



INSTITUTE OF ENERGY  
FOR SOUTH EAST EUROPE

# Towards Energy Efficiency in Buildings as a key part of European Union policies



Senad Vrazalic  
Senior Expert  
Buildings Performance Institute Europe



INSTITUTE OF ENERGY  
FOR SOUTH EAST EUROPE

# BPIE

## Building Performance Institute Europe

### Who we are?

Independent, non-profit organisation based in Brussels

Focus on energy efficiency in buildings throughout the Europe and the world

Supported by "ecee", European Climate Foundation, ClimateWorks...etc

Centre of expertise in buildings

European centre for a global Best Practice Network

Started to operate in February 2010

Targeted research, Policy analysis & evaluation, Projects on EPC-s...

# BPIE strategy for implementing energy efficiency in buildings

Source of credible information to all stakeholders

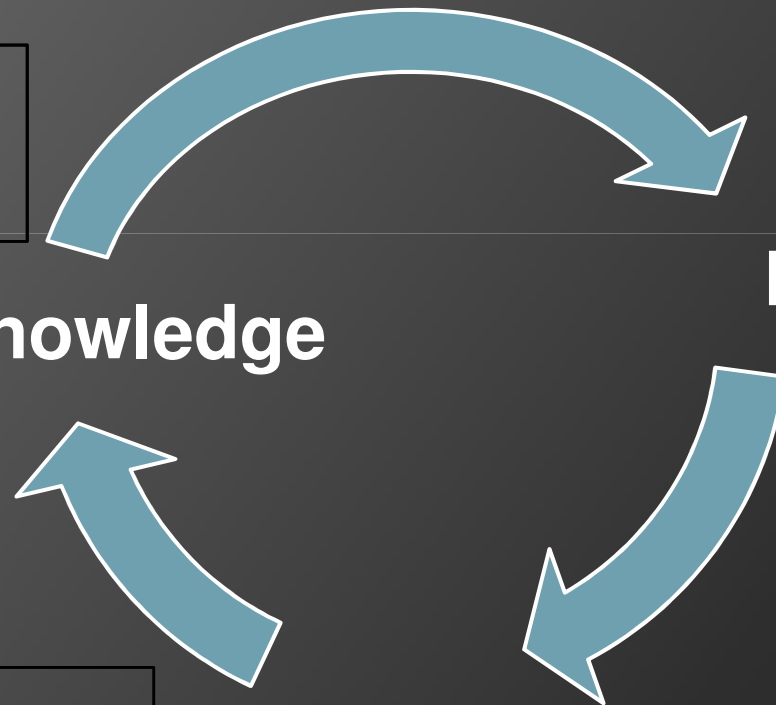
Impartial advisor at EU and governmental level

**Knowledge**

**Policy**

Partner for energy efficiency in buildings on national and local level

**Implementation**



# EU energy & climate package 20-20-20

Establishment of legally binding targets to:

- Cut GHG emissions to 20% below 1990 levels by 2020
- Increase the share of renewable energy to 20% by 2020

Indicative target of improving energy efficiency by 20% by 2020  
(EU Action Plan 2006 – under revision)

- Top priorities in terms of energy efficiency potential are:
  - **Building sector (40% of EU's energy requirements)**
  - Transport sector (26% of EU's energy requirements)
  - Manufacturing (25% of EU's energy requirements)

## Legal Framework for the supply :

Directive on Electricity Production from Renewable Energy Sources (RES)

Emissions Trading Scheme (ETS)  
21 % CO<sub>2</sub> Reduction in 2020 to 2005

Directive on promotion of cogeneration (CHP)

Directive on energy products and electricity taxation

## Legal Framework for the demand :

End use efficiency and energy services  
Directive (ESD) - Setting of National  
Action Plans

Energy Performance of Buildings Directive  
(EPBD)

Directives for labeling of appliances (e.g.  
air-conditioners, refrigerators) + Energy  
Star regulation for office equipment

Framework Directive for eco-design  
requirements for energy using products  
(boilers, refrigerators, freezers, etc)

## Major developments of the recast EPBD

Major renovations must implement minimum requirements

Energy Performance Certificates – part of advertising for sale or rent; display for buildings 1000 m<sup>2</sup>, 250 m<sup>2</sup> in 2015

Every new building must be near zero energy by 2020 (public buildings from 2018)

Inspections of heating (over 20 kW) and air-conditioning (including ventilation) systems followed by reports

Member States to establish ambitious plans to bring the existing building stock to near zero by 2020

