Climate action. Socially. Just.

A manual of arguments for a fair and ecological society

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Content

Foreword

Dear Reader,

There are some issues which, despite their exceptionally complex and challenging nature, we have ample evidence to suggest are entirely solvable and, what is more, solving them would immediately change our lives for the better. Climate policy is one such issue, and with this manual of arguments, we seek to contribute to the common effort to meet this challenge.

First though, we thought it might be nice to begin with a personal story. A tale related by one of the authors of our manual. In the process of writing his chapter, our author started to commute to work by bicycle two or three times a week, instead of making the journey by car as usual. This author does not just live on the outskirts of the city centre, but rather all of 11 km from the office. This is an excellent illustration of how small impetuses and incentives, what we might call »nudges«, whether material or psychological, can change our way of life for the better. In the case of this one author, these benefits included improving his physical condition and health, saving a bit of money, no longer contributing to air pollution, and allowing himself time in the outdoors to order his thoughts and enjoy the fresh air. Even more importantly though, the author was rewarded with a positive sense of having contributed to a healthier future for his children. And this is the first key message of this manual: ***By changing our way of life, making it more compatible with our environment, we can prevent those dramatic changes for the worse, those consequences of a deteriorating climate that will affect each and every one of us. We can improve our current quality of life.*** As our reaction to the Covid-19 pandemic illustrates, faced with new constraints, we are able to adjust and change our way of life, making it more sustainable. The same is true of our efforts to tackle the climate crisis. The policies and best practices in this field are anything but wishful thinking, these things are already part of everyday reality for thousands and thousands of people in cities, regions and countries with progressive environmental policies around the world. Collective action is crucial if we are to achieve the infrastructural changes needed to induce changes in behaviour. Rather than leaving it to the markets, this common undertaking must be a democratic process based on universal solidarity and a strong commitment to a common cause.

Climate action means social justice

A key message of our manual is that ***social justice and social wellbeing are inextricably linked with the environment and climate.*** It is, after all, always the financially less well-off or the middle classes who suffer more because of the climate crisis, rather than those with a secure web of privileges and enough of a financial cushion to absorb its dire consequences. It is the small farmers who have lost their living because of drought, the elderly citizens enduring the increasingly hot summers, the suburban middle-class commuters constantly stuck in traffic jams or living near motorways and industrial areas, permanently inhaling emissions, or the workers at a car factory whose jobs are at risk because the company management ignored the winds of change, sticking for far too long to outdated technologies and allowing a plethora of business opportunities pass them by. Whether we are talking about decentralised energy supply, sustainable transport, the just transition of coal regions, providing former coal workers with sustainable green jobs, thus ensuring income stability for their families, ambitious climate policies are helping the people, who would otherwise be hit hardest by the impacts of a rapidly changing climate. These policies provide them with security and prospects. By facing the challenges of our current climate reality head on, green policies put our lives and the lives of our children on a more solid footing.

The EU has set itself the goal of becoming the first carbon-neutral continent by 2050. This is far from utopian. The good news is that established social democratic policy tools are already in place that support energy efficiency, the replacement of fossil fuel with renewable energy, sustainable mobility, waste management, the transition from a linear to a circular economy, to name just a few. And with these policies, we can achieve our goals. ***We just need to step up our efforts, speed up the process and build on the many good practices, that have delivered tangible, practical results when it comes to making our societies environmentally sustainable and improving our quality of life and that of the generations to come.***

With people's support

Encouraging news: There is overwhelming support for this type of policy from populations around the world: A majority of citizens have indicated their support for governments to prioritise climate action, even during the post-Covid economic recovery period. According to a December 2019 Eurobarometer, 94 per cent of Europeans state that protecting the environment is important to them personally while 78 per cent agree that environmental issues have a direct effect on their daily life and health. A majority of citizens around the world (68 per cent) agree that if their governments do not act now to mitigate the climate crisis, they will be failing their citizens. Almost six in ten (57 per cent) say they would be reluctant to vote for a political party whose policies do not take the climate crisis seriously. We should not allow these expectations for

action, signalled by the people, to be left unfulfilled. Policymakers need to act on such strong societal consensus.

The global and European climate goals that the EU's Green Deal and other policies address are backed by science and are practically undisputed. The truth is that to achieve them, we will also need to rethink certain concepts, particularly those that have shaped the Western economic model over the past few centuries: the strong focus on GDP and growth, the undeserved value attached to activities that are detrimental to our environment, social justice and our wellbeing. With our dominant economic model having dire consequences for our natural habitat and also causing widespread social injustice, it becomes increasingly evident that the problems of the ***environmental crisis and social disruption have one common root cause***: the neoliberal capitalist logic with its mantras of infinite growth, competitiveness, profitability and exploitation of resources at all costs. These two crises must therefore be tackled using the same set of solutions. Putting it bluntly, if we want to ensure the continuation of human life on our planet, the prevailing concept of progress and quality of life per se must incorporate elements such as sustainability, intergenerational justice and solidarity, the common good and a way of life that is compatible with the needs and limits of our natural habitat, of our mother earth.

When you read through this manual of arguments you will be able to identify some overarching principles that must always be factored in when we appraise the challenges ahead of us. These principles provide us with a framework and a general sense of direction. The first of them is efficiency: How can we minimise the use of energy and resources to produce a given economic output? The second principle is »decoupling«: How can we, in the long run, completely decouple our economic activities from the limited endowment of natural resources? Third, in order to achieve this, we should be guided by the principle of consistency, i.e., our material and energy flows have to be reshaped in such a way that they are compatible with the needs and limits of the ecosystem that surrounds us. The fourth principle that must be factored in is sufficiency: How can we change our consumption patterns in such a way that we simply use fewer natural resources than before? And last but by no means least are the principles of social justice, fairness and solidarity: How do we make sure that when we tackle the climate challenge, everybody shoulders a share of the responsibility that is congruent with their abilities and needs, so that our efforts leave no one behind. Irrespective of whether we are talking about scaling up renewables, bringing about the mobility transition, creating sustainable green jobs, etc., the core principles outlined here make sure that we are not just doing different things, but that we are really doing things differently. In other words, we are being genuinely sustainable.

In this volume, you will find 139 pages teeming with arguments, best practice cases, facts and figures showing that this can feasibly be done, that in numerous areas and cases it is something we are already doing, and how we can step up our efforts and be bolder in the pursuit of our common goals, making our lives and societies not just environmentally sustainable but also more socially just.

The 1.5°C tipping points

It is only natural for every change to give rise to uncertainty. However, inaction when it comes to the climate crisis will create much more uncertainty because of the dire consequences for the environment, which has a huge impact on all of us. ***If we fail to limit global heating to 1.5°C, there is a high risk of us reaching »tipping points« in the Earth's system, after which global heating will continue to increase, without us being able to stop this vicious cycle***. Forests, which serve as natural carbon sinks, being destroyed by fires because of drought, methane gas released from melting permafrost or the loss of white ice cover which previously reflected a lot of sunlight back into the atmosphere, are just three such »tipping points«, which we have probably already reached. This is why the vast majority of nations signed the Paris Climate Agreement in 2015, creating a multilateral framework for »[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change«, as stated in article 2.[1] The Intergovernmental Panel on Climate Change (IPCC), an international scientific body that compiles the findings of thousands of the world's most renowned climate scientists, described the tremendous differences between a global temperature increase of +1.5°C and +2°C in its comprehensive special report »Global Warming of 1.5°C«,[2] highlighting the importance of not reaching the tipping points of our earth's climate system.

When we speak of »ambitious climate policies« in this manual, ***we mean policies in line with the 1.5°C target***, policies that can save us from uncontrollable, self-reinforcing global heating. By »ambitious climate policies«, we mean ***true social-ecological transformation for the better***, not just some green cosmetic changes to otherwise conventional policies. Thus, »[f]or everything to stay the same, everything must change.«[3] In other words, if we still want to live on an inhabitable planet, then our societies must change—for the better. If we fail, the climate crisis will destabilise not only our natural environment, but also our societies and our well-being.

We are aware of the concerns over this change, which is why in each chapter, we address them directly, debunking the myths surrounding climate policies and instrumentalising people's legitimate uncertainty. The best thing about action to tackle the climate crisis is that it is not based on wishful thinking. ***Climate action can refer to and take inspiration from hundreds and hundreds of examples of best practice that deliver real-life results***. Therefore, in writing this manual, we stick to the facts and only the facts, realistic policies and practical solutions, not pie in the sky scenarios.

It is the job of political foundations and think tanks to propose solutions, capture best practices, and consolidate lessons learned, and then to ensure these available for implementation, in doing so helping decision-makers, opinion-leaders, active and engaged citizens and members of the community tackle the most pressing of challenges in the best interests of current and future generations. We as social democrats consider this our duty. Historically, it was the social democratic movement that both challenged and achieved social transformations, shepherding societies through hard times with the ultimate goal of making them more humane and just. Who could be better equipped to find the right compromise, balance and synergy between climate and social security and justice?

»Nothing happens automatically. And only few things last. Therefore be mindful of your strength, and of the fact that every era wants its own answers, and you have to be up to its speed in order to be able to do good.« These famous words spoken by the late great Willy Brandt some 28 years ago are just as apt for today's mission. In our case, we know the challenges we have to address and we are mindful of the strengths we possess. But we need to redouble our efforts. We hope that this publication will play its part achieving precisely this.

Introduction

Climate Communication and the Structure of this Manual

Scientists have been warning about global heating since the 1970s. Today, we are constantly being flooded with information about climate crises, and environmental disasters feature in the news on a daily basis. Despite the omnipresence of what has been dubbed »problem-knowledge« (as distinct to action-knowledge), there is a momentous lack of action—both on the political and the individual level. Reasons for this gap between awareness, intention and behaviour are manifold. Studies have shown that simple information campaigns—an approach often used to raise awareness about climate catastrophe—rarely ever lead to a change in an individual's pro-environmental behaviour (Steg & Vlek 2009). In light of this, climate policymakers, sustainability advocates and environmental activists can benefit from valuable insights from environmental psychology and communication science.

We know that it will take more to combat climate crises than just stating the facts. We need to think strategically about our messaging if we want to reach our audience and avoid potential resistance or reactance, which may end up defeating our original purpose. In this manual of arguments, many of the following principles concerning the psychology of climate communication have been put into practice. They provide valuable advice for social democrats working in the context of social-ecological transformation on how to make their communication more effective.

First, the team of authors considered the manual's prospective target readership. By developing descriptions of the hypothetical persona the manual sought to address, we identified some common denominators for the values, identities, mental models, demography, habits and context factors of the people we hope this publication to reach. Very often, ***ensuring a good fit between our communication and the target audience is just as important as the content of the message itself*** (Webster & Marshall 2019).

Another fundamental consideration was the framing of the respective arguments. Social psychology and cognitive linguistics have shown that how we communicate content actually changes how people respond to them (Lakoff & Wehling 2008). With this in mind, ***our manual provides the reader with proactive arguments to enable them to become the author of his or her own narrative***. Rather than solely responding to hegemonic discourse, we have created arguments with frames that can be used as tools for you to tell your own story of social democratic transformation towards global justice and sustainability. These lines of argument create an overarching narrative that make this manual both of practical use and empowering for the reader. Each chapter is designed to inspire the reader to take a different approach to the issues at stake and reclaim agency for a story of change that we are all part of.

As you delve into the individual chapters, you will notice that they each begin with a ***positive, tangible vision***. This evokes gratifying emotions in the reader and fosters the openness and courage required to identify and seize opportunities to address the climate crisis and its causes, rather than withdraw from the issues at stake (Harré 2011).
In a context of alarming climate catastrophe and overwhelming global injustice, this is often easier said than done. It is important to remind ourselves of the potential risk and unwanted side effects of communicating an avalanche of messages invoking unpleasant emotions such as fear, anxiety, guilt and existential angst. There is a high chance that our target audiences will understand the argument, maybe even become aware of the reality of the threat and hold biospheric and altruistic values—harmful behaviour will continue or even worsen. Such a phenomenon has been the subject of research for decades and creates what social psychology calls »cognitive dissonance«. As a consequence, we run the risk of stimulating behaviours that are environmentally problematic, diverting the reader's attention away from the risks, causing them to reinterpret those risks in self-serving ways and become apathetic about the problems, or activating materialistic values (Crompton & Kasser 2009).

One possible way of addressing this dilemma is to focus on constructive visions of sustainability and justice that are primarily inspiring and motivating. These draw the reader's attention to the messages being advocated and elicit positive feelings. This, in turn, brings out important qualities that are essential to social progress (Harré 2011). ***Besides stimulating creativity and openness, the positive emotions also improve the reader's ability to process the alarming information that is an inevitable and crucial part of climate communication***. In this manual, we do not shy away from the harsher aspects of reality, of which we are all too well aware. But these are presented in a form that makes them easier to digest, encouraging readers to draw motivation for action from them, rather than causing them to retreat from the issues at stake.

Another essential consideration when it comes to strategic communication is the language we use. ***Employing progressive frames is key to generating change and showing that transformation is possible***. In this manual, therefore, a lot of care was put into creating frames that focus on a just and sustainable future. By using certain words and phrases and deliberately including or excluding certain aspects of the larger discourse, we aim to promote more helpful ways of seeing the world. With this in mind, the framings of the respective arguments are designed to appeal to a very specific set of values. They make the messages motivational and they are effective drivers for action. By incorporating appeals to concepts like justice and fairness, intrinsic values are fostered which strengthen the motivation to build a more sustainable, equitable

and democratic world. For example, the first chapter immediately starts off with the narrative that ambitious climate action is important for social justice and equality. By focussing on future generations, class and the global North-South division, this narrative depicts how climate action is a useful tool for fighting injustice. Taking this perspective instead of focusing on the cost of climate action or even ceding the stage to a discourse that considers climate action a means to an extrinsic end (such as company profits, power, achievement or national security) is useful to stimulate sustainable motivation.

Additionally, we have taken great care to take into account the respective target audience of the different arguments. By considering what the prospective readers care about, what they have in common and what is relevant for their shared identity as social democrats, the messages are more likely to hit home (PIRC 2011). Again, you can see this clearly in the first chapter which emphasises the strong connection between social democrats' past struggles and social justice.
The first and second chapters, in particular, cover issues of class and globalisation. When addressing aspects of justice, security, economy and jobs, we needed to categorise less-privileged groups of people, people who have not benefited as much from the capitalist global economy. ***We sought to be as inclusive as possible in our language by avoiding »othering«1 instead drawing out similarities***. While aiming to be explicit about the individual hardships people are facing, at the same time we also wanted to highlight the underlying systemic problems and possible ways of countering them (Underhill 2020). ***Consequently, the recommendations set down in this manual can help to promote solidarity and empathy and to build a more inclusive society*** (PIRC 2011).

