



European
Commission



3RD EU MACRO-REGIONAL STRATEGIES WEEK

7-11 MARCH 2022

#EUMRSWeek

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Energy Performance of Buildings in Danube Region

Overview of new and existing residential buildings stock
09 March 2022



Do you know ...?

How many of the Danube region countries (14 in total) plan implementation of system of a readiness indicator for smart solutions (SRI)?

(based on the strategy documents of LTRS and NECP)



A) **2**

B) **4**

C) **6**

D) **8**

Those are Bulgaria and Hungary

**In addition: Austria plans to analyse the possibility of SRI implementation
Slovakia and Slovenia plan to implement more smart solutions (without SRI)**

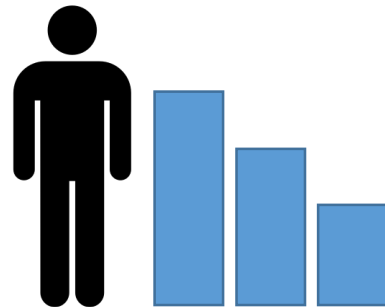
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Do you know ...?

How many of the Danube region countries (14 in total) reduced Final Energy Consumption in households per capita (in the time period 2010–2019)

- a) 7
- b) 9**
- c) 11
- d) 13
- e) All



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Country	Reduction (%)
Austria	12,7%
Bulgaria	-2,3%
Croatia	17,3%
Czech Republic	8,1%
Germany	12,4%
Hungary	14,5%
Romania	0,0%
Slovakia	-11,5%
Slovenia	31,6%
Bosnia and Hercegovina	-48,0%
Moldova	-17,6%
Montenegro	13,0%
Serbia	2,7%
Ukraine	34,4%

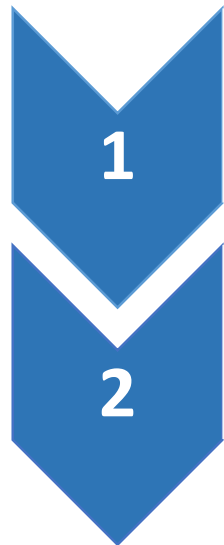
(based on the data from EUROSTAT)





1) Introduction

- The study on Energy Performance of building in Danube Region is part of the Interreg Danube transnational programme.
- The work is divided into two phases:



Mapping of the current measures in the fields of energy performance of residential building stock (new and refurbished) implemented in the Danube Region countries and regions.

Identification of the best practice cases and their potential spread out in other countries. The study further introduce additional measures to the renovation rate increasing.



1) Introduction

- The topics are addressed for countries belonging to the Danube region.
- EU Member States (9 countries)

Austria, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Romania, Slovakia, Slovenia

- With EU candidate status (3 countries)
Bosnia and Herzegovina, Montenegro and Serbia
- With signed an Association agreement (2 countries)

Moldova and Ukraine

*Bosnia and Herzegovina, Montenegro and Serbia have EU candidate status.
Moldova and Ukraine signed an Association agreement,
which is s the main tool for bringing them and the EU closer together.*



