

How socially fair policies can support the
implementation of the European Green Deal

Equitable 1.5-Degree Lifestyles



Imprint

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Policy Pathways towards 1.5-Degree Lifestyles

This policy brief is the first in a publication series that explores *Policy Pathways towards 1.5-Degree Lifestyles* – lifestyles which are compatible with staying within 1.5 °C global warming. It encompasses the insights developed during a scientific workshop with experts on sustainable and equitable housing held in April 2021 as well as a Policy Lab facilitating exchanges between policymakers and other stakeholders conducted by the ZOE Institute in June 2021. A further publication will provide background information on the role of equitable 1.5 Degree Lifestyles in reducing emissions. The background publications serve as a foundation for the thematic Policy Labs exploring how future-fit policy pathways for Europe can be created in the areas of food, mobility and housing. Three publications related to these policy labs on food, housing and mobility will follow. For more information about the project, visit [Policy Pathways towards 1.5 Degree Lifestyles](#).

Executive Summary

The Communication on the European Green Deal sets the ambition for Europe to become the **first climate-neutral continent by 2050**; however, it also stresses that this transition should be **fair and inclusive** (European Commission, 2019). When presenting the new set of measures to lead Europe on the path toward reaching climate neutrality by 2050 and –55% greenhouse gas (GHG) emissions by 2030, the European Commission President Ursula von der Leyen stressed the importance of putting social balance at the heart of the transformation necessary to reach this objective (von der Leyen, 2021). Executive Vice President Frans Timmermans underlined the need for this transition to be perceived as “fair” and brought forward the importance of influencing people’s behaviours to “move towards a zero-emission society and zero-emission economy” (Genicot, 2021).

Climate change and socioeconomic inequality reinforce one another, with the effects of the former hitting the most vulnerable the hardest, including lower-income groups, while the rising consumption of “luxury goods” – goods for which demand increases proportionately larger than increases in income – by high-income groups contributes to the acceleration of climate change (UNDP, 2020). Therefore, **tackling unsustainable consumption patterns is at the heart of addressing this causality**.

This policy brief provides a research overview about the equity implications of 1.5-Degree Lifestyles – lifestyles that are compatible with the 1.5 °C aspirational target of the Paris Agreement.

Calculating consumption-based emissions, emissions caused in the production, distribution, use and disposal phase of a product or service, each person on global average emits 4.8 t CO₂eq every year. For the citizens of the EU, the annual average, however, is 8.2 t CO₂eq. To stay within the limit of 1.5 °C, this level must go down to **2.5 t CO₂eq by 2030** and even **0.7 t CO₂eq by 2050**. So far, the **emissions reductions achieved in Europe mainly came from lower income groups** (Gore, 2020). Since 1990, the GHG emissions generated by the bottom 50 % of the EU’s population by income have fallen by 24 % while those generated by the top 10 % have risen by 3 %. The top 1 % have even risen by 5 %. The lack of policy focus on the high-carbon activities of high-income groups raises substantial ethical and equity concerns, not least because those population groups have a high capacity for climate change mitigation.



There are a variety of challenges when it comes to designing appropriate policy on this front:

- 1. The key consumption areas with the highest climate relevance are interconnected** and need to be addressed in a holistic manner. Food, mobility, and housing, with the latter also including heating/cooling and electrical appliances are all central for the way we live.
- The **most significant determinant of a person’s carbon footprint is income** (Hubacek et al., 2017). Today, the richest 10 % of the global population are responsible for almost half of total consumption-related emissions while the poorest 50 % account for only about 10 %.
- Next to be effective in tackling GHG emissions climate policies need also be explicitly designed in a way that is fair.** 1.5-Degree Lifestyles can be diverse as long as they stay within ecological boundaries. To be equitable, however, these policies should strengthen the prospects of the most vulnerable groups to live a good life while reducing the carbon-intensive consumption patterns of high-income groups.

One of the common solutions to reduce unsustainable consumption patterns is “getting the price right” through internalizing the environmental costs of products and services. However, this paper argues that **while price signals play a crucial role, they alone run the risk of being insufficient in accelerating decarbonisation and lack fairness considerations**. Policies influencing aggregate demand aimed at fostering lifestyle changes must be carefully designed to generate social acceptance and avoid potential harm. Such policies require addressing the root causes of today’s unsustainable consumption in a holistic way and with the lens of building a more equitable society.

Against this background, this policy brief stresses the importance of a demand-side perspective. It is arguing for a needs-based approach to ensure meaningful climate policies are accepted by citizens. It builds around the fundamental notions of consumption corridors, personal carbon budgets and universal basic services as important concepts to be considered by policymakers when designing policies compatible with a 1.5 °C scenario. Focusing on the EU policy context, it develops a map of policy instruments which support or hinder equitable 1.5-Degree Lifestyles.

Introduction

It has become increasingly visible in the European Union, as well as within its Member States, that the ecological crisis is predominantly caused by unsustainable consumption patterns. The [European Green Deal \(EGD\)](#) introduced by the European Commission in 2019 encompasses a variety of policy initiatives directed towards climate-neutrality in the EU and is a step forward in this direction. What is not considered well enough so far is that the ecological crisis is predominantly caused by the consumption of the affluent segments of societies. On a global level, the wealthiest 10 % are responsible for almost half of global emissions while the poorest 50 % are responsible for only 10 % of global emissions ([Figure 1](#)).

While a high share of the global wealthy lives in the EU, a more nuanced look at how income, wealth and related emissions are distributed within the EU shows large differences as well. The top 10 % of EU energy consumers, for example, are responsible for 20 % of the energy consumption while the bottom 50 % only consume 30 %. Comparing on a per capita basis, a person in the top 10 % consumes five times more energy compared to someone belonging to the bottom 10 % and still three times more than the lower half of the population ([Figure 2](#)).

