



A review of the implementation of the Energy Performance Certification Scheme in Europe

Marina Economidou

Expert in Energy Efficiency

IEA, Paris, November 2011



Buildings Performance Institute Europe

www.bpie.eu

- ▶ Non-profit association based in Brussels, created 02/2010
- ▶ Founders: ECF, ClimateWorks, eceee
- ▶ BPIE's mission is to improve the energy performance of buildings by:
 - Supporting the development of ambitious - yet pragmatic - buildings-related policies and programs at EU and member state level
 - Driving timely and efficient implementation by teaming-up with relevant stakeholders
 - Providing fact based analysis and knowledge, and sharing best practice globally through our network
- ▶ European center of Global Buildings Performance Network



EPC Definition

A certificate recognised by the Member State or a legal person designated by it, which includes the energy performance of a building calculated according to a methodology based on the general framework set out in the Annex;

Member States shall ensure that, when buildings are **constructed, sold or rented out**, an energy performance certificate is made available to the owner or by the owner to the prospective buyer or tenant, as the case might be.

EPBD requirements for EPC

- Energy performance calculated according to a specified methodology
- Obligation to establish a certification system for building energy performance
- The EPC may include additional information (i.e. share of RES etc.).
- An EPC should be issued for buildings or building units which are constructed, sold or rented out to a new tenant and for public buildings with a total useful floor area over 1000m² and frequently visited by the public. The recast EPBD extends the obligation to public buildings over 500m² and over 250m² from 2015.

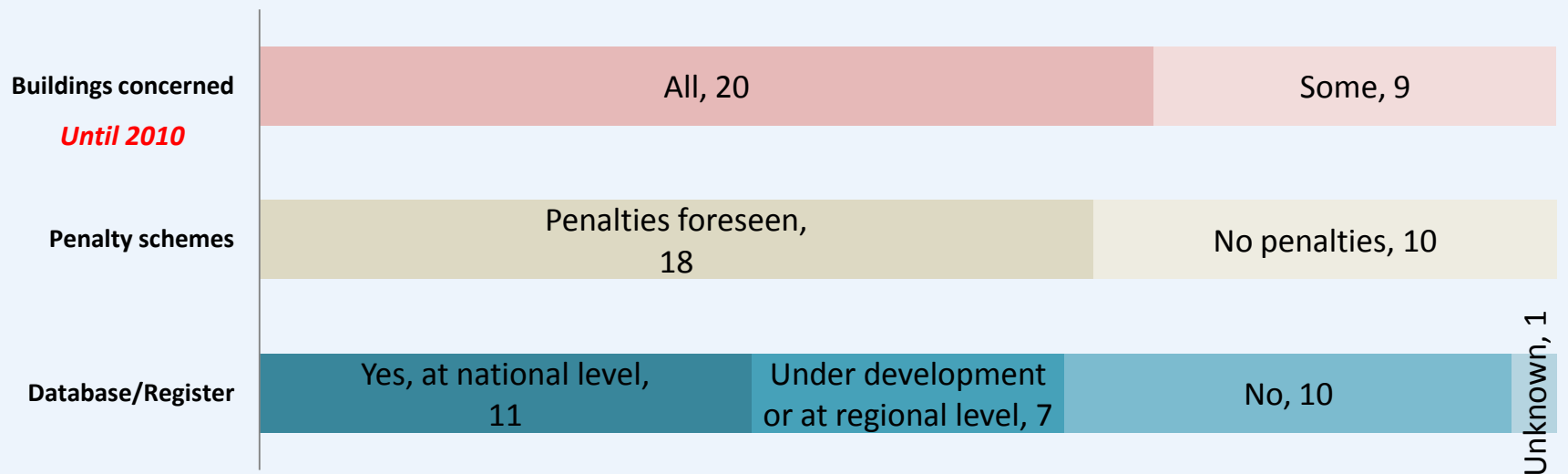
EPBD 2002/91/EC

EPBD 2010/31/EC

- Obligation to include recommendations for the cost-optimal or cost-effective improvements
- They should provide information on the actual impact of heating and cooling, on its primary energy consumption and on its CO₂ emissions.
- They may provide an estimate for the range of payback periods or cost-benefits over its economic lifecycle.
- The methodology for evaluating the energy performance should be in accordance with the European standards and have to consider harmonised instruments as introduced by the Ecodesign and Energy Labelling Directives.
- The MS should establish an independent control mechanism.

EPC implementation status

Overall situation



Countries concerned: EU27, CH, NO

Existing EPC registers/databases have proven to be extremely useful in monitoring and analysing the opportunities for energy performance improvement.