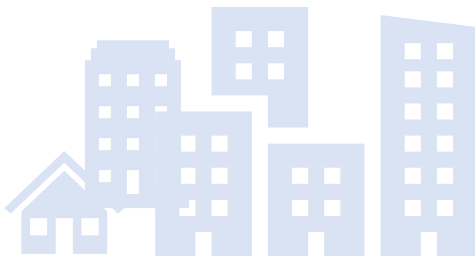
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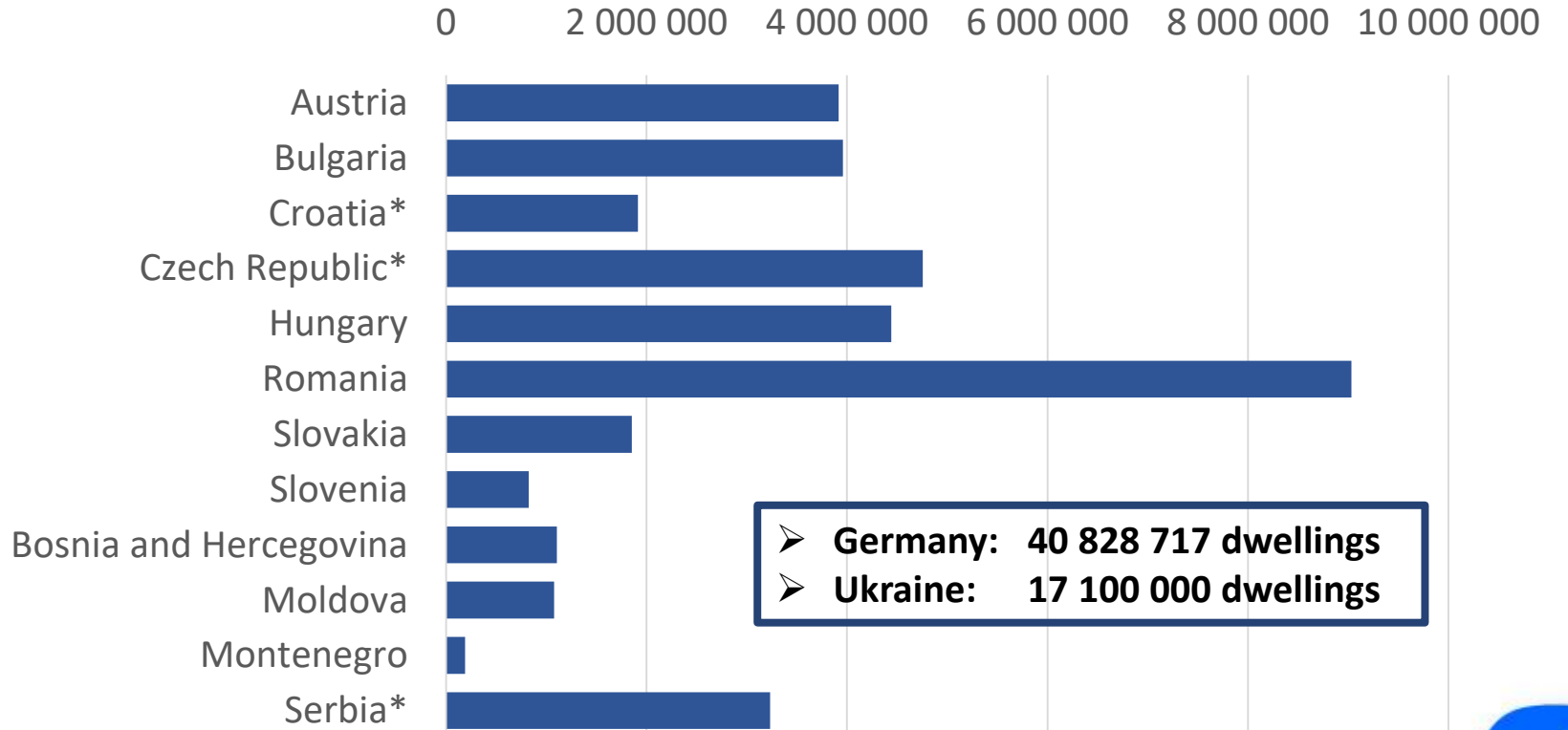
2) Residential Building Stock

- Total number of dwellings in Danube region countries:

over 94 millions



Total number of dwelling in 2018 (*2011)



