16th Mai 2019 | Ideas from the concept paper on energy sufficiency in buildings

Sufficiency policies in Buildings
Key messages for policy makers

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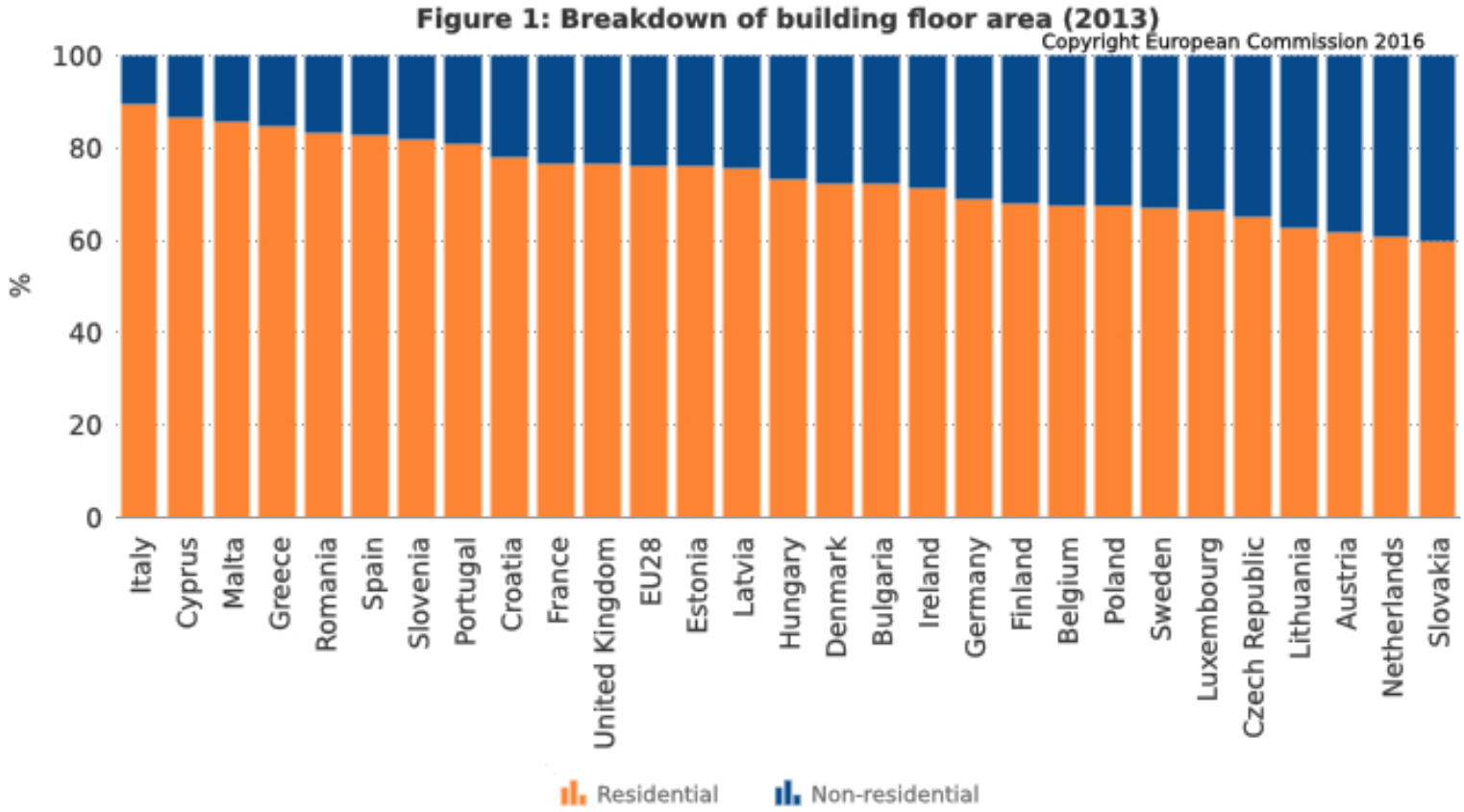
Areas for energy sufficiency in buildings