Implementation is the Challenge

## Standards in the EPBD context

EPBD (2002) EC mandate (2004) to European Committee for Standardization (CEN): standards for a methodology calculating the integrated energy performance of buildings

Over 30 CEN-standards published by 2008

Currently used in Member States but mixed with national approaches

Need for separation between common procedures and national elements

CEN standards will be more usable as direct reference (in the context of the new EPBD)

Minimum requirements must comply with the results of a « cost-optimum » methodology based on life-cycle cost



## Defining key targets and insights to achieve an ambitious plan

- Residential house builders
- Public and commercial building owners
- Tenants
- Real estate agents
- Social & cooperative housing
- Land owners

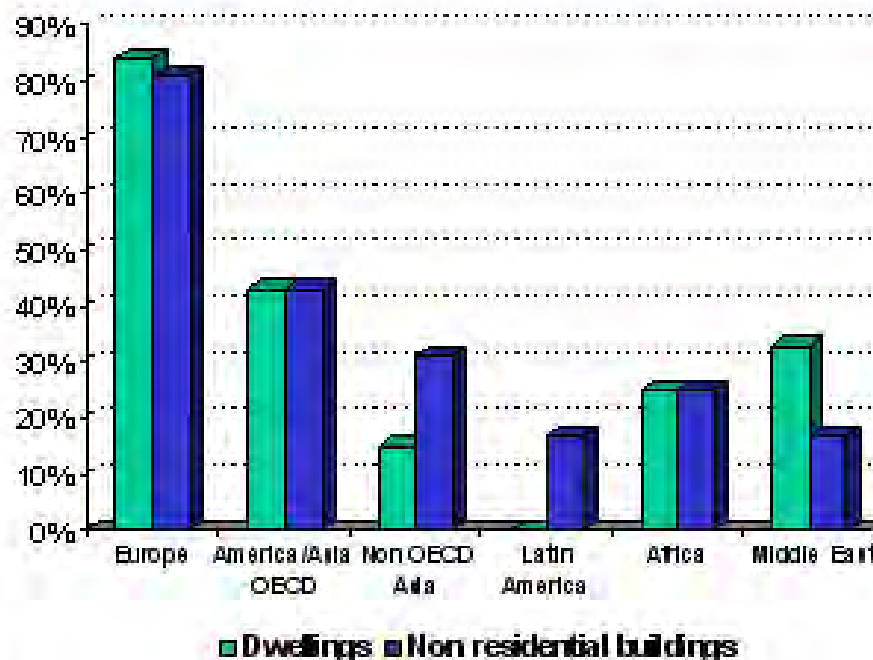
- European Commission
- National governments
- Cities/local authorities



- Architects
- Designers
- Building industry
- Energy industry
- Building material industry
- Estate agencies
- Property managers
- Finance institutes
- Specialized craftsmen
- Facility managers
- Energy managers

# Energy Efficiency standards for buildings

Figure 3.4: Countries with efficiency standards on new buildings  
 Pays ayant des normes sur les bâtiments neufs



Source: WEC/ADEME Survey

# Nearly-Zero Energy Buildings

Planned introduction of low energy standards as minimum requirements in building regulations

Country/year	2009	2010	2012	2013	2015	2016	2020
<b>Denmark</b>		- 25 %			- 50 %		- 75 %
Finland		-30-40%		-20%	LEB -PB(PH)		
<b>France</b>			<b>LEB 2.</b>				<b>E+</b>
<b>Germany</b>	- 30 %		- 30 % to 3.				<b>NFFB</b>
Ireland		-60%		NZEB			
Netherlands		- 25 %			- 50 % (PH)		<b>ENB</b>
Norway	20-25%						<b>LEB (PH)</b>
<b>United Kingdom</b>		-25 %		<b>(PH)-44%</b>		<b>NZEB</b>	

1. Percentage of the 2006 minimum level
  2. "Effinergie" standard
  3. Percentage of the 2009 min. Level
  4. Passive House level (PH)
- LEB: Low Energy Buildings
- E+: Energy positive buildings
- NFFB: Buildings to operate without fossil fuels
- ENB: Energy Neutral Buildings
- NZEB: 0 net. CO<sub>2</sub>, incl. heating, lighting domestic hot water and all appliances

Source: Rockwell International



INSTITUTE OF ENERGY  
FOR SOUTH EAST EUROPE

**BPIE thanks you for the attention**

**[senad.vrazalic@bpie.eu](mailto:senad.vrazalic@bpie.eu)**