

Reshaping Housing Policy for Equitable 1.5-Degree Lifestyles

Housing in a Climate-Neutral Europe



Imprint

Authors

Sylvia Lorek, Sophia Tomany, Nora Kögel, Christoph Gran, Jonathan Barth, Coline Lavorel

Please cite as

Lorek, S. et al. (2022): Housing in a Climate-Neutral Europe: Reshaping housing policy for equitable 1.5-degree lifestyles. Policy Brief #3: Policy Pathways Towards 1.5-Degree Lifestyles. ZOE Institute for Future-fit Economies.

Layout and design concept

Drees + Riggers

Image Credits

Illustration Front page: Anton Hallmann / Sepia
Inside Pages: Giorgio Trovatot / Unsplash; Mark Chan / Unsplash;
Lala Azizli / Unsplash; Priscilla Du Preez / Unsplash; Chuttersnap / Unsplash;
Moritz Kindler / Unsplash

Copyright

© ZOE Institute for Future-fit Economies, 2022

The views expressed in this document are those of the authors and do not represent the official position of ZOE Institute for Future-fit Economies. This publication and its contents may be reproduced as long as the reference source is cited.

Policy Pathways towards 1.5-Degree Lifestyles

This policy brief is part of a publication series that explores *Policy Pathways towards 1.5-Degree Lifestyles* – lifestyles which are compatible with staying within 1.5 °C global warming. This series presents insights from academic research and discussion in Policy Labs with members of the European Commission, with this particular policy brief building on a Policy Lab in September 2021 co-organised by the ZOE Institute and DG GROW. In this series, five publications outline the potential and options for reducing consumption-related greenhouse gas emissions:

- [*Reducing Emissions through Equitable 1.5 Degree Lifestyles: An Essential Plank in Bridging the Emissions Gap*](#)
- [*Equitable 1.5 Degree Lifestyles: How socially fair policies can support the implementation of the Green Deal*](#)
- *Housing in a Climate-Neutral Europe: Reshaping Housing Policy for Equitable 1.5-Degree Lifestyles*
- *Mobility in a Climate-Neutral Europe (forthcoming)*
- *Food in a Climate-Neutral Europe (forthcoming)*

For more information about the project, visit [Policy Pathways towards 1.5-Degree Lifestyles](#).

Executive Summary

This policy brief outlines **why and how European Union policies on housing and the built environment can be better designed to enable equitable “1.5-Degree Lifestyles”** in line with the Paris Agreement’s 1.5 °C global warming target. To counter the escalating challenge of climate change, the European Union has set ambitious climate goals for 2030 and 2050 and begun the journey toward the “green transition” to a climate-neutral Europe. However, **a gap remains** between the policies in place and the scale of change needed to meet the EU’s 2030 and 2050 climate targets¹.

Household consumption is linked to two-thirds of greenhouse gas (GHG) emissions globally². This indicates that climate action is not only about technology but also about the way we live and consume, and that **incorporating demand-side policies has significant potential** for accelerating the pace and scale of emissions reductions². Housing is one of three “hotspot” areas of carbon-intensive consumption both globally and within the EU^{3,4}. While energy efficiency and the diffusion of renewables are essential components of decarbonisation in the housing sector, demand-side measures are an important and under-explored complementary strategy to bolster emissions reductions by directly reducing demand, particularly for residential energy⁵. To ensure that basic needs such as adequate housing are protected and to target the most carbon-intensive consumption, **equity considerations belong at the centre of policy design**.

Based on academic research and discussion with policymakers, this policy brief maps out existing and suggested policies for the housing sector according to their contributions to advancing equity and “1.5-Degree Lifestyles”. Following this analysis, three types of policies are recommended for policymakers: policies which **provide financial support for shared or communal housing**, policies which **advance neighbourhood approaches to urban zoning**, and policies which create **adaptable building use regulations**. Through pioneering initiatives such as the **New European Bauhaus**, the European Union is already taking steps to sustainably reimagine and redesign the built environment with an eye toward inclusivity, creativity, and wellbeing⁶. By building on this progress through the recommendations and approach set out in this policy brief, policymakers can ensure that housing policy is facilitating the development of “1.5 Degree Lifestyles” which are accessible to all and key to the goal and vision of a climate-neutral Europe.



Introduction

With the launch of the European Green Deal (EGD) and the subsequent “Fit for 55” package, the European Union (EU) has set itself the goal of becoming the **first climate-neutral continent by 2050** and the intermediate goal of **55% emissions reductions by 2030**⁷. Enshrined into EU law, these goals were made legally binding, and Member States now must ensure that ambitious actions are taken. Climate targets were also considered in the EU’s Recovery and Resilience Facility, with a conditionality set at a minimum of 37% of expenditures going toward climate investments and reforms in order to steer post-COVID investment in ecological and social directions⁸. These developments demonstrate that the EU has recognised the severity and urgency of ecological challenges and is charting a path toward reshaping our economies and lifestyles from fossil-based to regenerative.

A cornerstone of the EU’s decarbonisation strategy is the “Renovation Wave for Europe”, a part of the EGD, the EU’s energy strategy, and the Recovery and Resilience Facility. Indeed, **energy use in buildings accounts for more than a third of greenhouse gas (GHG) emissions in the EU**, and the greatest climate impacts stem from residential housing^{9,10}. The Renovation Wave utilises the deep renovation of buildings with the goal of increasing energy efficiency as the main tool for achieving emissions reductions and acts

as a strategic framework across policy areas (for concrete objectives and other key policies, see Box 1). More recently, the EU’s “Fit for 55” package suggests amendments to the Energy Efficiency Directive – another key policy in the housing context – which almost double the annual end use energy savings obligations for Member States¹¹. Additionally, the “Fit for 55” package suggests expanding the EU Emissions Trading System (ETS) to the building sector in order to boost innovation as well as stimulate behavioural change in the housing sector¹¹. Until the ETS for the building sector enters into operation in 2026, housing policy would still be impacted by the Effort Sharing Regulation (ESR) that sets out annual binding greenhouse gas emission targets for sectors not included in the current ETS¹².

While the sum of these efforts is a policy package to mitigate climate change which stands among the most ambitious worldwide, achieving the 2030 and 2050 goals will require even more action¹. While the discussion has progressed on how to shift to more sustainable construction methods and heating technologies, **there is untapped emissions reduction potential in demand-side solutions that decrease the need for energy use**¹. Many EU citizens and local authorities are already starting to change their lifestyles and redesign the built environment accordingly, and the policy toolbox should include demand-side policies which enable and promote these changes and thereby bring the EU nearer to achieving the 1.5°C target. As dif-



ferent income groups are differentially affected not only by climate change but also by climate policies, **equity considerations deserve specific attention**. This policy brief examines policy tools and approaches for reducing GHG emissions which are left unexplored by current EU housing policy, highlighting the potential of policy instruments focused on enabling equitable *1.5-Degree Lifestyles*, meaning “clusters of habits and patterns of behaviour embedded in a society and facilitated by institutions, norms, and infrastructures that frame individual choice, in order to minimize the use of natural resources and the generation of wastes” in accordance with the 1.5°C target set in the Paris Agreement¹³.