In the longer term, they will also prove invaluable in assessing trends in energy performance.

EPC implementation status

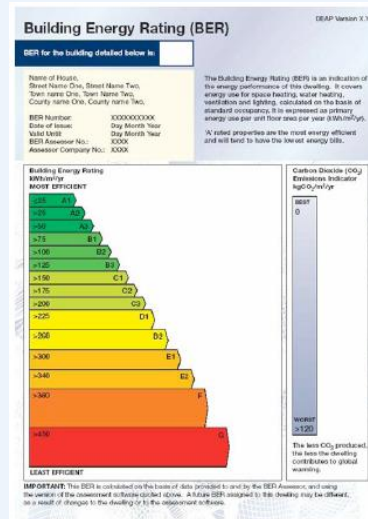
Key elements in detail

	Implementation responsibilities	Assessment method	EPCs issued since
AT	National & regional	Calculated rating	January 2008, January 2009 (public buildings)
BE	Regional	Calculated and measured rating (public buildings)	Flanders Region: November 2008 (sale), January 2009 (rent), January 2009 (public buildings). Non-residential expected in 2011
CZ	National	Calculated rating	January 2009 (new buildings and existing renovated buildings)
DK	National	Calculated rating	2006
FR	National	Calculated and measured rating	November 2006 (sale rez and non-rez), July 2007 (rent), July 2007 (new buildings), January 2008 (public buildings)
DE	National	Calculated and measured rating	2002 (new buildings), July 2008 (existing buildings)
HU	National	Calculated and measured rating	January 2009 (new and public buildings), January 2012 (existing buildings)
IE	National	Calculated rating	January 2007 (new rez buildings), July 2008 (new non-rez and public buildings), January 2009 (existing buildings)
NL	National	Calculated rating	January 2008 (sale and rent), January 2009 (public buildings, and social housing)
PL	National	Calculated rating	January 2009 (new buildings, renovations, existing buildings for sale/rent and public buildings)
PT	National	Calculated rating	July 2001 (new rez and non-rez buildings >1000 m ²), July 2008 (new buildings), January 2009 (existing and public buildings)
ES	National & regional	Calculated rating	2007 (new buildings), after 2010 (existing buildings)

EPC presentation



DENMARK



IRELAND



AUSTRIA

Significant differences in information provided by an EPC

- Length: from 1 page in HU to 8 pages in CZ and DK
- Recommendations to improve building performance: most MSs
- The label class after implementation of the recommended energy saving measures: CZ, DK, PT

EPC content

	AT	BE	CZ	DK	FR		DE	HU	IE	NL	PL	PT	ES
Label classes	A++ A+		A	A	Res	Non-res		A+	A1A2A3	A++ A+ A		A+ A	A
	A	sliding scale	B	B	A	A	sliding scale	A	B1B2B3	B	sliding scale	B, B-	B
	B		C	C	B	B		B	C1C2C3	C		C	C
	C		D	D	C	C		C	D1D2	D		D	D
	D		E	E	D	D		D	E1E2	E		E	E
	E		F	F	E	E		E	F	F		F	F
	F		G	G	F	F		F	G	G		G	G
	G				G	G		G					
						H							
						I							
Energy units	kWh/m2a	kWh/m2 a	GJ/year	kWh/m2a	kWh/m2a		kWh/m2 a	kWh/m2 a	kWh/m2 a	Energy index	kWh/m2 a	kWh/m2 a	kWh/m2a
Label present situation	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Label after taking measures indicated	No	No	Yes	Yes	No, but new indicator is calculated for each recommendation (calculated rating)		No	No specific information	No specific information	No	No specific information	Yes	No specific information
Recommendations	No	Yes	Yes	Yes	Yes		Yes	No specific information	No	Yes	Yes	Yes	No specific information

