

Why Sufficiency cannot be overlooked during the revision of the Energy Performance of Buildings Directive (EPBD)

Sufficiency policies are a set of measures and daily practices to avoid the demand for energy, materials, land, water, and other natural resources over the lifecycle of buildings and goods while delivering wellbeing for all within planetary boundaries.¹ While efficiency is about reducing energy consumption at the use phase, sufficiency aims to avoid energy and materials demand in the first place by questioning our needs. It goes beyond behavioural changes, implying also changing the way our infrastructures are modelled.

As demonstrated by IPCC modelled global scenarios, to achieve a true decarbonisation of EU buildings, sufficiency needs to be considered into energy and climate transition scenarios towards decarbonisation, in addition to the solution brought by efficiency and renewable energies.² In addition to tremendous potential in terms of energy savings and emissions reductions, sufficiency is also a condition for a just transition and society, as it aims to reducing demand where it exceeds planetary boundaries while ensuring to meet all consumers' basic needs. This corridor perspective between environmental maxima and social minima places the sufficiency approach within the economic framework of the Doughnut model.³

*The Energy Performance of Buildings Directive (EPBD) recast is a crucial opportunity to ensure that the potential for energy and material savings through the implementation of sufficiency policies is grasped at European level. To this regard, **the European Environmental Bureau, Energy Cities, the négaWatt Association (FR), Za Zemiata (BG), Possible Worlds (NL), and ZERO (PT), would like to express their full support to the text to be voted in ITRE on February 9th, which include the implementation of sufficiency targets in the national renovation roadmaps.***

The potential for energy and material savings in the built environment in Europe

In Europe, the built environment accounts for 40% of total GHG emissions and is a major consumer of emissions-intensive materials and cause of waste. Over the period 1990-2018, efficiency improvements and the increased penetration of renewables have reduced CO₂ emissions in the use phase from residential buildings by 29%, therefore reducing the overall energy demand per m². However, because the living space per person has increased (especially in the wealthiest countries); the energy demand per capita has remained rather stable.⁴ This 'rebound effect' clearly underlines **that the EU cannot reach its objective of a climate neutral building stock without considering the implementation of sufficiency policies**, as complementary measures to efficiency improvements and the uptake of renewable energy.

In addition, the built environment has a direct impact on urban areas' dynamics and consumers' behaviours, such as heating and cooling needs and daily transports habits (distance and modes). For example, people living in single-family homes in low-density areas – which is the case for 61% of

¹ Y. Saheb, Beyond efficiency, sufficiency matters and should be first, Buildings and Cities Journal, 2021. Available at : <https://www.buildingsandcities.org/insights/commentaries/cop26-sufficiency.html>.

² IPCC, Climate Change 2022 Mitigation of Climate Change, Summary for Policymakers, p. 40. Available at : https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf.

³ K. Raworth, exploring doughnut economics. Available at: <https://www.kateraworth.com/doughnut/>.

⁴ EEB and OpenExp, Sufficiency and Circularity, The two overlooked decarbonisation strategies in the 'Fit for 55' Package. Available at : <https://eeb.org/library/sufficiency-and-circularity-the-two-overlooked-decarbonisation-strategies-in-the-fit-for-55-package/>.

Europeans today – need 4 to 10 times more roads and asphalt, twice as much energy, and live in a home using 50% more material than people in multi-family buildings in high density area. Meanwhile, Europe’s current built environment is characterised by systemic inefficiencies and imbalances: 23% of Europe’s cities are shrinking fast, leaving vacant and decaying buildings. Yet, at a time where 16% of existing dwellings are not occupied and 35% are under-occupied, Europe is still building 15 million new dwellings per year.⁵

The CLEVER project estimates that, in countries such as France, Germany or the UK, sufficiency could reduce final energy consumption by 20-30% by 2050.⁶ **The systemic problems of inefficient use of space in Europe cannot be disregarded if we want to reach our global environmental and climate goals**, such as reducing 55% of emissions by 2030, decoupling resource use, and achieve net-zero land take by 2050.

Sufficiency levers and policies in the built environment

Applied to buildings, sufficiency aims to limit the impact of buildings on resources during construction and use (materials, energy, water, land...). It is notably characterised by policy measures to limit the floor area per capita to a maximum and pool buildings uses. This can be done through several strategies, such as optimising the use of buildings with co-working and co-living spaces, repurposing unused dwellings, as well as prioritising multi-family buildings over single-family homes, and adjusting the size of the buildings to the needs of the households, while ensuring adequate space for everyone and guaranteeing privacy and decent households’ comfort level.

The increase of the living space per capita over the years is multi-factorial: bigger rooms being designed in new buildings, the increase of single-family buildings, the impact of the aging effect with older households living in bigger flats than younger, as well as the ‘empty nest’ phenomenon, where family keep the same housing after children have moved out. To this regard, **there is room for implementing sufficiency measures in the built environment both at building design (new and renovated) and building use stages**. One attempt to define the implementation of sufficiency in buildings has been formulated as *“the adequate space thoughtfully constructed and sufficiently equipped for reasonable use”*.⁷ It encompasses the need to respect rules on adequate housing, therefore making sure to offer decent conditions of housing to households, while giving thoughtful attention to the materials used, adaptation to changing use and needs, deconstruction instead of demolition, as well as a reasonable affluence of equipment and use of private spaces. In practice, one of the most acknowledged potentials for sufficiency strategies in the build environment is to repurpose the now unused offices. Indeed, as people have continued to work remotely (full time or part time) after the pandemic, the number of empty offices has increased and could be repurposed to be used again as dwellings or alternative usage spaces.

