



European
Commission



3RD EU MACRO-REGIONAL STRATEGIES WEEK

7-11 MARCH 2022

#EUMRSWeek

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Croatian Energy Renovation Programmes for Residential Sector

09 March 2022

#EUMRSWeek



Do you know ...?

... what was the building renovation rate in Croatia in period 2014-2020?



A) **<1%**

B) **1%**

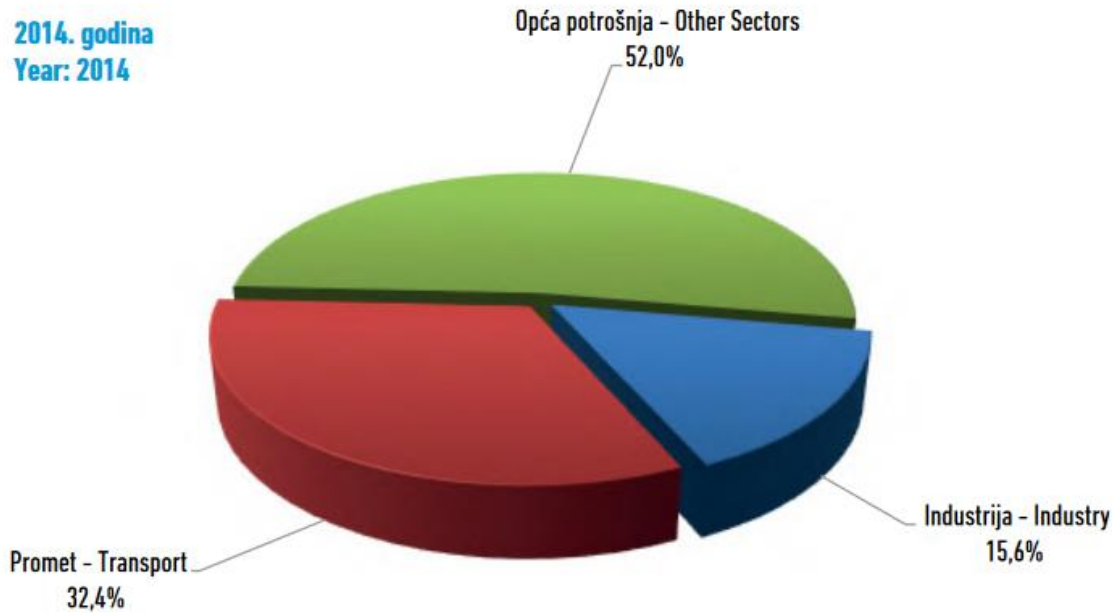
C) **2%**

D) **3%**

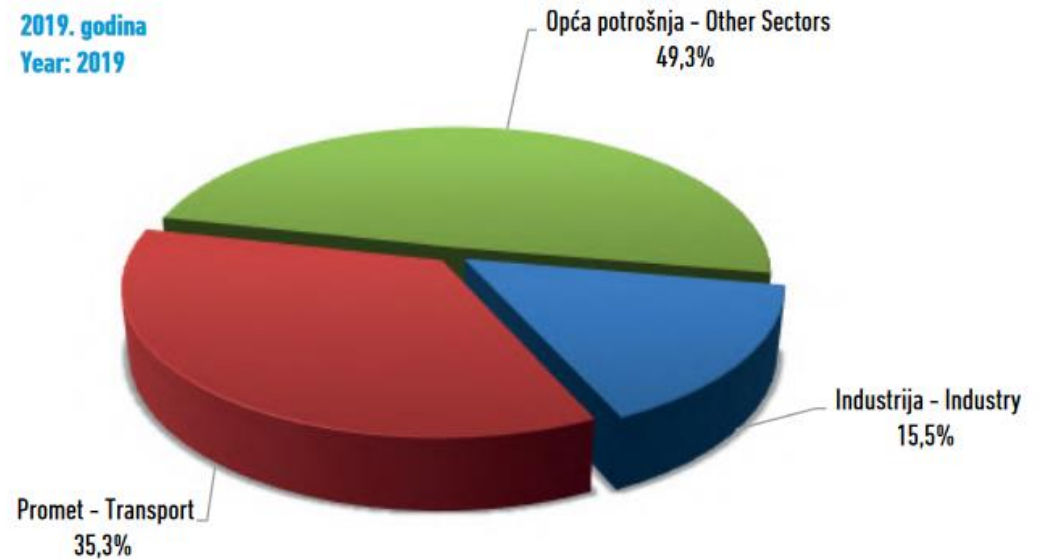


Croatian final energy consumption

2014. godina
Year: 2014



2019. godina
Year: 2019



Izvor: EIHP • Source: EIHP

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Programmes for energy renovation of buildings 2014-2020