Box 1: The Renovation Wave¹⁴

The Renovation Wave sets the following concrete objectives:

- at least double the annual energy renovation rate of residential and non-residential buildings by 2030, resulting in the renovation of at least 35 million buildings,
- reduce buildings’ GHG emissions by 60% by 2030 compared to 2015 levels,
- reduce buildings’ final energy consumption by 14% by 2030 compared to 2015 levels
- reduce energy consumption from heating and cooling by 18% by 2030 compared to 2015 levels, and
- create an additional 160,000 jobs in the construction sector.

In addition, the Renovation Wave aims to enhance digital-friendly renovation, promote renewable energy in buildings and address energy poverty by tackling worst-performing buildings first. The revision and creation of many other policies in the housing sphere fall under the umbrella of the Renovation Wave. The most notable include:

- the revision of the Energy Performance of Buildings Directive (EPBD),
- the revision of the Energy Efficiency Directive (EED),
- the revision of the Emissions Trading System (ETS),
- the revision of the Renewable Energy Directive (RED),
- the New European Bauhaus,
- the Affordable Housing Initiative, and
- the European Flagships Renovate and Power Up.

I For a detailed analysis of the role of demand-side solutions, see the ZOE Institute’s previous paper, [1.5 Degree Policy Mix](#).

The emissions gap and the building sector

The recent IPCC report, *Climate Change 2021: The Physical Science Basis*, warns that the world is racing toward the 1.5 °C climate target, with “the central estimate of crossing 1.5 °C of global warming ... occur[ing] in the early 2030s”¹⁵. In their current state, **the sum of all policy pledges falls short of meeting the 1.5 °C target**, with the most recent projections by the United Nations Environment Programme (UNEP) showing 2.7 °C in 2100 even if all Nationally Determined Contributions (NDCs) are achieved¹⁶. The GHG emissions reductions needed in developed countries are particularly significant, at an average of more than 95 % reductions by 2050 from a base year of 1990¹⁷. While the EU has set ambitious targets in line with closing this global “emissions gap”, the existing policy measures are not on track to achieve 2030 or 2050 targets¹. With the measures currently in place, the European Environment Agency (EEA) projects only 41 % emissions reductions by 2030, falling far short of the 55 % target, meaning that **the EU and its Member States must significantly increase the overall rate of decarbonisation**¹.

In the building sector, to meet the EU’s 2050 goal of climate neutrality, energy use in buildings would have to decline by at least 50 %¹⁸. Effectively reducing emissions in the building sector can, however, be particularly challenging. For example, on a global scale, despite a steep growth in the number of actions to reduce energy and limit emissions in the building sector, the rate of emission reductions between 2016 and 2019 slowed down rather than sped up¹⁹. This trend is reflected within the EU, where **energy consumption in the housing sector continues to rise**²⁰.

Housing is one of the three “hotspot” sectors for carbon-intensive consumption, alongside mobility and food. These sectors are the three main areas of climate impact for the average EU citizen’s consumption, and account globally for up to 75 % of lifestyle-related GHG emissions^{3,4}. The average per capita carbon footprint in the EU in 2020 was calculated at 8.6 t CO₂e². However, the 1.5 °C target can only be met if per capita carbon footprints decrease to a global average of 2.5 t CO₂e by 2030, 1.4 by 2040, and 0.7 by 2050³. In housing specifically, consump-



tion-based emissions would have to decrease by 68%³. While so far, most emissions reduction strategies have underutilised the potential of lifestyle-related reduction efforts, research shows that **in realistic pathways to a climate-neutral Europe by 2050, comprehensive policies targeting lifestyle change play a key role**^{3,21}.

In order to close the emissions gap and keep the 1.5 °C target in sight, unprecedented efforts and new approaches are needed, including measures which reimagine and reinvent current patterns in housing and energy use²². River flooding in northern Europe, agricultural droughts, severe wildfires along the Mediterranean, and frequent extreme heat waves in Europe already warn of the widespread consequences for human well-being, the natural environment and the economy if the 1.5 °C target is not reached¹⁵. These warnings demonstrate the urgency of rethinking existing policies as well as designing new policy approaches.

The need for a lifestyles approach

While the discussion on climate mitigation strategies often centres around energy efficiency improvements and the diffusion of renewables, another complementary strategy to close the emissions gap can help to complete the picture: lifestyles. Globally, **the demand for larger living spaces has skyrocketed** over the last decade, outpacing population growth, a trend which can be seen in Figure 1¹⁹. This trend is matched in the EU, where the rising demand for floor area and the accompanying rising energy consumption have outpaced the gains from energy efficiency improvements²⁰.

To effectively reduce energy consumption and the resulting emissions in the housing sector, **this unsustainable demand must also be addressed**, which entails re-envisioning living spaces as a part of fostering sustainable lifestyles. Demand-side policies, or “sufficiency”, are the crucial terms in this context. Beyond trying to satisfy demand with less or non-carbon-based resources, demand-side and sufficiency policies help directly reduce the (energy) demand. The importance of not only improving en-