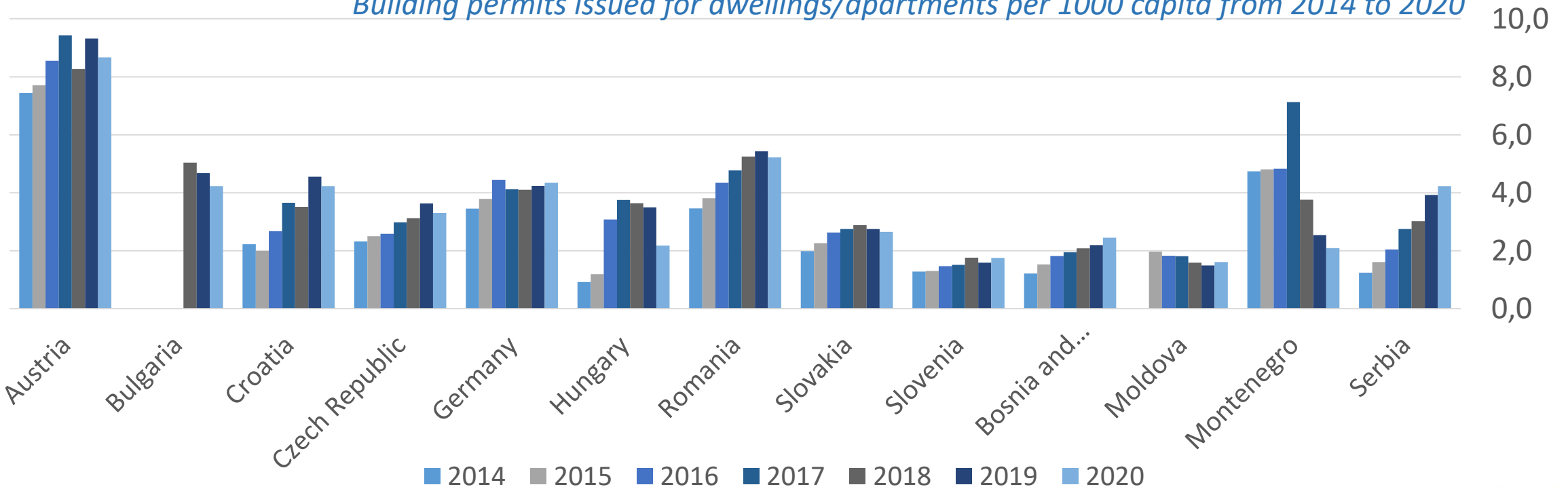
➤ **Germany: 40 828 717 dwellings**
 ➤ **Ukraine: 17 100 000 dwellings**

Data source: (National Statistical Institutes, 2021)



2) Trends in the Construction of Residential Buildings

Building permits issued for dwellings/apartments per 1000 capita from 2014 to 2020



