

Nordic Sustainable Construction Symposium

04.12.2024

Nordic Sustainable
Construction



Agenda

13:00 Arrival

13.15 Welcome and introduction

13.20 The Nordic Vision 2030

13.30 Nordic Collaboration and Europe

14.10 *Break*

14.30 Work Package short presentation, moderated by Helle

15.00 Panel discussion + Q&A

15.40 *Break*

15.50 The wicked problem of Nordic collaboration on sustainable construction

16.40 A utopia for a building industry of preservation

16.50 Toolbox Launch & Nordic Sustainable Construction 2025-2027

17.00 Networking and drinks

18.00 Thank you for today



The Nordic Vision 2030



Dan Koivulaakso
Head of Department for
Growth and Climate, The
Nordic Council of Ministers
and The Nordic Council



The Nordic Vision 2030: The Construction Sector's Role in Advancing Climate, Energy, and Digital Transformation

Nordic Common perspectives



Openness and a belief in everyone's right to express their views



Trust in each other and, because of proximity to power, trust in leaders



Compassion, tolerance, and the conviction that all people are of equal value



New ways of thinking in relation to initiatives for creativity and innovation



Sustainable management of the environment and the exploitation of its resources



Our vision 2030

A **green** Nordic region

Together, we will promote a green transition of our societies and work towards carbon neutrality and a sustainable circular and bio-based economy.

A **competitive** Nordic region

Together, we will promote green growth in the Nordic region based on knowledge, innovation, mobility and digital integration.



**The Nordic
region will
become the most
sustainable and
integrated region
in the world**

A **socially sustainable** Nordic region

Together, we will promote an inclusive, equal and interconnected region with shared values and strengthened cultural exchange and welfare.



The Nordic Council of Ministers' political priorities 2025–2030

- Integrated contingency planning makes the Nordic Region robust
- Culture, democracy and active citizens
- Mobility, exchange programmes and networking foster cohesion
- Innovation and skills bring growth and prosperity
- New technology requires balanced solutions
- Sustainable resource management is key
- Nordic solutions and leadership at regional and global level



Sustainable resource management is key

The Nordic countries have some of the **world's highest consumption levels and biggest carbon footprints**. Our environmental impact is closely linked to what we eat, how we live, our transport habits and clothing. Reducing the Region's climate footprint and making the economy more circular require **systemic and innovative change** by consumers, companies and the public sector.

Nature and biodiversity are under pressure, especially in marine areas. Sustainable resource management must be at the centre of a green transition and benefit all communities across the Nordic Region.

We will work together at the Nordic and international levels to address environmental and climate change. We will develop and improve work on climate adaptation and support solutions at the intersection **of climate, biodiversity and pollution**.



Thank you!

Nordic Collaboration and Europe - Prioritising existing buildings for people and climate



