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Friedrich, Silke

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ENERGY EFFICIENCY IN BUILDINGS IN EU COUNTRIES

Energy efficiency in buildings is an important objective of energy policy and strategy in Europe. Buildings account for nearly 40 percent of final energy consumption (and 36 percent of greenhouse gas emissions). Moreover, the building sector offers the second largest potential for energy savings after the energy sector itself.1 Consequently, European legislation has decided on a framework of ambitious targets for achieving high energy performance in buildings. Key parts of this framework include the Energy Performance of Buildings Directive (EPBD), and its recast 3. The recast of the EPBD established that all new buildings should be nearly zero-energy by the end of 2020.² The extent to which these Directives are implemented in national legislation crucially influences the efficiency of the energy saving targets.

Annunziata, Frey and Rizzi (2013) provide an overview of the current national regulatory framework, which is summarised in Table 1. They focus on the EPBD's three main goals. The first goal is the integration of energy efficiency and renewable energy. The authors argue that this goal calls for a hierarchy of energy efficient measures defined by national regulation, which could help to create a national system supporting innovative technologies. Besides this, the integration of energy efficiency and renewable energy can be encouraged by introducing targets for renewable energy sources. The second goal focused on by the authors is the translation of investment in energy saving into economic value. EU Member States should accordingly establish economic and/or procedural incentives and promote the offering of energy efficient buildings for sale and for rent in their real-estate markets. The third goal of the EPBD examined by Annunziata, Frey and Rizzi (2013), is the countries' commitment to the nearly zero target. Here the authors examine economic and administrative measures to punish non-compliance with the energy performance requirements prescribed in building codes, to assess the extent to which energy performance is monitored after refurbishment and national efforts to boost the number of nearly zero-energy buildings. As shown in Table 1, the regulatory frameworks for promoting the energy efficiency of buildings differ sigEqually as heterogeneous as these regulatory frameworks are the financing tools used by national governments to promote energy efficiency in buildings. The European Commission (2013) gives an overview of these tools, which is summarised in Table 2. The vast majority of national funds to promote energy efficiency in buildings are grants, followed by soft loan schemes and tax incentives. Other instruments used by national governments include energy performance contracting, the use of assigned amount units (AAUs) under the Kyoto Protocol, tax incentives (for example property taxes) and energy suppliers' obligations.

The European Commission (2013) points out that, while investments in building energy efficiency are increasing and there are many best-practice examples of existing instruments that are delivering cost-effective energy savings, the information available on the effectiveness of the different financial support measures for energy efficiency in buildings is still limited. The evidence provided by Annunziata, Frey and Rizzi (2013) and by the European Commission (2013) shows that the efforts and achievements related to improving energy efficiency in buildings vary across EU countries. This suggests that a country's profile needs to be taken into account in attempts to improve the sharing of best-practices and energy efficiency governance among European Union Member States.

Silke Friedrich

References

Annunziata E., M. Frey and F. Rizzi (2013), "Towards Nearly Zero-Energy Buildings: The State-Of-The-Art of National Regulations in Europe", *Energy*, http://dx.doi.org/10.1016/j.energy.2012.11.049.

European Commission (2012), *EU in Figures, Eurostat Yearbook 2012*, Publications Office of the European Union, Luxembourg.

European Commission (2013), *Financial Support for Energy Efficiency in Buildings*, Report from the Commission to the European Parliament and the Council.

nificantly between EU countries. Annunziata, Frey and Rizzi (2013) suggest that there are four main reasons for these differences: the countries vary considerably with regard to their responsibilities related to building energy regulations, their traditional building regulations and enforcement models, their contextual characteristics and their maturity.

¹ European Commission (2012).

² A "nearly zero energy building" is a building with zero net energy consumption and zero carbon emissions annually.

Database

		R	egulatory and policy	instruments to foster	efficiency in buildings		
	Integration of ene renewable energ	rgy efficiency and gy requirements	Translation of investm into econor	ents in energy saving nic value	Commitr	nent towards "nearly zero-energy	y" target
	Hierarchy of energy efficient measures	Targets for renewable sources	Incentives for sale of energy efficient buildings	Incentives for rent of energy efficient buildings	Penalties for energy performance requirement non-compliances	Minimum thresold for the mandatory communication about the effects of the refurbishment	Incentives for nearly zero- energy buildings
Austria			Х	Х	Х		Х
Belgium			R	R			R
Bulgaria		Х			Х	Х	
Cyprus	Х	Х			Х	Х	
Czech Republic					0		
Denmark		R			Х		Х
Estonia	Х		Х		Х	Х	
Finland	Х		Х	Х	Х		
France	Х				0		Х
Germany		Х	Х	Х	Х		Х
Greece		Х			Х		Х
Hungary	Х					Х	
Ireland	Х				Х	Х	Х
Italy	R	Х	Х			R	
Latvia							Х
Lithuania	Х			R	Х	R	
Luxembourg			Х		0	Х	
Netherlands			R	Х	Х	R	Х
Poland					Х	Х	
Portugal		Х			Х	Х	
Romania					Х		
Slovak Republic	Х				Х	Х	Х
Slovenia	Х	Х	Х			Х	Х
Spain		Х			R	Х	
Sweden			Х	Х	0	Х	
United Kingdom							Х
X = national regulation	ns, R = regional/local reg	gulations and O = other	regulations.				
Source: Annunziata E.	, M. Frey and F. Rizzi (2	2013).					

Table 1

Table 2

	Grants	Soft loans	Tax incentives	Sale of AAUs to finance EE	Energy performance contracting	EU structural and cohesion funds
Austria	Х	Х	Х		Х	
Belgium	Х	Х	Х		Х	
Bulgaria	Х	Х			Х	Х
Cyprus	Х	Х				
Czech Republic	Х	Х	Х	Х	Х	Х
Denmark	Х		Х			
Estonia	Х	Х	Х	Х		Х
Finland	Х	Х	Х			
France	Х	Х	Х		Х	Х
Germany	Х	Х	Х		Х	
Greece	Х	Х	Х			Х
Hungary	Х	Х		Х		Х
Ireland	Х		Х		Х	
Italy	Х	Х	Х		Х	Х
Latvia	Х	Х	Х	Х	Х	Х
Lithuania	Х	Х	Х	Х	Х	Х
Luxembourg	Х	Х	Х			
Malta	Х	Х	Х		Х	Х
Netherlands	Х	Х	Х		Х	
Poland	Х	Х		Х	Х	Х
Portugal	Х		Х		Х	Х
Romania	Х	Х	Х		Х	Х
Slovak Republic	Х	Х	Х			Х
Slovenia	Х	Х	Х		Х	Х
Spain	Х	Х	Х		Х	
Sweden	Х		Х	Х	Х	

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that as regards the use of Structural and Cohesion Funds the situation may have changed since the NEEAP was submitted. AAU = Assigned Amount Units

Source: Financing tools reported by Member States in their second National Energy Efficiency Plans (NEEAP), see European Commission (2013).