Number of building permits issued for dwellings/apartments in 2020

77 145	29 438	17 164	35 254	360 588	21 263	100 805	14 482	3 667	8 563	5 723	1 297	29 281
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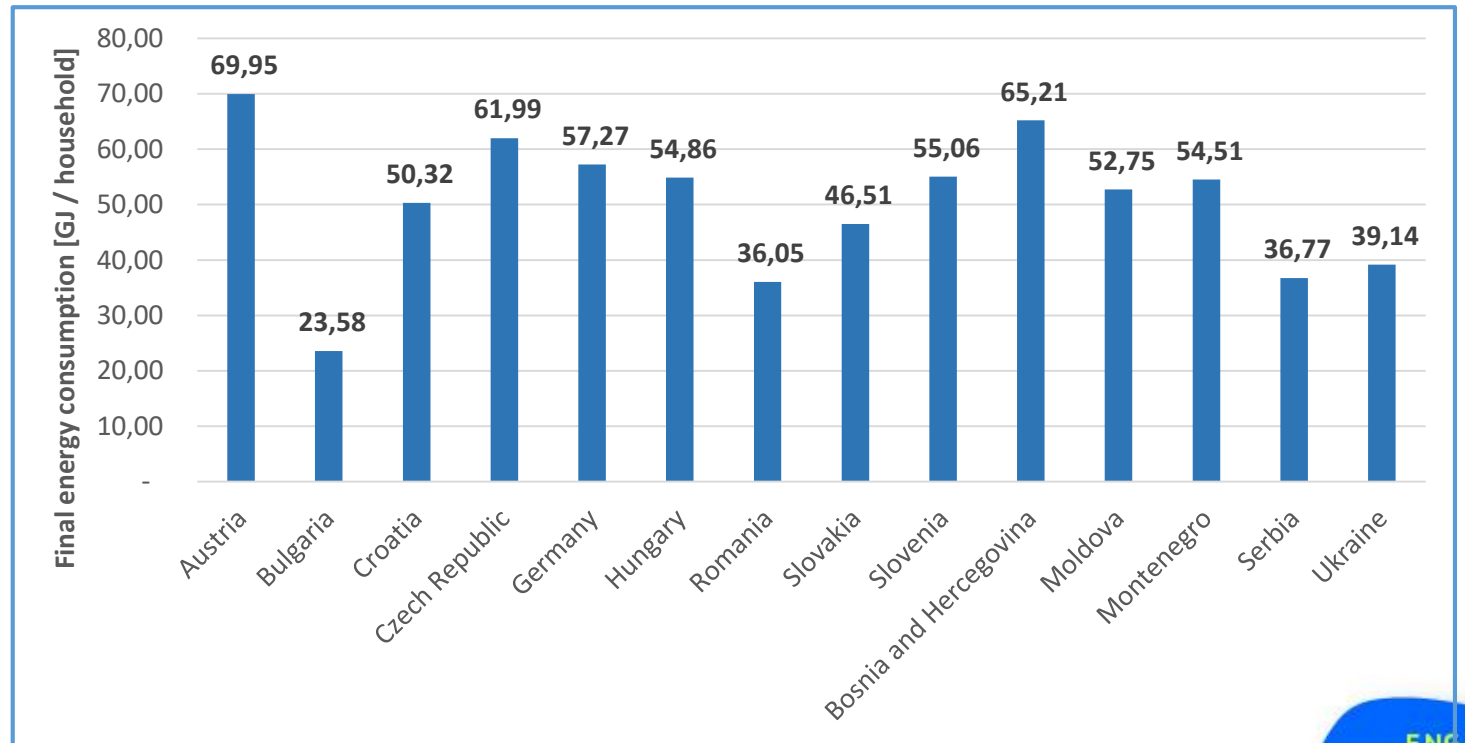
Data source: (National Statistical Institutes, 2021)



3) Energy Consumption Trends - Households

Final energy consumption per household in 2018 [GJ/household]

Country	GJ / household
Austria	69.95
Bulgaria	23.58*
Croatia	50.32
Czech Republic	61.99*
Germany	57.27
Hungary	54.86
Romania	36.05
Slovakia	46.51
Slovenia	55.06
Bosnia and Hercegovina	65.21
Moldova	52.75
Montenegro	54.51
Serbia	36.77*
Ukraine	39.14



*Building stock based on Census 2011, energy consumption from Eurostat 2018. The resulting value will be slightly lower due to new buildings over period 2011-2018.