In addition to their comparatively moderate contribution to GHG emissions, low-income and other vulnerable groups are disproportionately threatened by worsening climate conditions as well as by climate policies. People who disproportionally belong to vulnerable groups include women and girls, ethnic minorities, the unemployed,

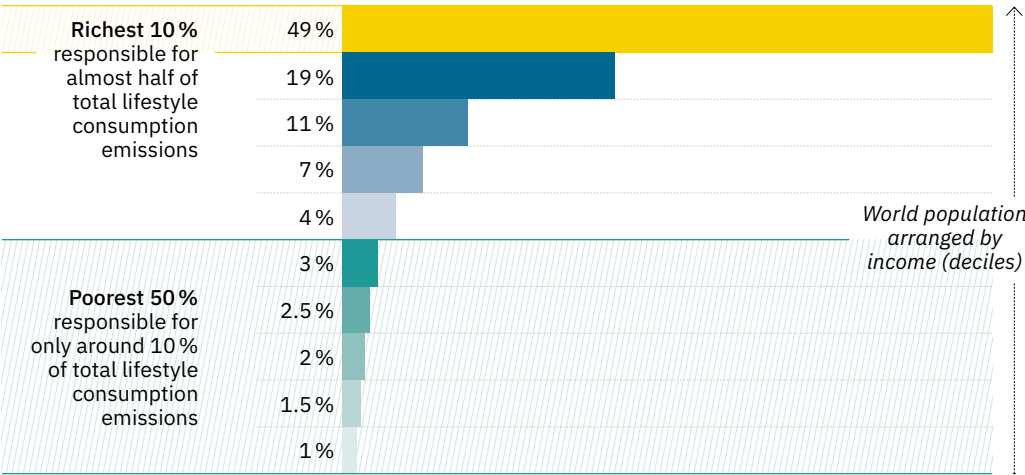


Figure 1: Percentage of CO₂ emissions by world population (Source: Gore & Alestig, 2020)

In addition to “getting the prices right”, the European Green Deal needs to establish policies which help achieve its goals in a socially fair way.

people with chronic illnesses or disabilities, and older or younger people (Skillington, 2016). The COVID-19 pandemic has also been shown to disproportionately affect them (Gore, 2020).

Thus, the interrelation between equity and climate policy cannot be ignored any further. Both the United Nations and the European Economic and Social Committee (EESC) have acknowledged this with the “leave no one behind” principle. In accordance, the UNDP’s 2020 Human Development Report redefined its way of measuring human development and included indicators accounting for planetary pressures rather than only focussing on income, education and health, a change which reduced the ranking of many European countries: in the worst cases, Luxembourg went down 131 places, Estonia 40 places, and Slovakia 21 places, while others like Hungary (+21) and Croatia (+19) improved in the ranking (UNDP, 2020).

In a market which does not internalise the cost of climate change, more sustainable products are more expensive. Organic food or train journeys in Europe (relative to air travel) illustrate well the non-internalisation of the cost of climate change. Thus, raising prices on ecologically harmful consumption is a widely used instrument employed for example in the case of fuel or electricity. This, however, leads to a situation where poorer parts of the population are suffering. The financial impacts of taxes on basic goods and services like mobility and keeping homes warm in the winter or cool in the summer hits these groups much harder. As [Figure 3](#) shows for example, the taxes on home energy consumption impact the budget of the lowest income group over three times more in relative terms than

the wealthier parts. This has strong implications for energy and mobility poverty – a fact that needs to be considered when the EU extends its [Emissions Trading System \(ETS\)](#) to buildings and transport (Stoerring, 2017). Thus far, such policies themselves risk deepening inequality further. The “yellow vests” protests in France are a prominent example in this context.

This situation indicates an urgent need for climate and economic policies to be explicitly designed in a way that is fair and equitable. In the context of the “[Fit for 55](#)” programme, the [Social Climate Fund](#) already addresses this issue. It devotes part of the ETS revenues to compensate those households who spend a larger part of their incomes on energy and transport and who, in certain regions, do not have access to alternative, affordable energy, mobility and transport solutions. This is a good first step. However, to ensure a successful implementation of the EGD, equity considerations and their interrelation with consumption patterns need to play a central role in the formulation of climate-related policies – beyond the reimbursement of overly strong financial burdens.

This policy brief provides the case for equitable 1.5-Degree Lifestyles by illustrating the insights brought by a demand-side perspective and argues for a needs-based approach as a promising path toward the acceptance of meaningful climate policies. Focusing on the EU policy context, it lays the ground for further publications in this series, in particular for developing a map of policy instruments which support or hinder equitable 1.5-Degree Lifestyles in the areas of food, housing and mobility.

Energy footprint inequality Europe (data for 2011)

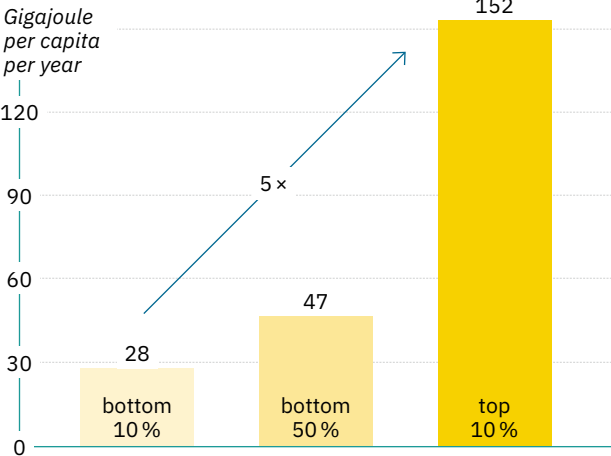


Figure 2: Per capita energy consumption of the top and bottom 10 % of income in the EU (Source: Oswald for this paper)

Multiple of 5th quintile

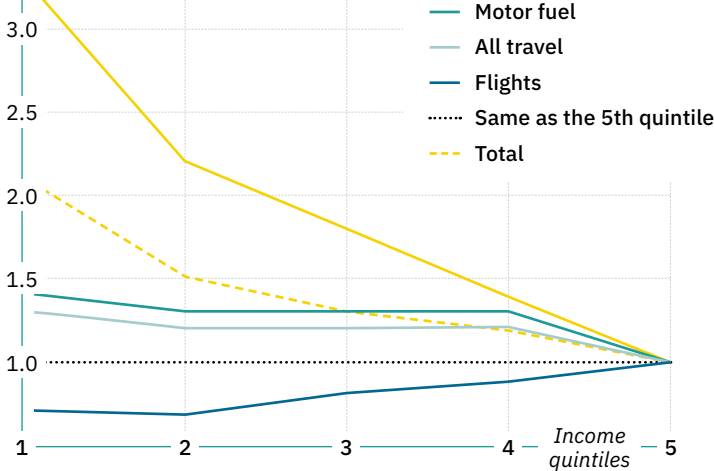


Figure 3: Distribution of carbon tax burdens in the EU (Source: Büchs, 2021a)

A lifestyle perspective reveals the scope of the challenge ahead and offers new strategies for climate and economic policy.