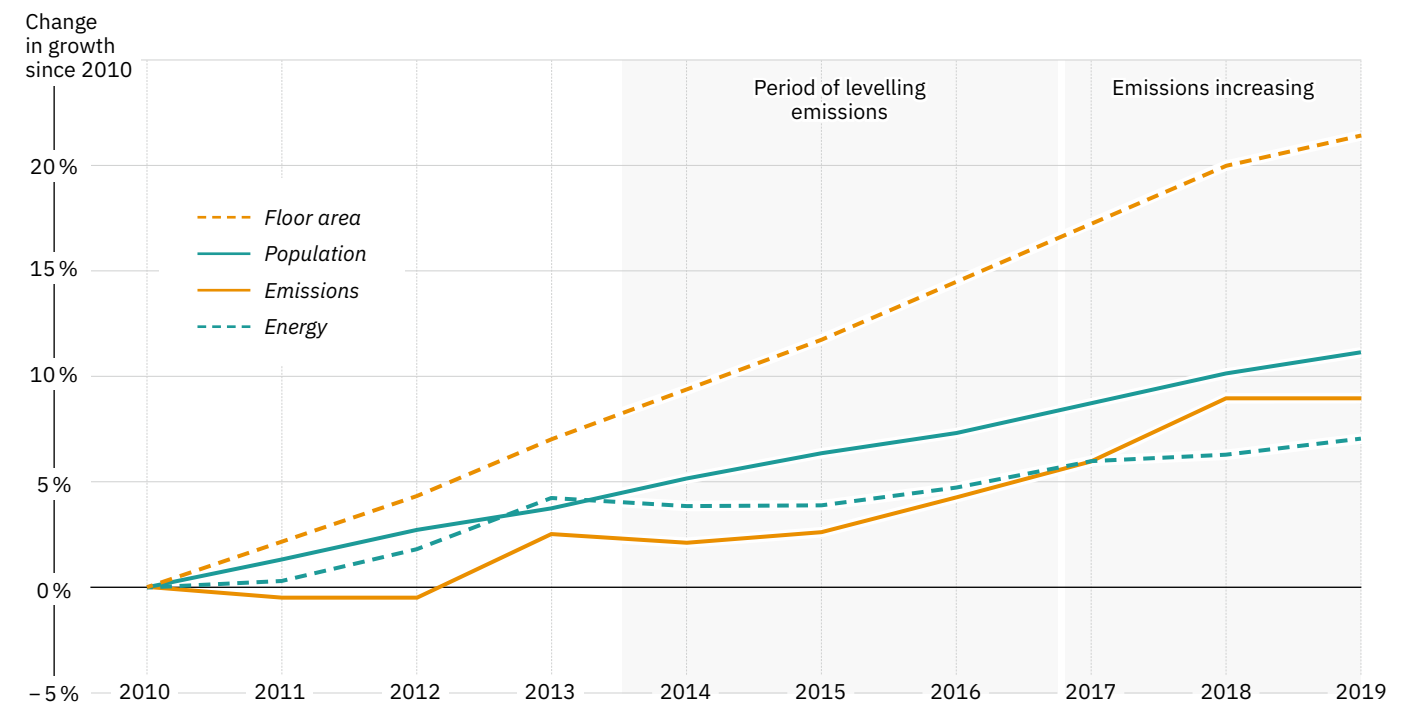
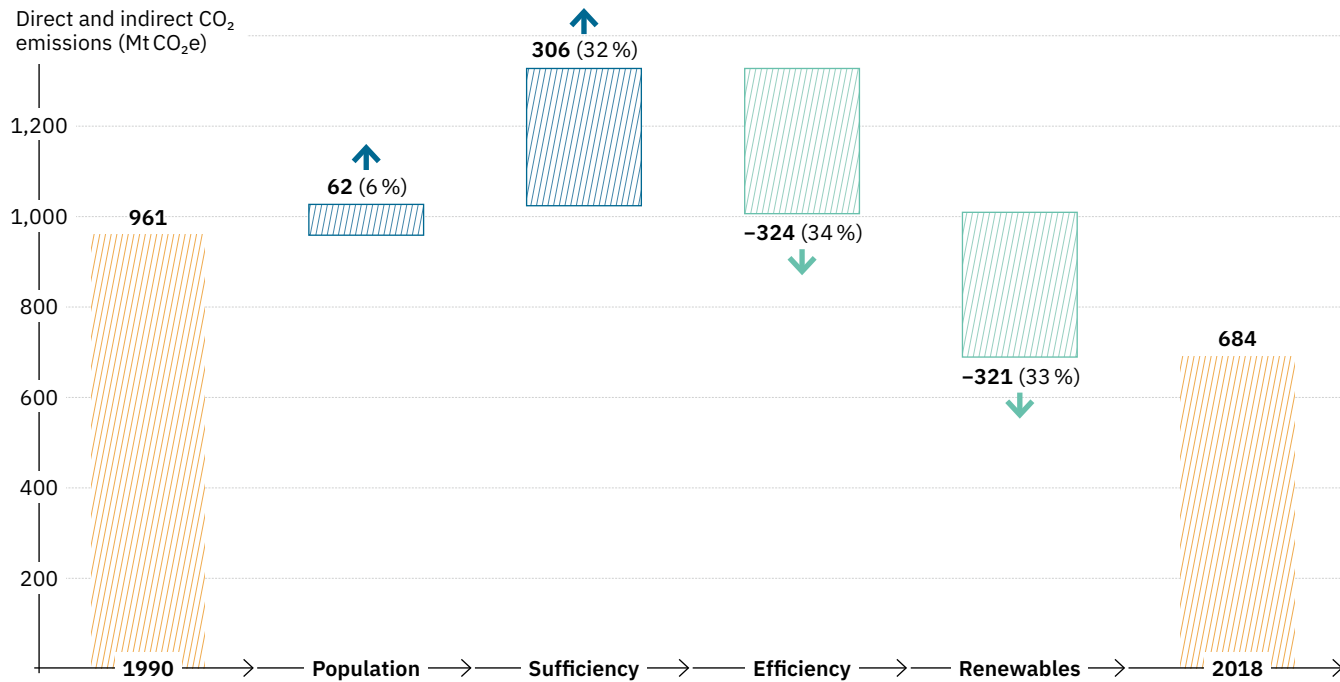


Figure 1: Trends in emissions, population, and floor area across the building sector¹⁹

Decomposition of CO₂ emissions of residential buildings in the EU27 + UK over the period 1990–2018Figure 2: The impact of missing sufficiency policies on emissions reductions in the housing sector⁵

ergy efficiency but also reducing demand in the housing sector is underlined by Figure 2. This figure shows how the increased demand for floor space in the housing sector (labelled as rising emissions under “Sufficiency”) almost completely offset the emissions reductions achieved by energy efficiency improvements in the housing sector.

This shows **the strong relevance lifestyle changes have in the success or failure of addressing the climate challenge** and underscores the need for sustainable lifestyles. In line with definitions by the UNEP, sustainable lifestyles are characterised by such habits and patterns of behaviour, that “minimise the use of natural resources and generation of wastes, while supporting fairness and prosperity for all”².

This is not only about individual behavioural change. **Policies** have also always played a **crucial role in shaping lifestyles**; for example, by requiring a certain amount of parking space for new buildings but not requiring storage space or racks for bicycles. For sustainable lifestyles to properly develop, societal institutions, norms and infrastructures have to be restructured to encourage and enable sustainable individual choices¹³. The term “1.5-Degree

gree Lifestyles” indicates even more concretely the level of ambition by linking the aim of sustainable lifestyles to the political commitment made in the Paris Agreement³. The overall aim of policies which enable “1.5-Degree Lifestyles” is to make it easier for citizens to pursue a sustainable way of living within the restrictions of the remaining global carbon budget. If designed well, these policies not only help reduce GHG emissions but also promote higher life satisfaction, stable societies, and prospering economies²³.

Demand-side policies hold great potential and bring a variety of co-benefits. A major advantage of this approach is that lifestyle changes do not depend on the effectiveness of future technologies and thus, there is no risk of unpredicted ecological side effects^{21,24}. Also, significant co-benefits can be expected, including health improvements, higher overall subjective wellbeing, pollution reductions, and the bolstering of local communities²⁵. Calculations suggest that 84 % of the emissions reduction costs of cutting GHG emissions down to reach a 1.5 °C compatible level in the EU could be offset by savings in health care costs²⁶.



