



Energy Performance of Buildings Directive - opportunities for BIPV

PV Days 2017, Halle

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Regulatory Framework

EU

EPBD (Energy
Performance
of Buildings)

Germany

GEG (Buildings
energy law,
Gebäude-
energiegesetz)

Overall targets & Long-term strategies

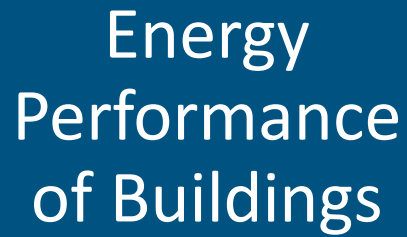
Discussion points

- Defining decarbonised buildings/nZEBs
 - Smart buildings
- Tackling renovation of existing buildings

EU legislation

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Energy
Efficiency

A large dark blue circle containing the text "Energy Performance of Buildings". It is surrounded by several smaller circles in shades of blue and orange, some of which overlap with the other main circles.

Energy
Performance
of Buildings

A large orange circle containing the text "Renewable Energy". It is surrounded by several smaller circles in shades of blue and orange, some of which overlap with the other main circles.

Renewable
Energy

A large orange circle containing the text "Electricity Market Design". It is surrounded by several smaller circles in shades of blue and orange, some of which overlap with the other main circles.

Electricity
Market
Design

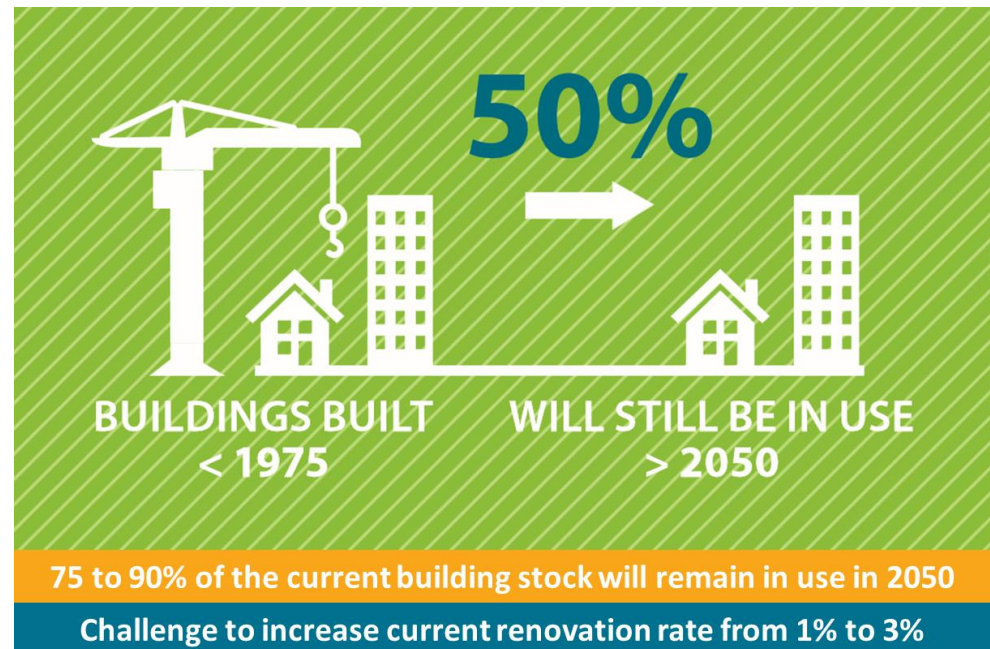
Current Status of EPBD negotiations

- Commission Proposal as part of the so-called Winter Package (Clean Energy for All Europeans)
- General approach of the Council (26th June)
- Report of ITRE
- 26th October: Decision if Bendt Bendtsen will be allowed to negotiate the directive with the other institutions (trialogue)
- 7th November: First triaologue
- 5th December: Second triaologue (end of Estonian presidency)

Long-term vision for deep renovation

COM proposal

- 30% binding target (Art. 3 EED)
- Long-term renovation strategies with roadmap and milestones for 2030 (Art. 2a EPBD)
- 3% annual renovation target for buildings of central governments (Art. 5 EED)



Long-term vision for deep renovation

COM proposal

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EU Parliament – ITRE: much stronger

- ITRE amendment Art. 2 (CA 5): “Decarbonised building stock” means a building stock performing to Nearly Zero-Energy Building level and which is energy efficient to the maximum of its potential”
- CA 7 long-term renovation strategies to “**ensure a highly energy efficient** and decarbonised national building stock with specific milestones for 2030 and **2040 as well as measurable progress indicators**”

CHALLENGES

AIR POLLUTION AND HEALTH ISSUES RELATED TO THE BUILDING STOCK

Between 30% and 50% of excess winter mortality is attributed specifically to housing conditions (Keatinger)

