

7<sup>th</sup> June 2022

# In search of a standard:

## What role can minimum energy performance standards play to fully decarbonise the building stock?

Panel 7, session 1: The obligation to renovate. Eceee Summer Study, 6-10<sup>th</sup> June 2022

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# What are minimum energy performance standards?

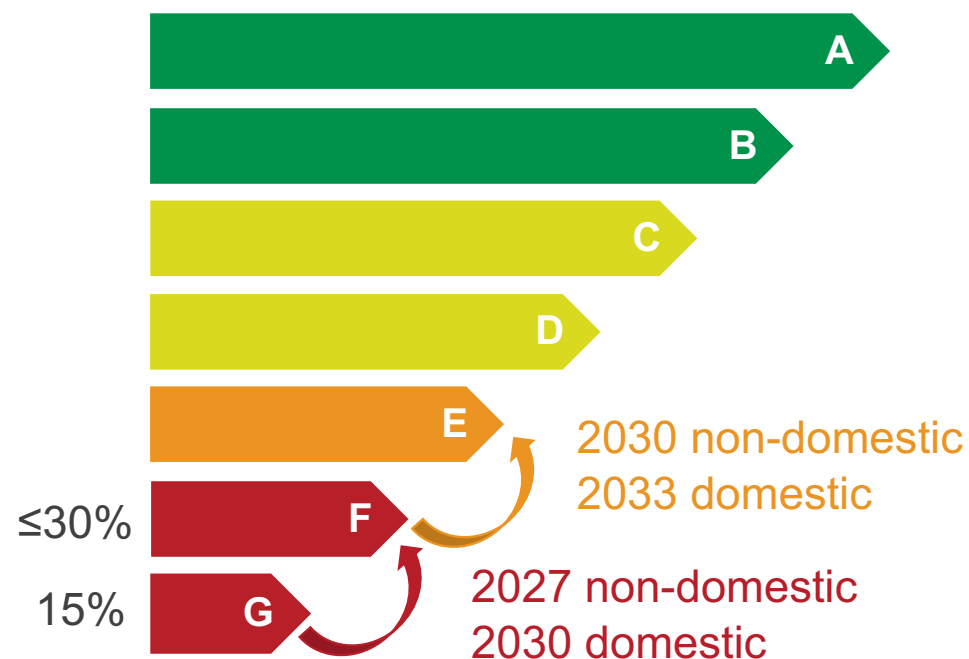
*Regulations that require existing buildings to meet a minimum performance standard at a chosen date and/or trigger point.*



# Why all the interest?

Energy Performance of Buildings Directive recast, December 2021. Under negotiation

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;

