

Training workshop “Studying international practices in implementation of innovative energy efficiency technologies in the electric power industry. Methodology, goal and objectives of electricity and heat consumers energy survey”

SEIT building, 62 Bayram Khan st, Mary, 13-19 March 2024

EU approach to energy efficiency promotion: lessons learnt and the way forward

Ilze Purina, Key Expert, SECCA

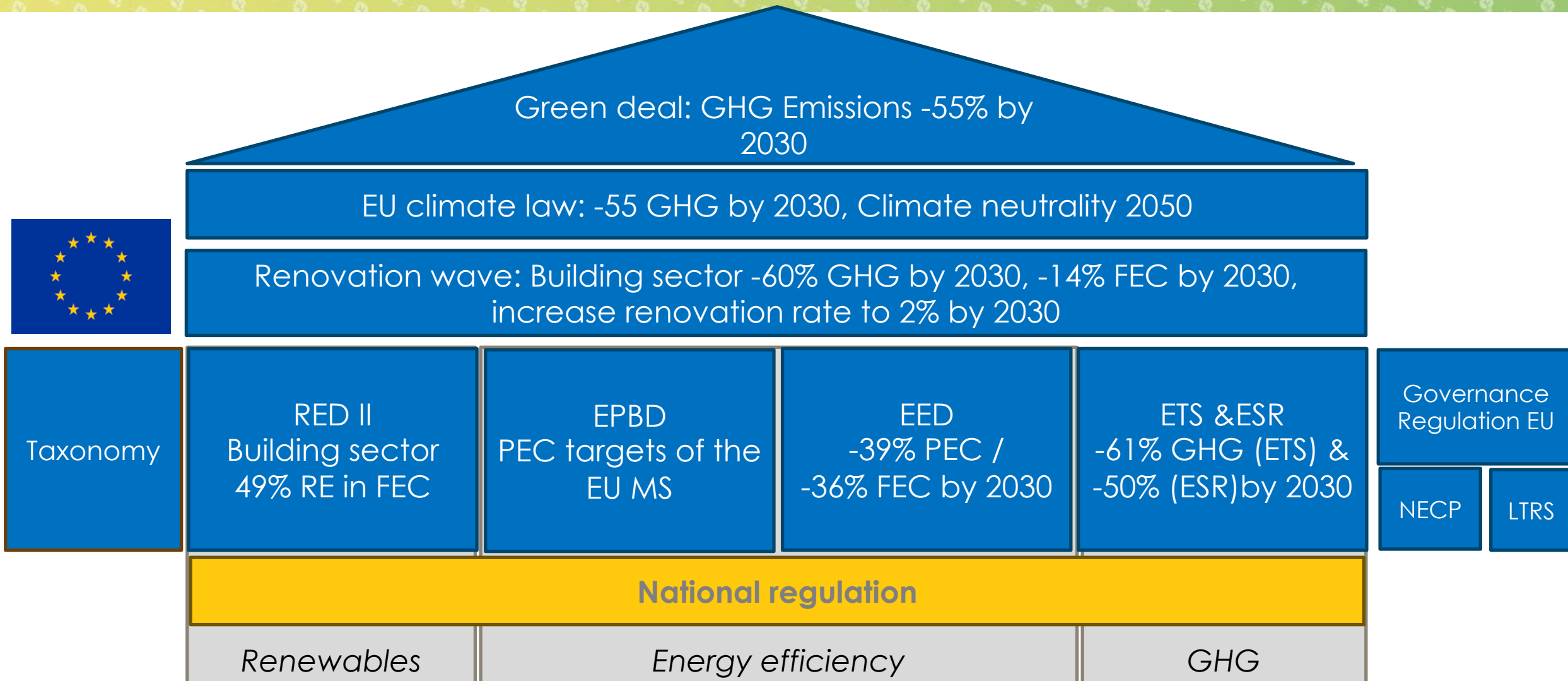