Another key element of each of the chapters in this manual are the Best Practice Examples, which show how change, which is entirely possible, can be brought about, underlining positive social norms adhered to by other individuals and institutions already working towards transformation. People are social beings. When we learn about things that other people do (the more similar these people are to ourselves, the better), it has a profound influence on our own actions. In fact, the influence of social norms is one of the most important drivers of human behaviour—and at the same time one of the most subconscious. Learning about sustainable initiatives and the work being done by like-minded people can be more motivating and seminal than having an awareness of the environmental problems that make such action necessary in the first place (Klöckner 2013). By providing best practice examples, we aim to highlight already successful changes, which make future changes seem more feasible. These best practice examples are presented in a way that emphasises the role people play in creating change, thus making them all the more inspiring to the reader.

Another important benefit of the best practice examples is that they provide action knowledge about how to tackle certain issues. This can help foster in people the sense of being capable of the action necessary to protect the environment. This is highly relevant, as both individual and collective self-efficacy have proven to be essential for pro-environmental behaviour (Klöckner 2013).

As Albert Einstein once fittingly said: »We can't solve problems using the same kind of thinking we used when we created them«. This manual raises some burning issues in industrialised, capitalist societies. Even more importantly, it goes beyond a mere analysis of the status quo, also ***depicting possible ways to move forward, toward a more just, sustainable and social democratic future.***

Endnotes and Sources

Endnotes Introduction

[1] Using language that distances another group from ourselves.

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Endnotes Foreword

[1] https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf
[2] https://www.ipcc.ch/sr15/
[3] This well-known quote is from the novel The Leopard by Giuseppe Tomasi di Lampedusa.

1 Ambitious Climate Action for Social Justice and Equality

Ambitious climate action is an essential tool to fight against growing injustice — both globally and at home. Social democrats have always fought for social justice. They have successfully dealt with fundamental transitions in a socially just manner, and they can draw on an extensive repository of inspiring concepts for environmental and social sustainability.

In the following chapter, we will highlight the importance of ambitious climate policies to secure social justice (part I) and social progress (part II). We will also show that the concept of a social-ecological transformation is nothing new for social democracy, but is an integral part of its historical development (part III).

Part I: Ambitious climate action is an important tool to fight against growing injustice—both globally and at home.

Ambitious climate policies foster social justice. This is something that is underlined by an increasing number of progressive citizens and social democratic politicians alike. In the section below, we will shed light on the interplay between the climate crisis and social justice for various marginalised groups.

In countries around the world, we are facing a crisis of justice. ***As a result of the climate crisis, the less privileged groups in society are suffering from a triple burden of growing injustice:***

1. First, marginalised citizens suffer more from the consequences of the climate crisis:

- When a heat wave hits a city, the 40°C temperatures affect older people living in a stuffy 40m² flat far more than the inhabitants of nice big house with shady garden to cool off in. Similarly, a well-paid employee can switch on the AC, or leave the office, while a blue-collar worker cannot leave the production line in a stiflingly hot factory. This is not only a matter of personal comfort: Even in affluent Germany, 20,000 people have died in heat waves in recent years—twice as many as in traffic accidents.[1] Other natural disasters caused by global heating will also hit marginalised parts of society harder, because their homes, schools and work places are often situated in places where natural hazards are more likely, for example on unstable soil or in flood-prone areas.[2]
- In addition to this, the ***sectors hardest hit by the climate crisis currently provide jobs for a predominately low-skilled workforce***. Here we are referring to the agricultural sector, which already suffers from droughts, storms, water shortages and increasingly unpredictable weather patterns, and tourism, which, on top of these challenges, also faces the problem of sea level rise (see also Chapter 2, page 40). Thus, the less privileged are more vulnerable to the impacts of the climate crisis. The ILO estimates a loss of 80 million full-time jobs within the next ten years as a result of the climate crisis—but even this figure depends on us keeping global heating below +1.5°C. If we fail to reach this target, even more people will lose their jobs. Studies show that EU citizens perceive the risk of losing their jobs due to the impacts of global heating (or because of inequality) as higher than the risk of job loss due to carbon emissions reduction measures.[3]

2. Second, socially marginalised groups have less capacity to cope with climate crisis impacts like these—they are simply less resilient:

The costs of a flooded cellar or storm damage to a roof represent a higher burden for society's poor than for affluent citizens with good insurance cover. People working in heavily affected sectors are typically also less flexible when it comes to changing their jobs. A small-scale farmer might not have the necessary capital and knowledge to install an innovative, water-saving irrigation system to counter the effects of a drought, for example.

3. This is all the more unfair, because, third, underprivileged groups in society contribute less to the climate crisis—and this applies to every country, both now and in the past.[4]

The less privileged fly less, whether for business or for pleasure, they do not drive (large) cars, they have much smaller apartments to heat, and buy fewer consumer products. In fact, 45 per cent of global greenhouse gas (GHG) emissions are caused by the richest 10 per cent of the world's population, while the poorest 50 per cent are responsible for as little as 13 per cent of emissions. Although most of these wealthy »top emitters« are found in the industrialised countries of the Global North, it is important to note that a third of them live in middle-income countries, such as Russia.[5]

The UN Special Rapporteur on extreme poverty and human rights, Philip Alston, even warned that »[w]e risk a ›climate apartheid‹ scenario where the wealthy pay to escape overheating, hunger and conflict while the rest of the world is left to suffer.«[6]

We all want our societies to be just, and we are all striving to fight against growing inequality. In light of the three reasons described above—the marginalised being more vulnerable, less resilient and having contributed less to emissions—it is imperative that the climate crisis be curbed to avoid a deepening gap between the world's rich and poor.

The climate crisis is not only a crisis of justice from the perspective of the privileged versus the deprived groups in society, but also along several other dimensions, specifically justice a) between generations, b) between nations, and c) between men and women.

1. We all want a better future for our children and grandchildren.

- We want them to live in dignity and without fear, to be able to develop their talents and take care of their loved ones. However, together with our parents, we have used so many resources that there will not be much left for future generations.[7] Acidic oceans brimming with plastic waste instead of fish, deserted landscapes, dwindling biodiversity, and societies that are all too frequently in crisis mode due to the spread of disease, natural disasters,

and exploding costs resulting from the need to adapt to the new situation—what a heritage to pass on to our children![8] It is hardly surprising that youth movements around the world go to great lengths to remind our generation that »There Is No Planet B« for them to live on.[9] ***So, if we want our children to live a happy life, we need to transform our societies and economies according to social and environmental principles—in other words, we need to change them for the better, right now.***

2. Ensuring climate justice is also treated as a priority at an international level, where we see the same patterns of injustice on the national level:

- Countries with a low carbon footprint (current, historical, total and per capita) will be hardest hit by the impacts of global heating. Most of these countries are located in already warm regions, which might, with increasing heat, become uninhabitable deserts.[10] Geographic features such as long, increasingly eroded coastlines mean they might be hit by severe storms with growing frequency, or they might see huge river deltas swallowed up by the ocean.[11]
- With most of these nations being low-income countries, they are at a disadvantage when it comes to trying to increase their resilience.[12] Improving resilience not only requires costly infrastructure development, but also the creation of rescue plans or establishment of funds for victims of extreme weather events. Yet, human and financial resources are often lacking.
- Thus, the climate crisis has the potential to significantly exacerbate global inequality. In light of this, an international debate over the responsibility of different nations to limit the climate crisis has been going on for decades. While it is now clear that to avoid a temperature increase of 1.5°C (which would lead to irreversible global heating), every nation has to be carbon neutral by 2050, we must not neglect to consider responsibility for historic emissions—

i.e. the problems that have been caused to a considerable extent by the countries of the Global North. From this perspective, the EU's target of carbon neutrality by 2050 is not ambitious, but in fact too late.

- Today, international solidarity when it comes to tackling the climate crisis not only means fair »burden sharing« in recognition of historic emissions, but also a fair distribution of the opportunities generated by green innovation. If countries in the Global North, having caused a large proportion of the emissions in the first place, now sell innovative green technologies to those countries in the Global South that are now suffering from the consequences of those measures to combat global heating, then this can no longer be called international solidarity. After having made a significant contribution to global heating in the first place, the countries of the Global North should at very least transfer »green technologies« to the most affected countries of the Global South, allowing them to »leapfrog«. It would be even better if the countries of the Global North were to support green research and innovation in the Global South, so that more patents, for example for renewable energies or for urban mobility, could be claimed by firms in the Global South.
- International solidarity has been a guiding principle for social democracy since its inception. Today, in a globalised world, solidarity is not only a question of values, but also a genuine asset, because it means combining forces. We can only prevent the climate crisis from threatening humanity if we truly stand together and work together on a global basis. The Paris Climate Agreement, one of the most important multilateral treaties in recent decades, is an excellent basis for such joint action.

3. It is a well-established fact that global heating impacts women more than men.

- More women suffer from poverty, they often lack access to crucial resources, and, in times of crisis, many societies tend to rescue or feed boys and men before girls and women.[13] In addition to this, economic sectors severely impacted by global heating — agriculture, tourism and healthcare, for example — employ a large female workforce. In many sub-Saharan African countries women play a stabilising role for their families and communities because of their importance in agriculture, and now this model of life is increasingly at risk. In the tourism sector, many jobs will be lost as well—when Croatia's beaches are gone, there will no longer be any need for chambermaids. In the healthcare sector, in contrast, many additional nurses will be needed to keep our healthcare systems functioning when the climate crisis fully unfolds. We need to ensure that this additional work is performed by employees working under good conditions, and not only by nurses who are already doing (unpaid) overtime today (see above, page 19, and for the gender equality effects of climate policies, see Chapter 3, page 55).
- However, it would be a mistake to depict women solely as helpless victims of the climate crisis. From smallholder farmers in the Global South rediscovering traditional agricultural techniques that are beneficial in the current situation, to Greta Thunberg, the teenage founder of »Fridays for Future«—around the globe women are leaders in the fight against the climate crisis.[14] When scientific data is available, it often shows that women are both better informed about the climate crisis and more concerned about its impacts.[15]
- Thus, ***climate policies should not only take the difference in the consequences of***

climate impacts for men and women into account, but also specifically empower women to combat this challenge, thereby contributing to gender equality.

But what about…

…concerns that climate mitigation measures could lead to new injustice within nations due to widening social gaps—for example because of CO2 prices hitting the less privileged harder?

The way forward: Ensuring social justice at home

- Ambitious climate mitigation measures can help to reduce existing social injustice. And social democrats in particular should make sure that new policies are designed with this in mind.
- On a national level, there are many best practice solutions. One excellent example is a carbon pricing system with a redistribution effect.[16] In this system, the privileged, the »top emitters«, pay more, while marginalised groups, who tend to cause lower emissions, pay less from the outset. The total tax revenue could then either be directly reimbursed to the poorer members of society, or be used in part for environmental projects benefitting less privileged groups in society—this could include new community gardens, free public transport or new heating/insulation systems for social housing projects. In both cases, marginalised groups have more money in their pockets at the end of the year, which could help them to improve their social status and at the same time serves as a reward for their comparatively small carbon footprint.
- However, it is not only fiscal measures that should be assessed in terms of their effects on social justice. In fact, climate-related and all other regulations and government investments also have to be subject to the same scrutiny: Better free public transport, new bicycle lanes or subsidies for (cargo) bicycles are a better investment from the perspective of the socially marginalised than subsidies for a 60,000euro electric SUV. It would also be fairer and healthier to ban all cars from city centres—provided there are good alternatives—than to only allow new electric vehicles (see also Chapter 5, page 107).
- These are just some examples demonstrating ***that the best solution from an environmental perspective will also bring about greater social justice.***

But what about…

…the fact that many countries in Europe cause relatively few emissions while the governments of major emitting countries, such as the United States or Brazil, refuse to take appropriate action?

The way forward: Ensuring global climate justice

This »blame game« where we all point our fingers at our neighbours, waiting to see who makes the first move, is a typical delaying tactic. In the context of the fight against the climate crisis in (Eastern and Western) Europe, this argument does not hold for five reasons:

1. First, if we take a) historic emissions caused by early industrialisation, and b) per capita emissions into account, every single European country has a high carbon footprint. Overall, European countries caused 33 per cent of global emissions, while the EU-28 countries alone caused 22 per cent.[17] What is not reflected in the numbers is the fact that CO2 emissions are counted where they are produced, not where a product is consumed. So, if carbon-intensive steel is produced in India but used in Slovakia, then India is the country with the bad record.
2. Second, if every country were to wait for its »bigger neighbours« to make the first move, in the end, nobody would do anything. Does the fact that Poland is ranked number 26 on the list of the biggest GHG emitting countries, for example, mean that the other 171 countries that signed the Paris Climate Agreement would not have to do anything until the Polish government decides to fully implement the treaty's obligations?
3. Third, even if national governments oppose ambitious climate policies, this does not mean that the carbon footprint of the country concerned cannot be reduced. President Trump's announcement that he was going withdraw from the Paris Climate Agreement was met with fierce resistance on the level of many US states and communities, their opposition conveyed with the slogan »We Are Still In«. The campaign bearing the same name today unites stakeholders with a combined budget of 6.2 trillion dollars—which would make it the third largest economy in the world.[18] Similarly, in many other countries, progressive politicians participate in direct dialogue on a community and province level (e.g. the »Covenant of Mayors«) about the best ways to combat global heating.[19]
4. Fourth, small countries can play a crucial role if they lead by example. This is true for nations of the Global South, such as the internationally acclaimed „Climate champions« Costa Rica and Morocco, but also for small European states. Denmark, for example, pursues a very ambitious climate policy, reducing emissions and supporting green diplomacy. Such role model states can set off a »domino effect«. The German energy transition, for example, began as a unique political experiment in the late 1990s in a context of worldwide dominance of fossil fuel generation and a tiny niche for extremely costly renewable alternatives. Within just a few decades, it had triggered the global success of renewable energy generation and led to the emergence of a highly competitive

renewable industry.

5. Fifth, for many years, major opponents have been describing climate mitigation measures as a »burden«—where, in fact, they are just the opposite. ***Ambitious climate policies are a tremendous opportunity to build fairer, healthier societies, and to improve the wellbeing of people across the globe.***

Throughout this manual, we will describe multiple examples of positive co-benefits of ambitious climate policies—for social and gender equality, for jobs, for health, for democratic decision-making processes, and even for time sovereignty.[20]

Part II: Ambitious climate policies protect the social achievements made in recent decades.