Zsolt Toth
Team Lead, Building
Performance Institute of Europe





Nordic Collaboration and Europe

Prioritising existing buildings for people and climate

Zsolt Toth, Team Lead, Building Performance Institute Europe

BUILDINGS PERFORMANCE INSTITUTE EUROPE

Who we are and what we do



NON-PROFIT
THINK-TANK



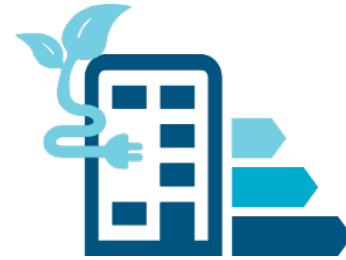
POLICY ADVICE
ON BUILDING
REGULATION,
FROM DESIGN TO
IMPLEMENTATION



BRUSSELS
AND
BERLIN



INDEPENDENT
RESEARCH



IMPROVING THE
SUSTAINABILITY
PERFORMANCE
OF BUILDINGS
ACROSS EUROPE



IN OPERATION
SINCE 2010



AGENDA

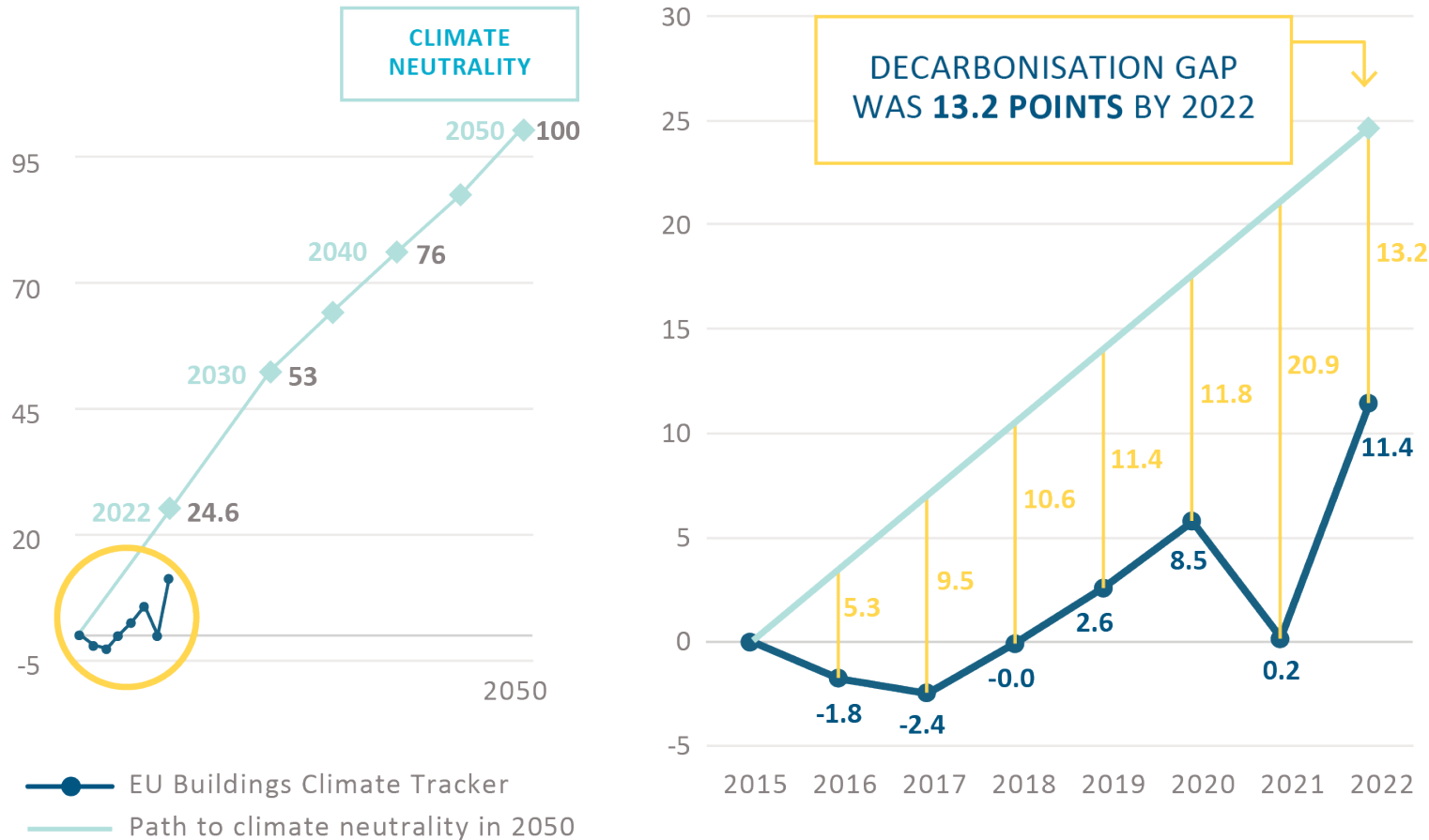
- **Preamble:** navigating the simultaneous climate and housing crises
- **The lifecycle perspective:** avoid and demand reduction
- **Sufficiency:** what does it mean in the building sector?
- **Case studies:** quantifying the impacts
- **Looking ahead:** conclusions and recommendations



3rd EU BCT MAIN FINDINGS

Off track to climate neutrality

Figure 1: EU BCT results between 2015 and 2022



EU building stock **remains off track to achieve climate neutrality by 2050.**

Decarbonisation gap has doubled since 2016.

Indicators are over 40% away from where they should be.

<https://www.bpie.eu/publication/eu-buildings-climate-tracker-3rd-edition/>



KEY FINDINGS

Indicator results

Indicator	Achieved progress 2015-2022	Required progress 2015-2022	STATUS	How much of the required progress was achieved during 2015-2022?
1 CO ₂ emissions from energy use in buildings for households and services	↓ 14.7%	↓ 27.9%	OFF TRACK	
	households	↓ 12.6%	FAR OFF TRACK	
	service-sector	↓ 19.8%	OFF TRACK	
2 Final energy consumption in households and services	↓ 2.8%	↓ 6.5%	FAR OFF TRACK	
	households	↓ 1.4%	FAR OFF TRACK	
	service-sector	↓ 5.4%	ON TRACK*	
3 Renewable energy share	↑ 6.3 percentage points (increased from 22.6% to 28.9%)	↑ 18.0 percentage points (should have increased from 22.6% to 40.6%)	FAR OFF TRACK	
	heating & cooling	↑ 4.6 percentage points (increased from 20.3% to 24.9%)	FAR OFF TRACK	
	gross electricity consumption	↑ 11.5 percentage points (increased from 29.7% to 41.2%)	↑ 12.8 percentage points (should have increased from 29.7% to 42.4%)	ALMOST ON TRACK
4 Cumulative investment in renovation	8 times the value in 2015	13.8 times the value in 2015	OFF TRACK	

CO₂ emissions from building energy use have decreased by just 14.7% since 2015—far below the 27.9% reduction required by 2022.

Final energy consumption in buildings has dropped by only 2.8% since 2015, less than half the required pace to meet climate targets.

The **share of renewable energy** in buildings has only increased by 6.3 percentage points since 2015, significantly below the required 18 percentage point increase.
Renewables for heating and cooling must quadruple.

Renovation investments reached only 60.6% of the required levels between 2015 and 2022.



NEW COMMISSION MANDATE

A focus on housing

- European Affordable Housing Plan, including a European Strategy for Housing Construction.
- Work with European Investment Bank to establish a pan-European investment platform for affordable and sustainable housing
- Address issues with short-term accommodation rentals and make proposals to tackle *inefficient use of the current housing stock*