Insights of taking a 1.5-Degree Lifestyles approach

Many efforts have been undertaken globally to limit global warming, but so far, even the sum of all policy pledges falls short of meeting the 1.5 °C target (IEA, 2021). Thus, awareness is rising that in addition to product- and production-based measures and negative emission technologies, demand-side actions are also sorely needed (Creutzig et al., 2018; Masson-Delmotte et al., 2018; UNEP, 2020). This is highlighted for example in the International Energy Agency’s roadmap for the global energy sector’s path toward net zero emissions by 2050 (IEA, 2021). The need for measures addressing demand becomes especially obvious when calculating lifestyle carbon footprints. These footprints sum up direct as well as embedded emissions from the production, distribution, consumption and disposal of products and services. On average globally, each person emits 4.8 t CO₂e annually. EU citizens have an average carbon footprint of 8.2 t CO₂e, which adds up to 22 % of global GHG emissions (Ivanova & Wood, 2020). To realise 1.5-Degree Lifestyles, meaning lifestyles meeting the requirements for achieving the political commitment to stay within 1.5 °C global warming, per capita emissions need to be brought down to 2.5 t CO₂e by 2030 and even 0.7 t CO₂e by 2050 (Akenji et al., 2019).

However, emissions within the EU are also distributed unequally. One important factor is the region. Economic factors play a role here as can be seen in Figure 4 with regard to eastern European countries; the way electricity is produced can also make a difference, as in the cases of France and Norway.

The most significant determinant influencing a person’s carbon footprint is income (Hubacek et al., 2017), and the emissions caused by food, housing and mobility stand out in their impact, followed by clothing, services and manufactured goods to a lesser degree (Ivanova et al., 2017). As Figure 4 indicates, mobility in particular is disproportionately affected by rising income, as is housing.

The uneven contribution to GHG emissions in the EU between the bottom 5 % and bottom 50 % of emitters on the one hand, and the top 10 % and top 1 % of emitters on the other hand, has sharpened over time. In fact, the emissions reductions achieved in Europe thus far have to a large extent come from reducing the emissions of low-income rather than high-income Europeans. Since 1990, the per capita GHG emissions generated by the bottom 50 % of the EU’s population by income have fallen by 32 %

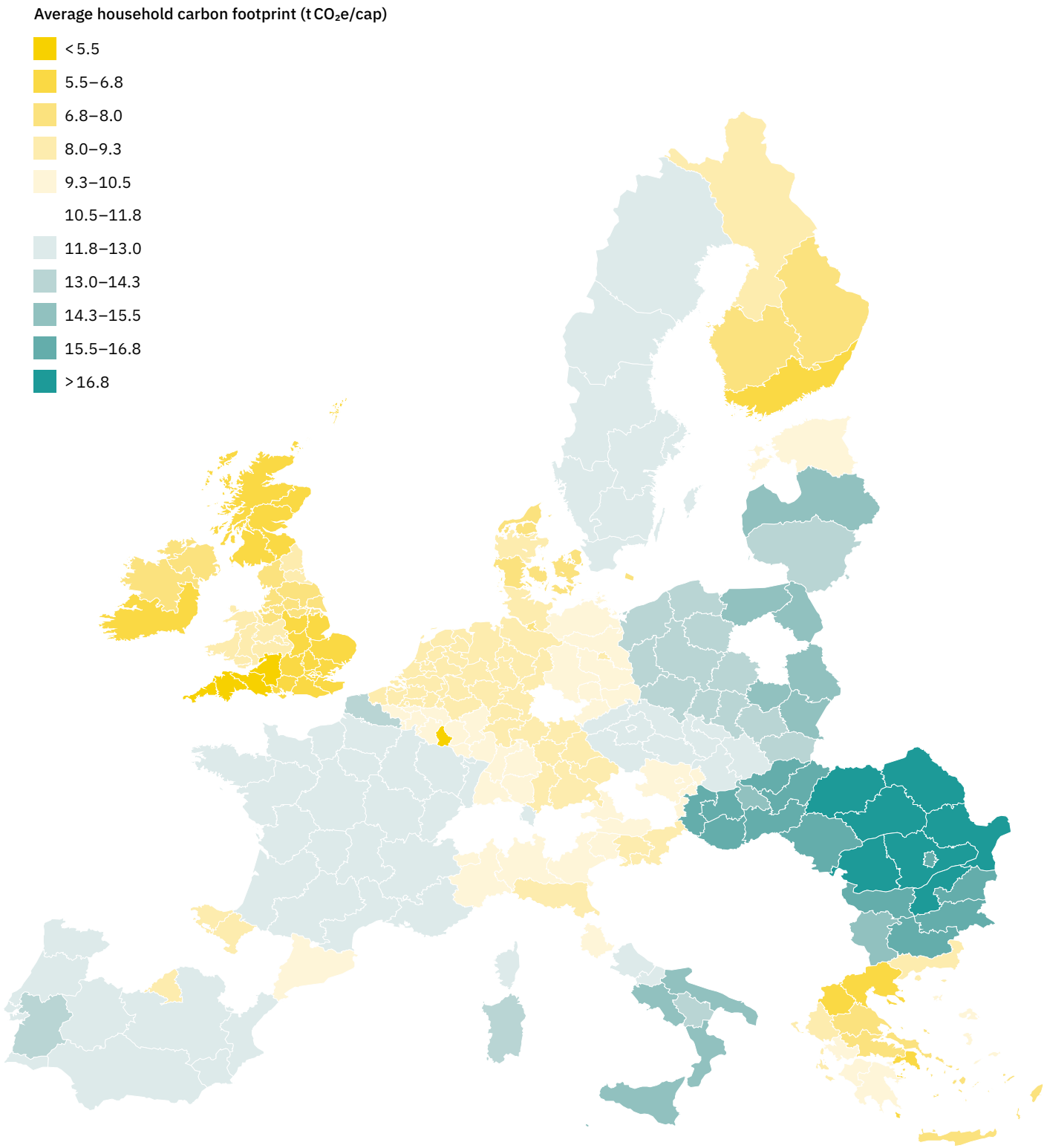


Figure 4: Average household carbon footprint in Europe (t CO₂e/cap) (Source: Ivanova et al., 2017)