Over the last few decades, our global community has made remarkable progress towards food security, access to water and to healthcare, and millions have been lifted out of poverty. Data from recent years shows, however, that this social progress has not only come to a standstill, but that some social achievements have already been reversed because of the emerging climate crisis, and because those successes have partly been based on the overexploitation of environmental resources.[21]

- The number of people in absolute ***poverty*** was in constant decline for almost two centuries. This is undeniably a great success.[22] We also saw a considerable increase in wealth in many countries of Eastern and Southern Europe. However, according to the World Bank, ***122 million people could be pushed back into poverty by 2030 because of the impacts of the climate crisis,*** dramatically reversing the positive trend of poverty reduction.[23]

INACTION ON CLIMATE PROTECTION INCREASES POVERTY

122

million people

More than 2x population of the Balkans

- ***Hunger*** is on the rise again: According to the FAO „Climate variability and extremes are […] a key force behind the recent rise in global hunger«,[24] and as a result »[t]he number of undernourished people in the world has been on the rise since 2015, and is back to levels seen in 2010–2011«.[25] Climate-induced crop failures also affect agriculture in (Eastern) European countries. Drought in Russia in 2010 and 2012, for example, reduced crop yields by between one-quarter and one-third, causing a sharp increase in food prices.[26]
- Access to safe drinking ***water*** will not only be a problem in areas already prone to drought, but also in many countries of the Global North. In Central and Eastern Europe, the governments of Bulgaria, the Czech Republic, Hungary, Lithuania, Poland, Moldova, Romania, Slovakia, Slovenia and Ukraine are working with the World Meteorological Organization (WMO) to establish an integrated drought management system.[27] Of particular concern are the glaciers of Central Asia, which provide drinking water for the inhabitants of all neighbouring countries, and which are currently shrinking dramatically.
- The growing climate crisis is increasingly putting our ***healthcare*** systems under pressure: Heat stress and injuries from natural disasters are not the only cause of concern, however.[28] Due to increasing temperatures, host animals from (sub-)tropical regions are able to survive in Europe, leading to the spread of vector-borne diseases, such as the West Nile fever, which has already reached South-East Europe and the Czech Republic.[29] Last but not least, air pollution is exacerbated by the climate crisis, reducing the life expectancy of millions of people (see also Chapter 5, page 90). This is a serious problem because only half of the world's population has access to healthcare, and many

people are forced into poverty because they cannot afford the medical treatment they need.[30]

Thus, ambitious climate policies help us to protect the social progress we have achieved over the past decades or even centuries.31

- What is more, social-ecological transformation of our economic systems will help to end hunger (for example by reducing food waste), will prioritise robust healthcare systems above short-lived consumption goods, and will enable all members of society to live a better life through a fairer distribution of wealth (not necessarily through constantly increasing GDP). ***It is this vision of a better future that progressive actors have been endeavouring to achieve for decades.***

But the impacts of the climate crisis not only threaten our social system. Other features of human security are also at risk:

- One issue the debate has focused on has been the climate crisis as a driver of ***armed conflict***. Water scarcity, famine, and hence mass migration aggravate (rather than cause) conflicts both within and between nations. Experts agree that with increased global heating, the climate crisis will become a more important factor in worldwide conflicts,[32] and the UN has even declared the climate crisis »the greatest threat to global security«.[33]
- The question of ***climate refugees*** is also increasingly at the centre of international debate. As the UNHCR emphasises: »Climate change and natural disasters can add to and worsen the threats that force people to flee across international borders. The interplay between climate, conflict, poverty and persecution greatly increases the complexity of refugee emergencies.«[34] While it is hard to predict how many climate refugees there are and how many there will be in the future, where they will migrate to and whether the climate crisis was the decisive factor in them choosing to leave their homes, cautious estimates have still been made. For example, a recent World Bank report predicted around 140 million climate refugees by 2050 if climate action is delayed.[35]

- The impacts of global heating on ***infrastructure*** receive less attention in the debate. Given the importance of schools, hospitals, railways, roads and factories, however, it is clear that a climate-resilient infrastructure is critical to all of us: Buildings must be able to withstand natural disasters (storms, floods, heavy rain, wildfires, landslides, etc.), as well as »slow onset events« (drought, melting permafrost and glaciers, or sea level rise). In light of the global heating we have already caused, these impacts are inevitable.[36] And faced with the virtual impossibility of creating a resilient infrastructure for a +5°C world, the focus should be on slowing down global heating and mitigating its effects—thereby building a better future.
- Similarly, it is only today that we can attach a price tag to the ***economic losses*** caused by climate-induced natural disasters: currently, approximately 520 billion US dollars per year, the equivalent of Sweden's GDP.[37] For countries in a +5°C world, however, it is impossible to estimate the economic and infrastructural losses, not least because the loss of cultural heritage and destruction of livelihoods when large parts of St. Petersburg, the Netherlands and Croatia's coastline are below sea level will be immeasurable.
- Last but not least, unmitigated global heating would also destabilise our ***political systems*** including undermining achievements such as participatory decision-making procedures and increased gender equality. In times of crisis, the executive are usually required to take bold and drastic measures, often neglecting the voices of other political stakeholders. Situations like this seldom bring about social progress and innovation, but rather involve a return to old-fashioned values (see also Chapter 7, page 128).

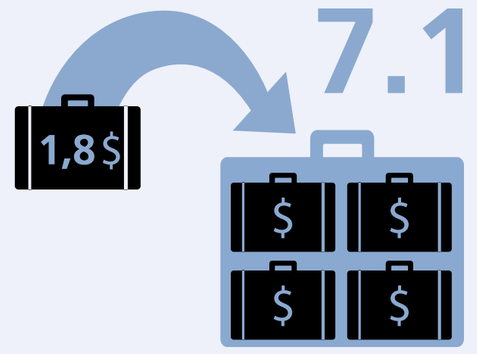
But what about...

the investment needed to make our societies more climate resilient?

The way forward: Ensuring social and human security

- We need to invest in agricultural planning, healthcare systems, water management, resilient infrastructure and also early-warning systems to be able to cope better with the consequences of global heating that even from today's perspective we know to be unavoidable. The World Economic Forum estimates an investment need of 1.8 trillion US dollars in five key areas . This may seem a lot, but the good news is that by 2030 this investment can unlock benefits in the amount of 7.1 trillion US dollars. Such investment would not only prevent much higher costs, but would also drive innovation, and many social co-benefits could be realised (for more detail on this, see Chapter 2, page 36ff).[38]

CLIMATE PROTECTION INVESTMENT BENEFITS THE ECONOMY



- UN Secretary General António Guterres was absolutely right when he emphasised that ***»[t]here is a cost to everything. But the biggest cost is doing nothing.«***[39] A recent study revealed that 30 trillion US dollars in damages caused by global heating could be prevented if we stuck to the 1.5°C target. The vast majority of nations, representing 90 per cent of the world's population, would benefit from this.[40]
- This is all the more true in view of the millions of human lives and livelihoods, the cultural and natural heritage, that will be lost. These are things that you simply cannot put a price tag on.

Part III: Social democrats are well equipped for the challenges that lie ahead

Having dealt with many significant changes and transitions, social democrats can draw on a rich history of concepts for environmental and social sustainability:

- Throughout its history, social democracy has always been closely associated with environmental issues. For the hard-working industrial workers, nature was a haven and somewhere to rest, a place where they could recover from long shifts in factories or down the mines. At the same time, it gave them an opportunity to escape the often difficult living conditions in the working-class areas of the towns and cities. Choosing to spend time in nature has therefore always been an expression of self-determination. The workers' movement that emerged throughout Europe in the 1880s endeavoured to institutionalise this interest in nature. With this in mind, the tourist association »Friends of Nature«, an international association of nature-loving workers from different countries, was founded in 1895. At this early stage in the history of social democracy already, it was acknowledged that international nature issues had to be resolved collaboratively.
- In the 1970s and 1980s, environmental policy issues were discussed more and more explicitly and openly. Around the world, environmental degradation had become all too evident. Through his North-South Commission, German Chancellor Willy Brandt fostered exchange between developing countries and the countries of the Global South. His was the first German federal government to adopt a development programme in 1971. The fact that we are discussing environmental and climate issues in a global dimension today is largely thanks to Willy Brandt whose New Eastern Policy represented an important step towards a united Europe and who demanded global governance after the collapse of communism—a requirement that is more important today than ever before.
- As the champion of workers, social democratic parties never focussed exclusively on environmental protection measures but were always concerned about the social impacts. Politicians were frequently preoccupied with concerns over job losses and failed to seize the opportunities for structural change. This made it all the more important that, in the 1970s, the SPD decided to tackle a structural change on its home turf of North Rhine-Westphalia. The target was the coal and heavy industry. For Willy Brandt, the goal was to »make the sky above the mining towers on the Ruhr blue again«. A lengthy conversion process started with a strong emphasis on economic diversification: new research, production and service companies moved to the former industrial areas. As a result, the quality of life in the region improved significantly, not least due to the better environmental conditions. This transformation in North Rhine-Westphalia is still considered a positive example of environmentally conscious structural change (see also Chapter 2, page 43).
- During this period, various countries saw the establishment of the first Green parties, which brought numerous environmental issues to the political stage and also pushed other parties to include environmental policies in their political programmes. Besides the Greens, the social democrats developed all-encompassing environmental concepts. Thirty years later, many social democratic parties still see themselves as having social and green roots.

- A milestone in environmental policy was the publication of the Brundtland Report entitled »Our Common Future«. The report, written under the leadership of the former Social Democratic Prime Minister of Norway, Gro Harlem Brundtland, defined the term sustainable development for the first time and sparked broad debates about global sustainable environmental policy.
- In Central and Eastern Europe, too, environmental degradation became an issue in the 1980s, not least in the wake of the Chernobyl nuclear disaster. Environmental groups were formed across the region, their members being declared opponents of the communist regimes. After the collapse of communism, many of these environmental activists found a political home in social democratic parties, where they continued to elaborate more environmental issues.

But what about…

…the shared climate politics of social democracy and trade unions, both rooted in the workers' movement? Aren't we betraying our past?

The way forward—together with the trade unions and acknowledging our roots

- There is no doubt that trade unions can and would like to play a key role in the fight against the climate crisis. They are natural partners when it comes to supporting environmental transformation that also leads to more social justice.
- In the past, a trade unionist with a progressive opinion on the climate crisis may have struggled to garner support. But with the climate crisis unfolding, significantly exacerbating inequality both nationally and globally, destroying millions of jobs in heavily impacted sectors, threatening the health and wellbeing of even more workers and undermining our common

future, this picture has changed dramatically—for the better.

- Today, all major international trade union confederations are active promoters of climate policies, as are many of their regional and national counterparts and their members. The International Trade Union Confederation (ITUC) and the European Trade Union Federation (ETUC) are emphatic about their support for the Paris Climate Agreement and promote the concept of a »just transition« to a sustainable

future (see also Chapter 2, page 40ff). In 2015, the year the Paris Agreement was concluded, the ILO published its »Guidelines for a just transition towards environmentally sustainable economies and societies for all«,[41] and the following year, the ITUC and ETUC established a »Just Transition Centre« supporting just transition processes around the globe.[42]

- More pragmatic trade unionists have pointed out that, »if trade unions are not sitting at the table« when climate policies are being developed, then »they will end up on the menu«. Both sides began to understand the importance of trade union representatives being included in multi-stakeholder dialogues on the development and implementation of climate policies, bringing together government, trade unions, scientists, and environmental NGO representatives. This can be seen as the basis for the formation of commissions in numerous countries today that define common pathways for a just transition to a zero carbon economy.
- Of course, trade unions will, first and foremost, focus on the interests of their members, the workers—this is their mandate. But this does not mean that climate action has to be slowed down. Once a concrete phase-out date has been defined, »coal commissions« and other multi-stakeholder forums must make sure from the outset that the results of their negotiations are in line with the Paris Climate Agreement's 1.5°C target, i.e. that a defined carbon budget will not be overshot.[43] This makes it possible to work out the best way of ensuring that transition completed by this specific date is socially just. To ensure a result in line with the Paris Climate Agreement is crucial because if we trigger a negative feedback loop of uncontrollable global heating, then nothing has been achieved. As Sharan Burrow, the General Secretary of the ITUC, has continuously pointed out: »There are no jobs on a dead planet.«
- In their fight for a just transition, trade unions are, once again, natural allies of social democrats. This is a continuation of our shared past. In pursuing their aims, trade unionists and social democrats alike have to keep the big picture in mind, continuously reforming their traditional core values to ensure they fit into today's world. We therefore need to ask ourselves the following questions: What meaning can international solidarity have today if we neglect climate justice? Which members of our societies are the most marginalised today—industrial workers, as was the case in the 1880s, or people in low-wage, precarious employment, whose jobs are threatened by the impacts of global heating? How can we stand united against export goods to Europe being produced under appalling employment and environmental conditions in the countries of the Global South? And how can we rid ourselves of a neoliberal world order underpinned by a business model that is leading to an ever-smaller number of people profiting from increasing exploitation of other human beings and of our environment? In this common endeavour, trade unionists and social democrats have begun to form new alliances—by attracting new members working in »green sectors«, for example, or by reaching out to environmental NGOs and movements. To dispel any remaining doubts, we need to emphasise our social democratic core values—justice, solidarity and social progress—for which, as we have shown in the first two parts of this chapter, ambitious climate policies are crucial.

What are we striving for?

- ***We are all striving for a world with more social justice and equality, for our own generation, and for that of our children and grandchildren.*** In the spirit of international solidarity, we want to end hunger and poverty, we want functioning healthcare systems and a fairer distribution of wealth. Not only do ***ambitious climate policies help prevent major setbacks in this regard, but they also help to build such societies***. Climate projects benefitting marginalised groups (such as community gardens, free public transport or energy efficient social housing), and political tools leading to a reduction in CO2 emissions and a fairer distribution of wealth at the same time (such as carbon taxes with a strong redistribution effect) are already being implemented by many countries.
- ***Based on the experience of successful transitions that have been already completed, and on the exceptionally progressive environmental policies implemented in previous decades, more and more social democrats, trade unionists and other progressive actors are working towards this vision of a life that is socially and environmentally better for everyone.***

Endnotes and Sources

Endnotes

[1] The study, published by the German Ministry for the Environment, did not collect the data on the much more severe heat waves of 2018 and 2019. Due to the availability of data, the study relied only on datasets from the summers of 2003, 2006 and 2015. See https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/das_monitoringbericht_2019_barrierefrei.pdf, page 34 (last accessed on 16.4.2020).

[2] Just think of the Oscar-winning movie »Parasite«, in which the rich family has to cancel a camping trip due to heavy rain, while the souterrain apartment of the poor family is completely flooded.

[3] See https://europeanmoments.com/opinions/eupinions (last accessed on 23.6.2020).

[4] This does not mean, however, that marginalised groups should not also be offered sustainable choices: a heating system that leaves local forests intact, energy-efficient refrigerators and healthy organic food should be available for everybody.

[5] A total of 26 per cent of the top-emitters live in the EU, Russia and Central Asia, see http://hdr.undp.org/sites/default/files/hdr2019.pdf, page 179, and https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/mb-extreme-carbon-inequality (last accessed on 16.4.2020).

[6] https://edition.cnn.com/2019/06/25/world/climate-apartheid-poverty (last accessed on 15.4.2020).

[7] There are several illustrative tools showing to what extent we live at the expense of the next generation—for example, counting the number »earths« we would need to support our lifestyle or »Earth Overshoot Day«. To continue with our current lifestyles—with all their social disparities—we would need 1.75 planet earths. If everybody had the lifestyle of the average Italian citizen, we would need four planet earths. »Earth Overshoot Day« marks the day of the year after which we »overconsume« the world's resources, which should be saved for generations to come. Each year, Earth Overshoot Day falls a little bit earlier in the year; in 2019, it was July 19. A useful overview of these tools can be found here: [h]ttps://www.theworldcounts.com/challenges/planet-earth/state-of-the-planet/overuse-of-resources-on-earth

[8] The most popular approach to illustrating the limits of the habitability of planet earth is based on what are referred to as »planetary boundaries«. Nine planetary boundaries define a »safe operating space for humanity«, while »transgressing one or more planetary boundaries may be deleterious or even catastrophic due to the risk of crossing thresholds that will trigger non-linear, abrupt environmental change within continental to planetary-scale systems.« See https://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html (last accessed on 16.4.2020).