TOWARDS INTEGRATED ENERGY AND CLIMATE PLANNING

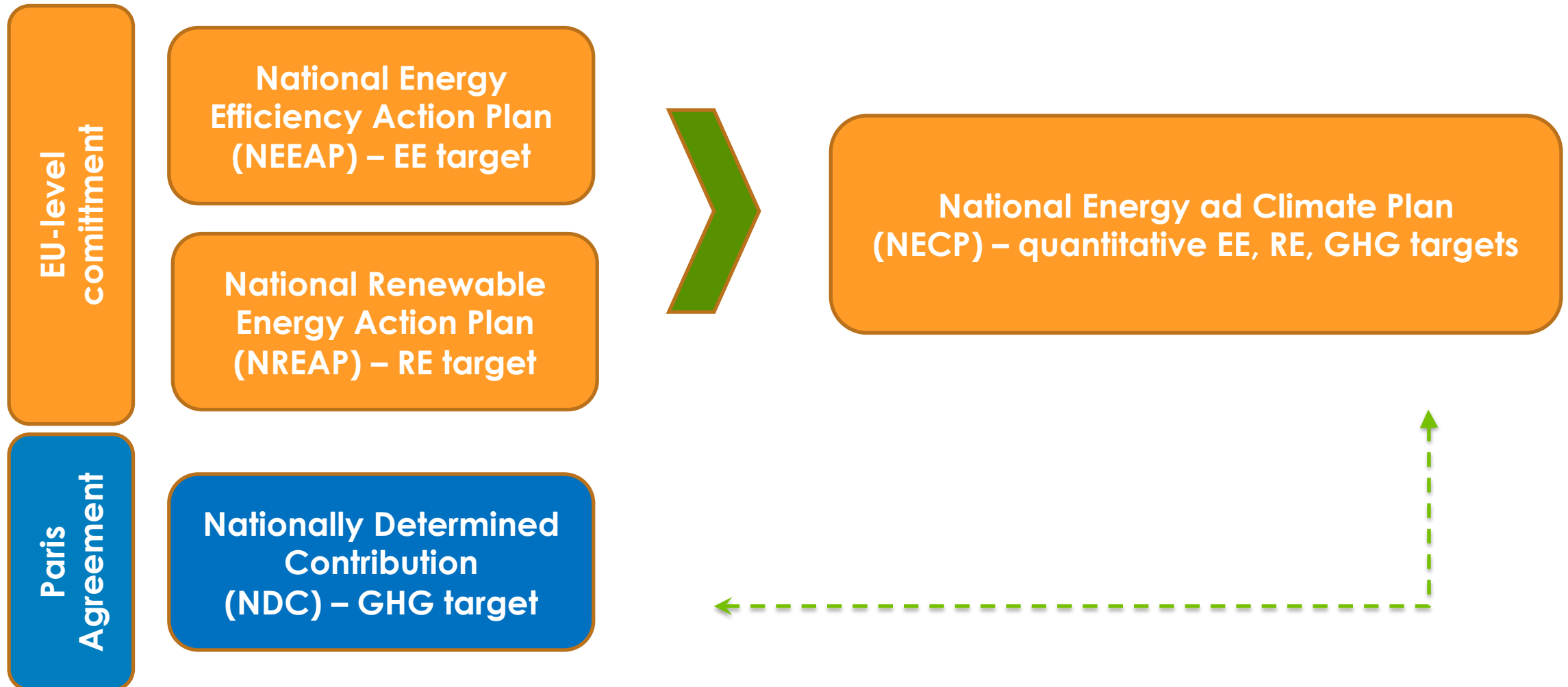


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EU policy framework for integrated Energy and Climate planning



Evolution of energy policy planning process in EU



National Energy and Climate Plan

NECP for 2021 – 2030
with the outlook to 2050



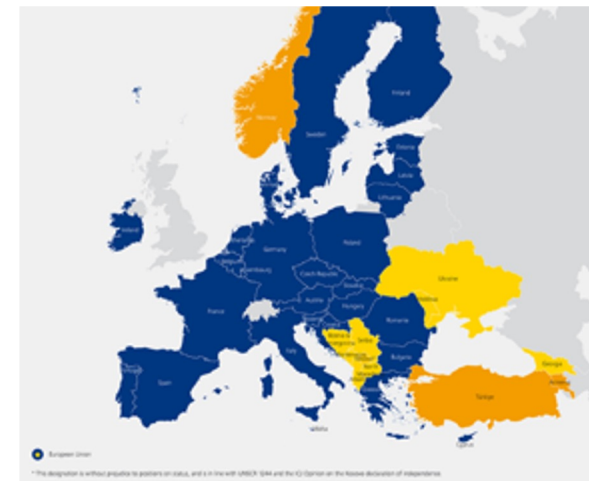
Five (5) dimensions:

- **Energy Security**
- **Energy Efficiency** as a primary fuel
- **Decarbonization** and **Renewable Energy** development
- **Market integration**
 - Cross-border connections
 - Harmonized Market rules
 - Addressing **energy poverty** and vulnerable customers
- **Research and Innovation** for new technologies

This approach requires **close coordination across all ministries**

Dimension 1: Energy security

- **Medium- to long-term objectives** and **standards** relating to **security of supply**, including with regard to diversification of energy sources and supply countries, infrastructure, storage, demand response, readiness to cope with constrained or interrupted supply of an energy source, and the deployment of alternative domestic sources
- The objectives should include **regional cooperation** and the policy measures to achieve these objectives should be **regionally coordinated**



Dimension 2: Energy market

- **Policies and plans** related to **infrastructure development for connectivity** with other **EU Member States** and **Energy Community Contracting Parties** (*The Energy Community is an international organisation consisting of the EU, represented by the European Commission, Albania, Bosnia and Herzegovina, Georgia, the Republic of North Macedonia and Kosovo*. Moldova, Montenegro, Serbia, and Ukraine are known as the contracting parties*)
- **Policies and objectives** related to **market integration**, deployment of flexibility in the power sector, roll-out of smart technologies, and smart grids

Dimension 3: Energy efficiency

- **Existing and planned policies and measures** related to achieving the future **energy efficiency targets in the EU**
- **Special attention** to measures and plans **to** reduce energy consumption in the **building sector** (i.e. building renovation, and investment programmes)
- **Development and quantification of a trajectory** towards 2030 including planned energy savings and final consumption
- The trajectory should specify the national contribution towards the EU energy efficiency targets

Dimension 4: Decarbonisation of the economy

- **Policies and measures** related to the **reduction of GHG emissions** in all key emitting sectors to meet 2030 targets:
 - in the EU (e.g. renewable energy targets), and
 - Nationally Determined Contributions (NDCs) under the Paris Agreement
- These should also contain an outlook towards becoming a low-carbon economy in 2050, including **the trajectory for the share of renewables**, projected electricity demand, relevant electricity producing technologies
- National policies and measures planned to support the **decarbonisation of transport**

Dimension 5: Research, innovation and competitiveness

- **Policies and measures** for accelerating the energy sector transformation, including funding programmes for R&D and subsidy schemes



Content of NECP

Narrative part

Current situation - overview of the national energy system and policy context of the national plan across the five dimensions