EPC usage

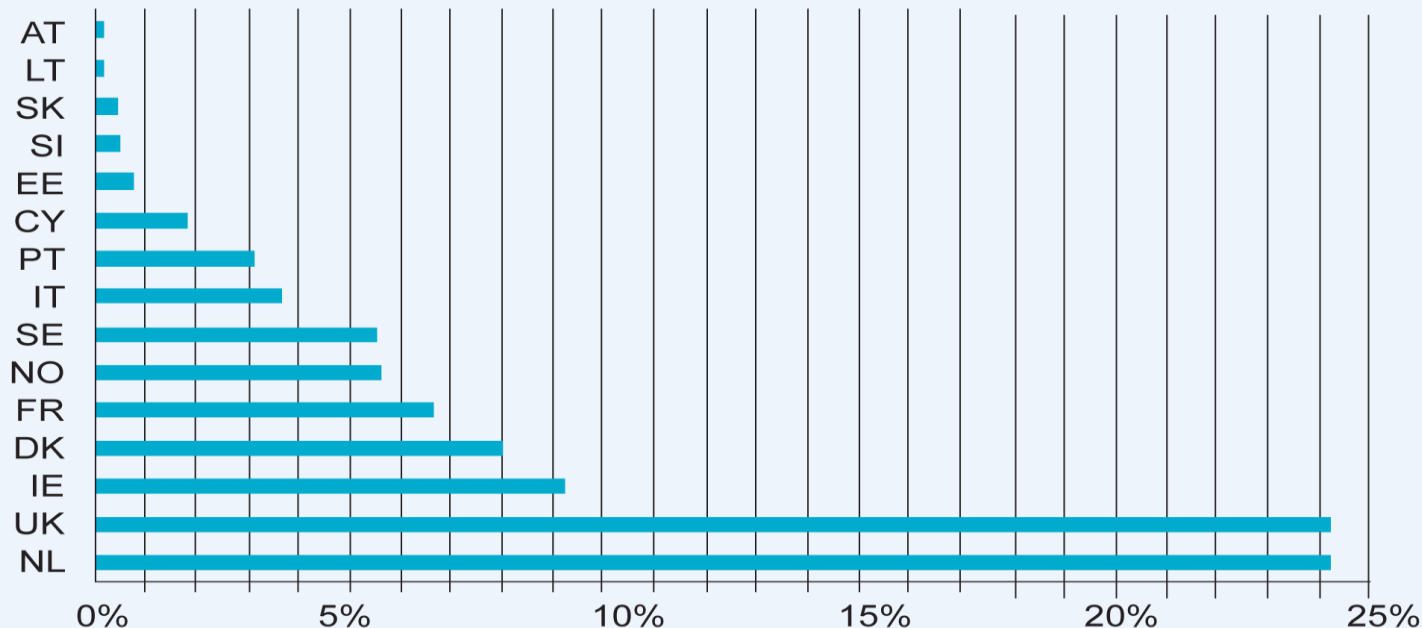
	Nr. of EPCs (*1000)	Estimation % of existing buildings which have EPC	Average energy performance rating
BE (Flanders)	141,3	4,10%	No specific information available
CZ	25-30 each year (= number of new buildings constructed each year, EPCs since January 2009 obligated)	1,50%	No specific information available
DK	45-50 each year	50%	Label class D (detached houses)
FR	No specific information available	90 % of social housing, 14 % of private houses	Label class C: 18% Label class D: 31% Label class E: 22%
DE	No specific information available	No specific information available	Single family home: 235 kWh/m2a Multi family home: 211 kWh/m2a
IE	75	No specific information available	New buildings: label class B2-B3 Existing buildings: label class D1-D2
NL	1287 (of which 83% rental homes)	18%	Label class ABC: 35% Label class CD: 50% Label class EFG: 39%
PL	80-100	0,75%	New buildings: 140 kWh/m2a
PT	100	No specific information available	Label class A+ A: 4% Label class B- B: 36% Label class C: 33% Label class D: 14% Label class EFG: 13%

EPC usage

Residential EPCs

Although the certification schemes have been working for only a couple of years, the proportion of dwellings not yet certified remain above 90% for all countries with the exception of The Netherlands and the United Kingdom.

Share of dwellings with a registered EPC



EPC costs

- Residential EPCs typically cost between €100 and €300 in most Member States, the full cost range is from under €50 to as much as €2,000.
- Information on costs for non-residential buildings was relatively limited. Where quoted, the values range from €0.5 to 3/m².
- A total of 18 countries (out of 29) foresee penalties in the event of non-compliance with the certification process.

A review of the implementation of Energy Performance Certification Scheme in Europe