Single-family houses

- Programme 2014-2020 (updated in 2015, 2020 and 2021)
- Grants from national EE Fund up to 80% in period 2014-2016, 60% in 2020

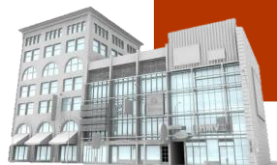
> 12.800 projects -> 80 M€ public funding



Multi-apartment buildings

- Programme 2014-2020
- Grants up to 40% from national EE Fund 2014-16
- Grants up to 60 % from ESI funds 2017-2020

> 800 projects -> 100 M€ public funding



Public / Commercial buildings

- Programme 2014-2015 -> ESCO model (central government buildings)
- Programme 2016-2020 -> grants from ESI funds

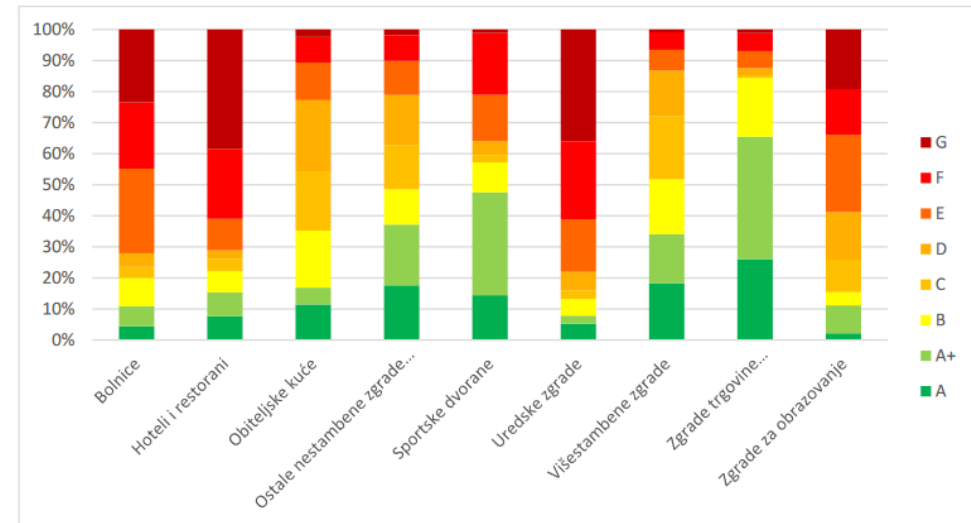
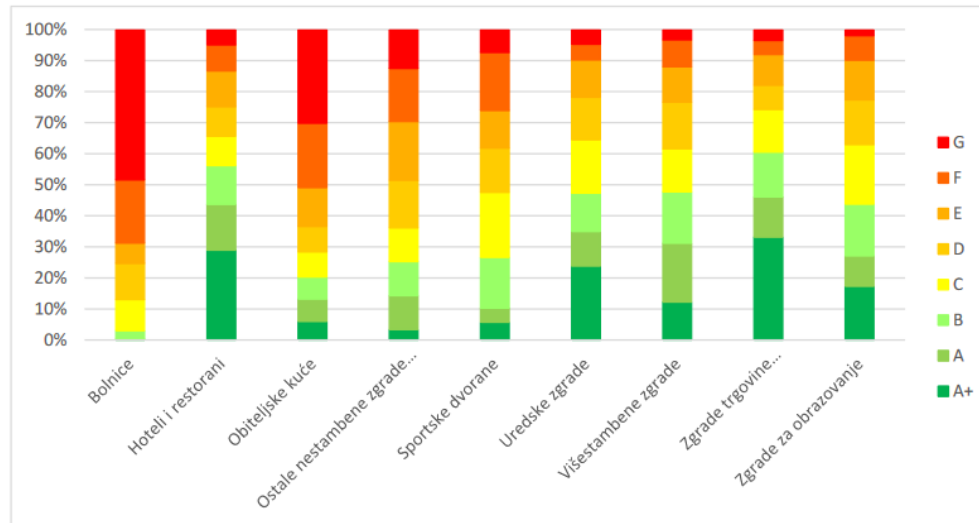
> 500 projects -> 200 M€ public funding

