

Technical Day:
Activities of IEA TCP on Energy in Buildings and Communities (EBC TCP)

**Challenges for the buildings sector
EU energy policy and post-2020 perspectives**

Brussels, 11 June 2019

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Clean Energy for All Europeans: THE RIGHT REGULATORY FRAMEWORK FOR POST – 2020

Energy Union Governance

Energy Efficiency Directive

- Binding 30% energy efficiency target for 2030;

Energy Efficiency
(Energy Efficiency Directive, European Performance of Buildings Directive)

Renewables
(Revised Renewable Energy Directive)

Ecodesign Working Plan 2016-2019

- List of new product groups;
- Contribution to circular economy objectives;

New Electricity Market Design
(Including Risk Preparedness)

Energy prices and costs report

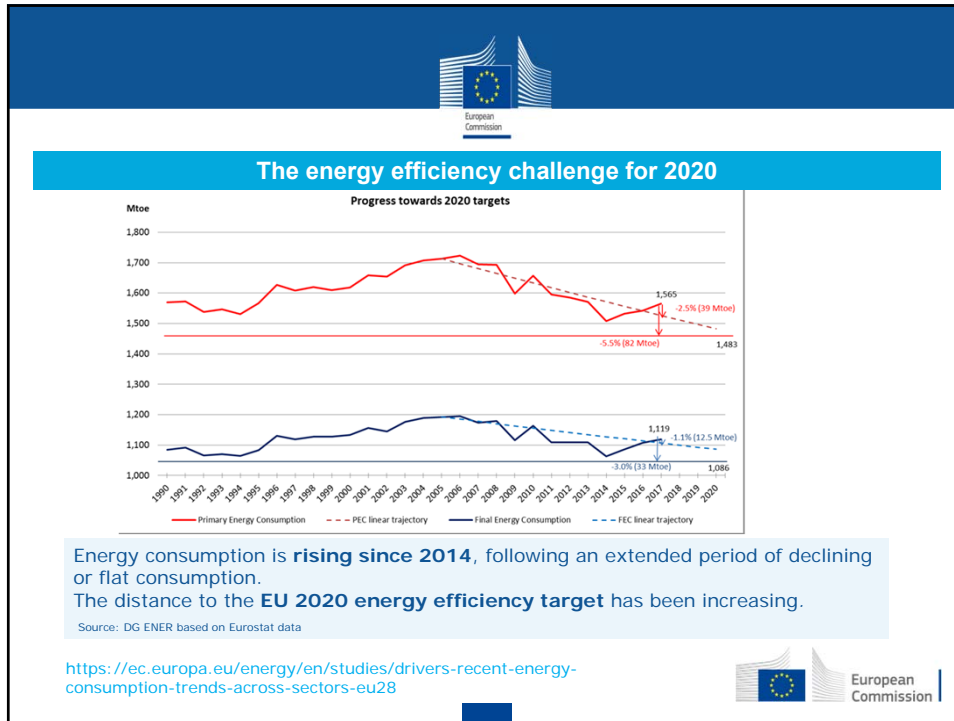
Energy Performance of Buildings

- Supportive of renovation;
- Smarter – ICT, smart buildings;
- Simpler;

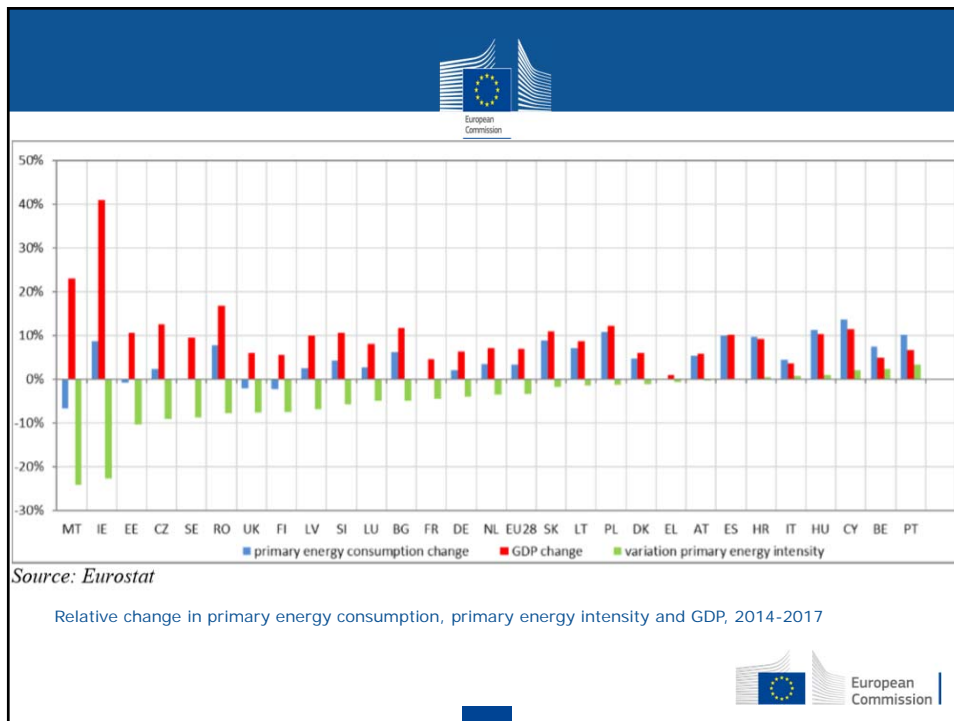
<https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans>