[9] The most prominent youth movement is »Fridays for Future«, which established a global representation within just 12 months. To see how the leader of the movement describes the chances of her generation living a good life, see https://www.npr.org/2019/09/23/763452863/transcript-greta-thunbergs-speech-at-the-u-n-climate-action-summit?t=1587037264028 (last accessed on 16.4.2020).

[10] See https://www.weforum.org/agenda/2020/05/global-warming-heat-territory-earth-uninhabitable/ (last accessed on 10.7.2020).

[11] The most recent »Global Climate Risk Index«, a report compiling data on climate-related extreme weather events, published on an annual basis, states that »[o]f the ten most affected countries and territories in the period 1999 to 2018, seven were developing countries in the low income or lower-middle income country group, two were classified as upper-middle income countries (Thailand and Dominica) and one was an advanced economy generating high income (Puerto Rico).« See https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_10.pdf (last accessed on 10.7.2020).

[12] See https://gain.nd.edu/our-work/country-index/ (last accessed on 10.7.2020).

[13] For an overview see, for example https://www.unwomen.org/en/news/in-focus/climate-change or https://www.globalcitizen.org/en/content/how-climate-change-affects-women/ (last accessed on 10.7.2020).

[14] See, for example https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiVr6GT7MLqAhWixMQBHb7GA5QQFjABegQIAxAB&url=https%3A%2F%2Fwww.ipcc.ch%2Fapps%2Fnjlite%2Far5wg2%2Fnjlite_download2.php%3Fid%3D9719&usg=AOvVaw0w7DWxcyZRbD6yyO99Gu9a (last accessed on 10.7.2020).

[15] For US data, see McCright, Aaron M. (2010): The effects of gender on climate change knowledge and concern in the American public, in: Population and Environment 32, no. 1, pp. 66-87.

[16] See, for example https://medium.com/the-sensible-soapbox/british-columbias-carbon-tax-is-working-3ea-81114be5a or

[17] See https://ourworldindata.org/contributed-most-global-co2 (last accessed on 10.7.2020).

[18] See https://www.wearestillin.com/about (last accessed on 10.7.2020).

[19] See https://www.covenantofmayors.eu/ (last accessed on 10.7.2020).

[20] This point was illustrated in a famous cartoon by the Pulitzer Prize winner Joel Pitt in as early as 2009: https://www.climateactionreserve.org/blog/2012/08/31/environmental-cartoons-by-joel-pett/ (last accessed on 10.7.2020).

[21] The global recession caused by the Covid-19 crisis might also threaten this positive development in two ways: First, on top of the many victims of coronavirus itself, the emerging economic crisis will destroy the livelihoods of countless people and cost millions of jobs. Second, if states do not fully embark on a »green recovery« path, the climate goals might end up out of reach, with all the severe impacts this entails, as outlined in this chapter.

[22] The percentage of people living on less than one dollar a day decreased from 84 per cent in 1820 to 24 per cent in the early 1990s, and the percentage of people living on less than 1.9 dollars a day fell from 44 per cent in the early 1980s to 9.6 per cent in 2015 (see https://ourworldindata.org/extreme-poverty (last accessed on 15.4. 2020)).

[23] See https://www.ohchr.org/Documents/Issues/Poverty/A_HRC_41_39.pdf , page 6. For the original report, see https://www.worldbank.org/en/topic/climatechange/brief/shock-waves-managing-the-impacts-of-climate-change-on-poverty (last accessed on 15.4.2020).

[24] http://www.fao.org/state-of-food-security-nutrition/2018/en/ (last accessed on 15.4.2020).

[25] http://www.fao.org/3/ca5162en/ca5162en.pdf#page=30 (last accessed on 15.4.2020).

[26] See http://library.fes.de/pdf-files/id-moe/15863.pdf, page 8 (last accessed on 22.5.2020).

[27] See https://public.wmo.int/en/resources/bulletin/integrated-drought (last accessed on 8.7.2020). A study on climate crisis impacts in Belarus, Ukraine and Moldova also highlights the risks of drought and water scarcity, showing that Moldova and Ukraine are most affected: https://www.droughtmanagement.info/literature/ZOI_climate_change_eastern_europe_2012.pdf (last accessed on 8.7.2020).

[28] The current Human Development Report warns that »[t]he negative impacts of climate change extend to health and education. Between 2030 and 2050 climate change is expected to cause some 250,000 additional deaths a year from malnutrition, malaria, diarrhoea and heat stress.« http://www.hdr.undp.org/sites/default/files/hdr2019.pdf, page 180 (last accessed on 15.4.2020).

[29] »Human health is also affected by dangerous infections and ecosystem-mediated impacts. Most CEECCA countries report a high risk of such health threats, including tularaemia, anthrax, Western tick-borne encephalitis, haemorrhagic fever with renal syndrome, Crimean-Congo haemorrhagic fever, West Nile fever, brucellosis and Q Fever, as well as dangerous infections such as cholera, malaria, tick typhus, leishmaniasis, leptospirosis and others.« See http://library.fes.de/pdf-files/id-moe/15863.pdf, page 8.

[30] https://www.who.int/gho/world-health-statistics (last accessed on 15.4.2020).

[31] The UN Special Rapporteur on extreme poverty and human rights, Philip Alston, emphasised that »[c]limate change threatens to undo the last 50 years of progress in development, global health, and poverty reduction.« See https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24735&LangID=E (last accessed on 15.4.2020).

[32] See https://en.unesco.org/courier/2018-2/climate-change-raises-conflict-concerns (last accessed on 16.4.2020) or Mach, K.J., Kraan, C.M., Adger, W.N. et al. (2019): Climate as a risk factor for armed conflict, in: Nature 571, 193-197. https://doi.org/10.1038/s41586-019-1300-6

[33] See https://www.un.org/en/chronicle/article/greatest-threat-global-security-climate-change-not-merely-environmental-problem (last accessed on 22.5.2020).

[34] See https://www.unhcr.org/news/stories/2019/10/5da5e18c4/climate-change-and-displacement.html (last accessed on 8.7.2020).

[35] See https://www.worldbank.org/en/news/infographic/2018/03/19/groundswell---preparing-for-internal-climate-migration (last accessed on 10.7.2020).

[36] To name just two examples: First, to prepare for the rise in global heating, many cities will have to replace all their culverts to make sure that water masses after a heavy rain event do not flood the city. Second, critical infrastructure in Arctic regions (roads, electricity transmission lines, buildings etc.) will also have to be rebuilt almost entirely because of melting permafrost. See http://library.fes.de/pdf-files/id-moe/15863.pdf, page 9 (last accessed on 17.4.2020).

[37] According to the global insurance agency Munich Re's »NatCat SERVICE«. https://www.munichre.com/en/risks/climate-change-a-challenge-for-humanity.html (last accessed on 17.4.2020).

[38] See https://www.weforum.org/agenda/2020/01/climate-resilience, and https://newclimateeconomy.report//2016 (last accessed on 16.4.2020).

[39] From his brilliant speech at the Climate Action Summit: https://www.un.org/sg/en/content/sg/speeches/2019-09-23/remarks-2019-climate-action-summit (last accessed on 17.4.2020).

[40] See https://www.researchgate.net/publication/325321687_Large_potential_reduction_in_economic_damages_under_UN_mitigation_targets (last accessed on 23.6.2020).

[41] See https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf (last accessed on 10.7.2020).

[42] The centre's homepage can be found on https://www.ituc-csi.org/just-transition (last accessed on 10.7.2020).

[43] The fact that no »Paris-compatible« phase-out date was set is one of the biggest criticisms from Germany's »coal commission«. Looking at its carbon budget, Germany would have needed to phase out coal by 2030 at the latest, but the stakeholders could only agree on a phase-out by 2035-2038 . The consequently slower expansion of renewable energies puts thousands of jobs in this sector at risk (see https://www.bund.net/service/presse/pressemitteilungen/detail/news/diw-studie-kohleausstieg-muss-bis-2030-kommen-zwei-drittel-des-gesamten-deutschen-emissionsbudgets-bereits-in-20-jahren-aufgebraucht/). Another big question is whether it is »just« to allocate 40 billion euros of taxpayers money for an industry without a future, while former employees of now bankrupt German solar companies did not receive any bailouts, and structurally weak regions dependent on a stable wind energy sector do not receive as much support as coal mining regions either.

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A useful overview of the links between inequality and the climate crisis: http://www.hdr.undp.org/sites/default/files/hdr2019.pdf (last accessed on 15.4.2020).

The links between poverty and climate change are elaborated in https://www.ohchr.org/Documents/Issues/Poverty/A_HRC_41_39.pdf (last accessed on 15.4.2020).

A comprehensive factsheet on the impacts of the climate crisis on health produced by WHO Europe: http://www.euro.who.int/__data/assets/pdf_file/0007/347983/13-Fact-sheet-SDG-Climate-change-FINAL-25-10-2017.pdf?ua=1 (last accessed on 15.4.2020).

The ILO Guidelines for a just transition: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf and a more recent ILO publication: Galgóczi, Béla/ILO (2018): *Just transition towards environmentally sustainable economies and societies for all*, https://labordoc.ilo.org/discovery/delivery/41ILO_INST:41ILO_V2/1256119990002676

The two most important documents guiding ambitious climate policies are the Paris Climate Agreement: https://unfccc.int/sites/default/files/english_paris_agreement.pdf and the IPCC's ground-breaking 1.5°C report: https://www.ipcc.ch/sr15/

2 Decarbonisation of the Economy and the Future of Jobs

The decarbonisation of all sectors of the economy is an opportunity to create many new jobs in emerging industries and through new circular economy business models.

In this chapter, we address the challenge that lies ahead: the decarbonisation of every sector of our economy. We contend that this undertaking — against the backdrop of our starting argument above — will require massive investment as well as technical and social innovation. But if this potential is harnessed, ambitious climate action is capable of creating many new and better jobs. In what follows, we will present arguments to support the feasibility of this scenario and outline how we can make it reality by adressing the challenges ahead. After all, the biggest challenge would be an unmitigated climate crisis — because there are no jobs on a dead planet.

Part I: The investment required to develop a new industrial and public infrastructure will provide an abundance of new jobs.

The decarbonisation of our economy requires a huge investment programme. Within the next 30 years, a significant part of our public and private infrastructure will have to undergo a substantial upgrade in order to become carbon neutral. This includes our energy grids, power stations, chemical processing plants, the building stock, the transport network, waste prevention and treatment, and many other areas besides.

To get an idea of the scale of this task, it is worth taking a more detailed look at the different sectors of our economy and the measures that have to be taken in each case:

1. In the ***power sector*** we will have to replace fossil fuel thermal power plants with renewable energy generation facilities such as solar PV systems, wind farms, biomass-fuelled and hydroelectric power plants. In light of the fact that a successful energy transition will be heavily reliant on a decentralised structure, an extensive overhaul of the energy grid is also going to be necessary, including the introduction of digital technologies to make it smart and demand-side oriented. A dispersed storage network based on different technologies will form the mainstay of the electricity system, ensuring supply security during the days and weeks when there is less sun and wind. The use of renewable electricity to produce green hydrogen is one way to store excess electricity at times when supply exceeds demand, with other examples being batteries and pump storage hydroelectric power plants. Once renewable energy production is decentralised, the same could happen with the production of hydrogen, which could be located onsite, particularly close to wind farms. This has the potential to create new jobs in local communities and give rise to new supply chains and production networks.
2. ***Industry*** will have to replace carbon-intensive production processes with new carbon-free alternatives. This applies both to energy use in the industries affected and to chemical processes that produce CO2 or that employ carbon-intensive products. For many carbon-intensive industrial processes, technological solutions are already at hand and we will most likely see the emergence of new industrial sectors. However, many of these new technologies are still in their infancy and will need further research and pilot projects to scale them up to industrial levels. Recently, for example, the application of green hydrogen has received a lot of attention. It can be used as a substitute in many energy intensive production processes that before required the use of fossil energy sources, amongst other things, and were therefore very carbon-intensive. One prominent example of the use of green hydrogen in industrial processes, e.g. as a replacement for coal in steel production.
3. The ***mobility sector*** will have to invest heavily in the flexibility (»multimodality«) of the transportation system. This will require, inter alia, expanding and making public transport capacities greener, developing sharing services, as well as high-level interconnectivity between different mobility options and mobility digitalisation. As a result, people will be even more mobile than they are today, making it less of a requirement to be a car owner. Increasing public transport capacities should include the expansion of the long-distance railway system as well as urban and local transport options. With

regard to the remaining cars, we will have to replace the existing combustion engine fleet with zero-emission vehicles using, for example, electricity or hydrogen as their secondary source of power. According to one study, at least 80 per cent of cars will have to be electric by 2050.[1] For a more in-depth look at mobility, see Chapter 5.

4. Often overlooked but nonetheless crucial is the ***heating and cooling sector***, which is all about how we heat our houses and public buildings in winter, cool them in summer and how we cook our food. The sector has large untapped potential to cut carbon emissions. This requires a twofold strategy of increased energy efficiency and renewable energy conversion. In other words: staying cool, warm and well-fed while using less energy than before and relying exclusively on renewable, zero-emission energy sources. To make this happen, we are first going to have to overhaul our existing building stock, by improving insulation through modernisation, for example. Second, we will have to replace conventional heating systems based on coal, oil or natural gas with zero-emission technologies such as solar-based systems, heat pumps running on green electricity, or renewable district heating systems. In addition, we need to rethink architectural design to make it as energy efficient as possible, through carefully planned window placement and air circulation, for instance.
5. The final sector that certainly deserves a mention here is the ***agricultural sector***. It is the largest source of methane and nitrogen emissions—greenhouse gases that are much more detrimental to our climate than carbon dioxide. Although it is often said that the agricultural sector is difficult to decarbonise, it is not impossible if we manage to change the way we produce and market agricultural products. Climate-smart- farming is key and the redirection of agricultural subsidies towards ecological farming is the first step. At slightly less than 40 per cent, these subsidies represent a substantial share of the EU's budget and currently

benefit primarily large-scale agro-industries.[2] While this sector is less investment intensive, it could become more labour intensive, creating new jobs through new business models. This is particularly true if we look at the agricultural sector in a holistic manner, applying the principles of a circular economy: Biowaste can be turned into fertilisers or biogas at a local level—even without massive financial investment or specific training for local farmers.

- All in all, the total additional investment required for decarbonisation in Germany over the next 30 years has been estimated at around two trillion euros. This might sound like a huge sum, but in fact it only amounts to about three per cent of the total investment in industrial installations and residential building stock that would be necessary to preserve the capital stock of the German economy. This illustrates the magnitude relative to the size of the economy. The bottom line is: ***It is a substantial sum, but it is feasible.***
- What is more, a look at the implications of the necessary investments for jobs in the affected sectors reveals positive news: First, these investments will ***trigger demand for products*** in the lead markets ***for climate protection technologie***s: for renewable energy technologies, for green mobility and for energy efficiency technologies and solutions. For example, we are going to need an expansion of the existing train network, new heating systems, insulation materials, wind turbines, to name just a few.