*Dan Jørgensen,
Commissioner for Energy
and Housing*

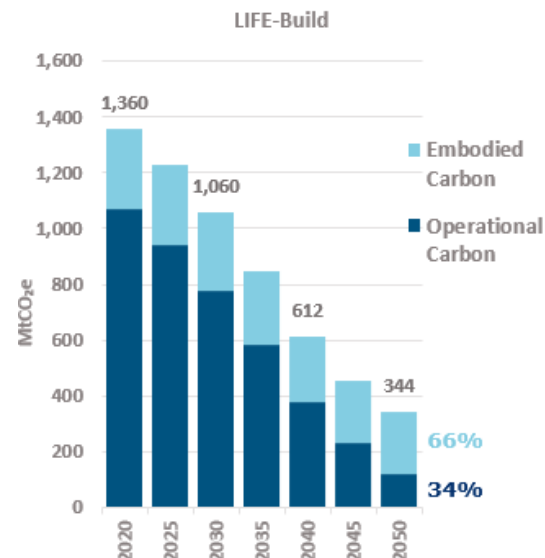
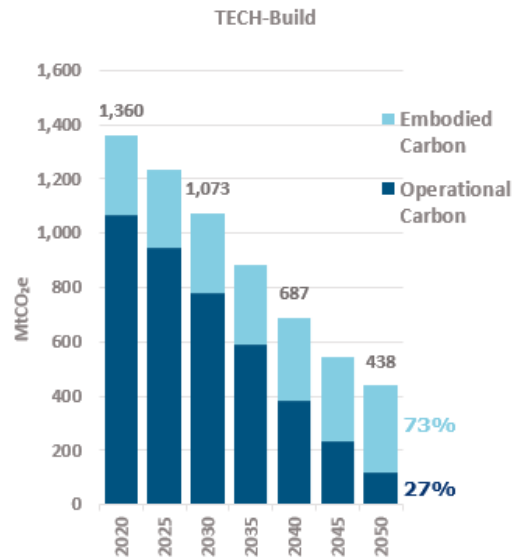
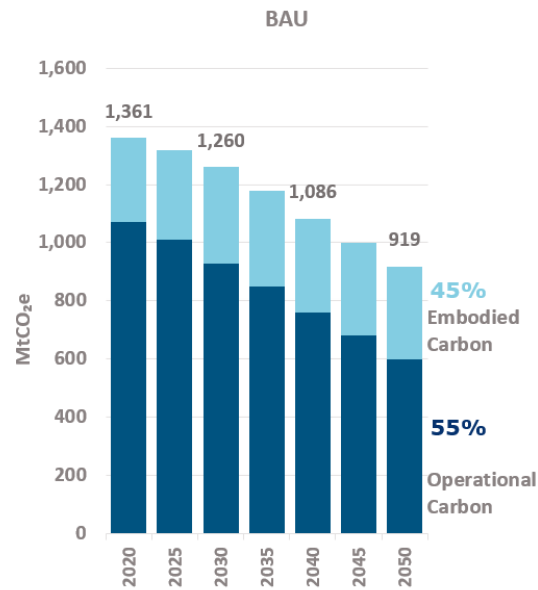


A WHOLE LIFE CARBON PERSPECTIVE

... on the building stock

- Technical study to support of the development of a Roadmap for the Reduction of WLC of Buildings
- Preparatory document for the EU WLC Roadmap

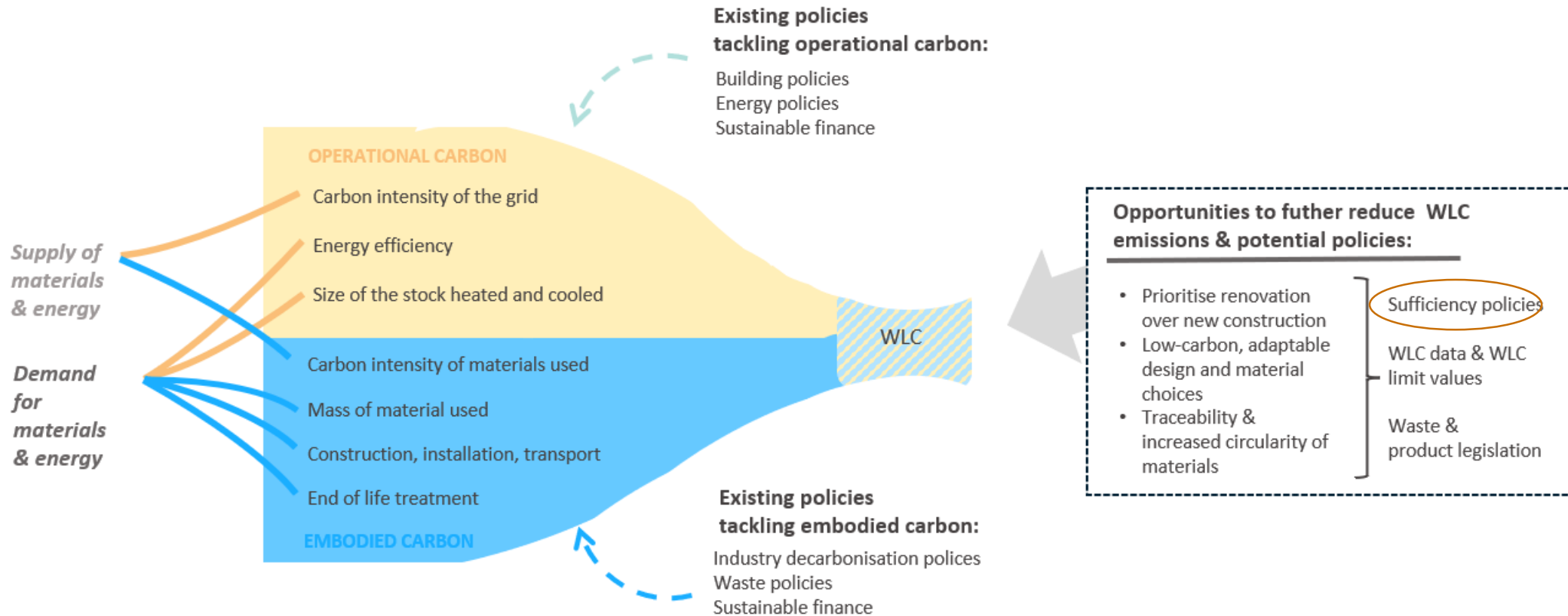
Solutions	Definition	Boundaries	TECH-Build
Improve	Optimise design, construction and production practices	Technical boundaries	
Shift	Use circular, low carbon or bio-based materials	Availability boundaries	
Avoid	Make best use of existing building stock	Social boundaries	LIFE-Build