Policy areas with untapped potential in housing

To support 1.5-Degree Lifestyles in housing, policymakers have a wide range of tools and policy options to pick from and build upon^{21,24}. Infrastructural changes like refurbishment and renovation, e.g., including heat pumps and renewable-based heating, already offer considerable reduction potential. In particular, self-producing renewable electricity can decrease the average carbon footprint substantially, although the mitigation potential is impacted by various contextual factors, e.g., location (determining how much energy can be generated) and the way technologies are maintained²⁷.

Thinking from a lifestyles perspective, however, can open up many more, and often more holistic, options. This perspective calls for shifting the focus from optimising individual buildings to designing built environments in pursuit of reaching the 1.5 °C target. Examples of this approach include:

- Many cities and communities are already exploring **how neighbourhoods can be built to encourage a new way of low-carbon living**^{II} (see section 6). For exam-

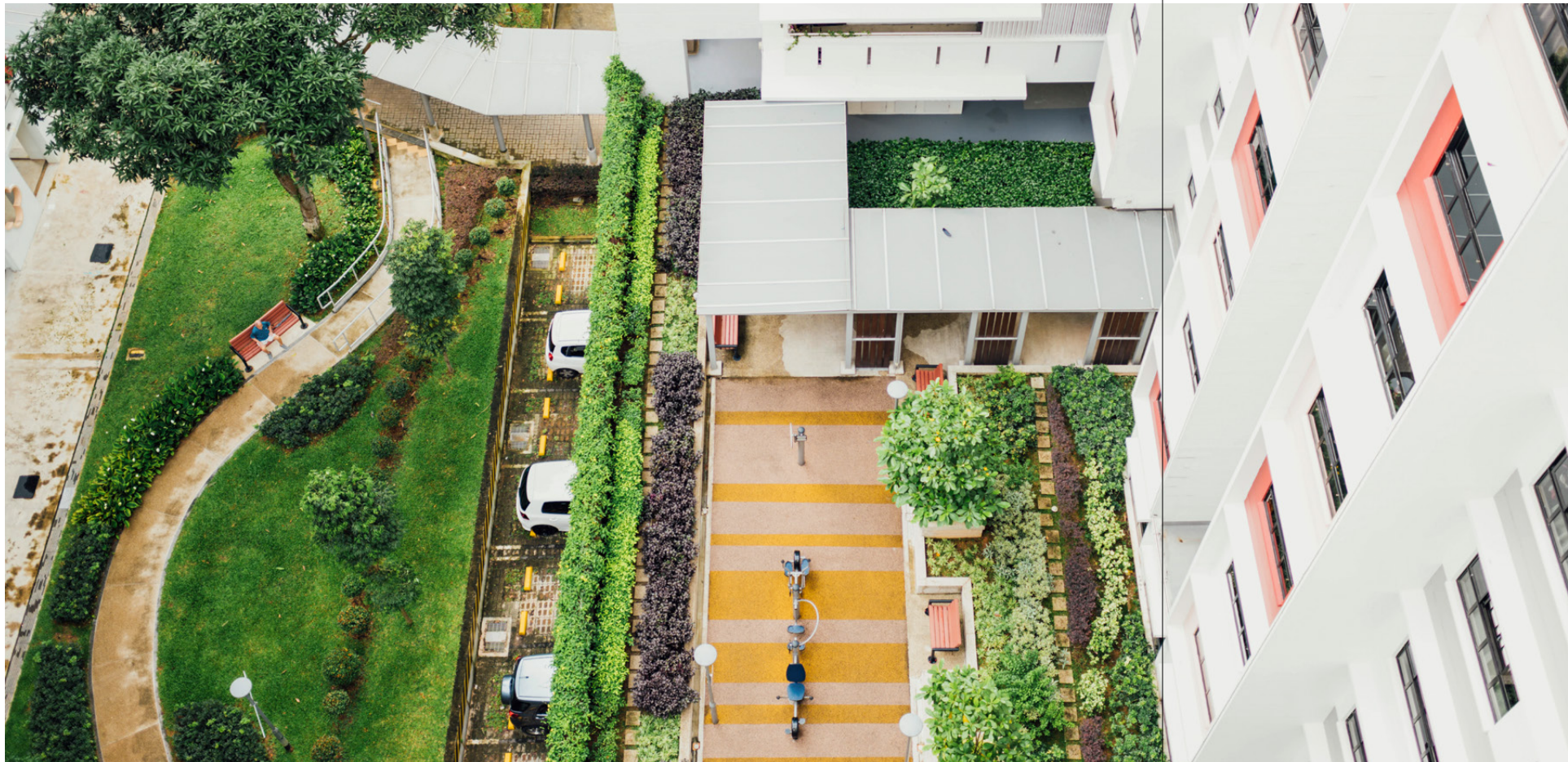
ple, zoning requirements can be designed to encourage sustainable ways of living through making all necessary services available in the neighbourhood, decreasing space for cars, and making neighbourhoods and cities more “walkable”.

- Changing the relationship between living space and energy demand** should also be explored in more depth. Reducing energy demand through behaviour change mainly concerns electricity consumption or heating behaviour. Policies in this context so far are mainly limited to appeals and information provision to the consumers.
- Rising demand for floor space can be tackled through a **“sufficiency” approach encouraging and enabling smaller living spaces**, for example through renting out guest rooms, co-housing, and more multi-family housing developments²⁷. Policy options here range

^{II} **Expert presentation** by Lewis Akenji at ZOE Institute Policy Lab 1: Policy Pathways Towards 1.5-Degree Lifestyles.

from modifying tax incentives to sufficiency consultancy, for example by municipal actors. This policy field is particularly important not least because collective living arrangements have cross-cutting effects into other hotspot areas: people who live together usually not only share space, cooling, heating, lighting and appliances, they also tend to share other consumption types such as food when cooking together and – in a neighbourhood context – traffic can also be reduced²⁷.

- A rather restrictive policy proposal emerging in climate research is to **define needs-based maximum levels of home energy consumption** by households / individuals. This could possibly increase incentives for households to find ways of living that only consume necessary energy, e.g., through sharing, downsizing or reducing the use of space^{III}. However, **this policy proposal requires further research** before it can be definitively included as a policy recommendation.



III ZOE Institute Policy Lab 1: Policy Pathways Towards 1.5-Degree Lifestyles, Housing breakout group

Integrating equity into housing and lifestyles

In the context of global warming, **inequity is a double reality**. On the one hand, vulnerable groups based on income, gender, age or geographical disadvantages suffer more from the effects of climate change. On the other hand, the same groups are affected disproportionately by the impacts of climate policies. Both effects need to be considered when designing climate policies. Accounting for inequity is especially important where policies touch on lifestyles, in order to ensure basic needs are protected, to target the most carbon-intensive consumption, and to increase the public acceptability of these measures²⁸.