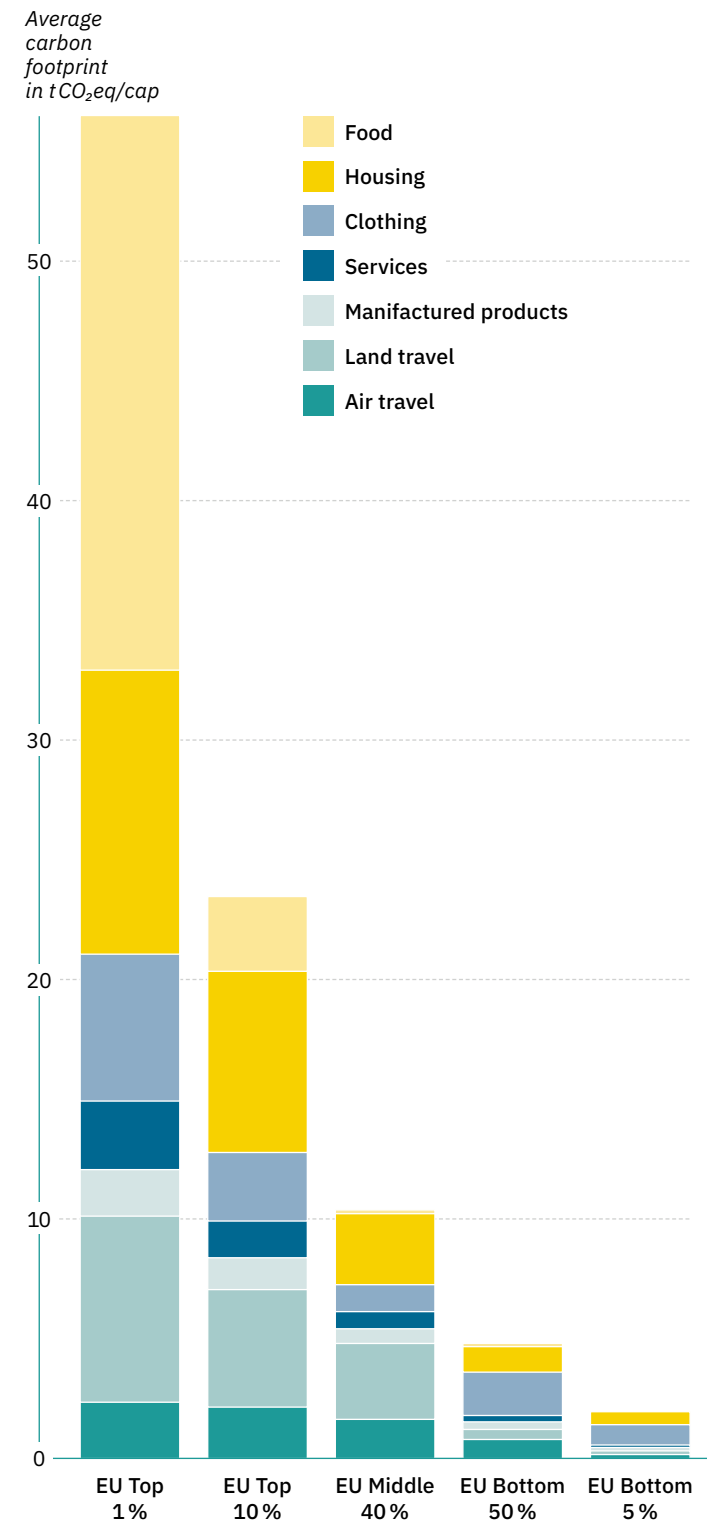


Figure 5: Average carbon footprint (CF) distribution by consumption category in the European Union (Ivanova et al., 2017)