A WHOLE LIFE CARBON PERSPECTIVE

... on the building stock



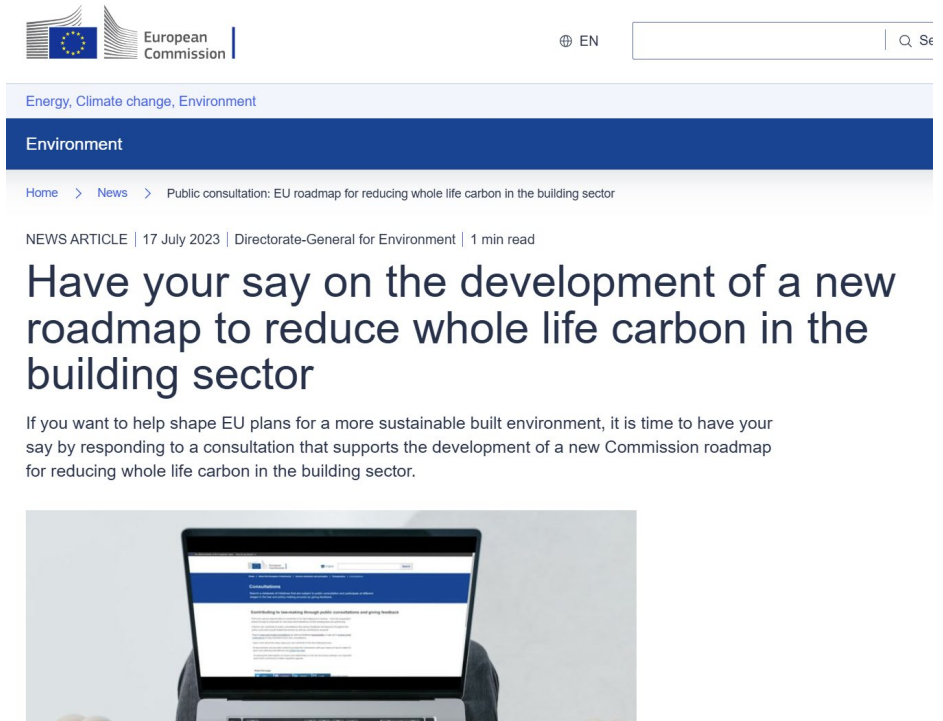
Source: own illustration



A WHOLE LIFE CARBON PERSPECTIVE

... on the building stock

- In response to the public consultation on the WLC Roadmap, **stakeholders from across the EU expressed overwhelming support for sufficiency principles as highly impactful and feasible approaches to reducing building sector emissions.**
- From a list of 18 action areas, 88% of respondents rated ‘prioritising renovations and extended lifespans over demolition and new constructions’ highly, along with ‘better use of currently empty buildings’ (78%).



Source: EU COM

- EU Commission (DG ENV) project on “Sufficiency in the building sector“ (Dec 23 – April 24)
 - What is sufficiency in the build environment?
 - What are the impacts?