Per capita GHG emissions mainly depend on income. Therefore, they are not only unequally distributed on the global level but also within the EU: the top 10 % of energy consumers in the EU consume 20 % of the energy while the bottom 50 % are responsible for 30 %^{IV}. In other words, an individual belonging to the top 10 % consumes three times more energy than an individual in the bottom 10 % of the total population. Today, the emissions target of 2.5 t CO₂eq/cap is only achieved by about 5 % of EU households²⁹. However, these levels are usually kept low due to precarious living conditions and poverty, not emissions-conscious lifestyles. On top of this, **the major reductions in GHG emissions have been mainly achieved by low-income Europeans**, leading to energy poverty in many cases³⁰. Such disparities endanger the success of the EGD and undermine social cohesion and political trust^{31,32}. Considering such disparities, it is necessary that first basic needs are ensured and protected for everyone including physical requirements such as a warm shelter and healthy food and social requirements such as communication, participation, and mobility³³.

As adequate housing is a necessity, **equity considerations must play a central role when designing policies toward emissions reductions in housing**. This is particularly relevant regarding energy use for electricity consumption and heating. Policies focusing on these sectors need to be designed with caution to make sure they do not disproportionately have adverse effects on vulnerable groups³³.

IV For more information, see the ZOE Institute's previous paper [Equitable 1.5 Degree Lifestyles: How socially fair policies can support the implementation of the Green Deal](#).

The EGD and subsequent policy packages identify the alleviation of energy poverty as a key element of the Renovation Wave, for example through the focus on worst-performing buildings in the Renovation Wave and the Affordable Housing Initiative.

However, to a large extent, **residential energy use can be categorised as a “necessary good”** which consumers will buy regardless of changes in price or income. As a necessary good, there is a limit to how far citizens can choose to reduce their emissions in this area. Attempting to achieve reductions, for example, by increasing the price of energy uniquely burdens those who are not able to move or renovate their housing, and these burdens fall heaviest on the shoulders of those with the lowest income. In this context, the new Fit for 55 package has been criticised for extending the EU ETS to the building sector without adequately cushioning the negative effects on vulnerable households^{34,35}. In response to this, the Social Climate Fund devotes parts of the ETS revenues to compensate these households. However, concerns remain about whether the fund can really compensate for all the side-effects of the ETS extension and the problems of its ex-post character (paying back only after the burden materialises), and the fund has limited political backing^{34–36}.

For the development of equitable 1.5-Degree Lifestyle policies, the following criteria should be considered^V:

- Housing and energy costs are, at a core level, a form of subsistence consumption, and when introducing financial policies surrounding housing and energy, policymakers must draw **a red line at ensuring that housing and residential energy use are affordable** for every individual and family.

- The examination of **who can tap into benefits** plays a crucial role. Policies which, for example, reward the uptake of solar PVs or introduce electric vehicle charging infrastructure benefit those who can afford to buy into such sustainable technology.

- Policy measures which allow for **inclusiveness should be prioritised**; for example, through the development of commercial-free areas for recreation in all neighbourhoods or through renewable energy communities.

- Absolute caps are also an option for residential energy use, but, as discussed, such a policy would have to be carefully designed, as different levels of energy use may be a subsistence requirement for some households, for example for those with disabilities or severe illnesses.

- Establishing **participatory decision-making processes** can help reshape zoning requirements for neighbourhoods, ensuring that everyone in the neighbourhood has the opportunity to reimagine the built environment around them in a way which allows them more accessibility, flexibility, and freedom.

^V Based on insights developed in a ZOE Institute expert workshop on “Strengthening equity considerations in 1.5-Degree Lifestyle policies” and the resulting Policy Paper “Equitable 1.5-Degree Lifestyles – How the Green Deal can support socially fair and sustainable policies”.

Mapping policies for equitable 1.5-Degree Lifestyles in housing

To illustrate the new terrain of how policy can contribute to 1.5-Degree Lifestyles in a fair manner in the area of housing, the ZOE Institute has developed **indicative policy maps** consisting of policies currently discussed in the EU political context as well as policy proposals emerging in academic research. In figure 3, policies along the x-axis are scored regarding their expected **contribution to making 1.5-Degree Lifestyles easier**. Their **contribution to equity** is illustrated along the y-axis. The scoring is based on a qualitative assessment drawing on academic research and discussion with policymakers, with a range of –5 to +5, 0 meaning no impact, 3 meaning a moderately positive (or –3 moderately negative) impact and 5 meaning a very strongly positive (or –5 very strongly negative) impact.

The purpose of the map is to make an appeal for designing policies in such a way that they fit into the **upper right** part of the map where incentives and support for low emissions go hand-in-hand with a high level of equity. The positioning of policies on the map may still be a topic of debate, but such debates add to the value of the map by sharpening perspectives on the potential and impacts of policies for achieving equitable 1.5-Degree Lifestyles. After all, the main aim of this map is to **boost discussion and thinking beyond the current set of solutions**.

The development of the map is based on a qualitative impact assessment. This was carried out in exchange with scientific experts and policymakers during the ZOE Institute’s *Policy Lab 2: Shaping changes in the built environment to meet 1.5 Degree Lifestyles*, co-hosted with DG GROW in October 2021. The map presents a non-exhaustive policy selection that characterizes the broad spread of instruments discussed in the field. This selection includes instruments which could be applied at various levels of governance, with some more appropriate at the national or local level and some arising from the EU policy landscape. The positioning of the policies in the map is indicative only and also accounts for considerations such as avoiding overlaps and allowing a balanced distribution. The assessment values and brief explanations can be found in the map’s accompanying table.

In this paper, we will focus on a few of the most promising policy recommendations to achieve equitable housing policies which enable citizens to live “1.5 Degree Life-

styles”. To illustrate the combined approach toward lifestyles and equity visualised on the map, take the example of shared or communal housing. In general, improved support for shared or communal housing can be implemented through various instruments at various levels, such as priority areas for communal projects and lower prices for purchasing community/municipality ground through lower taxes/fees or more favourable mortgage conditions²¹. Such measures impact the lifestyle choices of individuals and households, facilitating shared living situations and thereby cutting down on living space through shared communal and guest spaces^{21,37}. With respect to the 1.5 °C target, this policy can aid decarbonisation efforts not only through the reduction in floor space but also through the reduction of energy-intensive appliances per household. With respect to equity, this measure can enable community building and increase support for elderly or disadvantaged individuals^{21,33}.

As an example of a promising policy on the national or local level, consider instruments such as progressive property taxation. Progressive property taxes, calculated on a per capita level, would ensure that the purchase of larger houses or apartments leads to a larger financial burden. Because the tax is progressive by design, it places the emphasis on wealthier households and thus enhances equity. From the perspective of 1.5-Degree Lifestyles, progressive property taxation can help overcome the trend toward continually larger floor space per person. Such an instrument, however, must be linked to the per capita floor space so as not to disproportionately affect larger families³⁷.