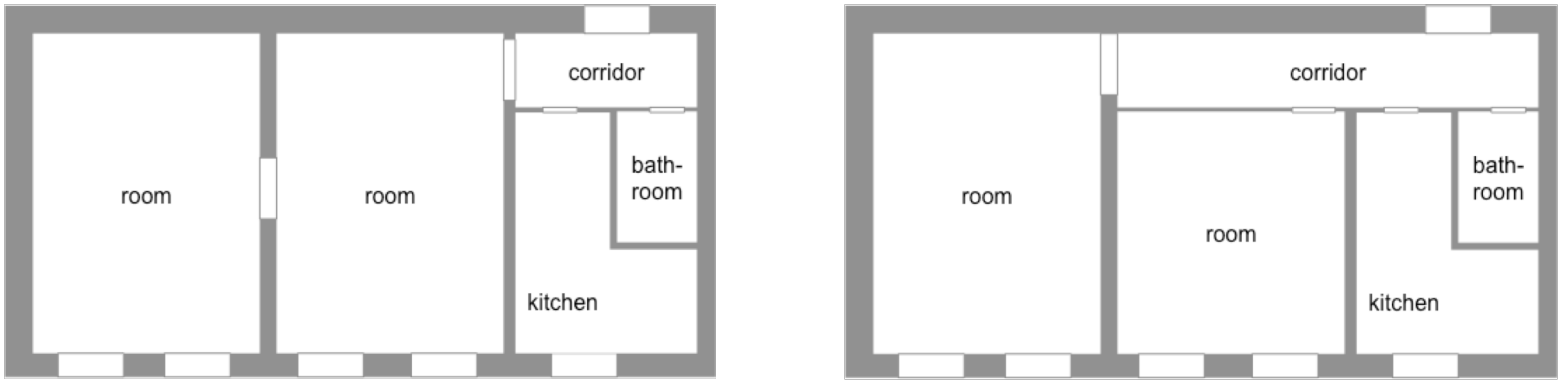


What does sufficiency in buildings mean?

adequate space **thoughtfully** constructed and **sufficiently** equipped for **reasonable** use

- **adequate:** e.g. EU adequate housing, UK bedroom standard, German definition of adequate space in the living space usage regulation for persons receive housing allowances
- **thoughtfully:** with attention to detail of material, adaptation to changing use and needs, deconstruction instead of demolition
- **sufficiently:** equipment for specific needs and use, without equipment not used or needed
- **reasonable:** use of rooms / space, use of equipment, heating and ventilation practices

Areas for energy sufficiency actions in buildings: space, construction, equipment, use



Living space per person in EU countries
(may include holiday residences)

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Country	m²/cap	Country	m²/cap
Romania	18,1	Germany	46,6
Poland	27,1	France	46,9
Lithuania	29,8	Sweden	48,5
Estonia	31,5	Italy	49,1
Slovakia	31,6	Luxembourg	51,1
Croatia	33,0	Spain	52,4
Latvia	34,6	Netherlands	52,4
Slovenia	34,6	Finland	52,6
Czech Rep.	35,6	Greece	53,8
Belgium	38,3	Austria	55,0
UK	42,0	Cyprus	59,0
Ireland	45,5	Malta	62,2
Hungary	45,7	Denmark	62,7
Bulgaria	46,1	Portugal	63,7

Simple approach to analyse a sufficiency potential:
theoretical energy savings from space reduction / enlargement to 35 m^2 / cap

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Country	Reduction		Country	Reduction	
Belgium	8,3%	1	Lithuania	-17,6%	0
Bulgaria	24,1%	3	Luxembourg	31,5%	3
Czech Rep.	1,7%	1	Hungary	23,4%	3
Denmark	44,2%	4	Malta	43,8%	4
Germany	24,9%	3	Netherlands	33,3%	3
Estonia	-11,2%	0	Austria	36,4%	3
Ireland	23,1%	3	Poland	-29,3%	0
Greece	34,9%	3	Portugal	45,1%	4
Spain	33,2%	3	Romania	-93,8%	0
France	25,3%	3	Slovenia	-1,2%	0
Croatia	-6,1%	0	Slovakia	-10,6%	0
Italy	28,8%	3	Finland	33,5%	3
Cyprus	40,7%	4	Sweden	27,9%	3
Latvia	-1,3%	0	United Kingdom	16,7%	2

Rating: sufficiency potential		
0	very low	≤ 0%
1	low	0,1-10%
2	average	10,1-20%
3	high	20,1-40%
4	very high	> 40%

Energy Savings:

- **1.232.915 TJ / 342.5 TWh***

*missing data from Belgium, Estonia, Cyprus, Slovakia, Norway

More detailed approach to analyse a sufficiency potential in buildings: three further potential indicators based on EU data

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Under-occupation and overcrowding rate

- High overcrowding rate and low under-occupation rate => less potential for sufficiency

Population without bath, shower, indoor flushing toilet in household

- High share of population => less potential for sufficiency
- Hints at more space needed