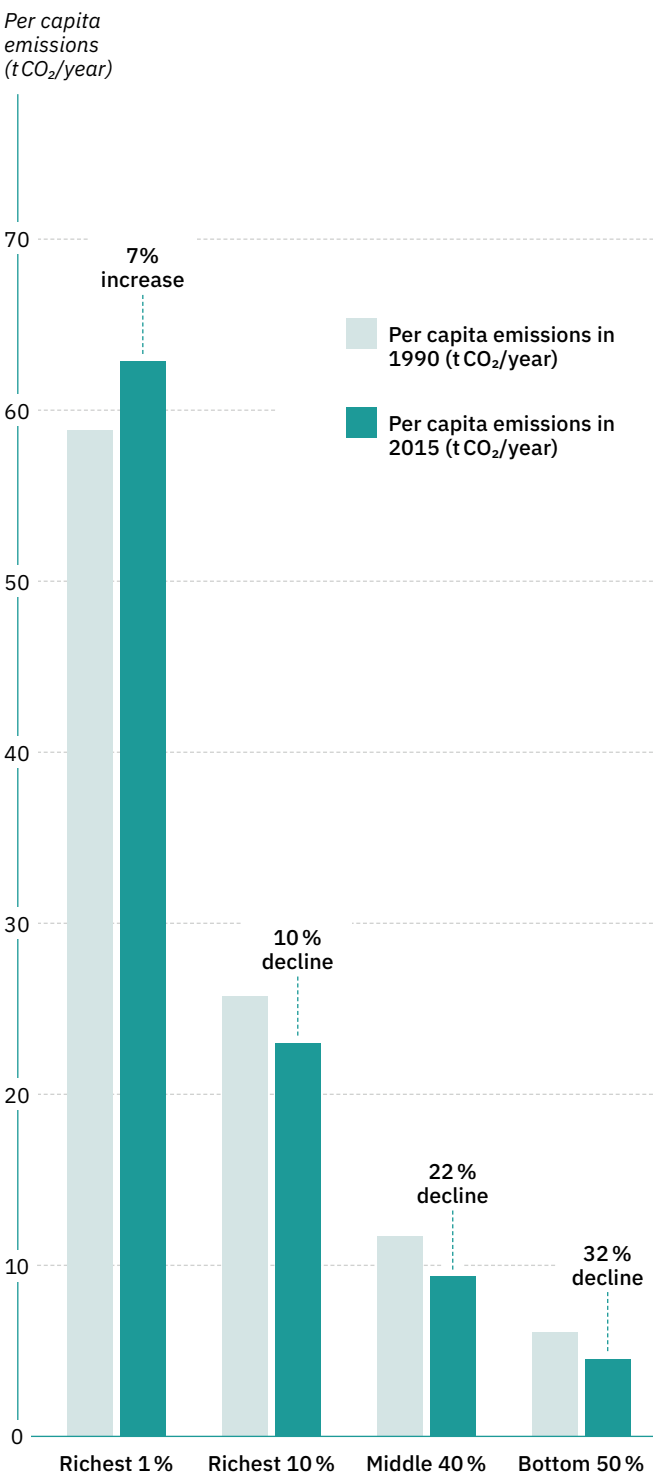


Figure 6: Per capita consumption emissions (tCO₂/year) by EU income group in 1990 and 2015 (Source: Gore & Alestig, 2020)

while the GHG emissions generated by the top 10 % only declined by 10 % and among the top 1 % even rose by 7 % (Gore & Alestig, 2020). Figure 6 points this out quite well. Such an unbalanced burden raises substantial ethical and equity concerns. The policies in the context of the EGD therefore hold untapped potential which can be unlocked when better focusing on the carbon activities of high-income groups, not least because these population groups have a high capacity for climate change mitigation (Ivanova & Wood, 2020).

Food, housing and mobility are the highest-emission areas of consumption, with the largest reduction potential in 1.) animal-based products, 2.) individual car possession and flights as well as 3.) the per capita living area, which needs to be heated, cooled and equipped.

The consumption areas with the highest climate relevance are food, mobility, and housing, with the latter including heating/cooling and electrical appliances. Together, these areas add up to 75 % of the impact of households, each category accounting for roughly one third of this total (Akenji et al., 2019; Lorek & Spangenberg, 2001). They are interconnected and need to be addressed in a holistic manner. Emissions from food, for example, result from land use, animal production (methane), the energy needed for slaughtering, the processing of food, transportation and finally consumption. While the emissions here also result from for example methane, the ones from housing and mobility are mainly related to energy use, both in the construction phase of buildings, streets and vehicles as well as in the end use phase. The most relevant reduction potential within these areas arises from animal-based products in the case of food, individual car possession and use as well as flights in the case of mobility, and heating/cooling as well as the per capita living area in the case of housing (Akenji et al. 2019). In particular, the contributions of air and land transport have thus far received rather low policy attention (Dubois et al., 2019). Together with housing, however, their inclusion in the EU ETS will be discussed by co-legislators, along with other measures of the “Fit for 55” legislative package for achieving climate neutrality by 2050.



Consumption corridors
as a tool to foster social
acceptance of climate
policies.

The potential of a needs
satisfaction orientation
for ensuring equitable
1.5-Degree Lifestyles

From a climate perspective, it could be seen as a positive sign that today about 5 % of EU households meet the climate target of 2.5tCO₂eq/cap. However, this level is seldom achieved through insightful steps towards a high life satisfaction with low emissions. More often, it is characterised by precarious living conditions and poverty. Therefore, policies fostering 1.5-Degree Lifestyles must be quite conscious regarding their impact on equity and ensure that basic needs can be fulfilled. A warm shelter and nourishing food are physical requirements in this context, along with social requirements such as communication, participation and mobility (Roberts et al., 2020). To develop 1.5-Degree Lifestyles in an equitable way, these requirements need to be secured by minimum consumption standards to ensure that these needs are fulfilled for everyone. Recent discussions about minimum income show one way to cover this aspect. In addition, the provision of basic services (see Box 3) can be an impactful instrument (Büchs, 2021a).

Analysing the energy intensity of different goods and services, it becomes evident that especially heat and electricity consumption have a very high emission reduction potential (see Figure 7). Transforming heat and electricity towards lower-emitting systems, for example as envisioned through including buildings in the EU ETS, requires carefully designed policies so as to avoid hitting vulnerable groups hard and to ensure that these policies are considered to be fair (Roberts et al., 2020).

However, as Figure 6 also shows, a second major source for high carbon footprints are "luxury goods". Goods are considered "luxury goods" when the income elasticity is above 1, meaning that the consumption of the product rises by more than 1 % when income rises by 1 %. Lower-income groups spend proportionally less of their income on such goods. The strong growth in the consumption of luxury goods among wealthier parts of the population is at least one of the reasons why the emissions reductions are so unevenly distributed between income groups. This indicates where more attention is needed in the future when designing fair climate policies – in addition to minimum standards, consumption maxima should also be given due consideration. The concept of ensuring



Figure 7: Energy intensity of basic and luxury goods (Source: Oswald et al., 2021)

basic needs fulfilment for everyone above a social floor of minimum consumption standards while not overshooting the ecological ceiling by accepting and defining maximum consumption standards is referred to as "consumption corridors". While research on the concept is advancing, the democratic process of identifying and agreeing on such minimum and maximum standards is still in its infancy; however, this needs to be taken up in the EU as well as in the global context (Fuchs et al., 2021; Sahakian et al., 2021, see Box 1).



Box 1: Consumption Corridors

The idea of consumption corridors demonstrates how living well within planetary boundaries can be approached. Consumption corridors are defined by minimum consumption standards as a floor and maximum consumption standards as a ceiling. Minimum standards are those needed to allow every individual in the present or in the future to satisfy their needs and to live a good life, safeguarding access to the necessary quality and quantity of ecological and social resources. Maximum consumption standards are needed as well to ensure that consumption by some individuals does not threaten the opportunity for others to have a good life. The space between the floor of minimum consumption standards and the ceiling of maximum consumption standards builds a sustainable consumption corridor. On the individual level, within the corridor, people are free to satisfy their needs according to their own preferences. On the societal level, consumption corridors create a space for envisioning and implementing the changes needed to make living well within the limits of planetary boundaries a reality (Fuchs et al., 2021 p. 33). While minimum standards are established in many countries mainly to fight poverty, maximum consumption standards are only appearing slowly in the context of climate policies. Nonetheless, the first steps are being taken. The German Federal Constitutional Court published an order in April 2021 which required clearer target-setting on maximal emissions, with the explicit argument that the annual emissions amounts allowed until 2030 are incompatible with fundamental rights for future consumption. The level of consumption and emissions today must be limited in order to allow for consumption-related emissions after 2030. As reductions still necessary after 2030 will have to be achieved with ever greater speed and urgency, this poses an uneven burden for the coming generations (Bundesverfassungsgericht, 2021).