Policy Visualisation in the Housing Sector

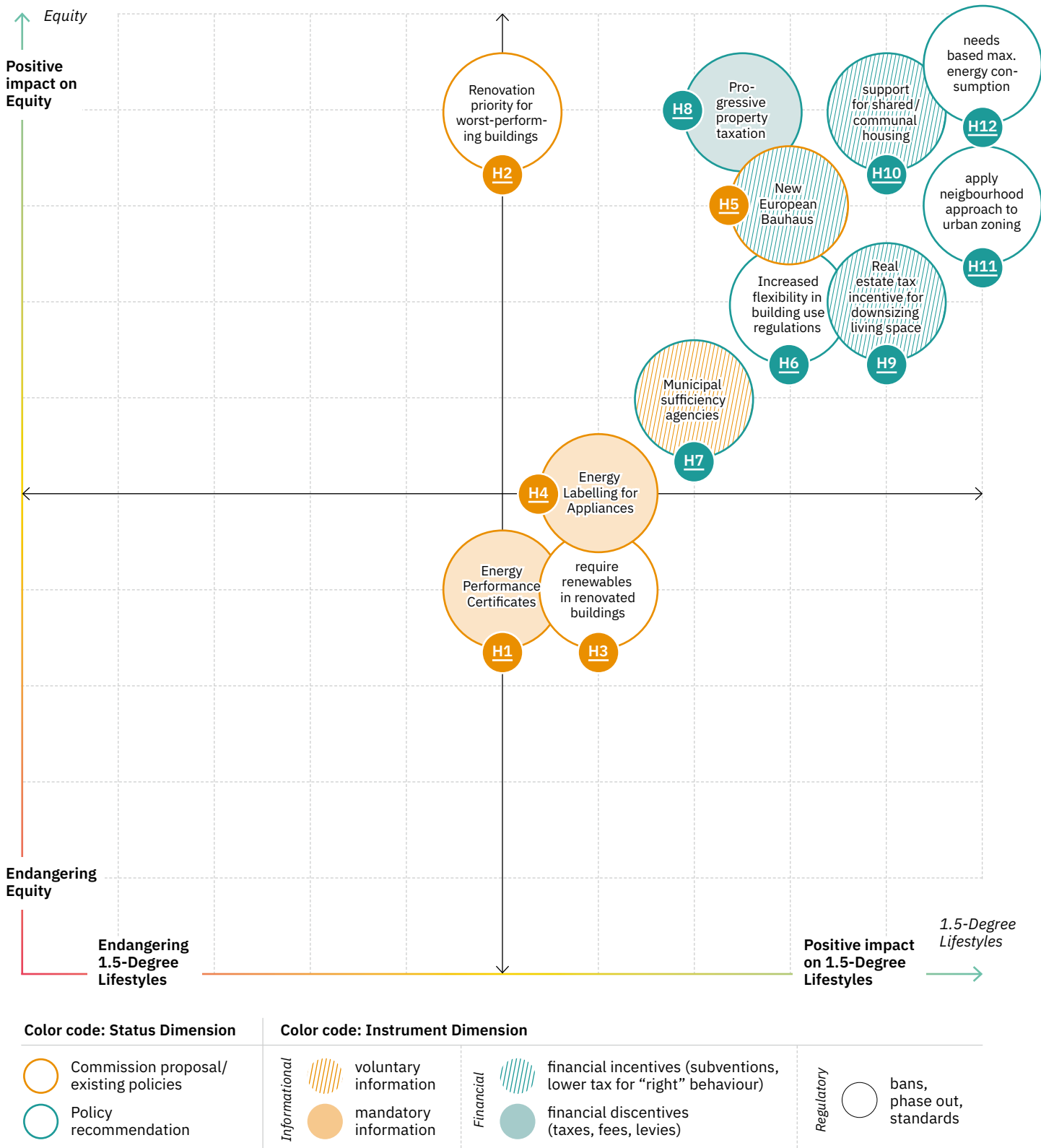


Figure 3: The impact of existing and recommended EU housing policy measures on equity and lifestyles

Commission proposals / existing policies

	Estimated impact on	
	life-style	equity
H1 · Energy Performance Certificates The costs of generating EPCs are usually indirectly passed on to buyers and renters. The certificates are often confusing, not standardized, and haven't been shown to impact buying and renting choices.	0	-1
H2 · Renovation priority for worst-performing buildings Low-income people disproportionately live in the worst-performing buildings, exacerbating energy poverty. While this policy allocates significant resources to energy poverty, the relevance for 1.5-Degree Lifestyles is unclear.	0	4
H3 · Renewables requirement in renovated buildings Increasing the presence of renewables in all new and renovated buildings/units can make energy more expensive. Increasing the presence of renewables in all new and renovated buildings/units decreases emissions but does not impact lifestyles.	1	-1
H4 · Energy labelling for appliances This has no clear impact on equity. Appliances only have a small impact on energy consumption, although the impact of such policies could be improved by including reparability requirements and a no-data no-market principle. In addition, choosing a more efficient product does not require a lifestyle change.	1	0
H5 · New European Bauhaus In line with the Bauhaus concept 100 years ago, the New European Bauhaus focuses on providing a good life, explicitly incorporating social aspects. With its focus on broad societal debates and engagement, the New European Bauhaus reveals a high potential for inducing the required cultural shift towards 1.5-Degree Lifestyles.	3	3

Policy recommendations

	Estimated impact on	
	life-style	equity
H6 · Increase flexibility in building use regulations Increasing flexibility through adaptable building use regulations would bring (1) more and (2) more affordable flats on the market. This can happen for example through changing office space into dwellings, allowing for building micro-apartments, and allowing for a shift from ownership to usership. The ability to choose an adequate (neither too limited nor oversized) per capita living size is one of the most important steps towards 1.5-Degree Lifestyles.	3	2
H7 · Municipal sufficiency agencies By offering training on how to run a sufficient home, such agencies could especially support households in energy poverty. Regarding 1.5-Degree Lifestyles, sufficiency agencies can, for example, support dwelling exchange between growing and shrinking households, ensure that enough flats of reduced size – and of lower price – are offered, and thereby ensure that per capita living area is adequate and neither too limited nor oversized.	2	1
H8 · Progressive property taxation Progressive property taxation contributes to better equity as it specifically targets wealthier parts of society. It can also contribute to overcoming the trend toward steadily increasing floor area per capita.	2.5	4
H9 · Real estate tax incentive for downsizing living space It is more likely that wealthier population groups will benefit from this measure; however, having it in place does not harm lower income groups. As an additional side effect, this would bring bigger apartments/houses on the market again for larger families or shared housing. Benefitting households which move to smaller dwellings can be an important signal to take up societal debate on per capita living space.	4	2
H10 · Financial support for shared/communal housing This can offer support for elderly/disadvantaged individuals and build community. Shared/communal housing is a lifestyle choice which can really decrease floor space per capita and the number of appliances per household.	4	4
H11 · Apply a neighborhood approach to urban zoning This will make access to needs and amenities easier, also in low-income areas. Through changes in urban design, reducing space for cars, and making neighborhoods and cities more walkable, a new ‘default’ way of low carbon living can be constructed and encouraged.	5	3
H12 · Needs-based maximum energy consumption By basing the maximum on needs, luxury consumption rather than needs-based energy consumption is targeted. This pushes households to find a way of living which uses only the necessary energy by downsizing, sharing or reducing appliances, and so on.	5	4.5

Policy recommendations

The policies making significant contributions to equitable 1.5-Degree Lifestyles can be found in the upper right corner of the policy map. All of them are relevant, but from this set, we would like to highlight three, based on their specific relevance in the EU policy context and their potential to foster systemic change.