**Annual
renovation rate
(only) 0,7% !**



Long-term renovation strategy until 2050

- Adopted by the Government in December 2020 based on the Construction Law
- Aim: increase the renovation rate and transition to energy efficient and decarbonised building stock
- Envisaged increase of annual renovation rate:
 - **1.0 %** in 2021 and 2022 -> **1.5 %** in 2023 and 2024 -> **2.0 %** in 2025 and 2026 -> **2.5 %** in 2027 and 2028 -> **3 %** in 2029 and 2030
 - from 2031 till 2040 **3.5 %**
 - From 2041 till 2050 **4.0 %**
- Focus on worse performing buildings (distribution of energy rating according to $Q_{H,nd}$ and E_{prim})





Long-term renovation strategy until 2050

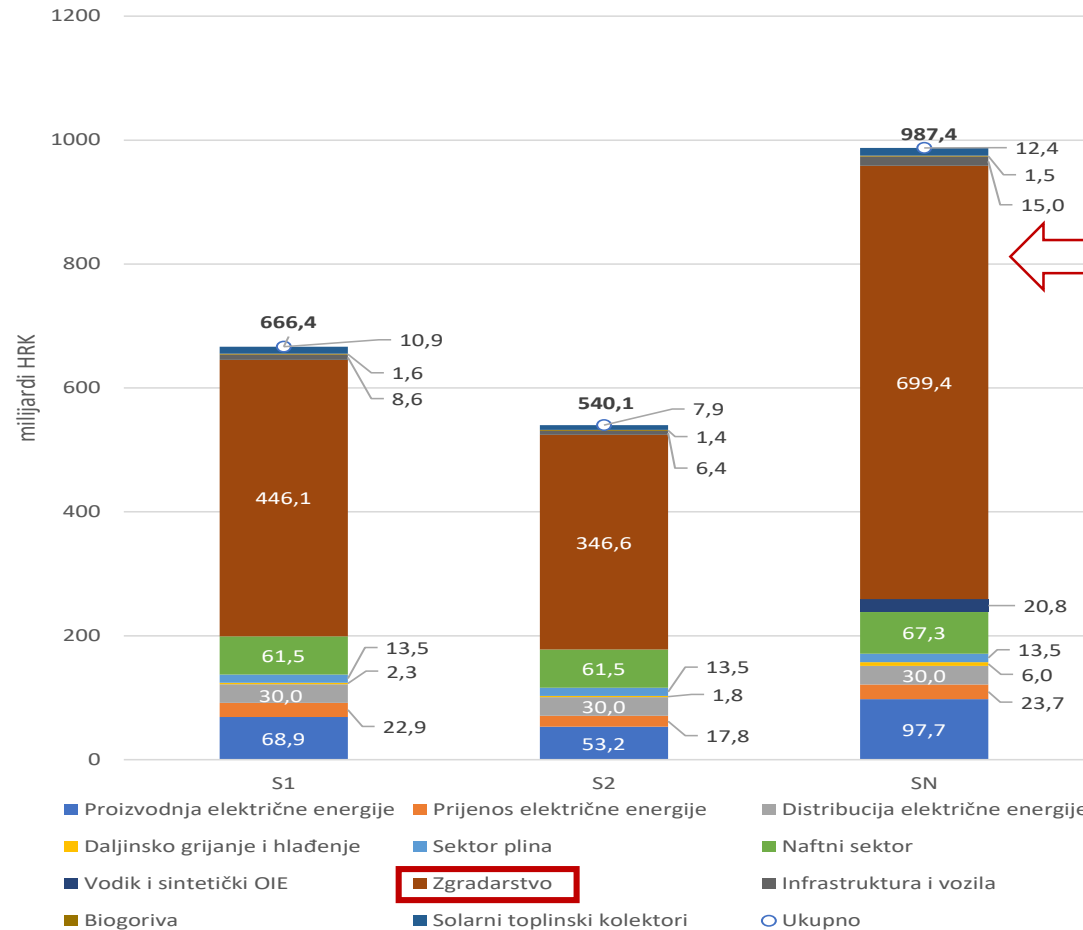
- Renovation volume and cost

Period	2021. – 2030.	2031. – 2040.	2041. – 2050.
Renovation volume – residential (million m ²)	17,77	24,57	18,58
Renovation volume – non – residential (million m ²)	10,67	14,10	10,98
Renovation cost – residential and non-residential (billion HRK)	71,24	97,26	74,73
Total renovation cost (billion HRK)	243,23		
Replacement of demolished buildings – residential (million m ²)	2,40	2,16	2,54
New buildings – residential (million m ²)	9,60	9,60	10,16
New buildings – non-residential (million m ²)	3,27	2,49	1,69
Total cost for replacement of demolished buildings and new buildings (billion HRK)	118,39	108,76	107,63
Total cost replacement and new buildings (billion HRK)	334,77		

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Achieving energy and climate targets (NECP)



Investments in building sector!



Policies and measures until 2030

Programme of
energy renovation of
**public sector
buildings**
until 2030

Programme of
energy renovation of
family houses
until 2030

Programme of the
Development of
**Green
Infrastructure**
in Urban Areas
until 2030

Programme of the
Development of
**Circular Building
and Spaces
Management**
until 2030

Programme of
energy renovation of
buildings with a
status of a
cultural heritage
until 2030

Programme of
energy renovation of
**multi-apartment
buildings**
until 2030

Energy Poverty
Programme for the
period until 2025
covering
comprehensive
renovation of
buildings
in assisted and
special government
care areas

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Categories of (energy) renovation in programmes

- **Individual measures** – step-by-step renovation
 - Only for single-family houses and cultural heritage buildings
- **Integrated energy renovation** – combination of measures with obligatory building envelope measures that lead to reduction of energy demand for heating ($Q_{H,nd}$) of **at least 50%**