AN INEFFICIENT BUILDING STOCK

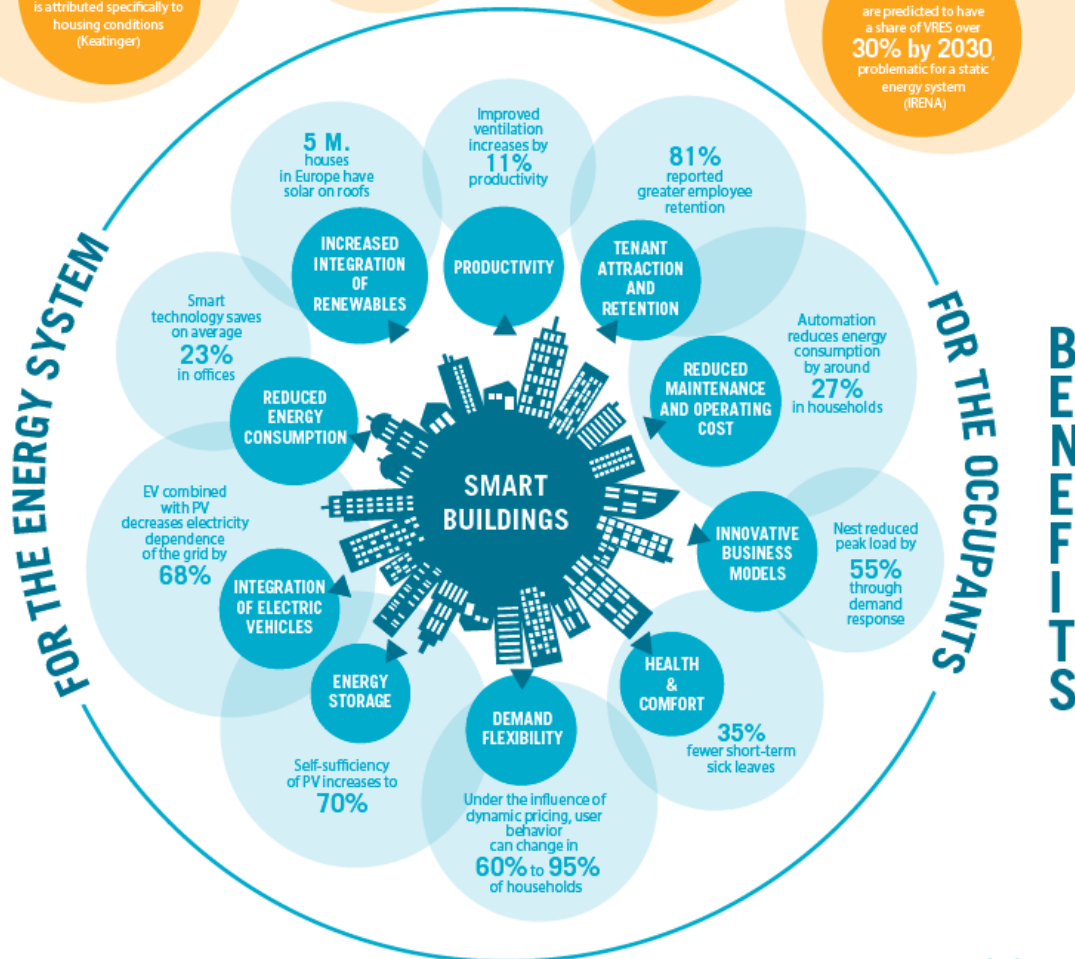
75% of the building stock is energy inefficient (EC)

AMBITIOUS DECARBONISATION TARGET

EU aims to cut emissions from houses and office buildings by around 90% by 2050 (EC)

AN INCREASED SHARE OF VARIABLE RENEWABLE ENERGY

A number of EU countries are predicted to have a share of VRES over 30% by 2030, problematic for a static energy system (IRENA)



Impulses for Smart Buildings

- definition of technical building system expanded to on-site electricity generation and on-site infrastructure for electro-mobility, building automation and control systems; ITRE: indoor air quality;
- Requirements to introduce charging infrastructure for electromobility
- Smartness indicator

Smartness Indicator in EPBD proposal Amended Annex by Parliament

CA 28: Annex Ia (new), SI shall have three functionalities:

- “the ability to maintain, efficiently, high building performance and operation through the **reduction of energy demand** and a **greater use of energy from renewable sources (electricity and heat)**, including the ability of the building to **manage its own demand** or on-site generation by re-managing its own resources;”
- “high standards of **indoor health**”
- “ability to enable participation in active and passive as well as implicit and explicit **demand response**”