European Commission

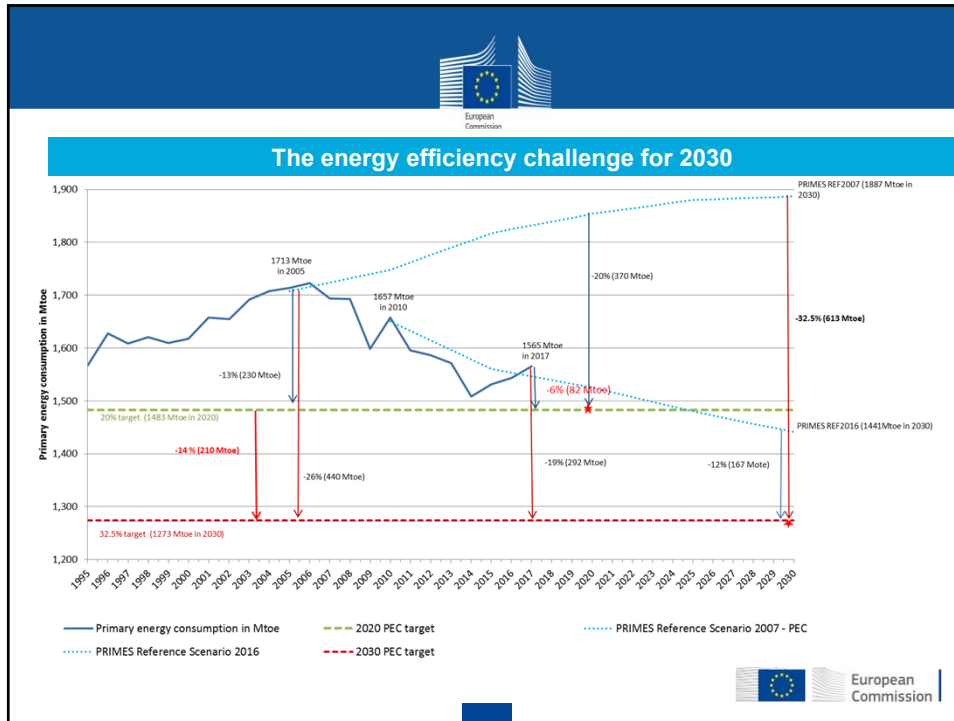
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Clean Energy for All Europeans: 8 different legislative proposals

Political negotiations on the Clean Energy for All Europeans package have been concluded

- Energy Performance of Buildings
- Energy Efficiency → 32,5%
- Renewable Energy → 32%
- Governance Regulation → NECPs
- Electricity Market Design
 - Electricity Regulation,
 - Electricity Directive,
 - Risk-Preparedness Regulation
- Rules for the regulator ACER

A major step towards completing the Energy Union and combatting climate change

- **Keeping the momentum:** We need approximately the same energy efficiency effort from 2020 to 2030 as from 2010 to 2020
- **Union's commitment** towards its international climate and energy goals in 2030 and beyond
- Endorse the Union's commitment under the Energy Union Framework to put **'energy efficiency first'**
- Give **investors** the security that it is worth investing in energy efficiency, with positive impact on the technology costs and payback periods

http://europa.eu/rapid/press-release_IP-18-6870_en.htm

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Energy Efficiency Directive

Main outcomes of the revision

The way to 2030

- A **new energy efficiency target** for the EU for 2030 of **32.5%**, with an upwards revision clause by 2023
- Extended **energy savings obligation** to achieve new annual energy savings of at least 0.8% (of final energy consumption) for the next period 2021-2030 and beyond, coming from new energy efficiency renovations or other measures in end-use sectors (11% more ambitious than in the current period).
 - **Exception for MT and CY: 0.24%**
- Strengthened rules on individual **metering and billing** of thermal energy (better information for consumers)

<https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive>



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Regulation on the Governance of the Energy Union and Climate Action