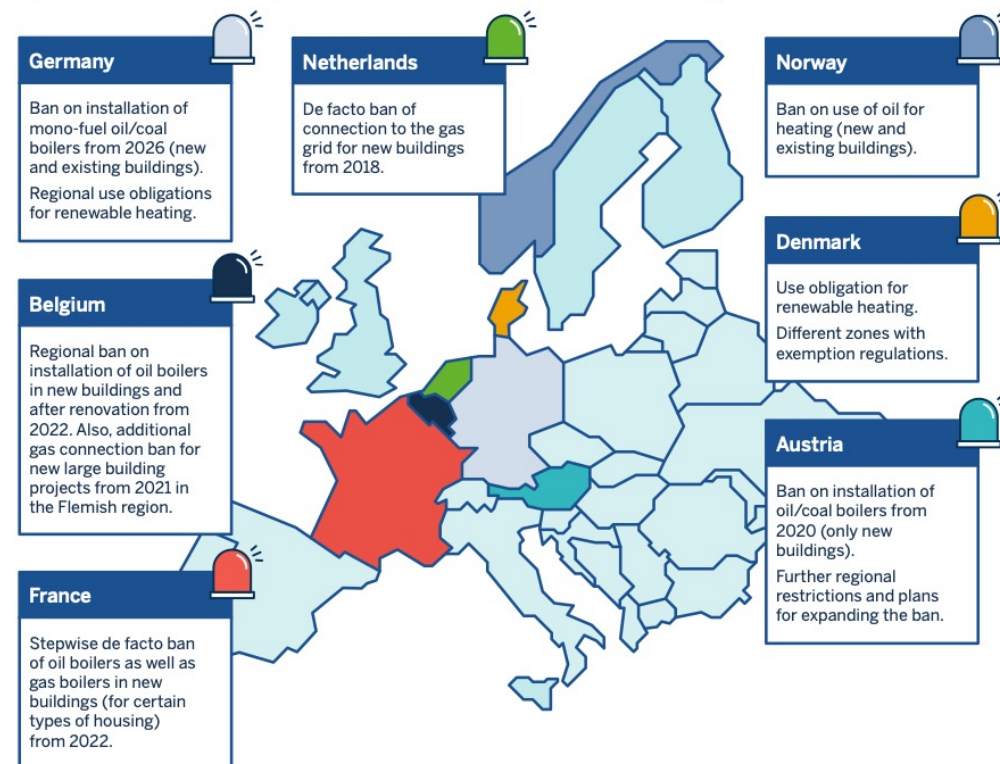




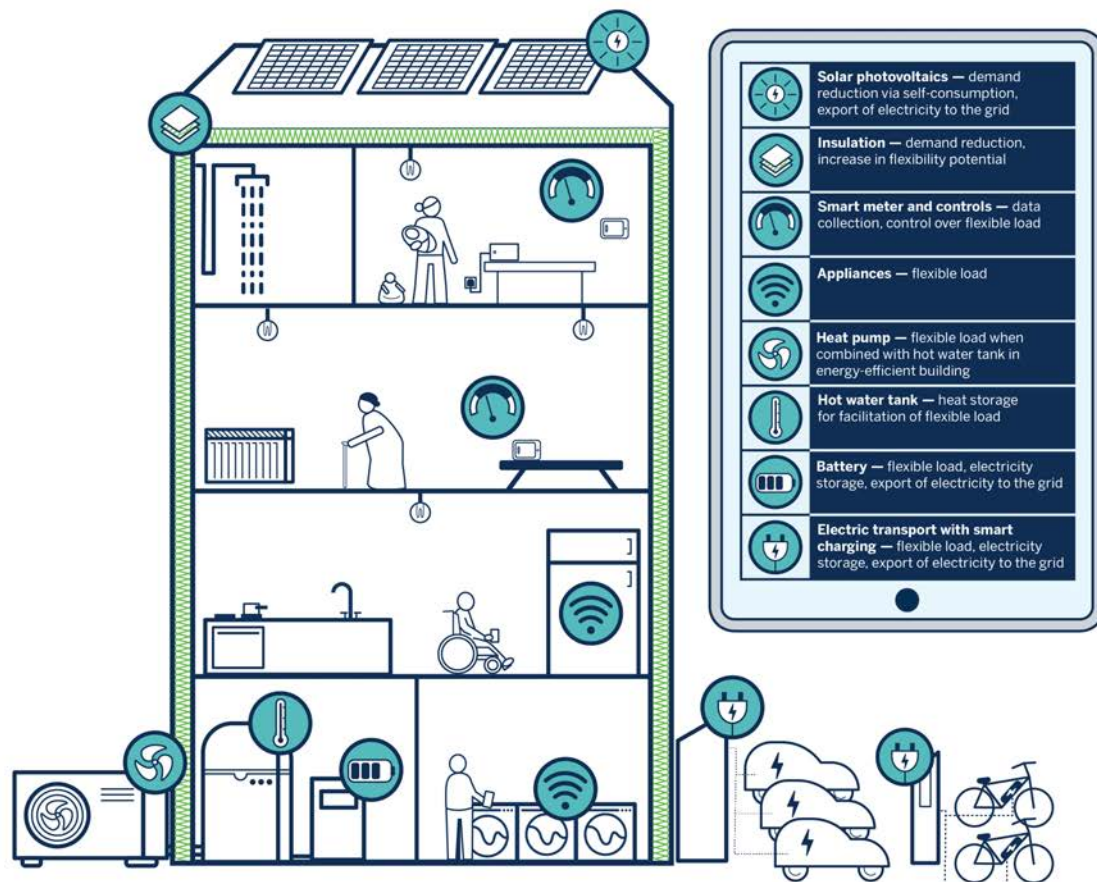
# Does this standard serve the current context?