- **Deep renovation** – combination of building envelope and technical systems measures resulting in reduction of $Q_{H,nd}$ at least 50% **and** reduction E_{prim} at least 50% (+nZEB)
- **Comprehensive renovation** – optimal measures for enhancing the overall state of the building
 - Energy renovation + fire safety, health (indoor climate) and enhancement of mechanical stability and seismic resilience

- 30% of the buildings stock built before **1963**
- the calculation of the resistance of buildings in the design - horizontal loads not included

since **1964** significantly increased requirements for the construction of buildings

- since **2008** European regulations in force
- further increase the seismic resistance of buildings



Additional eligible measures

- Accessibility to a building
- Green infrastructure (green roofs, green facades, green around the building)
- Sustainable transport infrastructure (bike parking, e-vehicles charging points)



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Financing for energy renovation

- RECOVERY AND RESILIENCE PLAN - Initiative: Renovation of buildings
 - 3 renovation components, for the implementation period 2/2020 - 6/2026:
 - I. Energy renovation of buildings: € mil 133.4
 - Renovation of multi-apartment buildings: € mil 40
 - Renovation of public sector buildings: € mil 93.4
 - II. Reconstruction of earthquake-damaged buildings + energy renovation: € mil 594
 - III. Energy renovation of buildings with the status of cultural property: € mil 40
- Single-family houses to be financed from national sources (EE Fund)
- Apart from RRP, no other public sources of financing confirmed yet (ESI funds expected)



What's next?

- **Securing financing!**
- 1st challenge: renovation of buildings **after the earthquake**
 - Very expensive constructive renovation (seismic retrofit)
 - Weak financial capacities of building owners (low standard and indebtedness of citizens, large number of low-income retired citizens)
 - Constant price growth - increased need for workers and services, the price of works and the shortage of labor in the construction sector are increasing (price increase in period 2014-19 more than 50%)
 - The shortage of workers and building companies
 - The complexity of the process of renovation of buildings of protected cultural property
- Integrated approach (full-scale EE+RES at the same time) would be optimal solution for decarbonization of building sector
 - New challenges in integrated approach to building renovation ahead of us
 - **e-mobility** and **green infrastructure** integration



Thank you!

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