- The governance mechanism is based on **integrated national energy and climate plans** (NECPs) covering
 - the five dimensions of the Energy Union
 - ten-year periods starting from 2021 to 2030
 - EU and national long-term strategies
 - integrated reporting, monitoring and data publication.
 - Wide public consultation

<https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/governance-energy-union/national-energy-climate-plans>



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Some interesting facts for the EU building sector

Buildings responsible for **40% of energy consumption and 36% of GHG emissions** in EU

Buildings to contribute significantly to **GHG emission reductions** of around 90% compared to 1990 by 2050

75% of the housing stock is energy inefficient

Construction rates / worse economic conditions

- low demolition rates (0.1-0.2% per year)
- limited new construction activities (0.4-1.1% per year)
- very low refurbishment rates (0.4-1.2% per year)

Problems and drivers

- structural
- market failures
- regulatory failures



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Energy Performance of Buildings Directive

Main outcomes of the revision

A strengthened Directive

- Stronger **long term renovation strategies** for Member States, aiming at decarbonisation by 2050 and with a solid financial component
- An optional **Smart Readiness Indicator** for buildings
- Targeted support to **electromobility** infrastructure deployment in buildings' car parks
- Enhanced transparency of national building **energy performance calculation methodologies**
- Reinforcement of **building automation**: additional requirements on room temperature level controls, building automation and controls and enhanced consideration of typical operating conditions



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Long-term renovation strategies (Article 2a)



Requirement for Member States to establish comprehensive strategies aiming at a highly efficient and **decarbonised building stock** by **2050** and at a cost-effective transformation of existing buildings into **nearly zero-energy buildings**

- ✓ More elements to be considered: **energy poverty**, market failures and barriers, split incentives, necessary skills, health and safety issues, wider benefits
- ✓ Set up a **roadmap** with measures, **measurable** progress indicators and indicative milestones for **2030, 2040** and **2050**
- ✓ Carry out a **public consultation**
- ✓ **Financial component: facilitate access to appropriate mechanisms** (effective use of public funding; aggregation; de-risking)

<https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-performance-of-buildings/long-term-renovation-strategies>



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Smart Readiness Indicator – SRI (Article 8, Annex Ia)



New article advocates the introduction of an **optional** common Union scheme for rating the smart readiness of buildings

- Will characterize the ability of a building to manage itself,
 - To interact with its occupants,
 - And to take part in demand response and contribute to smooth, safe and optimal operation of connected energy assets
- ✓ The SRI will be established through two legal acts: **delegated act** for the definition and calculation methodology; **implementing act** for the technical modalities of implementation. By 31 Dec. 2019
 - ✓ Motivation: recognition of progress towards smart building systems and their added value for building users, energy consumers and energy grids

<https://smartreadinessindicator.eu/>



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Electro-mobility (Article 8)



By **2025**, Member States will set **requirements** for a **minimum number of charging points** in **all** non-residential buildings with more than 20 parking spaces



Simplification of the deployment of recharging points (including with permitting procedure)



Requirement on the deployment of **ducting infrastructure** in new and major renovations of buildings of with more than 10 parking spaces

- 1 in every 5 parking spaces for non-residential buildings
- Every parking space in residential buildings



1 charging point per building for new and major renovation of non-residential buildings with more than 10 parking spaces



Targeted **exemptions** (e.g. for SMEs)



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Towards better data (Article 10(6) and Article 8(9))



Requirement for **EPC databases** to allow gathering data for the (measured or calculated) energy consumption of buildings



This **data shall be made available** to building owners and for statistical and research purposes



Requirement to **assess and document the performance** of technical building systems when they are installed, replaced or upgraded



Complementary with the EU **Building Stock Observatory**:

<https://ec.europa.eu/energy/en/eubuildings>



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Towards more transparency (Annex I)



New obligation to describe national calculation methodology following the national annexes of the **overarching standards** (ISO 52000-1, 52003-1, 52010-1, 52016-1, and 52018-1 developed under mandate M/480) <https://epb.center/>

- ✓ Considerations for the **calculations of Primary Energy Factors (PEFs)**
- ✓ National calculation methodologies must reflect the energy needs of a building in order to provide the **optimal comfort, indoor air quality and health conditions inside the building**
- ✓ Pursuing the **optimal energy performance of the building envelope**
- ✓ Treatment of **on-site and off-site RES on a non-discriminatory basis**



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EPBD implementation (studies & contracts)

- ✓ **Feasibility study (Article 19a of the revised EPBD)**
 - Standalone ventilation systems
 - Optional building renovation passports
- ✓ **Smart Readiness Indicator** <https://smartreadinessindicator.eu/>
 - Phase 1 Final report available (including summary version)
 - Phase 2 starting in December 2018
- ✓ Support to **use of CEN EPB Standards** <https://epb.center/>
- ✓ Comprehensive study on **renovation rates and NZEB uptake in the EU**
- ✓ **Finance measures on energy renovations**