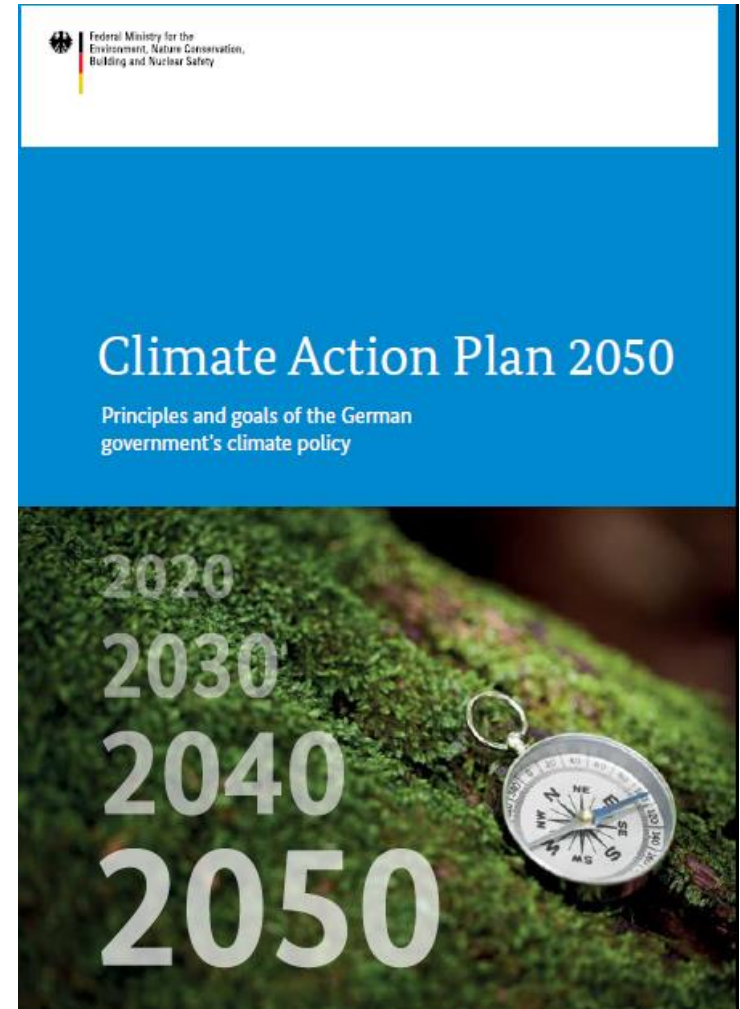
Renewables and Efficiency

- EPBD proposal: PEF are equally treating renewable energy generated on-site and off-site
- EED proposal: Renewable energy (self-consumption) and renovation of existing buildings is eligible to count towards energy saving target as formulated in Art. 7 EED (energy efficiency obligations)
 - Renewables may count towards the savings with a maximum share of 25%

Germany

Overall level of ambition

- Sectoral target of climate action plan 2050:
 - 72 Mio t CO₂ emissions in the building sector by 2030
- EPBD requires Member States to define nearly zero energy buildings (nZEB)
 - All new buildings have to be nZEB by 2021 latest