Dwelling not comfortably warm during winter time

- High share of population => less potential for sufficiency
- Hints at need for efficiency and / or heating system

Sufficiency potential in EU countries, based on the four indicator approach

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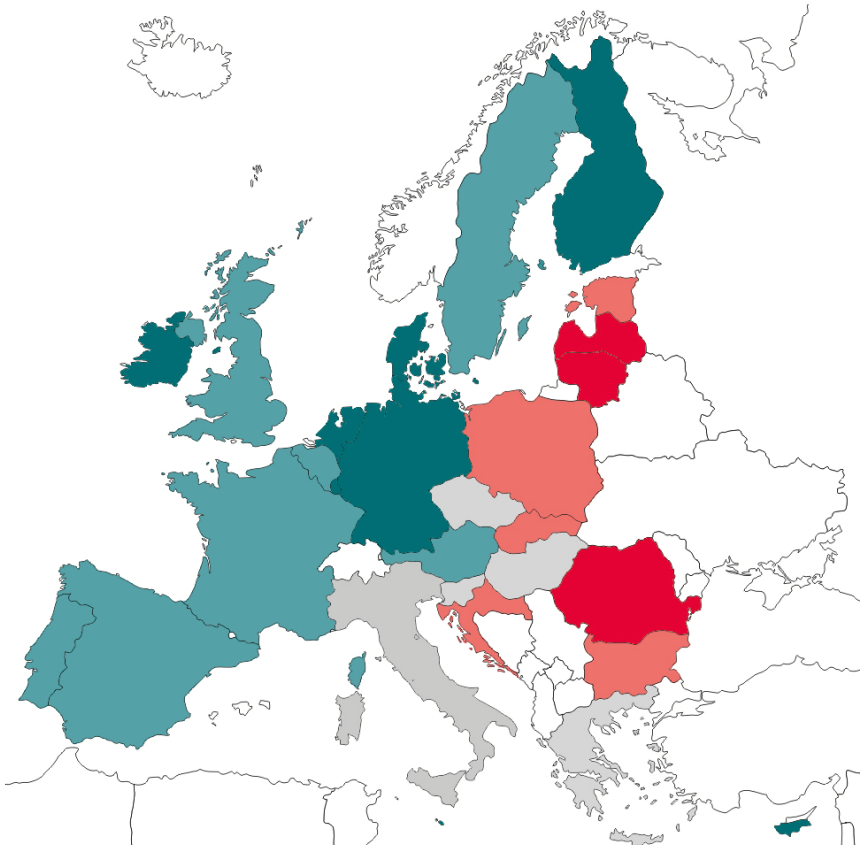
Country	Overall rating	Country	Overall rating
Luxembourg	**3,8**	Portugal	**2,5**
Germany	**3,5**	Italy	**2,3**
Ireland	**3,5**	Czech Republic	**2,0**
Netherlands	**3,5**	Slovenia	**2,0**
Denmark	**3,3**	Greece	**1,8**
Cyprus	**3,3**	Hungary	**1,8**
Malta	**3,3**	Estonia	**1,5**
Finland	**3,3**	Slovakia	**1,5**
Spain	**3,0**	Croatia	**1,3**
Austria	**3,0**	Bulgaria	**1,0**
Sweden	**3,0**	Poland	**1,0**
United Kingdom	**3,0**	Latvia	**0,8**
Belgium	**2,8**	Lithuania	**0,8**
France	**2,8**	Romania	**0,8**

very low	0 - 0,8
low	0,9 - 1,6
average	1,7 - 2,4
high	2,5 - 3,0
very high	3,1 - 4

Sufficiency potential in buildings in EU countries, based on the four indicator approach



very low
low
average
high
very high

The overall policy package for energy sufficiency for buildings

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Instruments mitigating the macro drivers of energy consumption	
Instruments advancing energy sufficiency at the micro and meso level	
Construction, equipment, use	Floor area and height of rooms (size)
Target: climate-neutral stock + efficiency and sufficiency funds	Cap on floor area per person: *legally binding or policy target?*
Integrated buildings policy for energy efficiency and energy sufficiency	Instruments to support and inform for new forms of housing, moving to smaller dwellings, sharing flats