	Single family	Multi-family	Non-residential	Penalties foreseen for EPC's non-compliance
AT	€300-420	About 1€/m ²	Office buildings about 1€/m ² .	No
BE				Yes
BG	€0,5-1,5/m ² (cost for the energy audit needed to issue a certificate)			Yes
CY				Yes
CZ	€200-500	€1000-5000	Others: €1000-5000	Yes
DK	Up to €730 for 100m ² dwellings, up to €875 for 300m ² dwellings		€1-3/m ²	Yes
EE	130-300		200-3000	No
FI	150-500	600-1000		No
FR	250	80/dwelling	300-1000	Yes
DE	150-300 (considerably lower in case the EPC is online-based)	250-600 (considerably lower in case the EPC is online-based)		Yes
GR	1,5€/m ² (€200 minimum)	1-2€/m ² (150 minimum)	300-2500 (up to 1000m ²) From 2500€ (for buildings above 1000m ²)	No
HU	€40-100/dwelling			No
IE				Yes
IT	300-10000 (all buildings)			Yes
LV	€300-500			No
LT	From 70		Up to €2500	Yes
LU	500-1300	125-250/dwelling		Yes
MT	250-750			Yes
NL	€100-250		€0,5-1/m ²	Yes
PL	€50-150		Up to €750	No
PT	45 for EPC registration + 1-3/m ² (charged by the inspection expert)		50 for registration of an EPC + €1-3/m ² (charged by the inspection expert)	Yes
RO				No
SK	About 250€		Up to thousand/s euros	Yes
SI	300-500			No
ES	From 100		Up to 4000	Yes
SE	About €400	€1000-1500 for an average sized buildings	About 1€/m ² for uncomplicated/simple buildings	Yes
UK	£30-100		From £200	Yes
NO				Yes
CH	400-600CHF	500-800CHF	700-1200CHF (up to 1000m ²)	No

EPC costs (€ unless otherwise stated) and existence of penalties in the event of EPC non-compliance



Public acceptance

	Use of certificates at sale/rent	Perception of usefulness by the public	Main "discussion points"
AT			Transparency of the certificate, not showing total energy performance, recommendations not always presented (clearly).
BE (Flanders)			Non-residential still under development.
CZ			Perception of general public as new expression of bureaucracy. Information on EPC not very useful. Only EPC for new buildings and major renovations. Main group of existing buildings not effected.
DK			For new buildings EPCs are issued more than for transaction moments for existing buildings.
FR			Use of EPCs high in social renting market, but low in private rental market. EPC still often only regarded as an 'informative instrument'.
DE			The quality of the cheaper version based on measured rating. Registration and practical enforcement.
HU			The costs of the certificate and mandatory character are a discussion point for the general public. EPCs not mandatory yet for existing buildings.
IE			Recommendations for energy saving measures not in actual EPC but in advisory report.
NL			Actual use of EPCs high for social housing, but low for private market. A public discussion on the transparency, reliability and reproducibility of the certificates lead to adaptations in the scheme.
PL			The EPC provides little useful information for the building owner for improvements. In practice EPCs are only issued at transactions when demanded by both parties.
PT			Use of EPCs is lower in the rental market than in the sale market.
ES			EPCs are only in practice for new buildings, public awareness is low.



Improvement desirable



Room for improvement



Good



Very good

Promotion, Administration, Compliance

	Promotion		Administration/registration system		Compliance/enforcement	
AT	Regional promotion		Regional databases		No practical/functional enforcement system	
BE (Flanders)	Regional promotion		Regional database		Strict enforcement system with penalties	
CZ	Low attention on promotion		No database		No practical/functional enforcement system	
DK	Promotion aimed at professionals		Central database		No practical/functional enforcement system	
FR	Low attention on promotion but professionals informed		No database		No practical/functional enforcement system	
DE	National promotion campaign by energy agency		No database		No practical/functional enforcement system	
HU	National promotion campaign		No database		No practical/functional enforcement system	
IE	National promotion campaign by energy agency		Central database		Strict enforcement system with penalties	
NL	National promotion campaign		Central database		No practical/functional enforcement system	
PL	Low attention on promotion		No database		No practical/functional enforcement system	
PT	Promotion by energy agency dedicated to stakeholders		Central database		Strict enforcement system with penalties	
ES	Low attention on promotion		No database		No practical/functional enforcement system	



Improvement desirable



Room for improvement



Good

Identified barriers

- **Country-specific circumstances** such as:
 - Slow administrative procedures in Spain due to the delegation of responsibilities from a national to a regional level;
 - Commitments on payment for the Energy Performance Certificate in Hungary. In Hungary the public can, in principle, reject a regulation via a referendum and it difficult to impose financial obligations, especially when people do not see the added value of the EPC;
 - Some interference by market players/stakeholders with political choices of EPC implementation in the Czech Republic by raising a discussion about the values of primary energy coefficients.
- **Reliability, transparency and usability of the EPCs for consumers** and the choices (e.g. assessment method, administrative and enforcement system and the involvement of relevant stakeholders);
- **Lack of awareness regarding the EPC obligations.**

Policy recommendations and conclusions

- Reproducibility and accuracy of the EPC methodology
- Exchange of experience, knowledge development and continuous consultation with stakeholders
- A clear legislative and administrative framework
- An effective registration and quality control system
- An appropriate level of consideration given by the implementation authorities
- Clear and appropriate enforcement



Thank you for your attention!

www.bpie.eu

Marina.economidou@bpie.eu