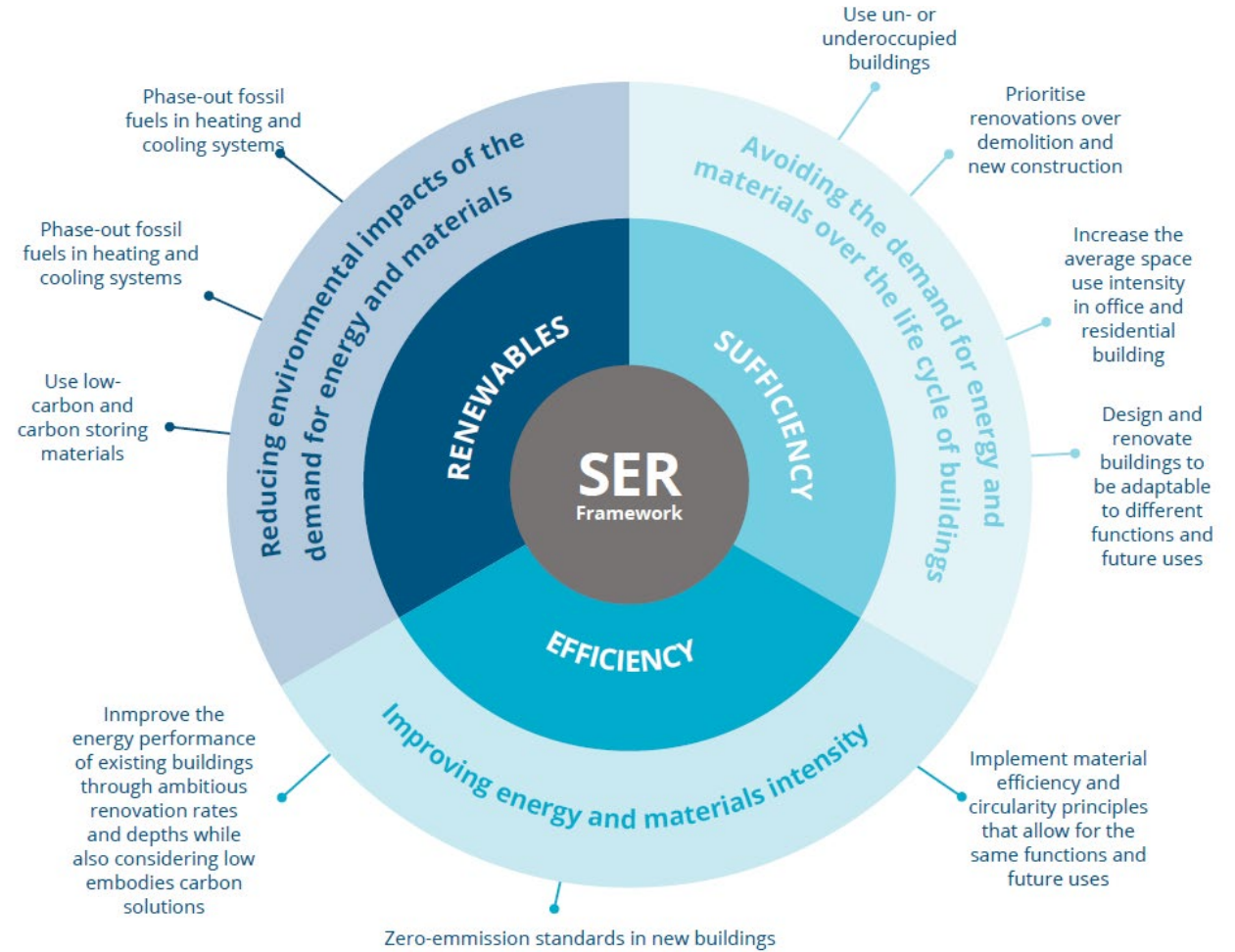
BPIE, Ramboll: forthcoming

- Term entered policy debate in 1990s as a complementary measure to energy efficiency and transition to renewable energy sources (e.g. due to persistent rebound effects)
- Gained traction in academic communities in France and Germany as a climate mitigation strategy especially after COP21
- France “sobriété” in policy since June 2022
- Thailand end 1990s “Sufficiency Economy Philosophy” as development strategy, [read here](#)
- IPCC 6th Assessment Report WGIII (mitigation) 2022: delivering an overall definition



IPCC AR6 WGIII, p. 957:

“Sufficiency is a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human well-being for all within planetary boundaries”.



Source: BPIE 2024, based on IPCC 2022



SUFFICIENCY

The concept



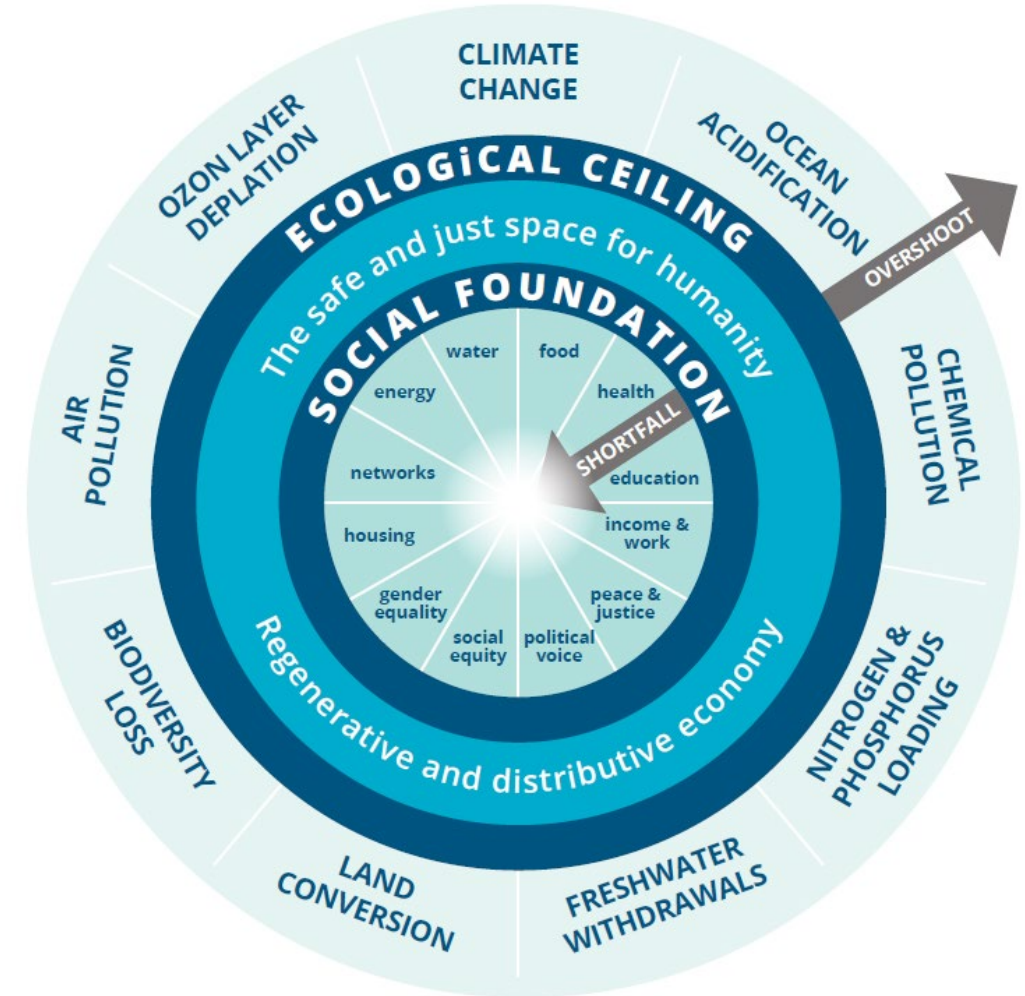
**While efficiency is about doing things right,
sufficiency is about doing the right things.**