Two types of policies offer the opportunity for the European Union to help reshape the ways in which the built environment is inhabited in order to foster equitable 1.5-Degree Lifestyles, while the third type renders buildings themselves more adaptable to sustainable lifestyles. It should be noted that an effective and equitable repurposing of the built environment on a neighbourhood level requires the participation of those living in those neighbourhoods and, on a broader scale, of the residents of a city or state. **Changes to housing and zoning policy should be cocreated with citizens and residents** or decided through citizens' assemblies and similar democratic initiatives, especially to encourage equitable solutions and rebalance the influence of industry in this sector³⁸.

That said, the most promising recommendations for policies which enable 1.5-Degree Lifestyles while advancing equity are as follows:

1. Policies providing **financial support for shared or communal housing** score equally high regarding their contribution to both equity and 1.5-Degree Lifestyles. Rather than a prescriptive policy, these financial support policies can help encourage a voluntary shift toward a communal way of living which some parts of the population already practice²¹. Helping citizens rethink their ways of living ultimately builds more equitable and environmentally friendly living opportunities²¹. Examples of such financial support could include funding for communal housing projects, preferential access to publicly owned real estate for communal housing, and the establishment of information centres and resources for those seeking communal living opportunities.
2. Policies advancing **neighbourhood approaches to urban zoning** received a particularly high score with respect to their estimated impact on increasing equity because they can facilitate the access to amenities and needs in low-income areas³⁹. Rethinking urban zoning also promotes a less carbon-intensive way of living, for example by reducing space for cars, thus contributing to GHG emissions reductions⁴⁰. These in-

terventions thus go hand-in-hand with initiatives to approach housing more holistically and connect it with other systems like mobility (e.g., considering how housing is built in relation to public transport, grocery stores, bike tracks, gardens, and so on). Some cities have already implemented projects exploring how urban zoning could be done differently, for example through Barcelona's car-free "superblocks" or the "15-minute city" concept being implemented by Paris and other cities^{41,42}. Neighbourhood approaches are a promising area for lifestyle-oriented interventions, which could, at the EU level, be guided by and find inspiration, for example, in the New European Bauhaus.

3. Policies which increase flexibility through **adaptable building use regulations** contribute both to equity and to 1.5-Degree Lifestyles by creating opportunities to adapt the indoor space available to meet the needs of citizens. Dwelling quality is determined by needs, liveability, and subjective wellbeing; therefore, the ideal living space for each person is not set or one-size-fits-all but varies throughout a person's life, for example when their family expands or their children move out⁴³. Adaptable building use regulations and creative design, as practiced for example in the "Urbane Dörfer" project in Switzerland, could allow residents to adapt the purpose of rooms, alter the size of or division between apartments, and shift from ownership to usership or single-family to communal over time^{38,44}. This can improve equity by ensuring residents are not paying for more space and energy than they need and by opening up space for new dwellings, including by opening unused office space for housing. The flexibility to change one's living space as necessary can also promote health by relieving energy poverty and freeing up resources for other needs³⁸.



Conclusion

In addition to existing policies reducing the energy needs of buildings and shifting energy sources, EU policymakers have already begun to explore the potential value of reshaping the built environment. In this sense, the **New European Bauhaus is a promising step in the right direction**, especially in its focus on societal debates and citizen engagement. Described as a design lab, network and accelerator at the same time, the New European Bauhaus is set to re-envision our built environment⁶, including the interaction between housing and the other two hot-spot areas food and mobility. Furthermore, similarly to the Bauhaus concept of 100 years ago, the initiative explicitly aims to foster a "good life" which is accessible and inclusive, opening an avenue for creative approaches to equity in the built environment. In addition to being sustainable and beautiful, New European Bauhaus projects are envisioned as affordable and accessible, and the holistic approach toward a liveable built environment can produce ways to support equitable 1.5-Degree Lifestyles outside the home⁶. These projects create room and funding for the EU to explore and introduce the recommendations set out here, including communal housing, sustainable and participatory neighbourhood zoning, and flexible building usage.

To build on this progress and unlock the full emissions reduction potential of lifestyle changes in housing and the built environment, EU policymakers should steer and implement further innovative policy approaches such as those discussed in this policy brief. By **envisioning and developing policies which advance both equity and sustainable lifestyle change**, policymakers can drive a European shift toward the equitable 1.5-Degree Lifestyles needed to build the first climate-neutral continent.

References

1. Förster, H. et al. (2021). *Trends and Projections in Europe 2021*. European Environment Agency. <https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2021>

2. UNEP. (2020). *Emissions Gap Report 2020*. UNEP – UN Environment Programme. <http://www.unep.org/emissions-gap-report-2020>

3. Akenji, L., Lettenmeier, M., Koide, R., Toivio, V. & Amellina, A. (2019). *1.5-Degree Lifestyles: Targets and options for reducing lifestyle carbon footprints*. Institute for Global Environmental Strategies, Aalto University, and D-mat ltd.

4. Serenella Sala. (2019). *Consumption and consumer footprint: indicators and assessment of the environmental impact of European consumption*. <https://data.europa.eu/doi/10.2760/15899>

5. Saheb, Y. (2021). *Sufficiency and circularity: the two overlooked decarbonisation strategies in the “Fit For 55” Package*. <https://eeb.org/library/sufficiency-and-circularity-the-two-overlooked-decarbonisation-strategies-in-the-fit-for-55-package/>

6. *New European Bauhaus: beautiful, sustainable, together* (2021). European Union. https://europa.eu/new-european-bauhaus/index_en

7. *The European Green Deal*. COM(2019) 640 (2019).

8. *Recovery and Resilience Facility*. European Commission – European Commission. https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

9. Kruit, K., van de Poll, F., Rooijers, F., Vendrik, J. & van Berkel, P. (2020). *Zero carbon buildings 2050*. CE Delft – EN. <https://cedelft.eu/publicaties/zero-carbon-buildings-2050/>

10. Hertwich, E. et al. (2020). *Resource Efficiency and Climate Change: Material Efficiency Strategies for a Low-Carbon Future*.