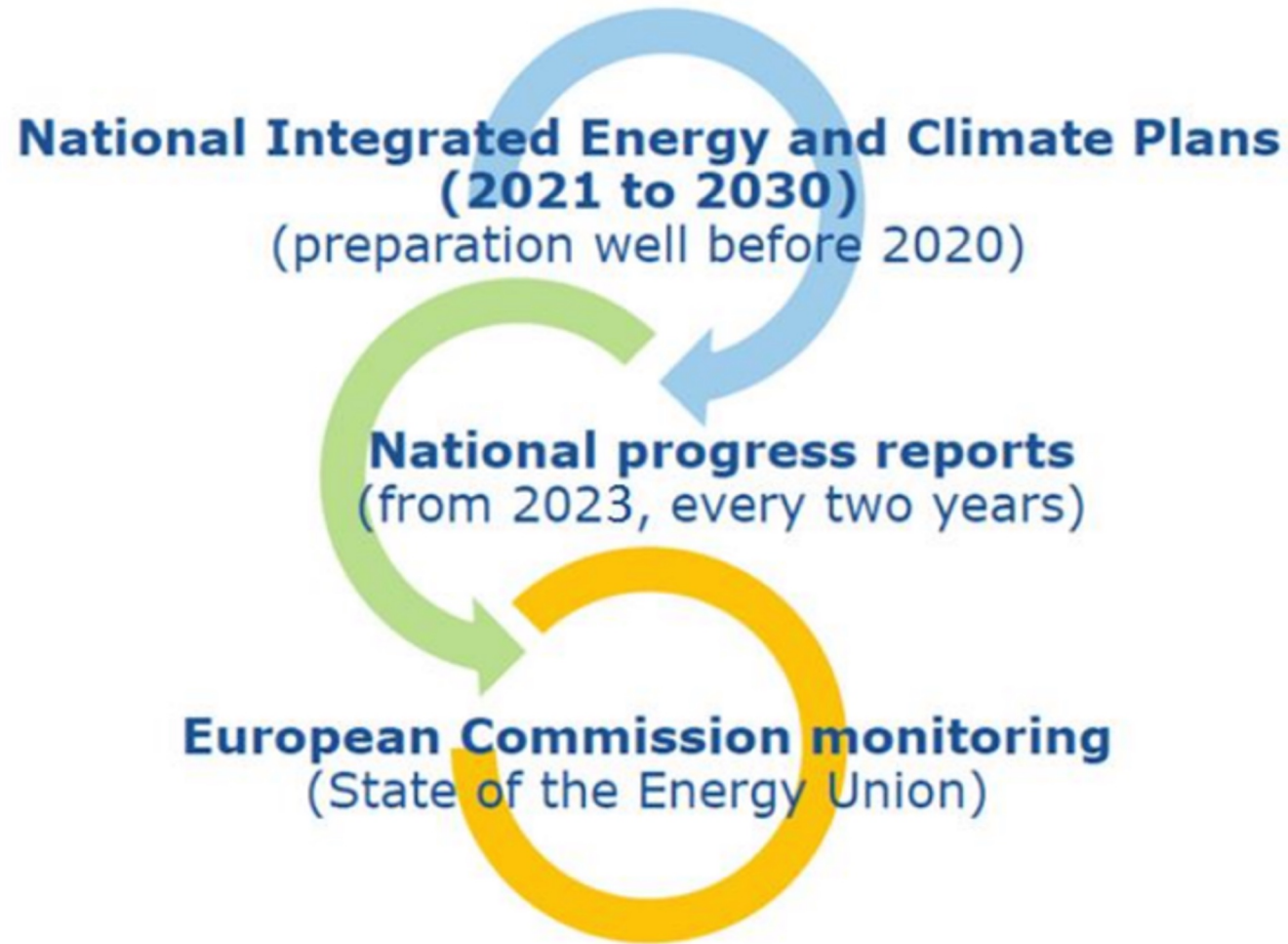
Objectives, policies and measures for the five dimensions

Analytical basis

Integrated projections and indicators - **a separate section on projections as an analytical basis of the plan**, including reference and policy scenarios assessing the relevant impacts of the policies and measures proposed