Sufficiency

“two types of enough”

- Human wellbeing within planetary boundaries
 - Inside: SDGs => social housing, accessibility, affordability
 - Outside: Planetary boundaries
- Sufficiency aligns with a vision that seeks to fulfil the international human right to adequate housing, viewing buildings as vital components of societal well-being



Source: BPIE 2024, based on DoughnutEconomics 2019



SUFFICIENCY IN THE BUILDING SECTOR

Tackling multiple crisis

EU Roadmap for the Reduction of Whole Life Carbon emissions: new construction as a second emission hotspot



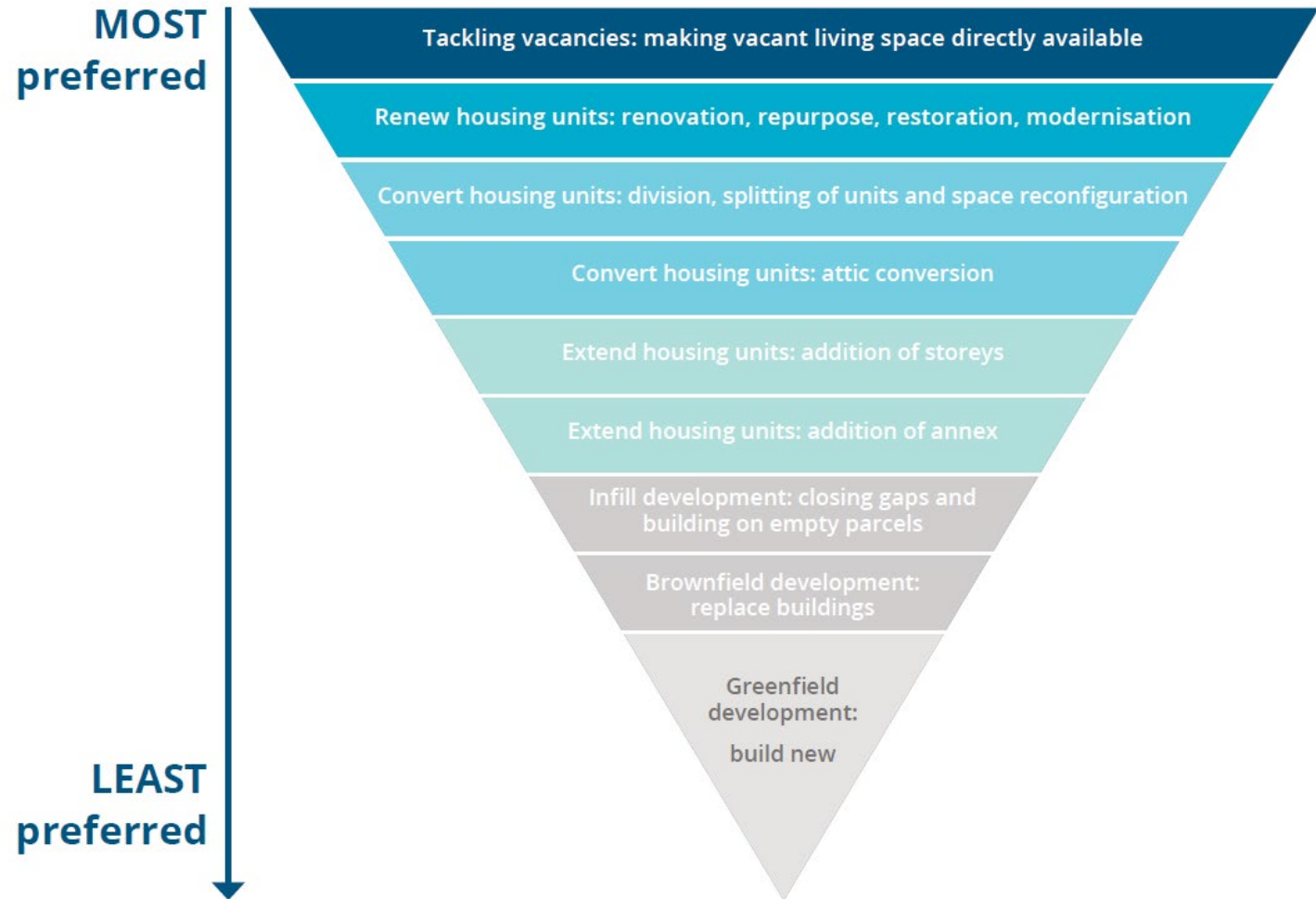
Need for new housing and the tight housing markets in many EU countries (incoming COM priority)

- As a policy strategy, sufficiency focuses on optimising the use of existing buildings to create a built environment that is attractive, affordable, and aligned with the actual space and accessibility needs of occupants, all while respecting planetary boundaries
- Huge untapped potential: 34% of the EU population lives in underoccupied homes, while average office occupancy rate is around 57%.

SUFFICIENCY IN THE BUILDING SECTOR

Decision pyramid

- Applying sufficiency principles to buildings can take many different forms



Source: BPIE 2024, adapted from Zimmermann & First (2024), [LINK](#)



SUFFICIENCY IN THE BUILDING SECTOR

The potential: What do we know so far?