Figure 8. Fossil-fuel heating restrictions in EU Member States and Norway



# What is the right standard? Start at the destination.



- Sufficient insulation, ventilation, air tightness
- Zero emissions source of heat
- Heat delivery system
- Flexible assets and controls
- Support sector integration

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## Exploring standards to support decarbonised homes



Ireland: homes must be Building Energy Rating B2 (heat loss indicator 2.0-2.3) to benefit from heat pump grant.



Scotland: Homes should reach EPC C by 2033, homes zero emissions by 2045.

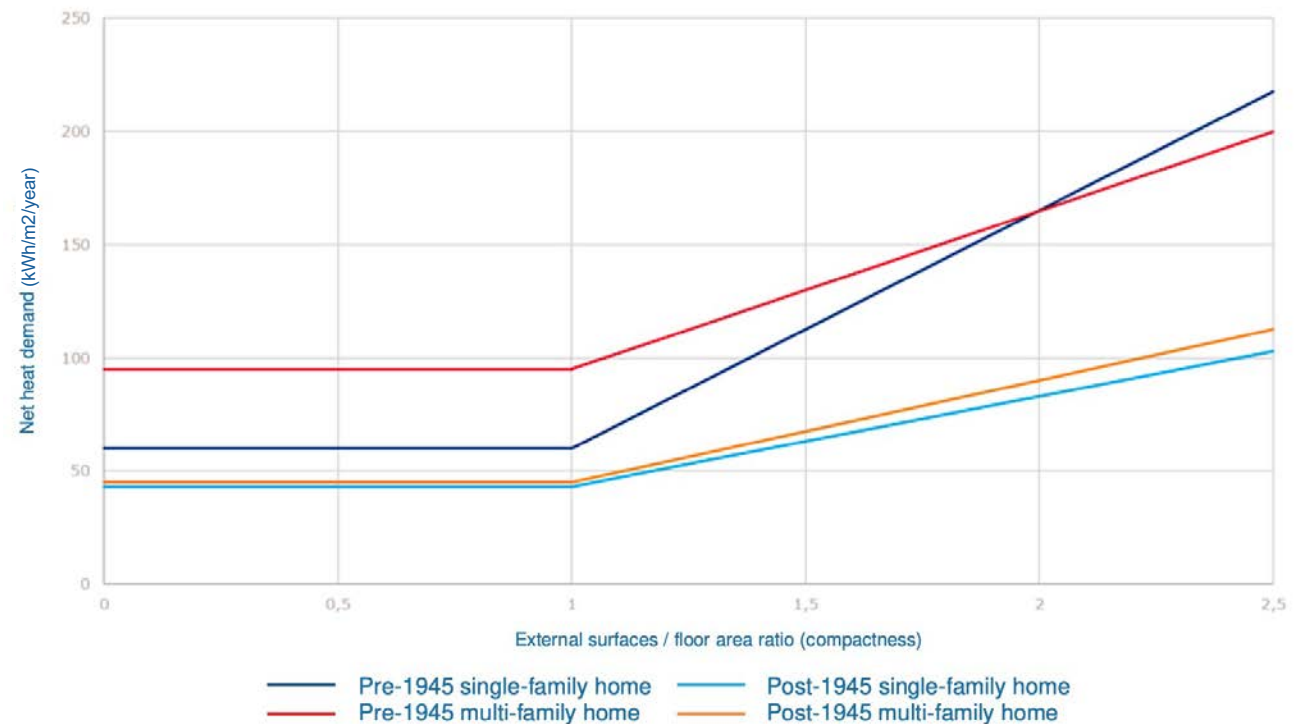


The Netherlands: Home Insulation standard designed to future-proof homes in readiness for connection to a sustainable heat source with lower flow temperature heat.