Continuous monitoring of implementation progress and results



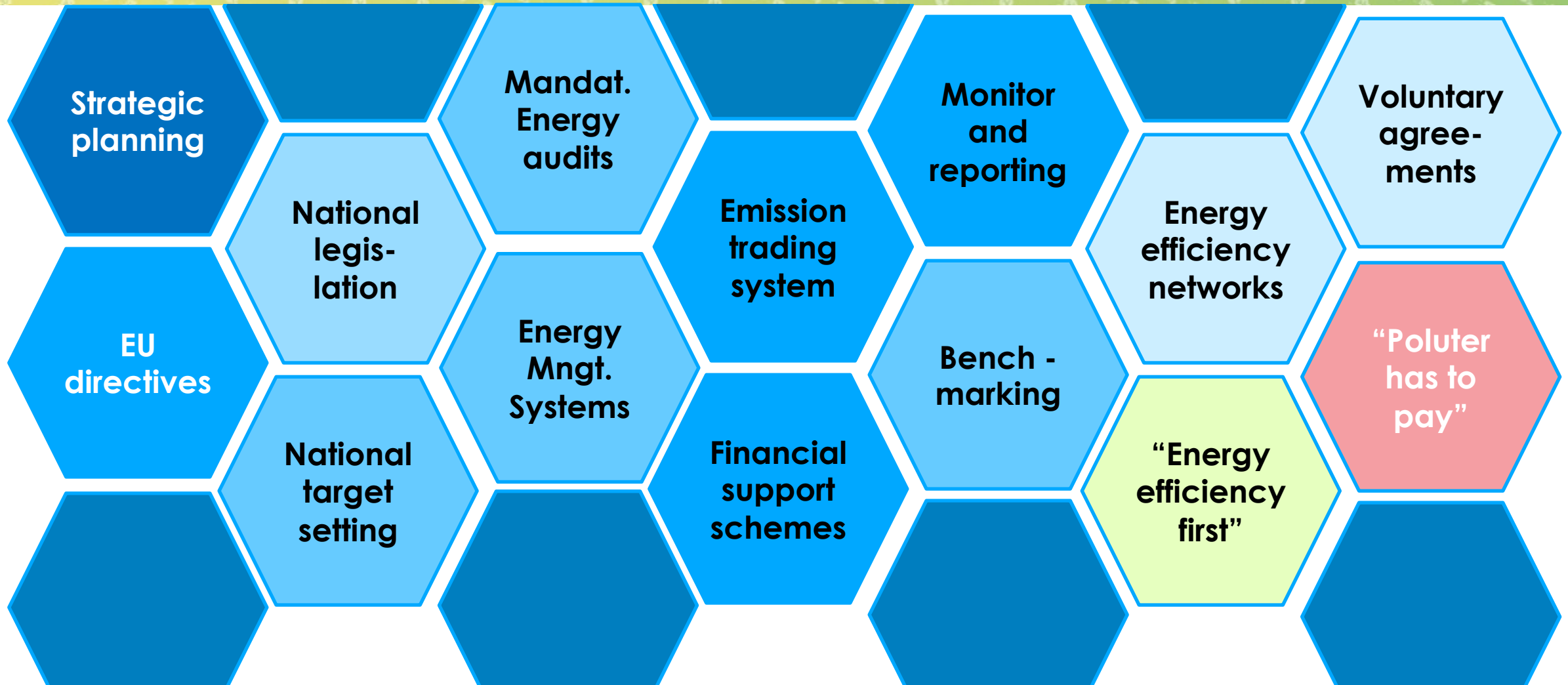


EE IN INDUSTRY



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Policy elements and instruments/ tools for EE in Industry



Role of large enterprises

≥250

Number of employees

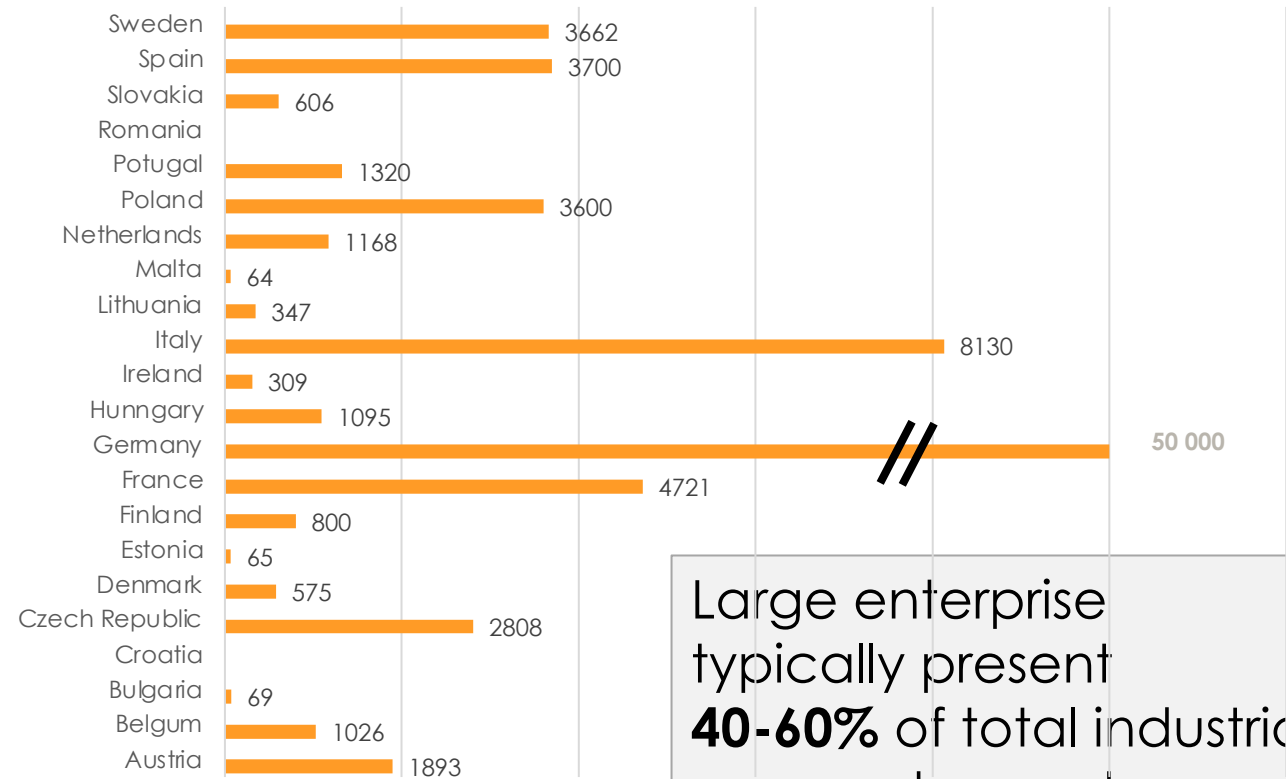
≥50mIn.