A helpful step toward creating a safe consumption corridor is to better distinguish needs from desires. The term “needs” is a familiar one in the sustainability context by the Brundtland definition that sustainable development “meets the needs of the present without compromising the ability of future generations to meet their own needs”. As briefly indicated above, examples such as food, shelter, protection, and belongingness are accepted as universal needs, meaning that they are the same for every human being (Di Giulio & Defila, 2021). The way they are satisfied, however, is generally socio-historically situated and varies between countries based on, for example, the climatic conditions and religious habits within that country. These can impact for instance the kind and amount of meat consumption. They also have changed over time, often due to new technological developments. In particular, new technological options tend to become desires for people, fuelled by advertising for such goods. Mobility, for example, meaning the ability to move between places for work, shopping or leisure, is clearly a need. The purchase

or possession of a car, however, must be recognised in a more nuanced way. When good public infrastructure is available, car ownership is a desire, because there are many other ways to satisfy the need like biking, traveling with public transport or participating in car-sharing schemes. However, many poorer households are often living outside of areas well-served by public infrastructure. They are thus more dependent on cars. The same holds true for people with walking disabilities. In these cases, cars might not at all be a desire, but truly satisfy a need and so are not optional for the time being. Changing (infra-)structures, from more accessible public transport to safe and commercial-free recreation areas within all neighbourhoods, can however help to establish new and better ways to satisfy needs (Sahakian et al., 2021). However, even where public transport is available, there can be obstacles to satisfying the mobility need. As Figure 8 illustrates, 5.4 % of the EU’s population in the lowest income quintile cannot afford regular use of public

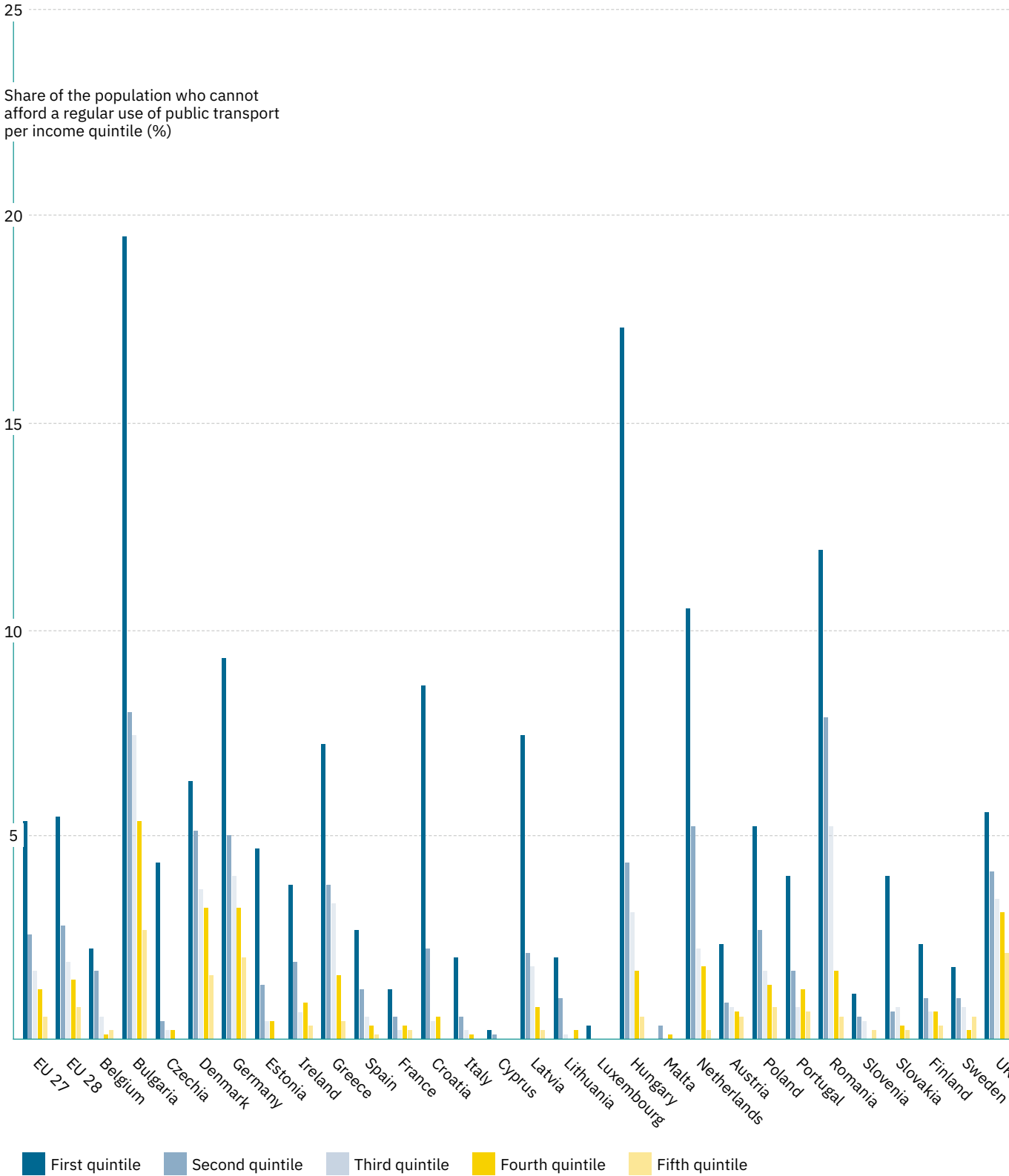


Figure 8: Lack of affordability of public transport (Source: EUROSTAT-SILC survey – data available only for 2014)

transport, with the highest shares reported by citizens living in Member States with a lower GDP per capita than the EU average, ranging from 19.5 % in Bulgaria to 11.9 % in Romania. Generally, difficulties are higher for the lowest quintiles living in towns and suburbs in Member States with a lower GDP per capita than the EU average (EU-ROSTAT, 2021).