- Germany study (BBSR): using the existing stock (most-optimistic scenario) renders new-build unnecessary, while providing enough homes
- EU study (Zimmermann): modelling of the sufficiency scenario:

9 million tonnes of CO₂ saved

-60% of materials (*compared to scenario relying on new construction*)

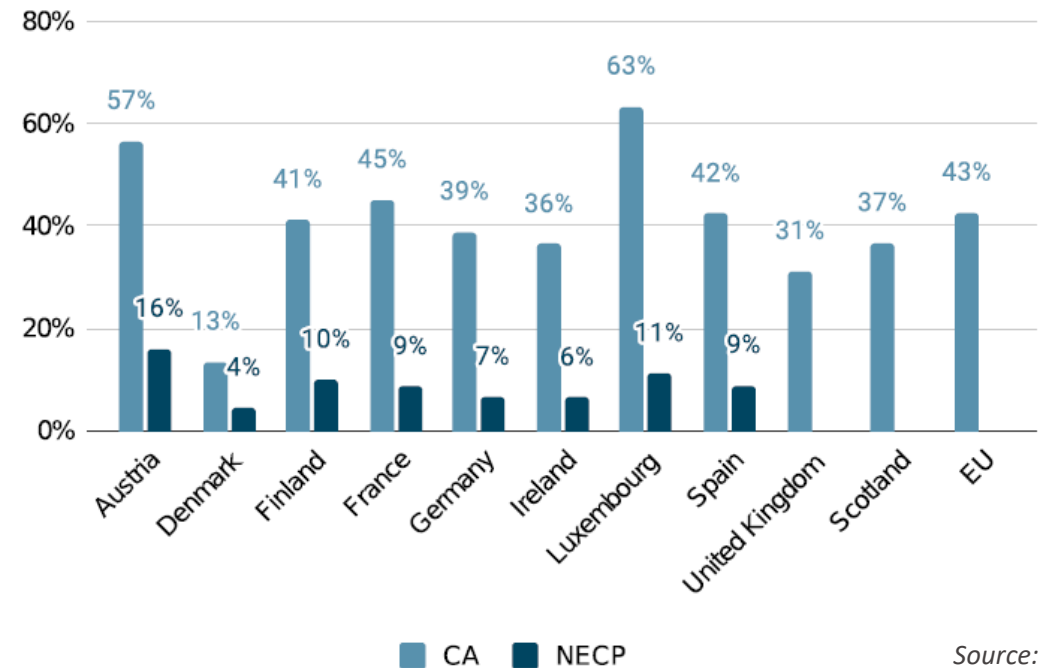
(BBSR 2023)

16% reduction of GHG emissions

-61% renewable resource demand
-9% non-renewable resource demand
(*compared to only -1% and -3% respectively in the other scenarios*)

(Zimmerman 2023)

- Social acceptance:
 - „Living smaller“ is not always perceived as negative, but can increase well-being
 - Informed citizens strongly favour a substantially higher number of sufficiency measures compared to what governments have planned (Lage et al. 2023)








Source: Lage et al. 2023

CA = Citizen's Assembly, a randomly selected sample of society meets for several sessions with experts to develop policy recommendations

NECP = National Energy and Climate Plans, submitted by Member States to the Commission on an xx bases, determines national contributions to EU climate targets

SUFFICIENCY CASE STUDIES

The potential: What do we know so far?

COUNTRY	INITIATIVE	MECHANISM	CURRENT OUTCOMES	ESTIMATED POTENTIAL (max)	
				Avoided new construction	Avoided embodied emissions
	1TOIT2AGES Brussels and Wallonia	Mobilise 'invisible living space'	Facilitated 604 matches in 2023	26.800 m ²	15.000 tCO ₂
	Plan lutte contre les logements vacants National	National strategy to map vacancies and making them habitable	1,1 Mio vacant buildings; over 6.000 "exited" vacancy status	20.190.000 m ²	9.500.000 tCO ₂
	Aus Alt mach 2 .. Oder mehr Pilot project Ravensburg	Premium for consultation for reconstruction of single-family buildings	A quarter of homeowners considers a reconstruction	23.526.000 m ²	11.200.000 tCO ₂
	Empty Spaces for affordable houses National	Mapping vacancies and making them habitable	Estimates of 215.000 usable units after renovation	12.106.000 m ²	5.750.000 tCO ₂
	Parkwest Dublin 12 The Plaza Office building in Dublin	Conversion of offices into housing units	86 social housing units created	5.800 m ²	2.759 tCO ₂ (- 82% less embodied carbon compared to new built)

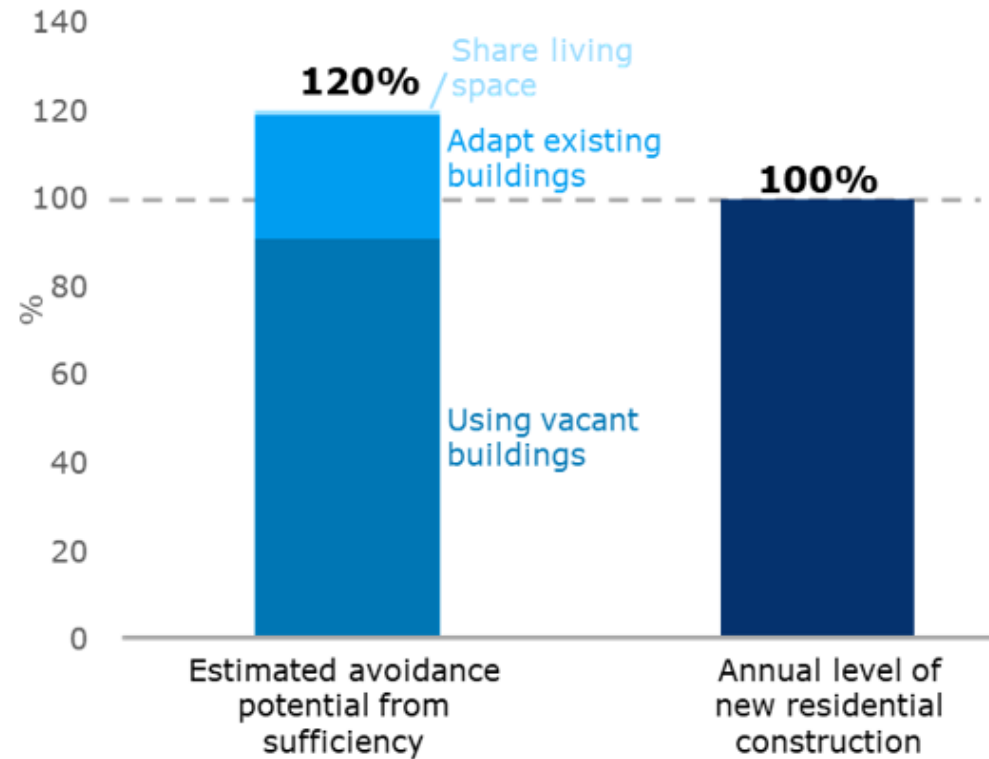
Source: BPIE, Ramboll 2024 (forthcoming)