Driver nZEB in GEG proposal as of 2017

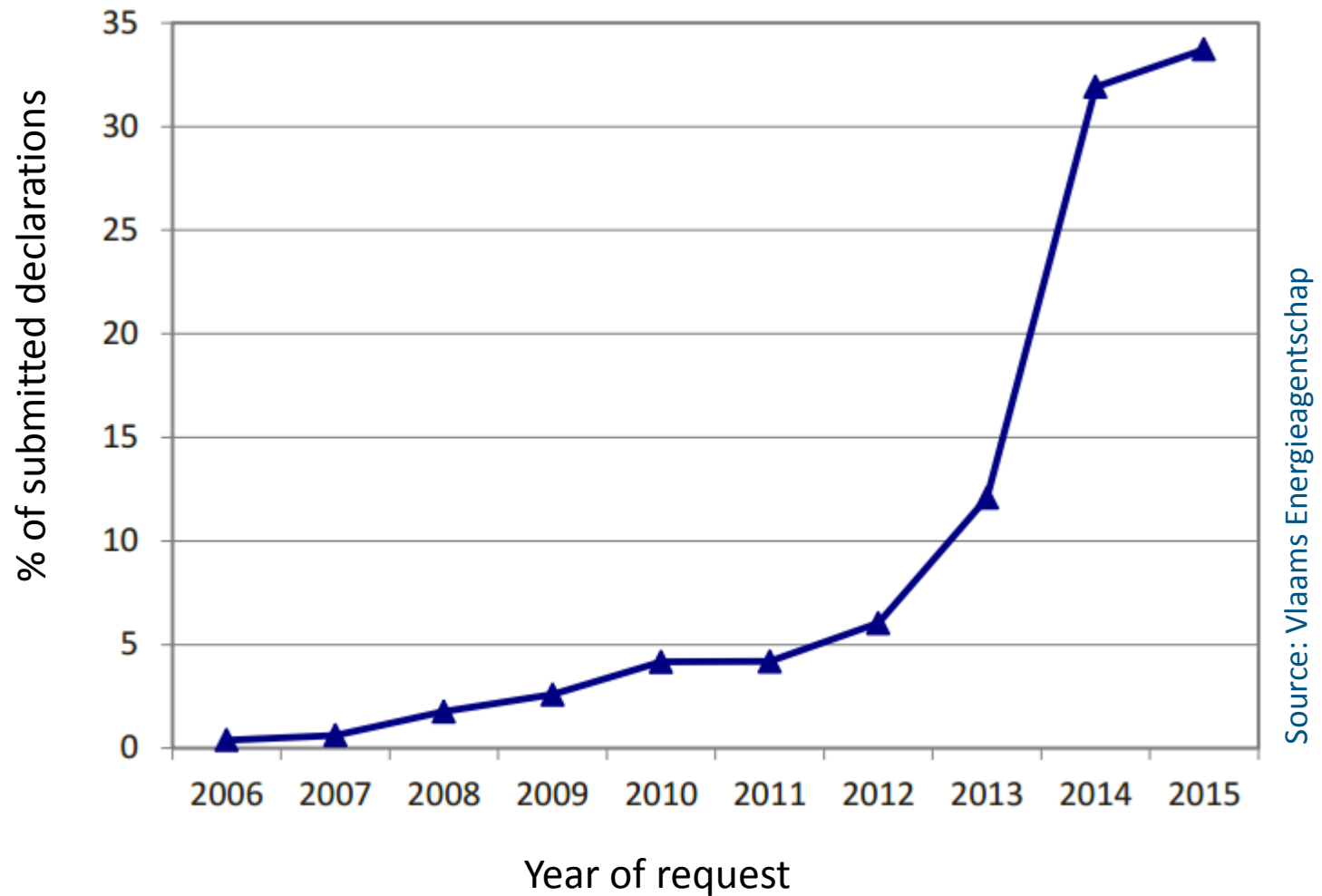


ZEBRA 2020 - NEARLY ZERO-ENERGY BUILDING STRATEGY 2020

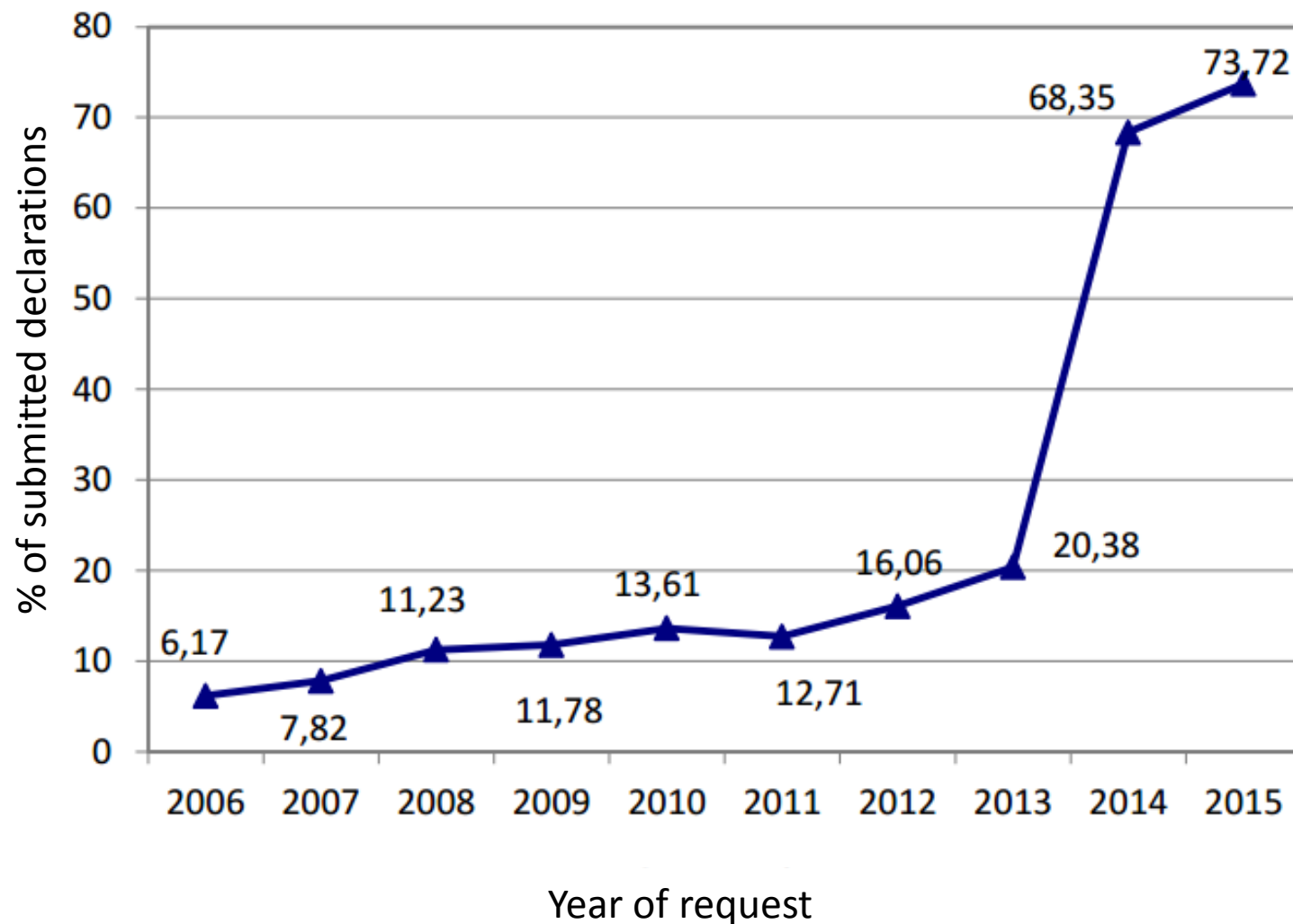
Strategies for a nearly Zero-Energy Building market transition in the European Union