Annual turnover [euro]

≥43mIn.

Balance sheet total [euro]

Number of Large enterprises in EU MS (2018 data)



Large enterprise typically present **40-60%** of total industrial energy demand

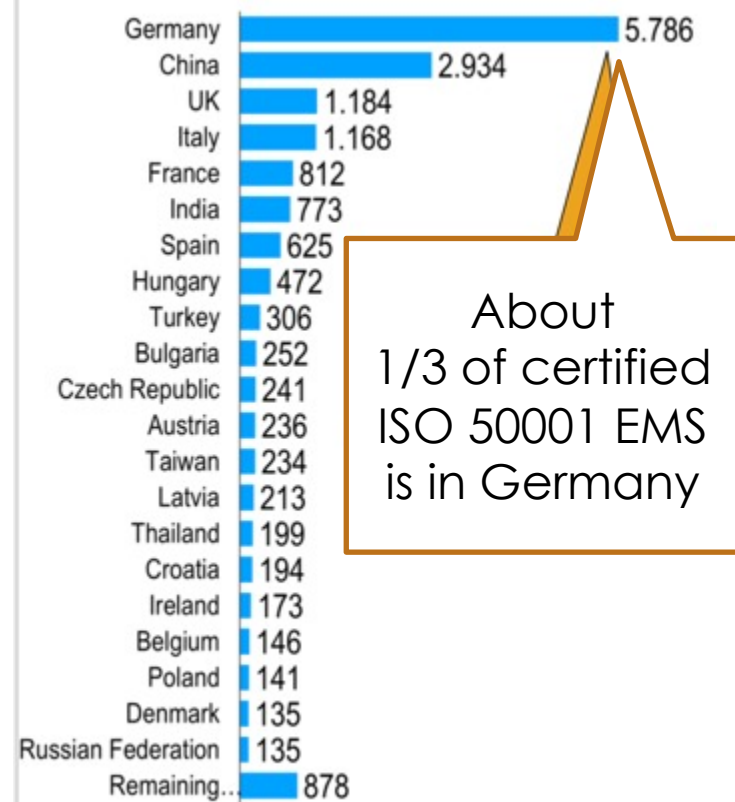
25.10.2012
Directive 2012/27/EU on energy efficiency



Energy management tools

ENERGY AUDIT (EA) - systematic procedure with the purpose of obtaining adequate knowledge of the energy consumption profile of a facility, identifying and quantifying cost-effective energy saving opportunities, and reporting the findings

ENERGY MANAGEMENT SYSTEM (EMS) - set of interrelated or interacting elements of a plan which sets an energy efficiency objective and a strategy to achieve that objective



Source: Certified EMS, ISO survey 2011-2019

Fit for 55 package: EED recast

Energy Management Systems and **Energy Audits** - subject of application is **shifted from enterprise size to energy consumption threshold**

- Enterprises with an average annual (energy) consumption higher than
 - **100 TJ** → implement Energy Management Systems
 - **10 TJ** → subject to Energy Audit
- Results of energy audits including the recommendations **must be transmitted to the management**
- Ensure that **quality checks** are carried out to ensure the validity and accuracy of Energy Audits