This, in turn, will create many more jobs in the relevant sectors and across regions. In the section below, we will examine the specific occupations that are most likely to benefit[3]:

1. With the transformation being infrastructure driven, people employed in ***structural and civil engineering*** will be the first to benefit: railroads need to be constructed and the building stock needs to be modernised.
2. The large-scale overhaul of the building stock will also benefit workers in interior construction and a whole range ***of occupations related to planning and supervising construction sites***, as well as ***building services*** engineering and technical building services.
3. Furthermore, the shift from individual mobility to more public transport will create jobs in ***traffic and logistics*** services, e.g. relate to the expansion of public transport and sharing systems, traffic management and the roll-out of the infrastructure for green mobility.
4. Last but not least, jobs in ***mechatronics, energy electronics and electrical engineering*** are likely to increase thanks to the increased demand for renewable electricity solutions and services. In a decentralised energy system, these jobs could directly benefit local communities.

- Given that many of the necessary investments need to be rolled out across entire countries and that the renewable energy system has to be more decentralised than today's highly centralised system based on thermal power generation, all regions of a country can share in these benefits. A tangible example that clearly illustrates this: Today, almost 300,000 people are already employed in the lead market for renewable energy right across Germany[4], compared to a mere around 28,000 in the coal industry, which is concentrated in specific regions.

Scenarios for Germany show that the decarbonisation of the economy could well create more jobs than are going to be lost, compared to a scenario with a less ambitious climate policy.

- ***There are already millions of people working in »green« sectors***. Recent research

conducted by the German Environment Agency (UBA) suggests that 6.4 per cent of the German labour force (almost three million people) is already employed in employment fields related to environmental protection, from ecotourism and sustainable financial services to industrial jobs. More than half of these jobs are directly related to climate protection.[5] At least 400,000

employees work in the renewable energy sectors, compared to just 18,600 working in Germany's lignite mining sector. There are very few studies providing figures specifically for the mobility sector (i.e. workers exclusively employed in manufacturing combustion engine cars vs. those building not only electric or hydrogen cars, but also (cargo) bikes, trains, buses, railroads, and bicycle lanes). ***Ambitious climate policies also result in secure jobs in these future, green sectors—whereas sticking to conventional industries puts those jobs at risk, and has already left thousands of people unemployed.***[6]

- One of the reasons for these job losses is that employees in green jobs are not yet organised in trade unions and therefore lack strong representation (in contrast to the coal sector with its traditionally very high degree of organisation and strong voice also within the union sector). Many »green start-ups« did not see the need to cooperate with trade unions, some even obstructed their work, and most trade unions also missed the opportunity to attract new members from emerging, innovative »green« sectors. ***Unionisation in »green jobs« is thus crucial for successful transformation, and, moreover, is to the benefit of all stakeholders—*** be it the employees through better representation, trade unions through new members, or »green« firms through gaining a voice.
- Historically, the rise and fall of sectors is nothing new—but ***this time, we have the opportunity to shape the transition of economies in a politically managed process that ensures social justice***. Today, there are very few people employed as stable boys compared to the era when horses where the main means of transport, and very few firemen on trains—these jobs have simply disappeared in the wake of technological progress. In the last few decades, thousands of secretaries were made redundant when PCs became an essential piece of office equipment (for a more detailed discussion of the employment effects of digitalisation, see also Chapter 3, page 57ff). Many of these transformations have been market driven. However, some were triggered by government measures—for example job losses in the tobacco industry when governments became more concerned about their citizens having healthy lungs, than about the profits made in this sector.
- If we look at shifting investments it becomes clear that a market-driven collapse of many »brown« economic sectors is a likely scenario: Major private banks, but also numerous pen-

sion funds and other financial investors, are all pulling out of fossil fuel-based industries, and multilateral and national development banks are implementing ***»divestment«*** strategies in the realisation that these sectors have no future.[7] The big question is not whether environmentally harmful industries will be able to continue with »business-as-usual« or whether they will shrink, but rather whether employees and communities will face a market-driven phase-out without a safety net or whether we put political frameworks for a just transition in place now, allowing citizens to participate in shaping their future.

- The key message is, therefore, that decarbonisation will lead to a shift in the structure of employment. This success of this transition will rely on effective management, political leadership, the right economic incentives for renewables and sustainable production and consumption. We will still produce and consume—but we will produce different things and consume differently.
- This is even more evident if we take a ***holistic look at the employment structure*** of our economies. Should we not aim for a society in which there are enough bus drivers to make sure no one is »left behind« at a bus stop in the middle of nowhere, where we have sufficient teachers to support every child's individual development, enough nurses to take good care of our society's elderly and infirm, and in which artists are able to make a living by broadening our horizons with their creativity and works of art? Even in most of our European economies, these sectors are chronically understaffed and underfinanced—although people working in these sectors contribute a lot more to our well-being than, say, buying a new consumer product every couple of months.
- Some industrial sectors will have to »degrow« (such as coal mining)—but ***»brown« industrial jobs do not necessarily have to be replaced by »green« industrial jobs***. Taking a broader perspective, we can make sure that those employees contributing most to our well-being receive fair wages, thereby also contributing to more social and gender equality. These days, precarious contracts, intolerable working hours, low wages and a lack of (trade union) organisation tend to be more of a problem for women working in the care sector (such as in health and education) than (male) miners—that is if care work is even financially rewarded at all, and not just taken for granted. Thus, in shaping the just transition processes of our economy, ***we must make sure that we promote those sectors which ultimately contribute to our happiness, and make our societies more just***, and not those which destroy our health and our environment.
- At the end of the day, we must not forget that limiting the climate crisis also prevents job losses, especially in tourism or agriculture (see also Chapter 1, page 16). There are simply no jobs on a dead planet.

But what about...

...the workers currently employed in those sectors that will be subject to the shift in the structure of employment due to the changes that go hand in hand with the transformation, e.g. all those associated with the fossil-based economy? How can we make sure that they will still have decent and secure jobs tomorrow?

The way forward: Shaping jobs for the future

- To start with, let us identify the industries that are going to be fundamentally transformed by decarbonisation. An important aspect to keep in mind, however, is that occupations becoming obsolete does not necessarily result in unemployment. It all depends on how we manage the transition—which is something we will explore below and in Chapter 4 with a special focus on the energy sector. Ultimately, a ***just transition*** is about acknowledging and ***engaging with the change that is inevitably coming***.
- As already described, those sectors that are linked to the fossil-based economy are undeniably going to lose a significant share of their current employment. This will especially impact those working in the fossil oil and gas industry, in the refinement of these products, in coal mining and in thermal power plants, particularly coal-fired ones.
- With regard to ***hard coal and lignite mining***, however, the ***most significant job losses already happened at*** the end of the Cold War. Lusatia, a lignite region in eastern Germany, has lost almost 90 per cent of its jobs since 1990. In Poland, home to Europe's largest hard coal region, as many as 80 per cent of jobs in the sector have been lost since 1990. The reasons are manifold, but global competition and rationalisation of production processes have played a key role.
- Another industry that will be significantly affected is the automotive industry. The switch to electric vehicles in particular will impact certain parts of the supply chain, especially those parts needed for vehicle propulsion/powertrains. Given the important role played by Eastern Europe in the automotive industry, following its integration in global supply chains, this is going to have a profound impact on the economies in the region. That said, decarbonisation is just one of many drivers, meaning that ambitious climate policy is not the »job killer« it is often said to be. Many lead markets for cars are undergoing changes that will significantly change mobility patterns and are likely to reduce the demand for the car as we know it, with or without decarbonisation. Digitalisation is driving new business models. Urbanisation is increasing the demand for public transport due to ever higher population density in metropolitan areas. And the industrial policy of emerging economies is increasingly geared towards disrupting existing industries, including the automotive sector, and developing new home-grown business models in order to catch up with advanced economies, e.g. the manufacture of battery cells for electric vehicles. As a result, ***the automotive sector will undoubtedly face a major transformation—even without ambitious climate policy***. We will describe the mobility transformation in more detail in Chapter 5.
- What is more: The continued automation of mining and industrial manufacturing would lead to a loss of employment in any event: Nobody in Europe digs coal with a pickaxe anymore—this is all done by machines. The same is true for car factories and the manufacture of many other industrial products—while, up until the 1970s, these were all filled with workers, on today's production lines there is hardly a person to be seen among the robots. In Central and Eastern Europe, many of these sectors are in dire need of investment to make them profitable again. But in this case investment also means ***automation, which inevitably results in job losses—so either way, we would have to provide a safety net for those workers.***

Let us now take a look at how to make sure that this disappearance of certain occupations does not translate into a loss of jobs. We have a whole repertoire of dedicated instruments at our disposal to support those workers who are going to be affected by the upcoming changes:

- Particularly when it comes to coal miners, there are two financial support measures that have already proven effective. Early retirement programmes for older workers and a transition fund that pays out to younger miners who need to retrain and find employment in other industries. When it comes to other industries, Germany's metalworkers' union, IG Metall, has recently proposed a transition-related short-time work arrangement for sectors subject to structural change, such as the automotive industry, meaning that workers reduce their working hours to give them an opportunity to acquire a new set of qualifications. This way, they can qualify for a job in emerging sectors before they even have to file for unemployment. The wage difference between short-time hours and full-time employment is covered by the state.
- Furthermore, workers receive assistance to a transfer to different but similar fields of work. In Germany's Ruhr area, workers were given the task of dismantling mining equipment or helping to recultivate the area (which is a very long process). New back-up power plants using synthetic gas can also provide new employment for those who used to work in the thermal power plants.
- Requalifying in new occupational fields is particularly promising if the retraining is focused on skills that are or are expected to be in scarce supply or high demand. One example might be occupations in the construction sector: Many more workers are going to be needed in order to implement all of the energy efficiency measures required for the building stock.

Changing jobs or sectors always involves a disruption to an individual's life. To see a sector shrinking, especially one that has been held in high regard in the past, is difficult to accept, which is why the »solutions« imposed on workers from outside are seldom effective. To make transition more palatable on an individual level, three considerations are important:

1. First of all, the lifetime achievements of people have to be acknowledged. Coal kept countless households warm and combustion engine cars allowed unprecendented individual mobility in recent decades. There are ways to preserve this memory. Former factories and mines have been turned into world famous cultural heritage sites, for example.
2. Second, people need to be given as much choice as possible when it comes to shaping their own futures. When given the option of retiring or learning new skills, when given a choice of new occupations to move into, citizens are not »victims« or onlookers, but masters of their own fate.
3. Third, new jobs should provide working conditions that are at least as good as those in the old one. This is often easier said than done because working conditions in heavy industry and mining have improved considerably thanks to the work of trade unions. Many people in these sectors profited from well-paid unlimited contracts, something which has not always been the case in the still emerging renewable energy sector.

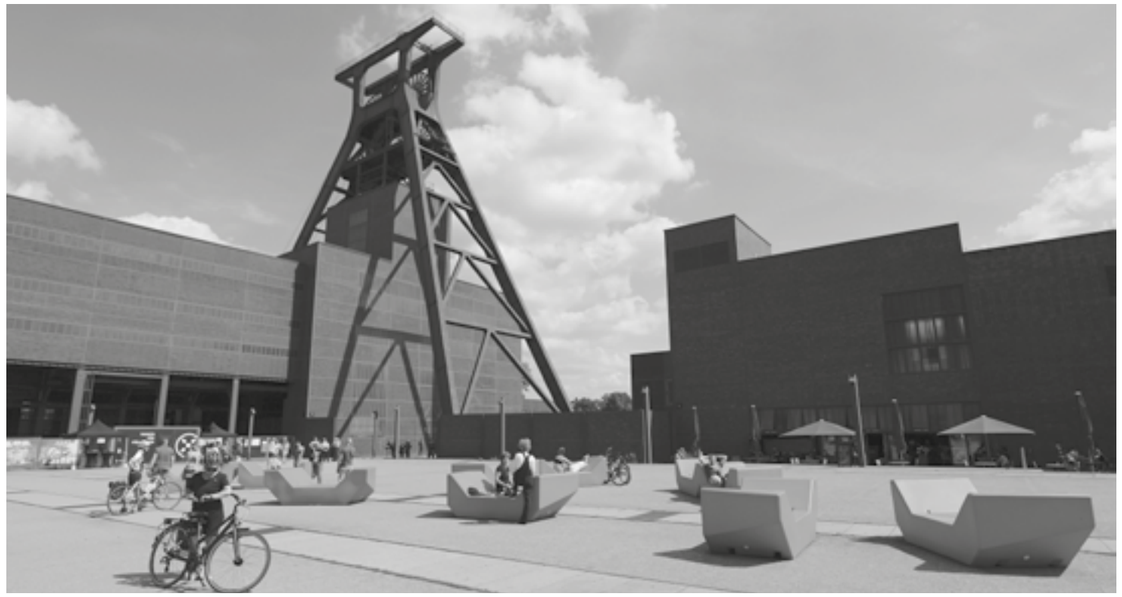
But what about...

...the regions that strongly rely on coal mining or heavy industry clusters? How can they benefit from a decarbonised economy?

The way forward: Using a window of opportunity

- As we have already described, with regard to hard coal and lignite mining regions, most of the structural change has already happened.

On the one hand, this explains why the remaining coal mining activities are so important to local economies. On the other hand, an ambitious climate agenda provides a window of opportunity for these regions to attract the attention and the structural funds they need to create new economic prospects. Not only will securing structural support funds for these regions open up opportunities in the years to come, it will also benefit those areas that suffered at the hands of deindustrialisation in the past.



When it comes to the question of how to support entire regions that will be affected by the transition, there are a plethora of lessons learned, e.g. from the German Ruhr area and the end of hard coal mining in Germany, which can provide direction for the future:

- Regional, national and European ***support programmes*** can help to implement a socially acceptable structural transformation. This often includes the creation of dedicated regional agencies that foster knowledge transfer and networking among local actors and try to coordinate transition measures. One lesson learned from the Ruhr area is that a common vision, decentralised management and involvement of civil society are key success factors.
- In line with concept of »***advancement through education«, the creation*** of universities and vocational training centres as well as the transfer of government agencies to the local level allowed former workers themselves, as well as their children and grandchildren, to aspire to ever higher levels of education. This not only helped to boost the local economy, but was especially compatible with the social democratic perspective that education is an important path to self-fulfilment.
- Furthermore, government funding programmes for ***research and development*** (R&D) and other targeted subsidies for new technologies should be focused on regions with struc-

tural problems, supporting and incentivising the creation of new economic clusters such as battery cell production. The development of clusters between R&D, universities, production facilities and start-ups have proven to be effective drivers for a successful transition in the Ruhr area. Some of the first technology parks in Europe were founded in cities in the region, such as Dortmund, for instance.

- To conclude, the ***possibilities for regions*** transforming from heavy industry or mining ***are manifold***. They can become cultural hubs, where visitors explore the fantastic buildings and machines of a past era (e.g. the UNESCO heritage site »Zeche Zollverein«),[8] they can be turned into recreational areas (e.g. lignite mines being converted into lakes), or the typically well-developed infrastructure in terms of railway and road connections and grids can be used to attract new industries.