- nZEB for public buildings \triangleq KfW55
- Calculation based on primary energy demand and structural thermal insulation
- Debate in Germany:
 - Overall level of ambition
 - CO₂-weighting of PEF? CO₂ as base for calculation?

Flanders - Evolution nZEB

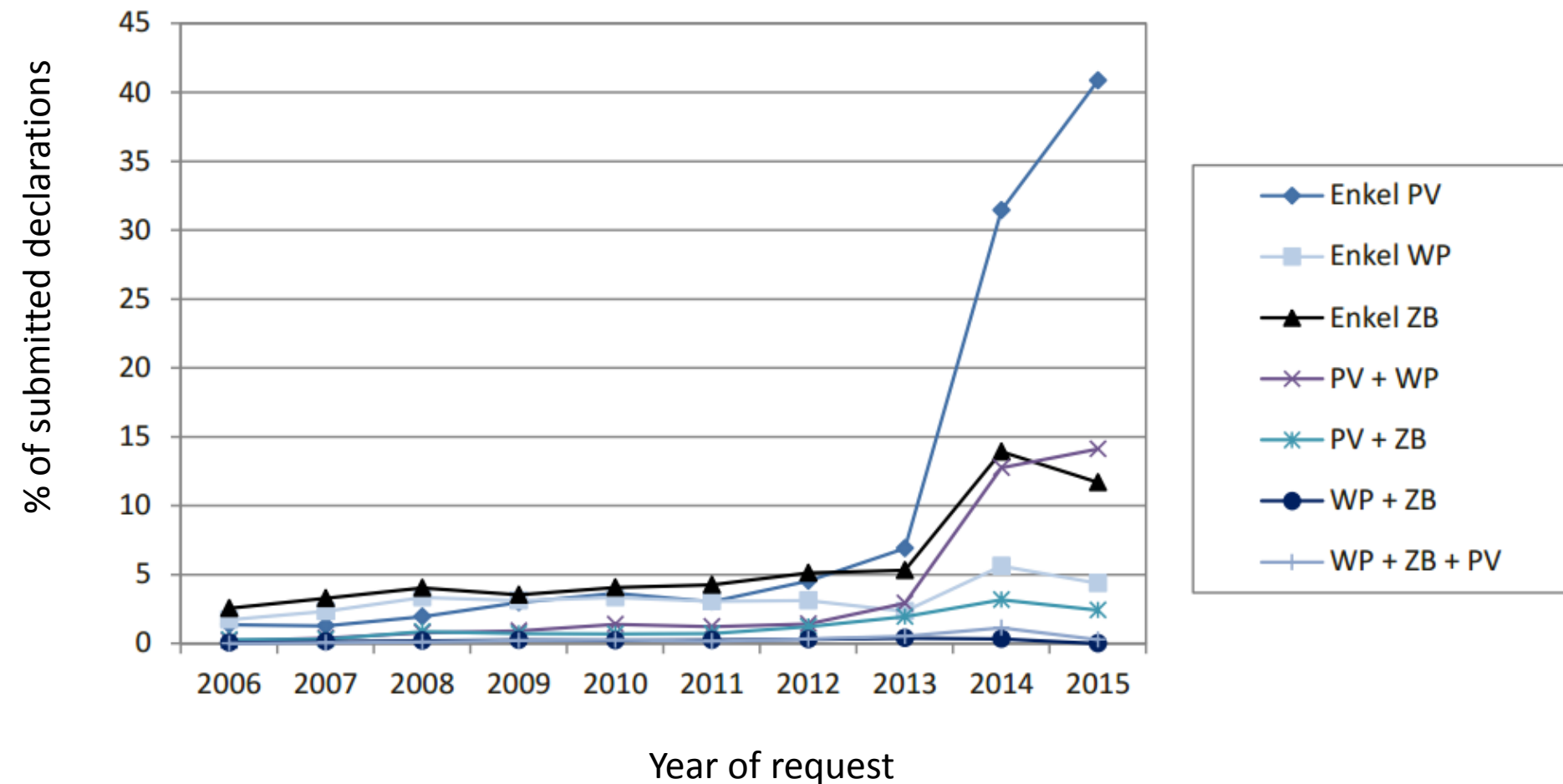


Flanders - Evolution RES in new buildings



Source: Vlaams Energieagentschap

Flanders - Evolution RES in new buildings



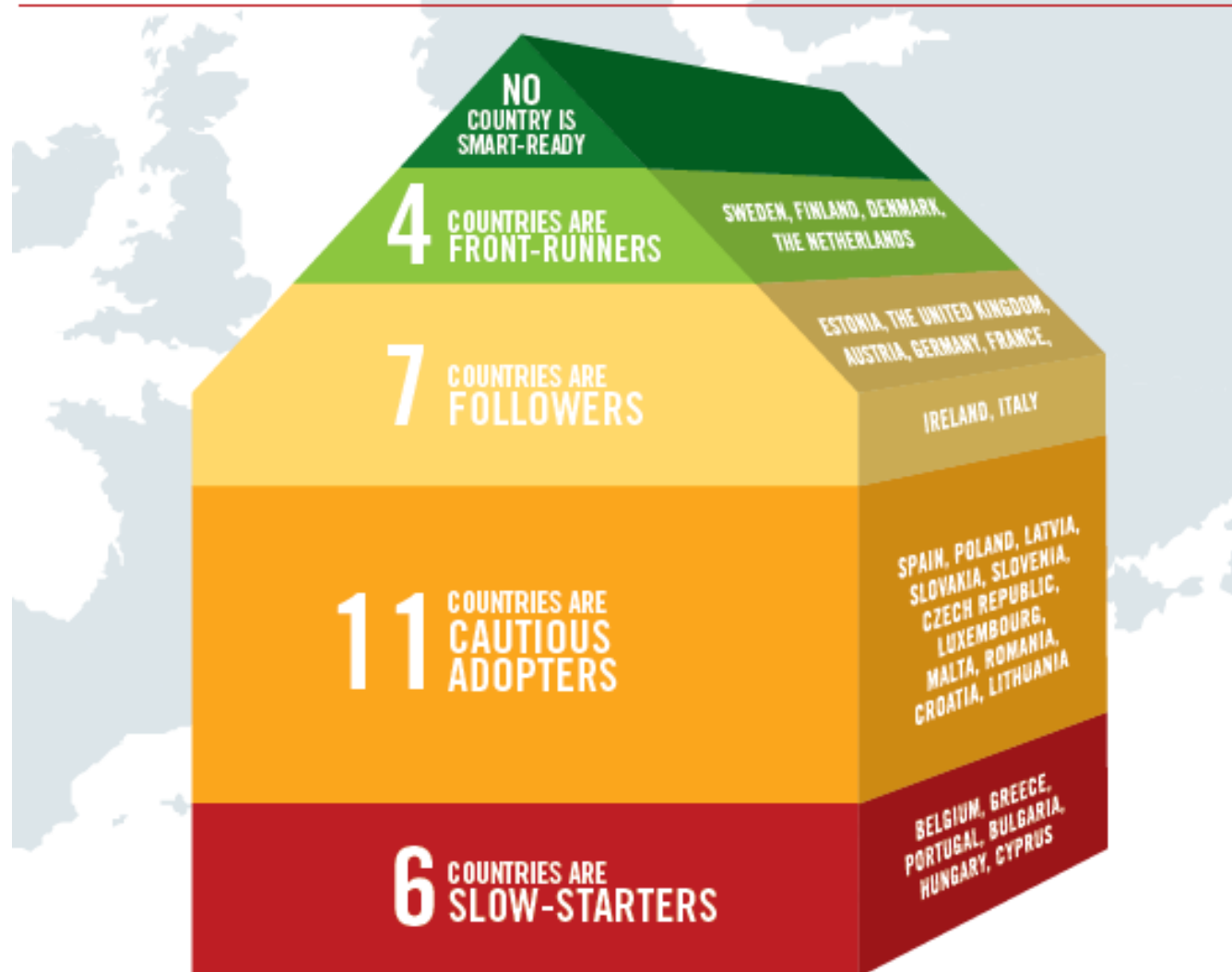
Source: Vlaams Energieagentschap

Minimum share of renewables in buildings in GEG proposal

- § 6: minimum share of renewables for heating and cooling in a new building
 - Baden-Württemberg: change of heating system
- §34: minimum requirements fulfilled
 - if renewable electricity is used to cover 15% of energy for heating and cooling
 - if solar energy is used: requirement is fulfilled in case of a nominal capacity of at least 0.02 kW/m² of building acreage

Smart Buildings in Germany

IS EUROPE READY FOR THE SMART BUILDINGS REVOLUTION?



