Recipe for success? Minimum energy performance standards to renovate existing buildings

Aceee 2022 International Scorecard Symposium

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The challenge of existing buildings

• ~ 50% today’s buildings will be in use in 2050
• 60% was erected when there were no code requirements regarding energy performance

Note: Building floor area covers residential, commercial, services, education, health, hospitality, public and other non-residential sectors but excludes industrial premises.
Buildings emissions reductions targets in Europe

-60% (on 2015 levels) necessary to meet the 55% emissions reduction target by 2030

Figure 1. Residential/tertiary sector greenhouse gas emissions (million tonnes CO₂e)

Introducing minimum energy performance standards (EU)
Building performance standards (US)

What are minimum energy performance standards?

Regulations that require existing buildings to meet a minimum performance standard at a chosen trigger point and/or date.

How are they different to building codes?

Apply to the whole building
Apply even when no building work triggers application of the building code
MEPS are made up of three design elements

Target buildings + Standard and metric + Trigger point

EACH ELEMENT CAN INCREASE AMBITION OVER TIME

Extend to more buildings or building sectors

Apply rising performance levels

Add trigger points or future dates for higher standards

European Countries implementing MEPS, examples

- Offices: EPC label C, 2023
- Private homes: EPC label E, 2028
- Privately rented homes: EPC label E, 2020
- Privately rented non-domestic: EPC label E, 2023; EPC label B, 2030
- All homes: EPC label C, Rented 2028; Owned 2033

Importance of building labelling and data

- EU energy performance certificate framework
  - Building assessment and label
  - Required at sale or rent
  - Letter relates to an energy performance band (kWh/m2/yr) (usually!)
  - Not harmonised – specific to national stock condition and climatic region
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- **All homes**: EPC label C
  - Rented: 2028
  - Owned: 2033

Source: [RAP](https://www.raponline.org/knowledge-center/filling-the-policy-gap-minimum-energy-performance-standards-for-european-buildings/)

Map adapted: © Copyright PresentationGo.com
Proposal for MEPS for all European Union states


Currently under negotiation

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**Article 9**

**Minimum energy performance standards**

1. Member States shall ensure that

   (a) buildings and building units owned by public bodies achieve at the latest
       (i) after 1 January 2027, at least energy performance class F; and
       (ii) after 1 January 2030, at least energy performance class E;

   (b) non-residential buildings and building units, other than those owned by public bodies, achieve at the latest
       (i) after 1 January 2027, at least energy performance class F; and
       (ii) after 1 January 2030, at least energy performance class E;

   (c) residential buildings and building units achieve at the latest
       (i) after 1 January 2030, at least energy performance class F; and
       (ii) after 1 January 2033, at least energy performance class E;

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Proposal for MEPS for all European Union states

Proposed Energy Performance of Buildings Directive, Article 9:

- Public and non-residential buildings must be:
  - EPC F by 2027
  - EPC E by 2030
- Residential buildings must be:
  - EPC F by 2030
  - EPC E by 2033
- Based on a harmonised EPC scale

Regulations alone do not make successful renovations

- Building assessments
- Technical support
- Financial support
- Safeguards to protect housing affordability
- Effective enforcement

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Further resources


About RAP

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