But what about...

...the investment needed to transform the infrastructure? How can we mobilise the funding?

The way forward: Financing change

There are many instruments available to finance the transformation of the infrastructure and the support of regions undergoing structural change:

- When it comes to funding the transition of public and private infrastructures, ***a combination of public funds and private investment*** is key. For countries in Central and Eastern Europe, the Just Transition Mechanism and funding through the European Investment Bank, both as part of the European Commission's Green Deal[9], are an important source of support. To attract private money, e.g. from pension funds, innovative forms of public-private partnerships that offer modest but stable returns have the potential to mobilise funds from institutional investors seeking such an opportunity. Finally, the inclusion of climate crisis risks into the risk assessments of banks and other investors can help to make investment in renewables and other sustainable technologies competitive with traditional investments and thus incentivise financial actors to restructure their portfolios. The EU Commission´s Sustainable Finance Action Plan is a first step in this direction.[10] Just as banks and funds »divest« from carbon intensive industries (see page 40), they are looking at new investment opportunities in sectors with a future.[11] This is why Tesla recently became the world's most valuable car maker (although Toyota, now rated second, sold 30 times as many cars), and why investment in renewable energies has recorded one record high after another in recent years.
- Coal regions and others subject to structural change are likely to receive more funding through the ***EU's*** regional programmes and the Just Transition Fund which is also part of the EU's Green Deal.

But what about...

…carbon leakage? How can we make sure that energy-intensive industries don't just move abroad instead of going »green«?

The way forward: Global fair play

- In the next 10 to 20 years, a ***large percentage of installations in energy-intensive industries, e.g. steel production and chemical processing, are due for reinvestment.*** These new installations will be operational for several decades. This is why it is crucial that these new installations employ the technologies with the lowest carbon footprint. Otherwise, they will contribute to global heating through what has been dubbed a »***carbon lock-in***« effect. And, on top of this, they will be driven out of the market by ever mounting CO2 prices and worldwide decarbonisation efforts, ending up as expensive stranded assets.
- As of today, these new technologies, for example the use of hydrogen in steel production, and the corresponding products are not yet competitive with their counterparts produced using conventional, carbon-intensive production methods—which, in many cases have been historically or are still being supported by subsidies.

Until these new technologies have matured and become competitive through a large-scale roll-out and emissions pricing/trading systems, first-movers will have to make sure that the decarbonisation of these industries neither drives them abroad nor causes them to disappear due to their inability to compete on the international market. To this end, there are three potential instruments that are currently being discussed on the European level as well as in many member states:

1. First, we will have to explore the effectiveness and feasibility of ***carbon border tax*** adjustments, i.e. import tariffs based on the CO2 footprint of certain energy-intensive products. This could help to protect industries in transition from ruinous international competition. Since the beginning of 2020, the EU has been contemplating the implementation of such a scheme as part of its European Green Deal.
2. Second, ***carbon contracts for difference*** could close the gap between the currently high production costs for carbon-neutral energy intensive products, e.g. steel, and the world market price, which is still determined by products manufactured with cheaper but more carbon-intensive production methods. That is, governments agree to cover the price differential for those companies that are willing to decarbonise their production.
3. In the long run, further international cooperation is essential with the goal of agreeing on a ***global carbon price floor*** in order to level the playing field between carbon-intensive and carbon-neutral methods of production.

- Finally, trade unions with expertise in value chains can provide essential support in all these endeavours. Based on the spirit of international solidarity, they can help to close »loopholes« created by nations failing to comply with environmental standards.

But what about...

…the high level of skill and knowledge required by many of these new industries and jobs? Isn't the playing field skewed towards highly advanced economies? How can we make sure that smaller economies are also going to benefit rather than just having to accept the consequences of decisions made by others?

The way forward—within and outside the EU

- Countries in Central and Eastern Europe (CEE) are already integrated into the supply chains of their Western European neighbours—the automotive sector is the best example of this. It is therefore crucial for countries in CEE to anticipate these transformations early and build on the know-how that has been accumulated over the last 30 years in order to remain part of these globally integrated networks of economic activity. This has to be accompanied by a skills campaign which will enable workers and companies to adapt to technological change and integrate into new networks of economic activity.
- Many of the countries in CEE have a young, qualified IT workforce that can contribute to

the development of new, digitalised solutions for the transition, in so doing creating added value in their home country.

- Many of the changes that we are witnessing at the moment are truly global changes. In this context, every European country is likely to just have to accept the decisions that are made in the decades ahead. However, many Central and Eastern European economies are part of the European Union, making them part of an economic bloc with global leverage. It is therefore crucial to ***improve European co-operation***. And steps to accomplish this are already underway: the European Green Deal and the European Industrial Strategy are two initial attempts to develop a common European response to global megatrends that we have to tackle collectively.
- Meanwhile, even ***countries that are not part of the EU*** will have the opportunity to successfully tackle the transition, if they make judicious use of the support and cooperation instruments for EU funding and loans in the context of the European Green Deal (e.g. funds from the Instrument for Pre-Accession Assistance or loans from EBRD/EIB programmes). Other international financial organisations, e.g. the World Bank or the German development bank KfW, and other international donors are also supporting a greening of infrastructure in countries with development challenges.
- To fully unlock the potential for local job creation and the associated benefits to local communities, a proper governance framework for decarbonisation needs to be put in place. One of the most important questions will be how to boost decentralised power generation and the complementary grid, so that the jobs associated with running it also remain in the local communities. This is a vastly different approach to the centralised systems we currently have. And it is a prerequisite if transition economies are to benefit as well. Strong regional, inter-regional and European interconnectivity, ensuring back-up in supply and technical stability, remains key for a successful energy transition. The decentralisation of power generation is also a crucial step on the path towards making power generation more efficient, sustainable and socially just. The implications of a decentralised energy transition is explored in greater detail in Chapter 4.

Part II: The shift from a linear to a circular economy will deliver new climate-compatible products and business models which will in turn create new jobs.

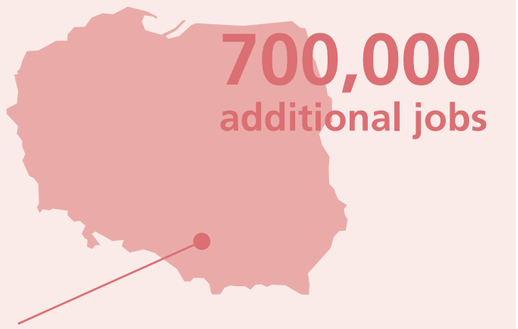
One important contribution to making our economies more sustainable will be the move from a linear economy to a circular economy. In a linear economy, resources are extracted, processed, used and ultimately discarded as waste. In a circular economy, however, waste is itself regarded as a resource. The resources and materials that were initially utilised are used for as long as possible (»cradle-to-cradle« approach).

Thus, beyond the replacement of our old infrastructure, ***new climate-compatible business models will emerge***. Decarbonisation is, at the end of the day, more than merely replacing all the processes within our economy that are greenhouse gas emitters with climate-compatible alternatives. It is an opportunity to create a new economy with better lives for all—provided that we proactively address social issues at the very outset.

Decarbonisation will ultimately only be successful if we manage to close as many resource cycles as possible. One of the reasons this is important is that the energy transition itself is very resource intensive: Although they do not involve burning fossil fuels, wind turbines and solar panels require huge quantities of metal in their production and they also have to be recycled. The carbon and resource footprint of renewable power plants (and even of electrical cars) is without a doubt significantly better than that of fossil alternatives. But we still need energy and material resources to produce and recycle them. If we want to avoid a situation where, by solving one environmental problem, we end up creating another, we will have to be as efficient with our resources as possible. Beyond this, the exploitation of natural resources is also threatening our livelihoods and it is—alongside the climate crisis—an issue that we must tackle.

- Boosting resource efficiency will require extensive changes to most of our products. They will have to be designed in such a way that all of the resources used can be recovered at the end of the product lifecycle. They will also need to be made predominantly from renewable sources in order to allow for effective recycling. This will create ***new jobs when it comes to product design, repair services and ultimately waste treatment, many of which will be in local communities***.
- The same is true for ***new business models based on sharing rather than owning things***. These are models that will inevitably emerge because they are more convenient for consumers. Take a washing machine, for example: rather than owning one, you could simply purchase a certain number of wash cycles. Once these are used up, the washing machine could be collected automatically and you would not have to worry about it being fed back into the resource cycle. Sharing services are already starting to change how people move around: lift-sharing and carsharing are just two examples.
- A comprehensive study commissioned by the European Commission estimates that, overall, moving to a circular economy could boost EU GDP by about 0.5 per cent by 2030 and create ***700,000 additional jobs, with Central and Eastern European countries benefiting more*** than their Western counterparts.[12]
- On top of this, we also have to consider the regulatory side of the situation: The European

CIRCULAR ECONOMY BOOSTS ECONOMY OF CENTRAL AND EASTERN EUROPE



Commission's impact assessment for waste targets, simplified legislation, improved monitoring and dissemination of best practices alone could create more than 180,000 new white-collar jobs across Europe by 2030.

But what about...

...all the new skills needed for circular economy jobs? How can we equip workers with the necessary skill set and make sure that no one is left behind?

The way forward: A gradual change in skills

- First of all, we have to consider that this change will take place gradually over the next 30 years. To avoid workers being stranded with a set of »obsolete skills«, it is important to develop a training and qualification strategy at an early stage (as discussed on page 43).
- Ultimately, the global changes that we are undergoing—and we are not just talking about global heating here—will fundamentally alter the way we work. Leaving no one behind also includes implementing a skills campaign to attempt to identify which skills and qualifications workers are going to need in the future. There are already some impressive projects underway, helping to map out transition pathways for jobs that might soon disappear and trying to identify which additional skill sets people are going to need in order to succeed in the future world of work. One example are the resources provided by Cedefop, the European Centre for the Development of Vocational Training, such as its Skill Forecast tool.[13]

But what about...

...the familiar pattern of business models and technologies being developed abroad? How can we make sure that transition economies are also able to reap the benefits from these developments and people and communities can thrive?

The way forward: Leapfrogging to a circular economy

- Indeed, advanced economies and their companies are often front-runners when it comes to developing, piloting and rolling out new business models and technologies. Yet, this also has an advantage for transition economies. It ***makes new technologies cheaper*** and more affordable for other countries as they are scaled up and learning curve effects and economies of scale kick in. This has been true for renewables and it is likely that we are going to see the same with regard to the circular economy.
- The decarbonisation of infrastructure is also a burden for highly developed countries that might have just recently invested in updating the existing fossil infrastructure and are now faced with decommissioning, rebuilding etc., thus significantly lowering the cost-effectiveness of the investment. In the meantime, countries with an older infrastructure that has to be updated anyway (e.g. power plants, roads, etc.), can ***»leapfrog« to a next level of modern technology***.
- The repair-reuse-recycle principle of the circular economy also has the potential to ***bring back more localised jobs*** and professions that were lost over the last decades as repairing things went out of fashion.
- The ***EUs Circular Economy Action Plan*** lays out an ambitious agenda with tangible measures ranging from increased recycling targets to minimum standards for producer responsibility when it comes to product design. Other important steps include the ban and control of illegal waste exports. The waste of today is the raw material for the circular economy business models of tomorrow.
- These are the first steps. However, we are entering uncharted territory when it comes to transforming our economy from linear to circular. In the midterm we will have to redesign the foundations of some of our fundamental economic policies, which might include reshaping our tax system or our trade policies in line with resource efficiency, consistency and sufficiency, e.g. through progressive taxation of resource use. ***The state will thus play a decisive role*** in the transition of the economy from linear to circular—on the national but also the city and municipality level (see also Chapters 6 and 7). It has to create the framework but it also has to ensure democratic participation in its implementation. And it will have to enshrine key principles of sustainability in its education policy.
- Innovation has always flourished in entrepreneurial states that take a proactive position with regard to the development and diffusion of new technologies—and today, such an entrepreneurial framework can also be provided at a joint European level. Such a framework should support the development of new technologies enabling them to be marketed. The transition we need to shape will thus not be compatible with the neoliberal understanding of the interaction of states and the market, as the neoliberal ideal of a »night-watchman state« would be

unable to incentivise and support the required changes.[14] Progressive leadership is needed. As we have seen in Chapter 1 (page 26), social democrats helped to shape such transitional processes in the past, and as we will see in Chapter 6 (page 112ff), all modern states have numerous instruments at their disposal to guide us into a socially just and environmentally sustainable future.

What are we striving for?

- In this chapter we have evaluated the potential of economy decarbonisation in terms of jobs and employment. ***We have seen that a transition is needed to keep jobs in sectors that have already been impacted by the climate crisis , and in sectors that will be hit by unmitigated global heating if we do not act***. After all, there are no jobs on a dead planet.
- We have also seen that, beyond the economic and technological dimension of the transition, ***progressive actors have the capacity to ensure that the process will also be equitable and socially just***. This is a pivotal responsibility, especially for social democrats. We have to make sure that all of the developments described in this chapter are politically managed in such a way that they contribute to reducing inequality in the process, e.g. through more redistributive tax regimes to mobilise sufficient funding.
- Guiding principles for a »just transition« such as this have already been developed by many stakeholders—trade unions, political parties and NGOs—and are already being applied across the globe. In addition to the social equity dimension of such political frameworks and guidelines, these principles will also have to include efficiency and sufficiency.
- Particularly for progressives, the relationship between the state and the market will have to be rebalanced. ***What we have to strive for is an innovative and entrepreneurial state***. A state that supports the development and diffusion of new sustainable technologies through strategic industrial and innovation policy. In this transition, it will not be enough to rely on the neoliberal paradigm of the free interplay of market forces bringing about the progress we need.

Sources and Endnotes

Endnotes

[1] According the study Klimapfade für Deutschland, this would amount to about 33 million electric cars in Germany alone. In 2020, there were around 48 million cars on German roads. (https://www.kba.de/DE/Presse/Pressemitteilungen/2020/Fahrzeugbestand/pm06_fz_bestand_pm_komplett.html#:~:text=M%C3%A4rz%202020.,%2C7%20Millionen%20Kfz%2DAnh%C3%A4nger.) Note, however, that this figure may ultimately be smaller, depending on the kind of mobility transition we choose. For more information, see Chapter 5.

[2] https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/cap-expenditure-graph1_en.pdf

[3] The following projections focus mainly on the effects of decarbonisation on jobs. However, other megatrends such as digitalisation and demographic change will also have a significant impact. These are discussed in detail in Chapter 3.

[4] In fact, it could be even more, were it not for the decline of the solar photovoltaic industry.

[5] Umweltbundesamt (2020): Beschäftigung im Umweltschutz. Entwicklung und gesamtwirtschaftliche Bedeutung, https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020_hgp_beschaeftigung_im_umweltschutz_final_bf.pdf.