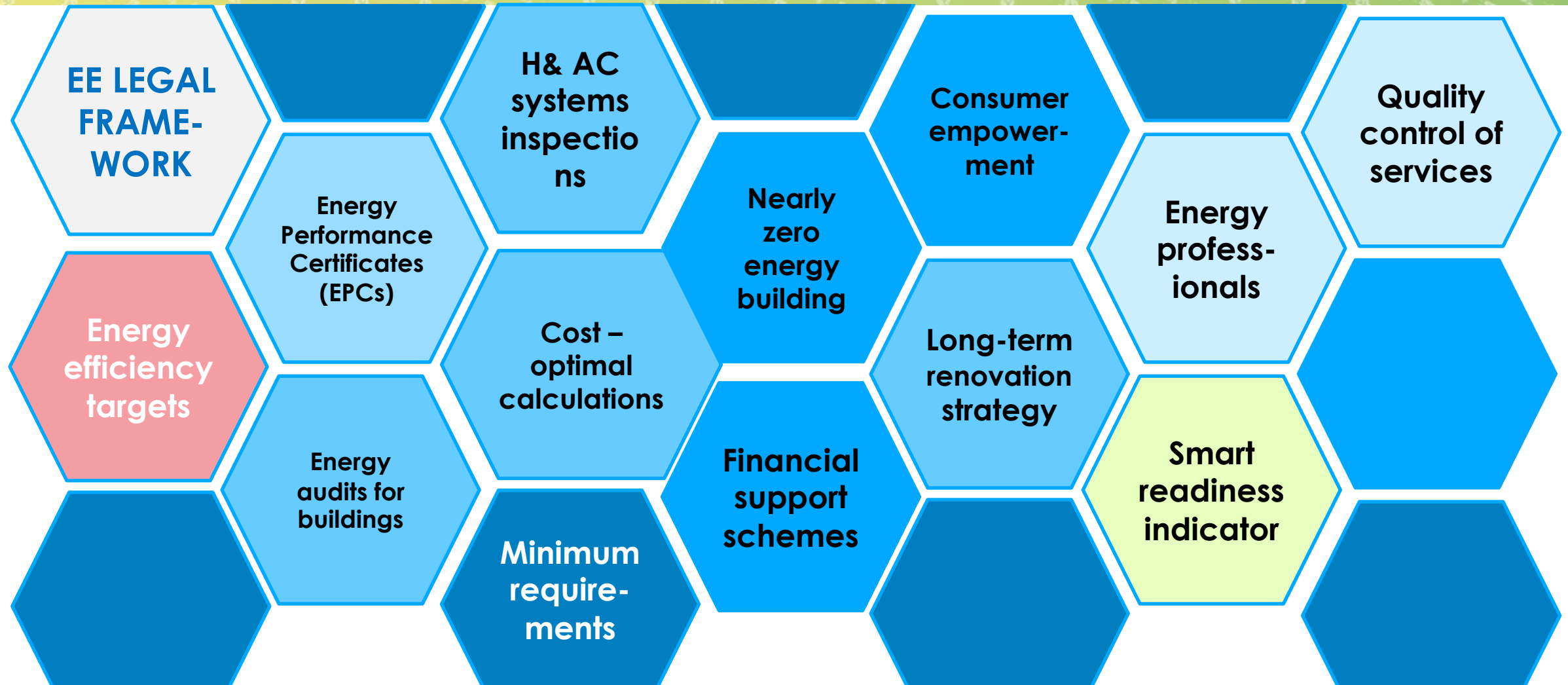


EE IN BUILDINGS



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Policy elements and instruments/ tools for EE in Buildings



Upcoming changes with EED 2023

EED 2018*:

Article 5: Exemplary role of public bodies' buildings

- Renovation:** 3% of government buildings (>250 m²) renovated yearly for energy standards
- Priority:** Target poorest performing buildings first
- Exemptions:** Historic, military (with exceptions), and religious buildings
- Flexibility:** Excess renovations credited; replacements for demolished buildings qualify

*Not all requirements reflected

** Not yet transposed to EU MS national legislation

EED 2023**:

Article 5: Public sector leading on energy efficiency

- Annual Reduction:** Public bodies to reduce energy consumption by 1.9% yearly
- Exclusions:** Possible to exclude public transport and armed forces
- Exemptions:** Units with <50,000 population (till 2026) and <5,000 (till 2029) exempt
- Lifecycle and Performance Considerations:** encourage consideration of lifecycle carbon emissions and wider benefits