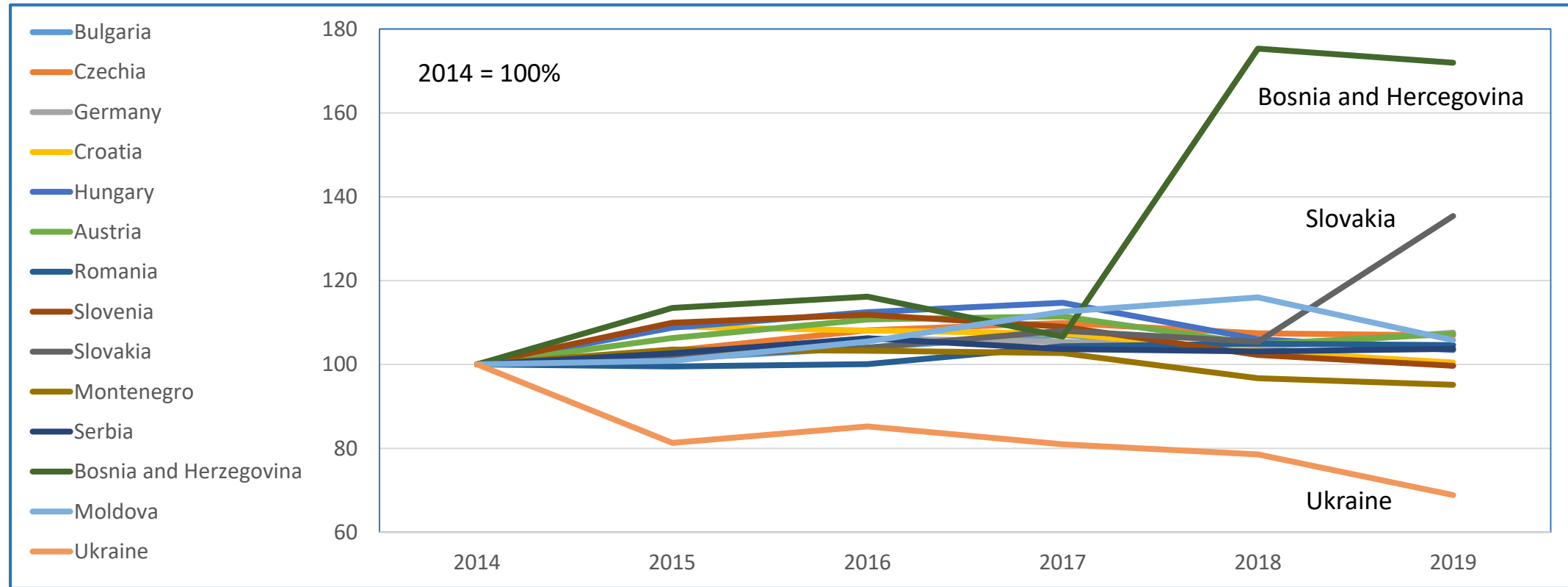
Data source: (Eurostat, 2021), National Statistical Institutes, LTRS





3) Energy Consumption Trends - Households

Final energy consumption - other sectors - households – Percentage Increase of Energy use from 2014 to 2020






























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Data source: (Eurostat, 2021)



4) Renovation rate and depth

- The building sector is still considered as one of the most relevant segments to meet energy efficiency goals
- The availability of data on the depth of renovations and the share of deep renovations was significantly lower across the states in the official documents

 Austria  Renovation is approximately 1.5% 	 Germany  around 1.00% 	 Slovakia  2.00% single-family houses  • 3.00% multi-apartment houses
 Croatia  Renovation is approximately 0.6 to 0.7% 	 Hungary  1.00% of all residential buildings 	 Slovenia  2.00% of all residential buildings 
 Czech Republic  1.40% Single-family houses  0.79% Apartment buildings	 Romania  0.50% on average 	 Ukraine  Significantly under 1.00% 

Data not available for other countries

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Data source: LTRS, NECP



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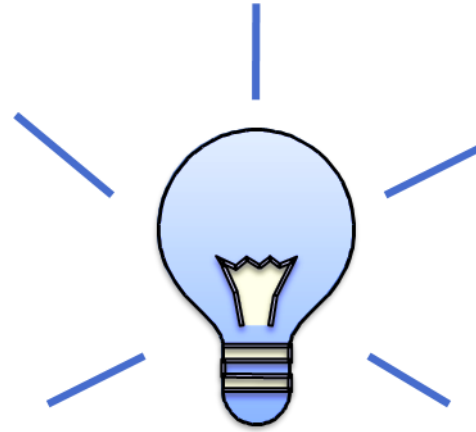
5) Good practice

➤ EU Member States offer a number of examples of good practice

Country	Identified good practice	Reason
Austria	Consultancy services	Good coverage, well-established, good conditions
Bulgaria	The National programme for energy efficiency in multi-apartment buildings	High impact and savings
Croatia	Procedure of decision-making for renovation measures <i>(Decision for renovation needs consent of only 51% of owners)</i>	High impact approach
Czech Republic	ESCO market New green savings programme	Well-established, increasing market High impact, comprehensive
Germany	Federal Government's CO ₂ Building Modernisation Programme The programme Future for Old Buildings (Zukunft Altbau)	High impact, good coverage Well-established
Hungary	Warmth at Home Programme (WAH) 2014–2020 Green Capital Requirements for Housing Scheme	High impact High impact approach
Romania	Local energy planning	High impact approach
Slovakia	Green Households project	High impact
Slovenia	ENSVET network (Slovenia's Energy Advisory Network)	Well-established