[6] With governments focusing on fossil fuels, thousands of jobs have already been lost in the renewable sector. See, for example https://www.cleanenergywire.org/dossiers/energy-transitions-effect-jobs, https://www.solarpowerworldonline.com/2020/04/report-estimates-over-a-half-million-clean-energy-jobs or https://www.theguardian.com/environment/2020/jun/25/up-to-11000-renewable-energy-jobs (last accessed on 9.7.2020).

[7] See, for example https://bankwatch.org/press_release/world-s-largest-multilateral-bank-ends-fossil-fuels-financing or, for a global overview http://energywatchgroup.org/divestmentblog (last accessed on 10.7.2020).

[8] https://www.zollverein.de/zollverein-unesco-wrorld-heritage-site/

[9] The European Green Deal is the EU Commission's proposal for an ambitious roadmap to decarbonise Europe's economy by 2050: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[10] The EU Sustainable Finance Action Plan aims at rechannelling capital flows into more sustainable investments by including long-term considerations into financial planning, such as the risks stemming from the climate crisis and environmental degradation: https://ec.europa.eu/info/publications/180308-action-plan-sustainable

[11] See, for example, the UN-convened Net-Zero Asset Owner Alliance: https://www.unepfi.org/net-zero-alliance/

[12] Cambridge Econometrics et al. (2018): Impacts of circular economy policies on the labour market, available at: https://op.europa.eu/en/publication-detail/-/publication/fc373862-704d-11e8-9483-01aa75ed71a1/language-en

[13] For further information, see https://www.cedefop.europa.eu/en

[14] See Mazzucato, Mariana (2013): The Entrepreneurial State: Debunking Public vs. Private Sector Myths. London: Anthem Press.

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3
Compounding Megatrends

Compounding megatrends are additional drivers of structural change. Decarbonisation is not the only transformation that we are currently witnessing. Digitalisation and demographic change, as well as the reduction of working hours will significantly affect how and when we work.

In this chapter, we will examine the megatrends that affect the decarbonisation process and have a profound impact on the future of work: demographic change, digitalisation and working time reduction. We show how these megatrends affect employment and jobs, but also how they pave the way for a more sustainable, low-carbon economic model.

Other megatrends, such as the deglobalisation triggered by the Covid-19 pandemic, which is pushing the world economy to retreat from economic integration, might also have an impact on the future of work and decarbonisation.

Part I: Demographic change is anticipated to reduce the size of the workforce in the near future, so ultimately there may very well be more jobs than workers.

- The debate about whether the decarbonisation of our economy will ultimately lead to the loss of large numbers of jobs often overlooks what will be one of the most important drivers of change in the job market in the years and decades to come: demographic change.
- First, the ***population of Central and Eastern Europe is projected to shrink*** in the next few decades. These societies are also rapidly ageing. With regard to the labour market, this means that the available workforce is going to decline substantially, a development that will further exacerbate the shortage of qualified workers that many sectors are already suffering from.
- The ageing of societies also means that the ***elderly care sector will have to expand***. Since this is a labour-intensive sector, it will be competing with other sectors of the economy over the shrinking workforce.
- In Central and Eastern Europe, this development will be further amplified by the fact that there has already been a substantial amount of ***labour market migration*** to Western European countries in the last few years. This trend is likely to continue, be it in the care sector, the construction sector or the skilled trades.
- Taken together, these developments indicate that one of the key challenges is likely to be how to secure enough workers for the modernisation of public and private infrastructures that was outlined in Chapter 2.

But what about...

...the quality of jobs? How can we make sure that the new jobs in the sectors of the economy that are going to grow—e.g. the skilled trades, construction and the care economy—provide at least the same high level of wages, job security, a sense of belonging and trade union representation as jobs in the current dominant industries, e.g. the power generation or automotive sector?

The way forward: Strengthening trade unions and gender equality

- Some conventional sectors do indeed have particularly strong union representation. However, it is worth reiterating that decarbonisation is not the only driver of change (as argued in Chapter 2). Trade unions in these sectors are likely to undergo substantial transformation, irrespective of decarbonisation. To shape these manifold transformations in the spirit of social justice and solidarity, trade unions will have to scrutinise the power resources that might become available to them and develop appropriate strategies along the power resource approach.[1] The same applies to social democratic parties and movements. To be a strong and supportive partner for members of society during this great transformation, we need a proactive approach, sound knowledge and effective strategies. It is important to recognise that stopping the transition is an unrealistic scenario and procrastination will result in even harsher consequences.
- The trends associated with demographic change play in favour of the unions since the shortage of workers is likely to increase their bargaining power. In addition, the trade unions' bargaining power will be strengthened by the increasing competition for workers from sectors such as care, which will gain importance due to the ageing of the population. The Covid-19 crisis has also increased awareness of the importance of the care sector, opening a window of opportunity with regard to public support for better working conditions and higher wages.
- When it comes to the quality of jobs and the specific questions raised above, trade unions will have to forge new alliances and mobilise workers in emerging sectors and sectors of the economy that have so far been underrepresented. ***A proactive approach can empower the core industrial workforce to manage the transition into new sectors, while maintaining trade union representation and allowing for collective bargaining agreements***. This is an excellent opportunity for the trade unions to get a head start moving into the new age of decarbonisation, by serving as one of the key players in a successful transition.
- The growing importance of the care sector ultimately also presents an opportunity to ***improve gender equality***. The majority of the workforce in the occupations associated with this sector are women. If the social importance of these jobs is recognised and the wages paid in the sector are increased accordingly, it would contribute to a more even distribution of income within households. This would also take the pressure off the main bread-winner, making households less dependent on his or her income. At the same time, it would allow for a more equal distribution of working hours within the household. While the sum of paid collective hours worked might increase, the real working hours for everyone might actually decline. Issues related to working hours will be looked at later in this chapter.

But what about...

...all those people who are unemployed at the moment? How can we make sure that this current

shortage of jobs translates into decent work for everyone?

The way forward: Reforms to secure employment

- First of all, unemployment rates differ substantially across European countries. Many Central and Eastern European countries have, according to Eurostat data, close to full employment. The unemployment rate for the Czech Republic, for example, was about 2 per cent in 2019, and Poland's unemployment in the same period was 3.3 per cent. At the same time, many countries, such as Spain or Greece, are still struggling, particularly with persistently high levels of youth unemployment. Moreover, statistical data about unemployment in CEE and SEE must be viewed with scepticism, as, in many countries, there is not always much incentive for an individual to register as unemployed, for example.
- With regard to those countries still suffering from high rates of unemployment, the high level of ***investment necessary for the modernisation of the public and private infrastructure*** is an opportunity to create new jobs. The question of unemployment therefore hinges, among other things, on whether a green investment campaign can successfully be implemented in the coming years.
- Furthermore, one reason for persistent unemployment that is often overlooked is not necessarily the lack of demand for labour but the ***skill mismatch*** in the labour market, meaning people's skills do not correspond to what employers are looking for. This has been a problem for many years and needs to be tackled through various dedicated measures, including improved qualification and training programmes with strong practical components; as well as a cluster approach in education in general, cooperating with public and private employers, research institutes, etc.
- It will therefore be paramount to invest in workforce training and retraining in order to equip workers with the required skill sets. This means that countries will have to restructure their ***education systems*** so that they provide the technical skills as well as the soft skills needed for tomorrow's world of work, cooperating closely with other stakeholders shaping the labour market.
- Thus, as an underlying trend, demographic change holds many opportunities for workers since it has the potential to make labour more powerful and resourceful relative to capital as a result of the increased bargaining power of the workers. This strength, however, can only be effective if it is ***exercised collectively***, through trade unions.

Part II: Establishing new digital services and technologies facilitates the transition to a decarbonised economy, while at the same time creating more and better jobs

The decarbonisation of the economy is already being accelerated by the digitalisation trend, a process that will only gather momentum. One example of the impact of this trend is that new ***digital technologies enable enormous improvements in areas such as renewable power generation, management and distribution***. Let us take the case of sun and wind energy, which are only available at certain times and not entirely predictable. Their usage therefore requires more communication and cooperation in balancing power supply and demand. Both solar and wind energy have the potential to be used more effectively when coupled with new energy storage technologies. Increased data access through digitalisation will enhance information sharing, facilitating better management of energy demand in real time. For example, smart meters in individual households will make power supply more efficient and demand more predictable. On a larger scale, this will allow the grid operators to integrate decentralised renewable energy sources, such as start-ups and prosumers, into the network. Last but not least, this will also foster job creation in the renewable sector.

- Digitalisation is also a ***powerful tool for increasing energy efficiency***. This reduces greenhouse gas emissions, but also provides us with the resources to clean up our energy supply. However, the annual rate of improvement in global energy intensity (defined as units of energy per unit of GDP) has been slowing in recent years, dropping from nearly 3 per cent in 2015 to 1.9 per cent in 2017, and then again to 1.3 per cent in 2018.[2] Modernising energy efficiency through digitalisation could reverse this trend in most of the sectors/areas that are responsible for CO2 emissions and significant energy demand. This can apply to the individual household (see the smart meter example above), as well as to large municipal or industrial consumers.
- All these ongoing changes triggered by digitalisation will have a profound impact on the electricity business. Not only does digitalisation contribute to decarbonisation, it also fundamentally transforms the sector and makes many of the industry's current characteristics obsolete. In the future, the digitised power system will allow more and more decisions to be taken and implemented autonomously, meaning that entry barriers will be removed and part of the value chain will be opened up to new actors. ***New business models will emerge***—conventional utilities will shift from creating asset-heavy infrastructures that provide stable and predictable electricity supply to managing flexible, decentralised energy solutions. It is likely, for example, that regional and local distribution system operators will play a more substantial role. Moreover, a market for start-ups providing effective tools and instruments for demand-side management is already developing. However, this will also have a major impact on the type of skills and qualifications required on the labour market.
- The trends described above will not only lead to transformation in the energy sector. They will also bring ***structural economic and societal changes*** in their wake, something that will, in turn, also ***have a major impact on employment***. Several occupations will disappear or be transformed, but new jobs, requiring less repetitive tasks and a higher level of skills, will be created. In the coming decades,

it will be the task of the trade unions and policymakers to take maximum advantage of the opportunities that digitalisation is creating for the workforce: automation will pave the way for greater competitiveness, it will prevent production sites from being offshored to locations with low labour costs, and it will replace the routine tasks with more creative ones. Ultimately digitalisation will provide workers with better remuneration and improve their working conditions.

But what about...

...the risk of a rebound effect, i.e. the fear that the savings from energy efficiency due to new technologies will be cancelled out because of changes in people's behaviour or other systemic factors?

The way forward: Regulation against the rebound effect

- The rebound effect has been the subject of research for some years. One of the fears is, for example, that increased energy efficiency makes energy-consuming technology less expensive to use, so people may use it more often and thus in fact consume more. But it is sometimes the case that new technologies, such as servers, that play a key role in the digitalisation process, are so energy intensive that they soon eat up the resources that they are trying to save. One direct effect of digitalisation, for instance, is the expansion of the IT technical basis which sometimes comes at a significant cost to the environment. For example, an important component of many smart digital technologies are rare earth materials, the use of which has major implications in terms of toxic pollution. They are extracted using highly energy-intensive processes, spewing carbon emissions into the atmosphere and toxins into the ground.
- Smart infrastructures have the potential to increase resource efficiency, but only if they are managed correctly. It is not a foregone conclusion that digitalisation is good for the climate. We need regulations to steer the process towards sustainability. Regulations are crucial for improving the environmental impact of digital technologies.
- ***When it comes to the rebound effect, there are plenty of technical and political solutions which will help us to mitigate negative effects and unleash the positive potential of digitalisation***. We can achieve major energy savings if the right regulations are in place. This should already start at the design phase of smart products, as decisions that are made at this stage in the development of smart technologies have a huge influence on energy consumption. Stipulating ***ecodesign directives*** for energy-related products, such as laptops, smartphones, servers, etc. is essential for reducing their energy consumption and improving their environmental impact. For instance, it is estimated that the effect of the ecodesign directive for servers set out in the latest EU regulations for servers and storage will result in annual energy savings of approximately 9 TWh by 2030, which is equal to the yearly electricity consumption of Estonia in 2014 and corresponds to a total of 2.1 million tonnes of CO2 equivalent.[3] Extending and improving such regulations will have a significant impact on the energy consumption of smart technologies and on our carbon footprint.
- But we should not just use regulations to mitigate the potentially negative effects of digitalisation, but, more importantly, to advance progressive agendas and foster new, more sustainable economic models. The concern that digitalisation will have major environmental costs should be replaced by the ***determination to use technological change as an opportunity for creating more sustainable economic models***, such as a circular economy (see Chapter 2, page 47). Technological progress is a result of human action—it can and must be embedded into progressive frameworks of action. For instance, the regulations addressing the ecodesign of smart technologies mentioned above can be used as an opportunity to reduce the impact of phenomena such as planned obsolescence and to push for aspects that are relevant for a circular economy. Regulatory measures that require electronic devices, such as smartphones or laptops, to be designed in a way that ensures longevity, reparability, reuse and recycling will help us prolong the lifetime of these products and reduce e-waste.

But what about...

...the economic disruption and job losses? How can we make sure that jobs comprising easily automatable tasks and involving routine, repetitive activities are not at risk of automation?

The way forward: New markets, new business models, new jobs

- The advance of digital technologies does indeed bear the risk of technology making certain jobs obsolete. However, we must also consider the other side of the coin: Not only does ***every technological revolution result in the dismantling of existing business models, markets and jobs—it also creates new markets, new jobs and new business models***. New behaviours, new interactions, new consumption patterns require new services and products, all of which generate new opportunities for employment that requires human labour, creating jobs that are more skilled and thus better paid.
- When it comes to the energy sector specifically, several analyses, including one conducted by the World Economic Forum, point to significant opportunities for digitalisation to create new jobs in the sector. Digital initiatives are expected to generate up to 3.45 million new jobs by 2025—this translates to 10.7 per cent

job growth in the electricity industry.[4] Most importantly, job creation potential is highest in the consumer renewables sector, with energy storage integration creating up to one million new jobs.

- That said, it is acknowledged that not every worker will immediately be able to find a new job in the new, emerging industries, even with excellent training. This is where ***governments should use the sound, just and supportive social policy*** outlined above to smoothen the transition and make it a fair process for all of society. Public works or public employment programmes are always a solution that governments can make use of to mitigate the negative effects of digitalisation.
- When discussing digitalisation, we should remember that throughout our history, humanity has been repeatedly confronted with economic disruption triggered by technological progress, and the number of jobs has not declined; on the contrary, it has increased. Lessons from the past regarding the impact of technological progress indicate that new technologies are unlikely to fully automate jobs and cause unemployment, but instead they will change the nature of the workplace and the tasks and skills different jobs involve.
- Our focus should therefore be on how to develop the workforce expertise required to take advantage of the tremendous opportunities digitalisation creates. In this sense, fostering ***continuous reskilling*** and lifelong learning throughout the economy will be critical. Education and training can mitigate the negative effects of digitalisation by helping workers to acquire the technological skills that increase their employability and allow them to switch to better paid jobs, thus enabling them to participate in the benefits generated by new technologies. Studies regarding automation and technological change indicate that workers who switch to more complex jobs, requiring a higher level of technological skills land better paid jobs, typically also characterised by better working conditions.
- But most importantly, we should always bear in mind that technology development can, to a large extent, be controlled or at least steered. ***Technology is frequently seen as synonymous with a loss of control—we tend to forget that governments can steer innovation and technology development without destroying it***. And, while it is true that technological disruption alone will not foster a sustainable society, by steering technological innovation, our governments can reshape the future and enable a more sustainable, circular society that benefits ordinary people and the environment alike.