SUFFICIENCY CASE STUDIES

The potential: What do we know so far?

The combined potential of the analysed sufficiency initiatives (BE, FR, DE) in comparison with annual new construction activity in these countries.



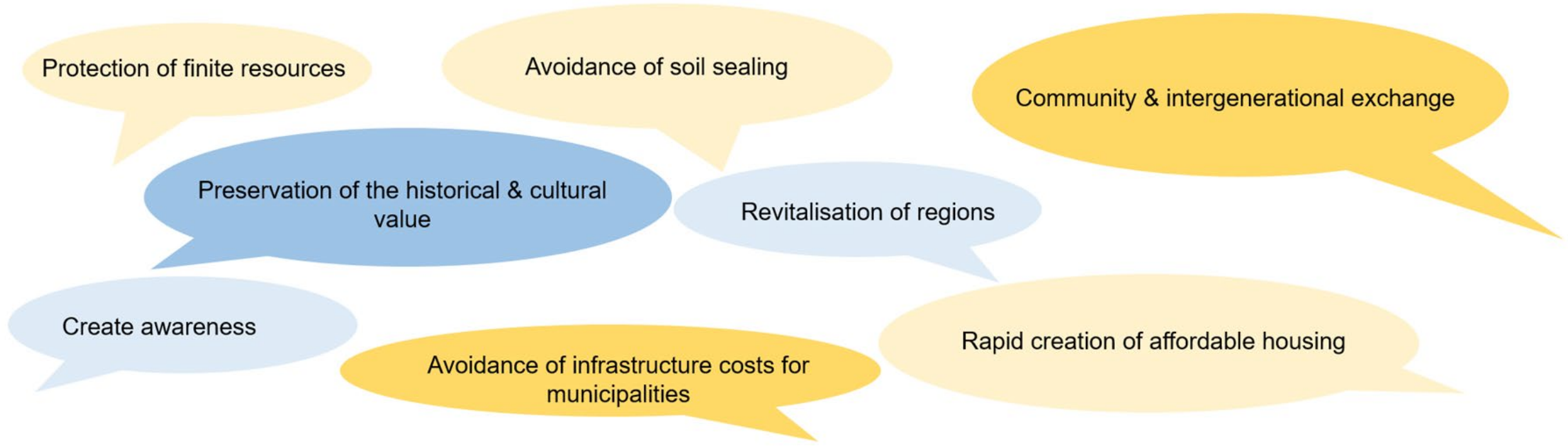
Source: BPIE forthcoming



Sufficiency in the building sector

The potential: What do we know so far?

Harvesting positive social, economic and environmental impact of sufficiency policies:



For further reflection

Do we have the right metrics and KPIs driving building regulation?

Existing building policies have failed to alleviate planetary pressure, inequality and housing shortages, as they rely on a narrow view of carbon and energy intensity metrics. Savings are offset by floor area growth per capita which continues to outpace population growth.

For further reflection

How to create value from doing less?



Maximising the potential of existing building stock requires fundamentally rethinking the persistent focus on new construction and traditional building methods. "New" is not always better — there's cultural and historical value in thoughtfully repurposing existing structures.





Sufficiency in the building sector

Recommendations

- **Make best use of vacant or underoccupied buildings by collecting data**
 - *e.g. France: National Plan to Combat Vacancies; Poland: Adaptation of Empty Spaces for Affordable Apartments*
- **Prioritise the preservation, repurposing and reuse of the existing building stock ahead of new construction**
 - *e.g. Ireland, Belgium: office conversion into residential housing; France: architectural competition to repurpose unattractive sites ('Reinventing Cities')*
- **Incentivise more efficient use of space at both the building and neighbourhood levels**
 - *e.g. Belgium: sharing invisible living space; Baden-Württemberg: divide large homes into multiple units*



Sufficiency in the building sector

Recommendations

- **Apply sufficiency principles in new construction**
 - *Germany: shared spaces and adaptability to future uses and changing occupancy*
- **Support experimentation of sufficiency initiatives and exchange of experiences and awareness raising**
 - *Göttingen: Living Space agency as a one-stop-shops advisory service*
- **Use synergies with other policy fields and forge new alliances**
 - *Göttingen: combining renovation and re-densification assessments; France: linking 'vacancy prevention' with renovation advice*
- **Invest in research on the qualitative and quantitative impacts of sufficiency initiatives**
 - *Asses potential impacts, identification of success factors, diversity of approached and replication*



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Coffee/tea break