In any case, it is important to recognise that the way people satisfy their needs is influenced by many political, economic and cultural aspects, which lock people into certain habits which are not necessarily the most sustainable ones (Brand-Correa et al., 2020; Mattioli et al., 2020). Aligning social and environmental goals through solutions and investment in infrastructure, which benefits the achievement of societal objectives, holds great potential for delivering sustainable prosperity. This supports the fulfilment of basic needs in line with the principles of equity, efficiency, and sustainability (Büchs, 2021b; Vogel et al., 2021).



Box 2: Universal Basic Services

Universal Basic Services (UBS) represent a form of consumption that is public and shared rather than private and individual. Services in this context are activities which are essential and sufficient to enable people to meet their needs and which serve the public interest. Areas of relevance include healthcare, childcare, adult social care, schooling, and social work, along with other services such as housing, transport, and access to digital information and communications (Coote, 2021). Fare-free public transport is the most prominent example of Universal Basic Services which have been established for social as well as environmental reasons. Examples of this already exist within the EU, mostly on the local level but also across a whole country in the case of Luxembourg.

Lifestyle changes in line with the climate targets must be supported and encouraged by political frameworks.

Policies supporting equitable 1.5-Degree Lifestyles

On the one hand, climate policies make a significant contribution to reducing GHG emissions. On the other hand, some climate policies, such as the [Energy Taxation Directive](#) which mandates the taxation of electricity and fuel within the EU, disproportionately affect vulnerable groups. An effective and fair climate policy would need to strengthen the prospects of vulnerable groups while reducing consumption of carbon-intensive luxury goods. In a best-case scenario, the policy mix should ensure that the satisfaction of basic needs is not impacted in a negative way, as this will improve public acceptability. There is still much to learn on how policies can be designed to achieve positive social outcomes and avoid potential harm (Lamb et al. 2020).

Financial policies

Financial policies need to better target those most responsible for high emissions and with the greatest capacity to carry the burden.

A direct financial compensation for carbon taxes, for example, can address the regressive effects of carbon or energy taxes. While households are compensated financially, carbon emissions may or may not be significantly reduced, depending on how the rebates are spent back into the economy. Taking further car trips would cause new emissions, while investment in the insulation of the dwelling would further reduce emissions. Green voucher schemes which provide free renewable electricity or free public transport to households have been suggested to reduce such rebound effects as these schemes directly replace conventional electricity with renewably generated electricity and motor fuels with public transport.

Fortunately, research shows that low-carbon goals can be compatible with more equitable, cohesive, fairer societies and cultures. Generally, fiscal reforms can shift funds from subsidizing fossil fuels towards directly addressing the needs of disadvantaged populations while at the same time eliminating the health burden of fossil fuel-based air pollution in cities, from which vulnerable groups tend to suffer more. Ex-post analyses of climate policies, ranging from direct procurement via taxes and subsidies to feed-in tariffs, have shown that a careful design helps to meet climate mitigation goals alongside improvements



Target high emitters	Support the vulnerable
→ Put burdens on those who are most responsible and have the greatest capacity	→ Compensate for the financial burden of climate policies
→ Target luxury goods	→ Guarantee and improve basic needs satisfaction
→ Tax high income & wealth as resources for financing the just transition	→ Support green living options, create viable alternatives (e. g., public transport, affordable low carbon housing)

Table 1: Policy strategies for equitable 1.5-Degree Lifestyles (based on: Büchs, 2021b)

in livelihoods, affordability, equality, the provision of employment, and community cohesion. To achieve this, it is important that policies incorporate equity and fairness right from the beginning, mainly by ensuring that revenues are earmarked for the support of vulnerable groups. In addition, they need to be supported by well-functioning institutions and financial alignment towards affordable low-carbon energy services, for example, public transport in the case of rising fuel taxes (Lamb et al., 2020; Vogel et al., 2021).

In turn, three types of financial mechanisms should be carefully assessed against their impacts on social fairness:

1. **Untargeted policies** which pass on the financial burden to households, for instance those that increase electricity prices under renewable procurement obligations or feed-in tariffs.
2. **Policies affecting non-substitutable subsistence goods** with few low-carbon alternatives for poorer households. This is often the case for taxes on heating fuels, which expose low-income home renters to significant additional costs while being unable to access or pay for thermal efficiency upgrades.
3. **Policies benefiting high-income groups** which can afford the capital investments required to gain access to a support measure, such as subsidies for solar power systems (Lamb et al., 2020).

Fortunately, there are multiple cases where unfair outcomes have been deliberately avoided via policy design, for example where tax revenues have been recycled as lump-sum transfers to households to offset negative distributional outcomes (as in the British Columbian carbon tax), or where thermal efficiency subsidy programmes have been means-tested, with a higher proportion of funds allocated to low-income households (as in the UK Warm Front Energy Efficiency Programme or the “Saving in-house” programme in Greece). Such schemes bring together climate policy with social policy, addressing any contradictions between these goals directly (Lamb et al., 2020).

In addition to explicit climate policies, there are other economic policies which target greater equity which would have a remarkable impact on GHG emissions, such as all kinds of taxation on high-income groups. These taxes have solid potential for generating revenue for zero-carbon investment (e. g., retrofitting housing, subsidies for electric cars or bicycles and bicycle infrastructure) or investment in better public services (e. g., improving health care systems) (Saez & Zucman, 2019). **Table 1** summarises the core strategies to ensure fairness when moving towards 1.5-Degree Lifestyles. Targeting high emitters as those most responsible for GHG emissions needs to go hand-in-hand with support for the vulnerable.



Emissions caps

Opening up policy debates for stricter and more regulatory measures.