Article 6: Exemplary role of public bodies' buildings

- Renovation:** 3% of public bodies' buildings floor area to be renovated to nearly zero-energy/zero-emission standards annually
- Selection:** Based on cost-effectiveness and technical feasibility
- Exemptions:** Social housing, historically significant buildings, military buildings, and places of worship
- Negotiations:** For leased buildings to meet standards
- Credit for New/Replaced Buildings:** Towards the renovation rate if more energy and CO₂ efficient
- Inventory:** Establish/update biennially an inventory of public buildings over 250 m²

Evolution of Energy Performance Certification of Buildings concept

2002

Directive 2002/91/EC – EPBD 2002

- Introduced EPCs for buildings when constructed, sold, or rented
- Emphasized improving energy performance of buildings
- Mandated regular inspection of boilers and air-conditioning systems

2010

Directive 2010/31/EU – EPBD Recast

- Introduced "nearly zero-energy buildings" (NZEB) concept
- All new buildings to be NZEB by end of 2020
- Enhanced user-friendliness of EPCs and promoted wider dissemination

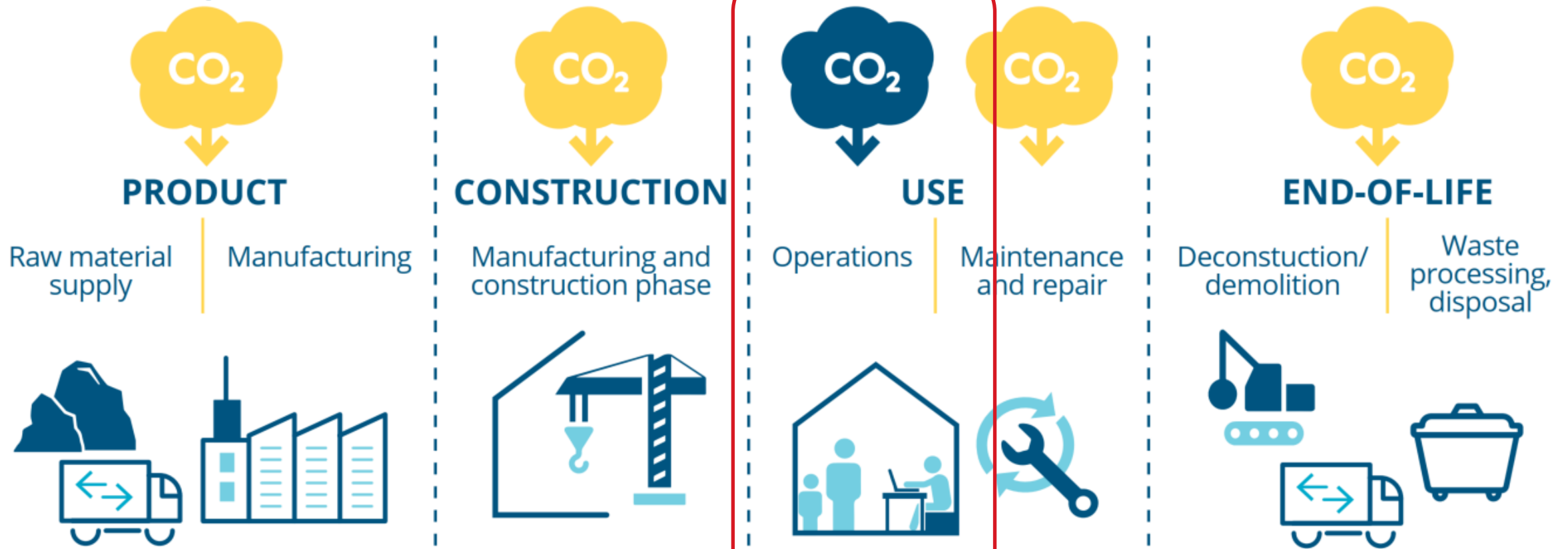
2018

Directive (EU) 2018/844 - EPBD Revision

- Aims to decarbonize building stock by 2050
- Promotes smart technologies and e-mobility
- Encourages use of financial tools for energy efficiency improvements
- Stresses the use of EPC for Long-term renovation strategy

2023

Zero-emission buildings are a new aim for making buildings more climate friendly



The current scope of Performance evaluations