11. European Commission. (2021). *“Fit for 55”: delivering the EU’s 2030 Climate Target on the way to climate neutrality*. COM(2021) 550.

12. Sterneberg, R., Treige, Y. & Carlucci Rincones, S. *European Commission unveils its “Fit for 55” package*. DLA Piper. <http://www.unep.org/resources/emissions-gap-report-2021>

13. Akenji, L. & Chen, H. (2016). *A Framework for Shaping Sustainable Lifestyles: Determinants and Strategies*.

14. *A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives*. (2020). COM(2020) 622.

15. *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. (2021). Cambridge University Press.

16. IEA. (2021). *A Roadmap for the NetZero by 2050 – Global Energy Sector*.

17. Dusch, V., Denishchenkova, A. & Wachsmuth, J. (2019). *Achievability of the Paris Agreement targets in the EU: demand-side reduction potentials in a carbon budget perspective*. Clim. Policy 19, 161–174.

18. Staniaszek, D., Kockat, J., Broer, R. & Álvarez, X. F. (2021) *The road to climate-neutrality: Are national long-term renovation strategies fit for 2050?* <https://www.bpie.eu/publication/the-road-to-climate-neutrality-are-national-long-term-renovation-strategies-fit-for-2050/>

19. United Nations Environment Programme & Global Alliance for Buildings and Construction. (2020). *2020 Global Status Report for Buildings and Construction: Towards a Zero-emissions, Efficient and Resilient Buildings and Construction Sector – Executive Summary*. <https://wedocs.unep.org/xmlui/handle/20.500.11822/34572>

20. Bierwirth, A. & Thomas, S. (2019). *Estimating the sufficiency potential in buildings: the space between underdimensioned and oversized*.

21. Kai Kuhnhen et al. (n. d.). *A Societal Transformation Scenario for Staying Below 1.5°C*. Heinrich-Böll-Stiftung. <https://www.boell.de/en/2020/12/09/societal-transformation-scenario-staying-below-15deg>

22. Otto, I. M. et al. (2020). *Social tipping dynamics for stabilizing Earth’s climate by 2050*. Proc. Natl. Acad. Sci. 117, 2354–2365.

23. Vogel, J., Steinberger, J. K., O’Neill, D. W., Lamb, W. F. & Krishnakumar, J. (2021). *Socio-economic conditions for satisfying human needs at low energy use: an international analysis of social provisioning*. Glob. Environ. Change 102287 (2021).

24. Nyfors, T. (2020). *Ecological Sufficiency in Climate Policy: Towards Policies for Recomposing Consumption*. Futura 3.

25. Wang, S. & Khosla, R. (2021). *Achieving Low-Carbon and Equitable Lifestyle Change*. <https://cast.ac.uk/wp-content/uploads/2021/01/CAST-Briefing06.pdf>

26. Stagl, S. (2020). *Opportunities of post Covid-19 European recovery funds in transitioning towards a circular and climate neutral economy*. [https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_BRI\(2020\)658186](https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_BRI(2020)658186)

27. Ivanova, D. et al. (2020). *Quantifying the potential for climate change mitigation of consumption options*. Environ. Res. Lett. 15, 093001

28. Lorek, S., Gran, C., Barth, J., Lavorel, C. & Tomany, S. (2021). *Equitable 1.5 Degree Lifestyles: How socially fair policies can support the implementation of the Green Deal*. <https://zoe-institut.de/en/publication/equitable-1-5-degree-lifestyles/>

29. Conceição, P. (2020). *Human Development Report 2020: The Next Frontier – Human Development and the Anthropocene*. <http://hdr.undp.org/sites/default/files/hdr2020.pdf>

30. Oxfam. (2020). *Confronting Carbon Inequality in the European Union*. https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/2020-12/Confronting%20Carbon%20Inequality%20in%20the%20EU_0.pdf

31. Gore, T. & Alestig, M. (2020). *Confronting Carbon Inequality in the European Union*.

32. Ivanova, D. & Wood, R. (2020). *The unequal distribution of household carbon footprints in Europe and its link to sustainability*. Glob. Sustain. 3.

33. Roberts, J. T. et al. (2020). *Four agendas for research and policy on emissions mitigation and well-being*. Glob. Sustain. 3.

34. Friends of the Earth Europe. (2021). *“Fit for 55” puts energy poor in jeopardy*. <https://friendsoftheearth.eu/press-release/fit-for-55-puts-energy-poor-in-jeopardy/>

35. Right to Energy Coalition (2021). *Fit for 55, not fit for Europe’s energy poor*. <https://righttoenergy.org/2021/07/14/fit-for-55-not-fit-for-europes-energy-poor/>

36. Taylor, K. (2021). *EU’s proposed social climate fund comes under fire from all sides*. Euractiv.

37. Cohen, M. J. (2021). *New Conceptions of Sufficient Home Size in High-Income Countries: Are We Approaching a Sustainable Consumption Transition?* Hous. Theory Soc. 38, 173–203.

38. Saheb, Y. (2021). *A blueprint to deliver a healthy, affordable, and sustainable built environment for all*. <https://mk0eebor-gicuyptuf7e.kinstacdn.com/wp-content/uploads/2021/03/Blueprint-for-sustainable-built-environment.pdf#%5B%7B%22num%22%3A19%2C%22gen%22%3A0%7D%2C%7B%22name%22%3A%22XYZ%22%7D%2C83%2C757%2C0%5D>

39. Folmer, E. & Risselada, A. (2010). *Zoning the neighbourhood economy: the zoning plan as a formal institution and its relation to diverging economic trajectories of urban residential neighbourhoods*. Louvain-la-Neuve: European Regional Science Association.

40. Akenji, L., Briggs, E., & United Nations Environment Programme. (2015). *Sustainable consumption and production: a handbook for policymakers*.

41. Yeung, P. (2021). *How “15-minute cities” will change the way we socialise*. <https://www.bbc.com/worklife/article/20201214-how-15-minute-cities-will-change-the-way-we-socialise>

42. López, I., Ortega, J. & Pardo, M. (2020). *Mobility Infrastructures in Cities and Climate Change: An Analysis Through the Superblocks in Barcelona*. Atmosphere 11, 410.

43. Stefánsdóttir, H. & Xue, J. (2018). *The quality of small dwellings in a neighbourhood context*. Housing for Degrowth. Routledge.

44. Urbane Dörfer. (2020). *Urbane Dörfer* <https://www.urbanedoerfer.ch/>



ZOE Institute for Future-fit Economies is a non-profit and independent think & do tank. We are dedicated to research for a future-fit economy. At the interface of politics, science and civil society, we develop trend-setting impulses for the fundamental questions of economic development.

 info@zoe-institut.de

 www.zoe-institut.de

 [@zoe_institute](https://twitter.com/zoe_institute)