Avoiding all the obstacles which fiscal policies have, and in line with the consumption corridors concept, setting an absolute cap on emissions on a per capita basis is another policy idea. Personal emission caps would imply strong constraints on the consumption of individuals; however, the higher impact would fall on affluent consumers for reducing GHG emissions. Such a cap could be achieved through establishing personal carbon budgets which are limited in total (see [Box 3](#)). A minimum emissions budget would be provided for everyone, with additional allowances for those with greater needs, for example due to age or health status. On the basis of permits or certificates, individual carbon budgets were already discussed in Ireland (Feasta, 2008) and France (Raux & Marlot, 2005) as well as – with quite some public attention – in the UK in the context of “Personal Carbon Trading” (PCT)(Capstick & Lewis, 2010; Fawcett & Parag, 2010; Thumim & White,

2008). While the official institutions reflected that “the idea is ahead of its time”, research showed that PCT was not less socially acceptable than an alternative taxation policy. In fact, it was perceived as fair and effective (Fawcett, 2010) because it allowed for the consideration of individual needs. This was confirmed more recently by the “Leeds Climate Citizen Jury”, but not supported by the “Climate Assembly UK” (Climate Assembly UK, 2020). Real world examples thus paint an ambiguous picture. On a voluntary level, living within capped emissions is already being tested, for example in carbon rationing action groups (Howell, 2012), in a company context (WSP, 2021) or recently in the context of city-level transportation in Lahti, Finland (Kuokkanen et al., 2020).

The city of Lahti experimented with residents’ personal carbon trading to reduce their mobility-related emissions. The project was carried out with the help of a digital PCT platform and mobile application that automatically identified the mode of transportation of its user and visualised emissions from mobility.



Box 3: Personal carbon budgets

Personal carbon allowances or personal carbon budgets emerged in the late 1990s as a method of bringing about gradual, widespread behaviour change and delivering a long-term mechanism for encouraging substantial reductions in fuel use. These systems include a free allocation to individuals of allowances from the government, the sum of all allowances being equal to the government’s target consumption for the household sector for the year. These allowances are “spent” or “surrendered” whenever a fuel bill is paid (gas, electricity, petrol, diesel, heating oil, coal). Allowances are determined according to need, with additional allowances, for example, for disabled and older people or people forced to live in insufficiently insulated homes.

Within this concept, everyone has a carbon account which is periodically charged with a universal free carbon allowance. Every time fuel is purchased, the carbon card is presented (in addition to a payment card) and the level of remaining allowances in the carbon account is checked electronically. If the balance is sufficient, the carbon value of the purchase is then removed from the account. Whether the surplus of allowances should be tradable is an open point (Burgess, 2016). In contrast to ETS and other market-based solutions on the supply side, personal carbon budgets allow for a more equitable distribution of the remaining overall carbon budget, as it would firstly be spent on basic goods common to all income groups and only what is then remaining could be used for luxury goods or could be traded.

Participatory decision making

Traditional stakeholders like trade unions as well as new institutions like citizen assemblies need to team up to commonly address the challenge of equitable 1.5-Degree Lifestyles.

As laid out so far, the shifts in policymaking needed to take an equitable 1.5-Degree Lifestyles perspective will have to be substantial. Therefore, they need to go hand-in-hand with new and different processes of decision-making. Citizen assemblies searching for better, often innovative ways of goal achievement are a first step here. On the national level, they have already been initiated in France, Germany, Ireland, and the UK (Devaney et al., 2020; Eymard, 2020; OECD, 2020). Such an involvement of a wider range of voices in decision-making has two advantages. First, it can lead to more equitable and sustainable policies and outcomes as it reduces the disproportionate influence of industry and business, who in the actual structures have the power, time, and money to influence legislation (Fuchs, 2007). Second, commonly developing policies based on

the needs and interests of wider population groups can improve acceptability of even stricter climate policies.

An important aspect which can only be mentioned but not elaborated in this policy brief is that equitable 1.5-Degree Lifestyles might, alongside reduced consumption levels, also induce reduced and transformed production. Therefore, traditional stakeholders need to be taken on board in this societal endeavour.

Conclusion

With the formulation of the European Green Deal, the European Commission has taken a great and important step towards achieving the target of staying within 1.5°C global warming. Along with ongoing efforts for decarbonisation through better efficiency measures and the provision of energy from renewable energies, demand-side policies also need to become a prominent part of the current policy discussion. To design adequate policies for this, taking a 1.5-Degree Lifestyles perspective is helpful. Firstly, this perspective clearly shows the size of change needed: bringing down per capita GHG emissions from **8.2 t CO₂eq to 2.5 t CO₂eq by 2030 at the latest**. Secondly, it indicates the main areas where consumers need structural support to adapt their actual behaviour: food, housing, and mobility. Thirdly, it uncovers how unevenly the burdens of climate change as well as of climate policies have been distributed so far.

Achieving a just transition is one of the stated goals of the EU, and climate measures have taken up the challenge. As part of the “Fit for 55” package, the Social Climate Fund aims at reducing and compensating for the burdens consumers may have to carry, not least due to the expansion of the EU ETS to the housing and transport sectors. The next step lies in operationalising the just transition and putting equity considerations at the heart of the package.

This policy paper opens up a perspective on new options in the search for equitable 1.5-Degree Lifestyles solutions. It recommends designing further policies in a way that

carefully supports, in fact ensures, the fulfilment of basic needs like food, shelter and energy provision for everyone. At the same time, it provides the arguments for better targeting high-emitting consumption habits based on the luxuries and desires which have been identified thus far as contributors to climate change. In practice, this paper calls for stronger measures directed at the emissions of wealthier segments of the population in order to make 1.5-Degree Lifestyles equitable and acceptable. A useful tool in this context is to envision the lifestyles of European citizens flourishing within a consumption corridor which is shaped by a floor of minimum social consumption standards and an environmentally informed ceiling with maximum consumption standards. This can help ensure that no one is indeed left behind, both now and in future generations.

Further policy briefs in this series provide more in-depth analysis on the 1.5-Degree Lifestyles approach and the emissions gap. Three thematic policy briefs apply these insights, pointing out how EU policies could be enriched to support equitable 1.5-Degree Lifestyles. In the area of food, we pay specific attention to the [Farm to Fork Strategy](#) as well as the [Common Agricultural Policy \(CAP\)](#). Regarding mobility, we develop recommendations in the context of the [Sustainable and Smart Mobility Strategy](#). For housing and the built environment, we introduce valuable policy options in relation to the [Renovation Wave](#) initiative and the [New European Bauhaus](#).



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