Elements of the package for energy sufficiency policy for buildings

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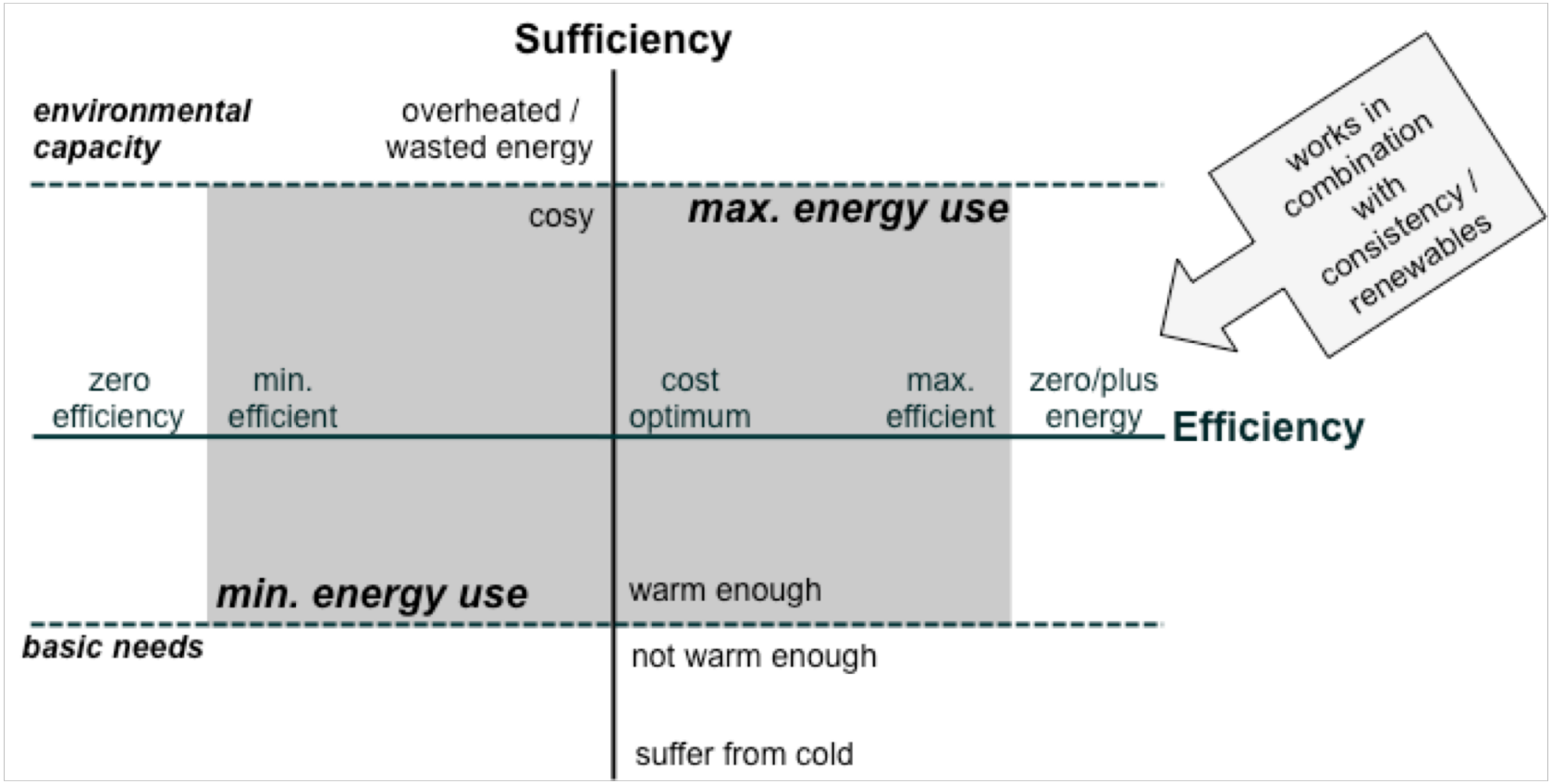
Instruments on building floor area and size

- cap on average dwelling floor area per person as an overarching instrument
- municipal living space agencies: living space advice, practical support for moving, and the provision of financial support
- financial incentives for alternative forms of housing with smaller per capita area
- securing and creating energy-sufficient building infrastructure, e.g. clothes drying or cool storage rooms

Instruments on construction, equipment, use

- targets for a climate-neutral building stock => including sufficiency aspects into the EDBP
- energy pricing instruments
- energy efficiency and sufficiency funds, financial incentives => adaptation of urban development and efficiency programmes possible
- sufficiency-oriented product and buildings policy targeting building and equipment use (Minimum Energy Performance Standard, labelling)
- energy sufficiency advice => adaptation to existing programmes possible
- promotion of energy sufficiency services

Interplay between energy efficiency and sufficiency



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Thank you for your attention

For further informationen see

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