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Other areas to be explored

- ✓ **Wider benefits of NZEB and highly energy performance buildings**
 - Health, comfort, indoor air quality, increased property value, increased productive (for offices), etc.
- ✓ Strengthen the implementation of **EPCs** (quality, creditability, usability, including as a tool for finance mobilisation)
- ✓ **District- and urban-level approaches for energy renovation of buildings**
- ✓ Upgrade EU buildings data and analytics, including through **big data approaches**
- ✓ Better support of **indoor environment quality, life-cycle performance and resource-efficiency**



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The "Smart Finance for Smart building" Initiative



Smart Finance for Smart Building Initiative aims at unlocking investments and private financing through:

- ✓ **Effective use of public funding**
 - Making more use of financial instruments (to achieve higher leverage)
 - Facilitate the use of Energy Performance Contracting for the public sector
 - Flexible financing platforms at national level, mixing different strands of public financing (i.e. ESIF, EFSI)
 - Sustainable Energy Investment Forums
- ✓ **Technical Assistance and Aggregation of projects**
 - Encourage local/regional one-stop-shops
 - ELENA - Technical assistance to develop large-scale projects
 - Project Development Assistance (bankable projects)
- ✓ **De-risking**
 - The De-risking Energy Efficiency Platform (DEEP) <http://deep.eefig.eu>
 - EEFIF Underwriting toolkit <http://valueandrisk.eefig.eu>

Pilot phase in 5 EU Markets: MT, FR, ES, NL and PT (and preliminary discussions in PL and IE)

https://ec.europa.eu/info/news/smart-finance-smart-buildings-investing-energy-efficiency-buildings-2018-feb-07_en



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EU funding for sustainable energy investment after 2020



Increased mainstreaming across EU budget (25%)

- Cohesion Funds
- Invest EU
- **Horizon Europe**
 - €15 bn to Climate, Energy, Mobility
- **LIFE**
 - € 1 bn to Clean Energy Transition
- Connecting Europe Facility
- Innovation Fund

Partial agreement reached on 19 March 2019



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LIFE PROGRAMME

- Proposed budget for 2021-2027: EUR 5.45 billion
- Sub-programmes:
 - Nature & biodiversity
 - Circular economy and quality of life
 - Climate change mitigation and adaptation
 - Clean energy transition – EUR 1 billion
 - *Enabling framework for energy efficient and renewable energy policy implementation through capacity building*

Partial agreement reached on 19 March 2019



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HORIZON EUROPE

- Proposed budget 2021-2027: EUR 97.6 billion
- Cluster 5: Climate, Energy and Mobility, ca. EUR 15bn
 - Climate science and solutions
 - Energy supply
 - Energy systems, grids
 - Buildings and industrial facilities in energy
 - Communities and cities in transition
 - Energy storage
 - Clean transport and mobility

Partial agreement reached on 19 March 2019*

**to be validated by EP and Council*



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Horizon 2020: support to citizen-centred energy transition

1st Deadline: 3 September 2019

- EE-09 Innovative financing for energy efficiency investments
 - EE-10 Mainstreaming energy efficiency finance
 - EE-2 Integrated home renovation services
 - EE-11 Aggregation - Project Development Assistance
-
- B4E-11-2020 Financing for energy efficiency investments - Smart Finance for Smart Buildings



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Horizon 2020: Buildings in energy transition

1st Deadline: **15 January 2020**

- B4E-1-2020: Towards highly energy efficient and decarbonised buildings
- B4E-5-2020: Integrated design concepts for energy-efficient ICT in buildings
- B4E-6-2020: Big data for buildings
- B4E-7-2020: European building stock data 4.0
- B4E-8-2020: Renewable and energy efficient solutions for heating and/or cooling, and DHW production in multi-apartment residential buildings
- B4E-9-2020: Support to the coordination of European smart buildings innovation community
- B4E-10-2020: Self-assessment and self-optimisation of buildings and appliances for a better energy performance



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Horizon 2020: Buildings in energy transition

2nd Deadline: **10 September 2020**

- B4E-2-2020: Stimulating demand for sustainable energy skills in the building sector
- B4E-3-2020: Upgrading smartness of existing buildings through innovations for legacy equipment
- B4E-4-2020: Next-generation of Energy Performance Assessment and Certification
- B4E-14-2020: Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side



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Horizon 2020: Smart and clean energy for consumers

Deadline: **January 2020**

- EC-3-2020: Consumer engagement and demand response **29 January 2020**
- EC-4-2020: Socio-economic research: non-energy impacts and behavioural insights on energy efficiency interventions **15 January 2020**



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Thank you!

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<https://audiovisual.ec.europa.eu/en/video/I-170870>