Recent studies have put in evidence **several innovative economic and regulatory measures based on sufficiency and circularity**, as well as their impact and feasibility to achieve a true decarbonisation

⁵ Systemiq, Efficient and balanced space use: shaping vibrant neighbourhoods and boosting climate progress in Europe. Available at: <https://www.systemiq.earth/wp-content/uploads/2022/12/Systemiq-White-Paper-Space-Use.pdf>.

⁶ Estimation based on CREDS British “transform” scenario; French négaWatt scenario 2022; and a cross-analysis of several German scenarios including AGORA KN-2045, RESCUE-GreenSupreme and German CLEVER scenario.

⁷ Anja Bierwirth, Wuppertal institute for Climate, Environment and Energy, “Sufficiency in Buildings and Cities: Concepts and Examples”, presentation of October 2021 available at: <https://www.youtube.com/watch?v=7kxj06ZmeHs>.

of the built environment.⁸ One of the examples of policy which could favour the uptake of sufficiency measures in the built environment are ESG-based Build-to-Rent Mortgages, seeking to reward developers who include socially, environmentally and/or economically aspects in the projects by offering them a lower interest rate.⁹ Through application of ESG mortgages, sufficiency actions like optimised use of living space or reduction of the 'wasted' floor area per capita could be implemented. Identified sufficiency KPIs to measure ESG performance could be m² living space/capita, m² of unused living space, or density capita/area.

Currently, residential floor area per capita in the wealthiest European Member States is above the global average estimated in scenarios aiming at 1,5°C target, which is of 40m² of useful floor space of dwellings permanently occupied per capita.¹⁰ **By 2050, emissions in the use phase of buildings of residential buildings could be significantly lower if sufficiency policies are considered, with a tremendous potential for space savings and optimisation**, especially considering the rate of under occupation of current dwellings.¹¹

Sufficiency formulations in the revision of the EPBD

The EPBD recast is a once-in-a-generation opportunity insofar as any ambitious choice made now on our buildings will have positive and long-lasting environmental and socio-economic impacts. To this regard, we would like to emphasize the potential of the EPBD revision to incentivise the implementation of sufficiency policy measures in the built environment, considering its positive consequences not only for CO₂ emissions reduction, but also for our broader urban and living areas.

On February 9th, the Members of European Parliament will vote in ITRE committee on the recast of the EPBD. The latest compromise amendments include a definition of sufficiency and mention it several times throughout the text.¹² **We very much welcome and support the consideration for the potential of sufficiency policies, to help the EPBD best deliver on its ambition of decarbonising of the EU building stock and fulfil the Energy Efficiency Directive (EED) targets in terms of consumption reduction.**

However, as proposed by the IPCC¹³, we would support the definition included in the Rapporteur's report, which is more comprehensive and provides that sufficiency is *"the minimisation of demand for energy, materials, land, water, and other natural resources over the lifecycle of buildings and goods, while guaranteeing wellbeing and comfort for all within planetary boundaries"*. The emphasis in the latter part of the definition on the balance between human wellbeing and planetary boundaries is crucial in ensuring that both the climate and social objectives are considered.

⁸ EEB and Naider, Financing decarbonisation via innovative economic instruments based on Circularity and Sufficiency. Results from the study can be explored on this website: <https://financesustainablebuildings.eeb.org/>.

⁹ EEB Playbook, Finance Sustainable Buildings, Build-to-rent mortgages (based on ESGs, standing for environmental, social and governance variables). Available at: <https://financesustainablebuildings.eeb.org/local-climate-bonds-2-2-2/>.

¹⁰ négaWatt, CLEVER, Establishment of energy consumption convergence corridors to 2050, Residential sector. Available at: https://www.negawatt.org/IMG/pdf/2210_convergence_corridors_-_residential-2.pdf.

¹¹ Y. Saheb, ZOE institute for future-fit economies, Series of Co-creative Policy Labs on 1,5-Degree Lifestyles. Available at: <https://www.youtube.com/watch?v=ohH6CsCYhc0>.

¹² European Parliament, Committee on Industry, Research and Energy, Draft report on the proposal for a directive of the European Parliament and of the Council on the energy performance of buildings (recast). Available at: https://www.europarl.europa.eu/doceo/document/ITRE-PR-732742_EN.pdf.

¹³ IPCC, Climate Change 2022 Mitigation of Climate Change, Summary for Policymakers, p. 41. Available at: https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf.



Concretely, **the social component of sufficiency means that everyone can enjoy a decent housing, including the ability to afford the energy required to in the buildings to cover the essential needs.** Sufficiency measures mean further energy savings, in addition to those done through efficiency measures and the satisfaction of our needs through renewables. Sufficiency is the systemic answer to reduce energy demand from embodied energy in materials to energy use in our daily activities, therefore reducing the dependence of households on energy prices and supply.

Therefore, ahead of the vote in ITRE on February 9th, we ask the Member of the European Parliament to support a text including sufficiency targets in the national renovation roadmaps, and to push for a more complete and coherent definition of the concept in the text.



Possible
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