations before the Directive came into force.

In terms of financial instruments available for energy efficiency, Bulgaria can be characterized as a somewhat less successful example in comparison with Hungary and the Netherlands. The Hungarian and the Dutch governments offer various funding opportunities for organizations developing projects and directly to tenants, including soft-loans, fiscal incentives and tax exemptions, whereas in Bulgaria the system of economic incentives for energy efficiency is still at the initial stages. The budget of state financial initiatives in this field is pretty limited, especially since the 2008 financial crisis, often involves fairly complex bureaucratic procedures, and is mostly available only in the form of co-financing. For these reasons state funding in Bulgaria cannot be considered as a strong supportive tool for energy efficiency improvements as yet.

From the point of view of interaction of stakeholders on the level of house associations and tenants all three states have general legislation which defines a “house representative”. In Hungary and the Netherlands, where designation of house representative organization is mandatory, rights of the house association with regards to implementation of large scale renovations and disposal of funds of the tenants are defined by complementary legislation. In Bulgaria, however, establishment of a house association is on a voluntary basis and so far has not been prevalent in the residential sector; it also currently difficult to set up such an association, due to the requirement for 100% consent on the part of residents.