# Dutch Home Insulation standard

- Supports gas grid phase out.
- Guidance standard, not regulated.
- Defines the insulation, air tightness and ventilation qualities to enable a home to be connected to a low flow temperature heating source.
- Standard defined as:
  - Maximum **heat demand** per square metre for different home types.
  - Target values for each element.
  - Minimum values for each element.

Figure 1. Graphical representation of the standard for archetypes of different compactness



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# Why is lower flow better?

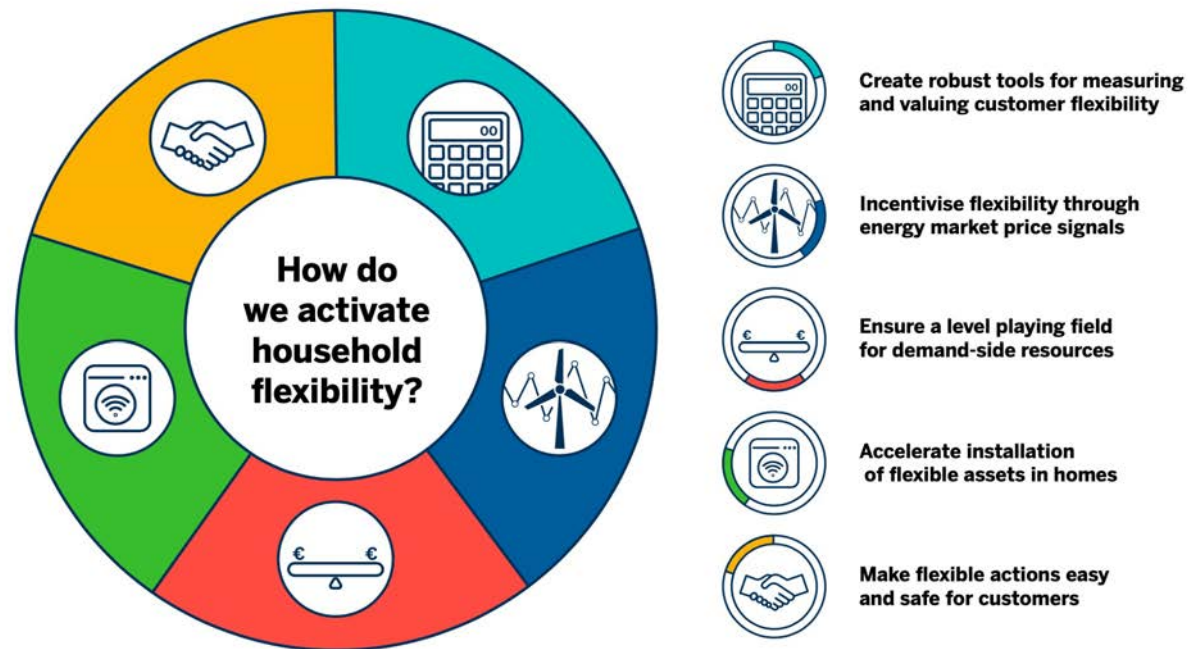




# Importance of flexibility

- Low flow temperature standard also readies homes to offer demand response and demand flexibility services.
- Enables occupiers to access beneficial tariffs and services.
- Flexibility of heating load is vital to support efficient electrification of new loads.

## Five-point action plan for mobilising demand-side flexibility



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## **A flexible standard in more ways than one**

- Supports all national decarbonisation approaches
- Enables early action
- Move on from energy savings to efficient decarbonisation

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# Questions

- What is missing?
- How to promote solar?
- How to ensure we go further than the minimum standard, particularly for those who need much lower bills?