IS EUROPE READY FOR THE SMART BUILDINGS REVOLUTION?

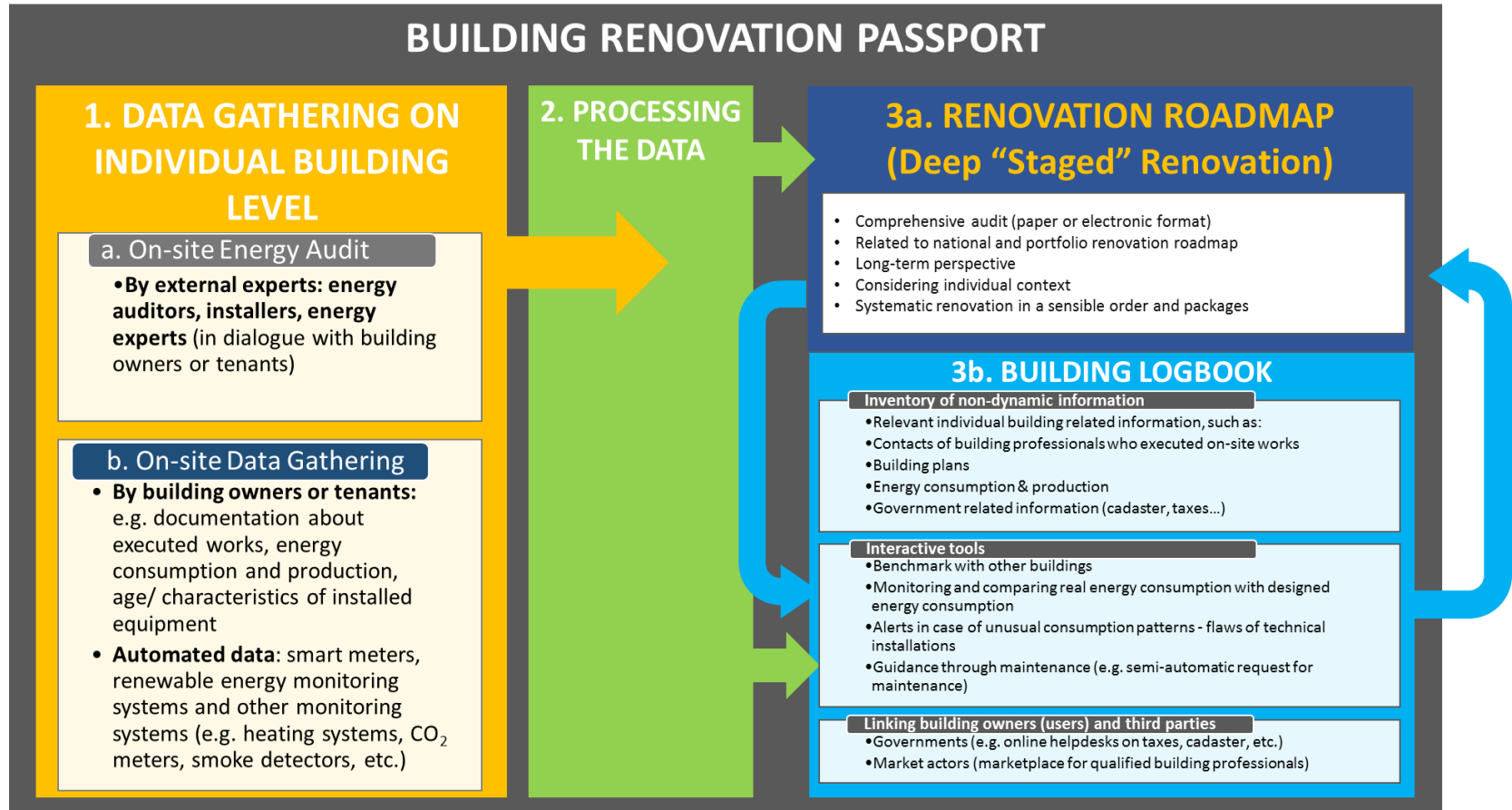


EU and National Level: Tackling existing renovation



Big blind spot

Building Renovation Passport



Building Renovation Passport in Germany iSFP

Result: building-specific renovation roadmap



Summary: relevance for BiPV

- With high overall ambition of building performance-demand for BiPV will rise
- Main driver for BiPV at national level: nZEBs
- Calculation of overall building performances: more CO₂-weighted?
 - renewable electricity will increasingly count towards fulfilling overall performance of buildings requirements
- Impulses for smart building and electro mobility from European level
- Increasingly important:
 - multiple benefit of energy efficiency including indoor air quality/health
 - renovation of existing buildings



Thank you...