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5) Good practice

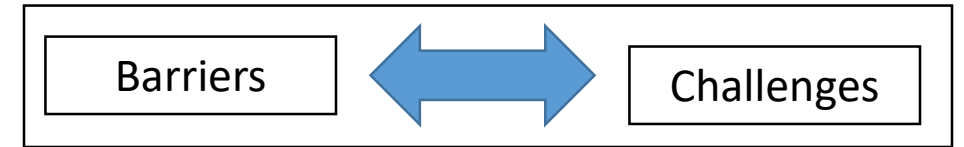
➤ Proposed measures/focus areas:

- **The „energy efficiency first“ principle** (*insulation > technologies*)
- **Effective combinations with renewables** (*PV + heat pump/cooling/ventilation*)
- **Energy performance contracting and ESCO market**
- **Energy poverty focused support** (*benefits for vulnerable consumers*)
- **Newly introduced green financial instruments**
(*green bonds, bank guarantees, tax benefits, better terms for green projects...*)
- **Consultancy services, one-stop-shops for users** (*EE awareness, free consultations*)
- **Comprehensive incentive system and less administrative burden**

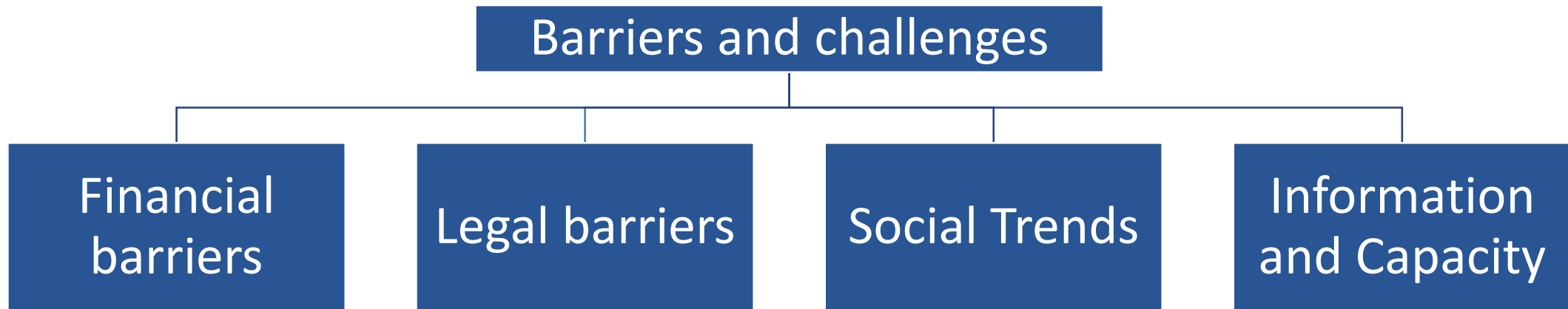
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6) Challenges in the region



- Barriers in complying with the EU legislation requirements emerges
 - at the national level (laws)
 - at the specific local level (region, market segment, certain sector of the economy)
- Categories of barriers are similar in general in all the countries:



For example, in case of building renovations, the renovation rate is a "theoretical" concept at the legislative level, a percentage point, but also a "practical" amount of activity and concrete projects at the level of implementation and the involvement of people and stakeholders.

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7) Conclusions

➤ We see a **great opportunities in the national strategies** related to renovation of buildings. However, the documents are **not striking enough**, they **should be more penetrating**

➤ There are relatively **large differences in the ambitions and directions** of member and non-member states so far

➤ We have identified high number of **good practice cases across all countries** to be shared or adopted

➤ Statistics and methodologies for data collection and reporting **need to be strengthened** to facilitate planning measures and comparing data across countries

➤ Monitoring renovation rate is important, but we must also **monitor and recognise deep renovations**, which are monitored in an uncoordinated way



Thank you!

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