# Contact



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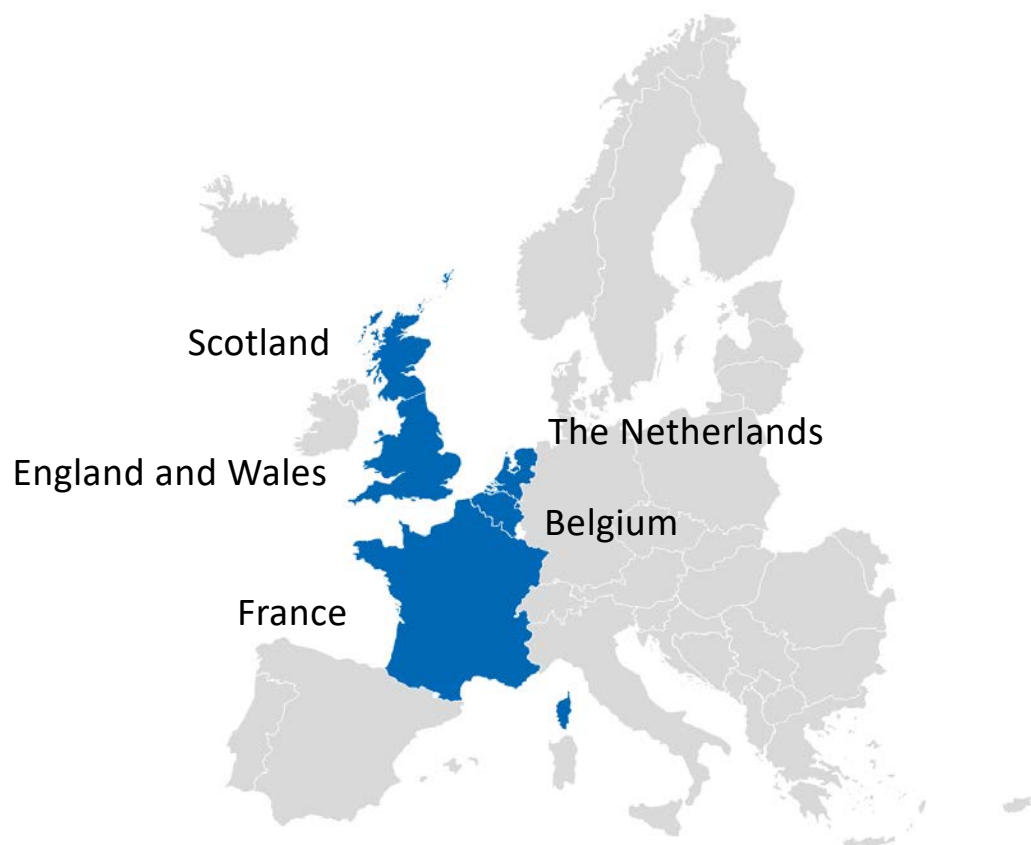


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# Further resources

- Sunderland, L. (2022) How much insulation is enough? A low-consumption, smart comfort standard for existing buildings. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/how-much-insulation-needed-low-consumption-standard-for-existing-buildings/>
- Yule-Bennett, S. and Sunderland, L. (2022) The Joy of Flex: Embracing household demand-side flexibility as a system resource for Europe. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/joy-flex-embracing-household-demand-side-flexibility-power-system-resource-europe/>
- Sunderland, L and Santini M. (2021) Next steps for MEPS: Designing minimum energy performance standards for Europe's buildings. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/next-steps-for-meps-designing-minimum-energy-performance-standards-for-european-buildings/>
- Maby, C. and Sunderland, L. (2022) Owing the Future: A framework of regulations for decarbonising owner-occupied homes in Scotland. The Existing Homes Alliance Scotland. <https://www.raonline.org/knowledge-center/owning-future-framework-regulations-decarbonising-owner-occupied-homes-scotland/>

# Examples



Jurisdiction	Standard
<b>Netherlands</b>	Office buildings must be EPC C by 2023
<b>France</b>	Private homes must be EPC E by 2028
<b>France</b>	Rented homes must have primary energy use less than 450 kWh/m <sup>2</sup> /year by 2023
<b>France</b>	Large non domestic buildings must make reductions in final energy use 2030-2050
<b>England &amp; Wales</b>	Privately rented homes must be EPC E by 2020
<b>England &amp; Wales</b>	Privately rented non-domestic buildings must be EPC E by 2023 and B by 2030
<b>Scotland</b>	Privately rented homes must be EPC C by 2028 and owner-occupied homes by 2033
<b>Scotland</b>	Owner occupied homes
<b>Flanders, Belgium</b>	All homes must have roof insulation by 2020 and double glazing by 2023



# About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

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