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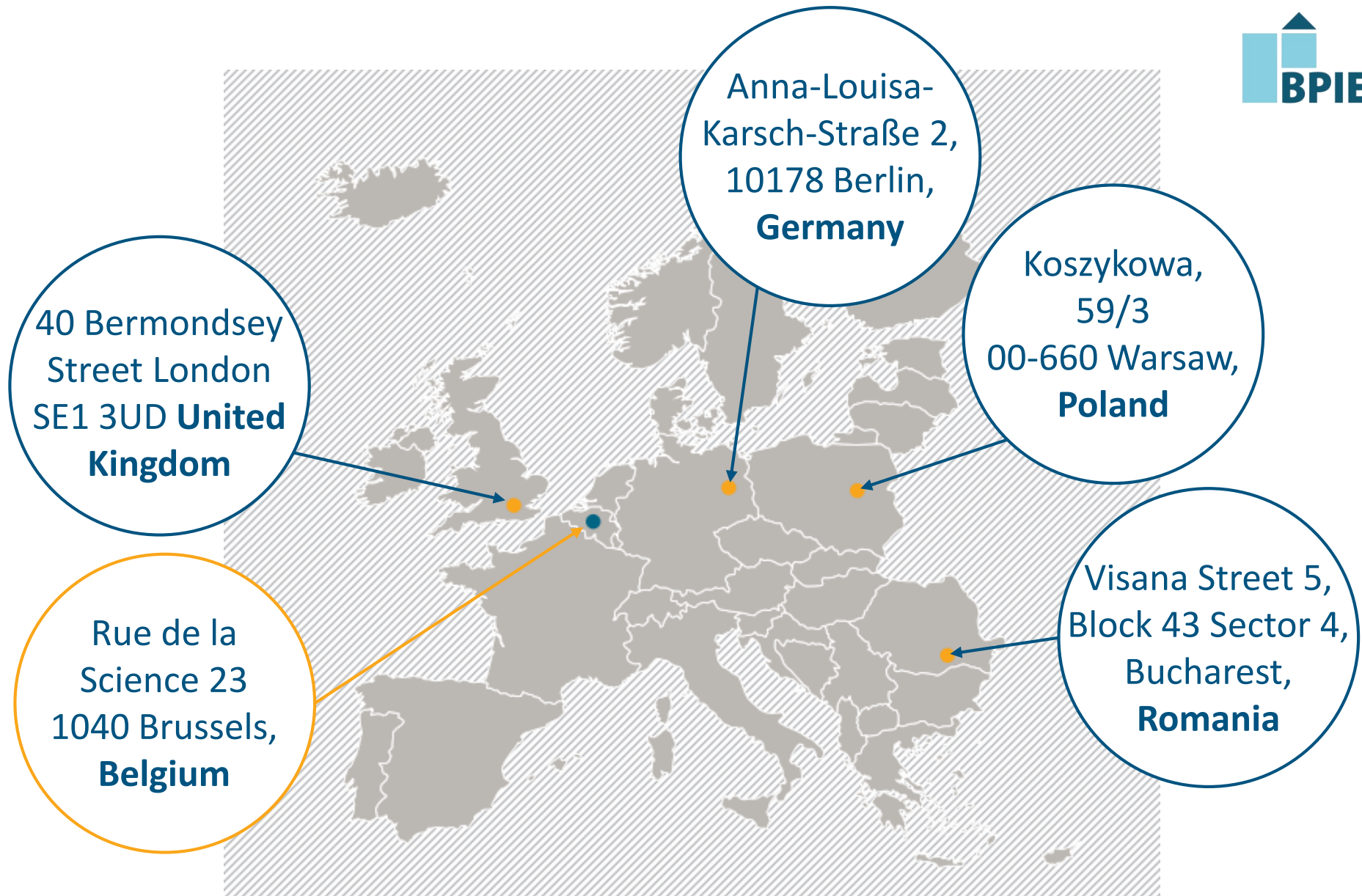
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**BPIE's mission
is to improve
the energy
performance
of buildings by**

- 
- A solid blue triangle pointing upwards, located above the list of mission points.
- Providing fact-based analysis and knowledge, and sharing best practice globally through partnerships;
 - Supporting the development of ambitious - yet pragmatic - building-related policies and programmes at EU and Member State level;
 - Driving timely and efficient implementation by teaming-up with key stakeholders.



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