Part III: Reduced working hours are one of the main trends seen in the last centuries, underscoring the idea that we work to live, not live to work.

The debate about the future of work is also about our quality of life: ***How much do we have to work to afford a lifestyle that makes us happy?*** Generations of trade unionists and social democrats have fought for a continuous reduction in working hours—quite successfully until the 1950s. In the 1850s, at the height of the industrial revolution, a 12-hour working day and a six-day working week—72 hours a week in total—was commonplace. In the late 19th century, it was estimated that the average workweek was over 60 hours. Over the course of the 20th century, working hours declined by almost half, dropping to a typical 40 hours/5 days per week after 1950. In 2000, France imposed a 35-hour workweek. »The four-day workweek is inevitable,« claimed US President Richard Nixon as early as 1956. We should not lose sight of the fact that we work to make a living and work is a means to a sustainable, decent existence, not a goal in itself.

- ***A reduction in working hours could contribute to the creation of a sustainable economy and thus a more sustainable society***. It is widely known that because of lack of time, labour-intensive households are more prone to purchasing ready-made products with a large environmental footprint, such as home appliances or ready meals. Combined with greater public awareness, fewer hours at work could mean more time for more climate-smart activities, such as home cooking, repairing broken items instead of throwing them away, etc. This will also improve our wellbeing, giving us more time to spend with others, to exercise, and to pursue our hobbies.[5]
- A shorter working week would mean we consume less resources and energy—we would not use transport as frequently to travel to work, less energy-sucking office space would be required, and less resources would be needed to produce goods and services. ***Data shows that countries with shorter working weeks have a smaller carbon footprint***. There are studies showing that reducing our working time by one per cent leads to a 0.8 per cent decrease in carbon emissions.[6] These results are mainly driven by the effects of lower income and lower consumption.

REDUCING WORKING TIME LOWERS CARBON EMISSIONS

1% reducing our working time = 0,8% decrease in carbon emissions

But what about...

...the lower salaries if we work less? How can we make sure that working less does not undermine competitiveness by lowering productivity and ultimately lowering our wages?

The way forward: Fair wages for increasing productivity

- It is true that reduced working hours can reduce salaries, but this is avoidable. Past examples show ***that trade unions have repeatedly succeeded in reducing working hours without a reduction in wages***.
- Moreover, reduced working time does not necessarily result in lower productivity. In fact, there is evidence to the contrary: By correlating hours worked per person in OECD countries between 1990 and 2012 with the GDP created per hour worked, one study actually demonstrated that productivity is highest when people spend fewer hours working.[7] There is also a strong body of scientific research providing evidence that, above a certain threshold, an increase in working hours brings no gains in productivity. One of the rather obvious factors mentioned in the literature is fatigue, which not only diminishes performance but also increases the probability of workplace accidents as well as negatively impacting employee health.
- Our main concern should not be the productivity losses, but the decoupling of wages from productivity. The reality is that in the last few decades, productivity growth has been higher than wage increases. For example, in the past 20 years, labour productivity rose by about 30 per cent in Germany, whereas wages increased by just 18 per cent. In some parts of the developed world, such as the US, the situation is even worse—from 1979 to 2018, net productivity rose by 69.6 per cent, while the hourly wage increased by a mere 11.6 per cent (after adjusting for inflation).[8] If we add to the debate the potential increases in productivity brought about by digitalisation (see previous section), it becomes perfectly clear that we should not be worrying about productivity: Instead, ***we should be focusing on how to ensure decent wages and how to reduce working time***.

- The two main ways of achieving this are more worker-friendly national regulations and stronger trade unions, both facilitating a rapid, successful and just transition. ***The wealth generated by workers does not automatically trickle down—we need proper legal frameworks and effective policies, which foster a better redistribution of wealth*** by ensuring living wages, for example. Increased coverage of collective bargaining and more centralised wage-setting can also bring substantial wage increases, without negatively impacting working conditions and increasing labour intensity.

But what about ...

...decreased production and diminished consumption resulting in degrowth? Reduced working hours would trigger major changes in production and consumption patterns: Not only would we consume differently; we would also produce and consume less.

The way forward: Degrowth and green growth

- Replacing »brown jobs« with »green jobs« alone will not solve the climate crisis. However, ***the concepts of »green growth« and »degrowth« are two sides of the same coin: We need growth in some sectors and degrowth in others.*** There is a broad consensus that many sectors should rather grow than degrow, for example public transport, healthcare or the renewable energy industry. It is also widely acknowledged that some sectors have to degrow if we want to limit the climate crisis, for example coal mining or the manufacture of vehicles that are energy inefficient.
- Separating economic growth from physical growth, for instance, can help us to attain a better life without unsustainable resource consumption. After all, it is increased consumption of the earth's resources and its negative environmental impact that led many to conclude that economic growth was unsustainable. However, GDP doesn't just measure the production of goods, it also measures the provision of services. It is possible to escape from the »resource trap« development model, for example ***by shifting to an economy based on services and knowledge***. With increases in education, care services, the arts, etc., economic growth could expand without consuming such large quantities of the earth's resources.
- We should bear in mind that above a certain level, material possessions no longer increase our wellbeing, which is, after all, the ultimate goal of all of our efforts. While a decent standard of living definitively implies a certain amount of material possessions or a certain level of consumption of goods, there are many other factors that improve our lives. Our emotional wellbeing largely depends on our state of health, the care we give and receive, community ties,

family and friends. ***Economic growth based less on material production and more on a whole range of services that improve our wellbeing*** would not just reduce carbon emissions, but also make us happier.

- Many people also agree that there are numerous products that should still be produced—but in ***lower quantities and at higher quality***: for example, washing machines that run for ten years instead of two (after which the warranty ends), mobile phones that can be easily repaired if only one part is broken, or electric drills that can be rented so that not every household has to buy one (in the average German household, an electric drill is used for 13 minutes per year), not to mention the incredible amount of food waste or cars being used for only a fraction of their operational lifetime.
- A sustainable sharing, repairing and »cradle-to-cradle« economy would need a big workforce of specialised workers, service providers and networkers to align supply and demand etc. (see Chapter 2).
- So the only controversial question remaining is whether the market needs to provide for—or rather stimulate—massive consumption across all sectors, such as a new television set every other year. Aside from this question, »degrowth« and »green growth« are in fact not as contradictory as often framed: Some industries will always degrow in a market economy; and carbon-intensive industries will certainly degrow (as is already the case). But all industries that contribute to achieving a good life for everyone need to be preserved, or even grow—and they need to be »greened«. The form such a fundamental transformation might take in two key sectors—energy and mobility— will be discussed in the following chapters.

What are we striving for?

- In this chapter we have described three ongoing megatrends: ***demographic change, digitalisation and reduced working time*** and the challenges and opportunities they present for the future of employment and the transition to a low-carbon economy.
- We have analysed the underlying risks associated with demographic change, digitalisation and reduced working time, showing that none of them presents an insurmountable obstacle and that policy regulations are crucial.
- We have assessed how these megatrends impact the decarbonisation process and the future of work, emphasising the idea that, ***in order to take maximum advantage of the opportunities presented by these megatrends, we need forward-looking, progressive, collective and political action***. None of these megatrends will produce a more sustainable and fairer future on their own: ***We must steer and shape the inevitable transformation, and we must do so together***.

Endnotes and Sources

Endnotes

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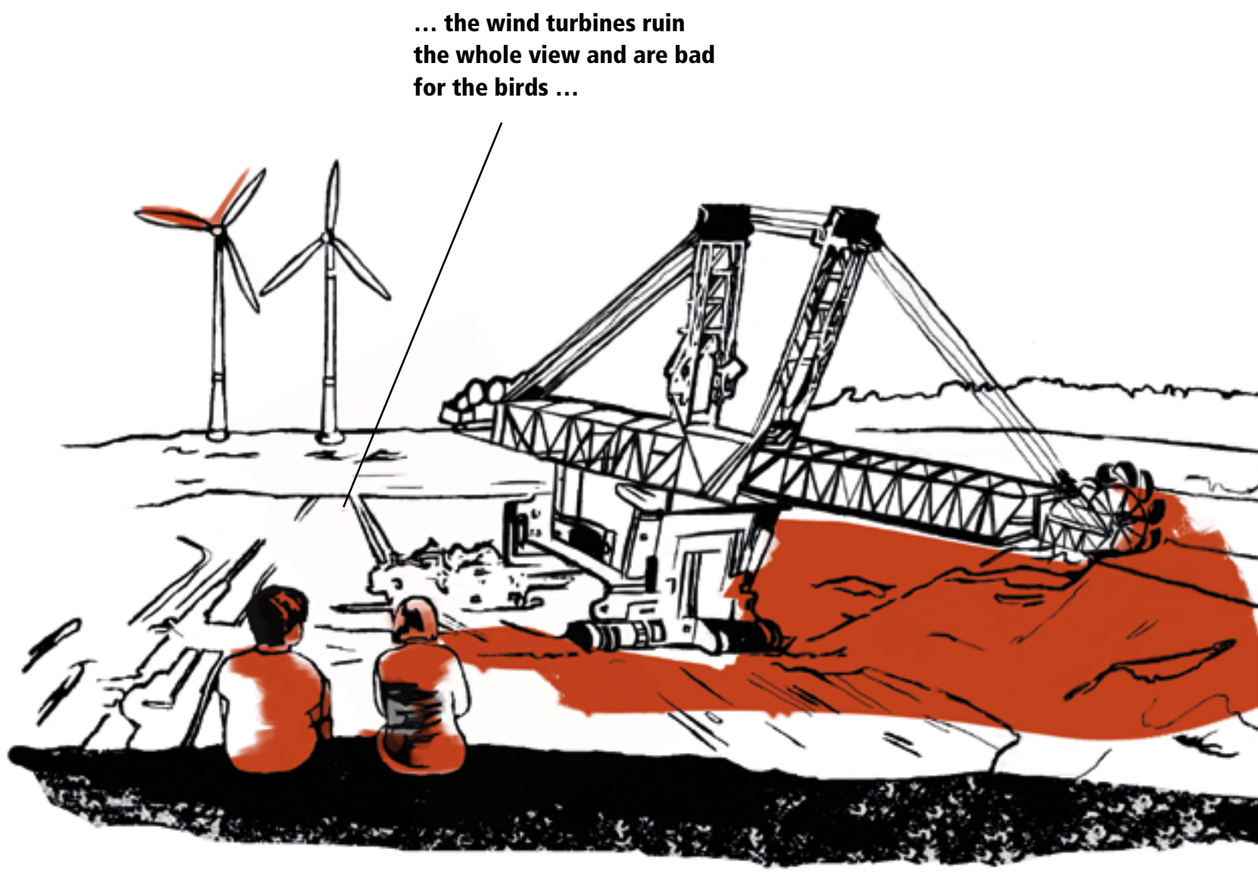
4
Socially Just Energy Transformation

By promoting an energy transition and scaling up renewables in a just and equitable manner, four goals will be achieved in moving our societies forward. 1. Renewable energy will democratise our electricity systems and infrastructure, i.e. the processes of generation, transmission and distribution of power. 2. This will help us to ensure affordable access to cheap and reliable energy for all: businesses, workers and consumers. 3. This will clearly also help us to combat climate change and the accompanying social distortions. 4. Renewable energy will improve individual and public health.

This chapter will show how shifting our economies to renewable energy will help us to save our planet and thus also our jobs, improving conditions and reducing emissions. After all, a healthy and intact planet is the basis for all our work. As we move towards a decarbonised energy system, electricity will become an even more important energy source, because of the huge potential for renewable electricity generation. Different energy sectors will be increasingly electrified (»sector coupling«). To keep the discussion below focused and provide as many useful arguments as possible, we will therefore focus mainly on the power sector.



Part I: Democracy needs democrats, and energy needs democratisation.

Civic participation is at the heart of an energy democracy, not only as part of the energy transition, but also when it comes to having an equal say in the process that influences the moral implications of energy policies for individual and collective choices. And thus, a bottom-up energy-coherent society is created. As a result, energy transition will narrow the distinction between citizens as final energy consumers and existing producers, and will, in turn, alter the collaborative consumption concept referred to as ***prosumerism***.[1]

- If we look at the German or Scandinavian examples, where the importance of citizens' energy in the power transition has been acknowledged, it is evident that the switch to renewables has contributed to an energy democratisation that goes beyond citizen participation and enables equal access of individuals and households to the ownership and co-ownership of all power generation units and processes. Besides prosumerism, in 2018, Germany alone had about 824 active energy cooperatives, a figure close to Denmark's former 1999 peak of 931.[2] And this is the example that every country and every region should follow, in order to enable democratic choices, equally accessible to everyone in the energy sector.
- If the shift towards renewables occurs in a sufficiently ***decentralised manner***, this will allow citizens and energy cooperatives, community-owned and municipal energy plants to play a role in the current energy system.
- With the support of alternative economic models, the ***state as a key partner*** in a socially just energy transformation will grease the wheels to ensure a smooth process of democratisation within the sector and to redefine the link between energy and the citizens: and here we mean energy, not only as a source of light, but also as a source of revenue.
- A number of positive examples across the EU and beyond demonstrate the benefits of energy decentralisation accompanied by participatory governance, remunicipalisation and devolution, which also requires the evolution of the existing roles of producers and consumers, especially in the management of local grids. The success of this decentralisation, however, depends on the creation of an adequate legal framework to govern the establishments, guarantee accessible financial instruments and facilitate strong synergies between local authorities and local energy communities. Today, a connection to a modern, inter-regional and European transmission grid is also a structural prerequisite for a successful energy transition that focuses on decentralised generation.
- The small German town of Wolfhagen is an excellent example of a local energy project that was established thanks to the aforementioned conditions of energy decentralisation and has thus resulted in local socio-economic benefits such as jobs and revenue, as well as significant decarbonisation and democratisation of the local economy. Based on a community-local government hybrid model, this project took an innovative approach following the idea of remunicipalisation of energy operations by putting the public company Stadtwerke Wolfhagen in charge, and then entering a joint ownership with the citizen-led energy cooperative BEG Wolfhagen. This resulted into direct benefits for the municipality and citizens alike: cooperative capital investment, de-risking by the municipality, and new forms of democratic engagement of citizens and shared governance.[3] It is also very important to point out here that communities like this do not become »energy islands« but are integrated into a stable national grid (see below).
- ***Inclusive, affordable and sustainable energy access for all can be achieved*** by scaling up renewables through combining available technological solutions, local economic models and existing solar and wind endowments. Today, in 2020, when one in nine people worldwide have limited access to electricity to light their homes, cooperation between governments, businesses and citizens is vital. This type of mutual action is necessary to support those in need through sufficient expansion of renewables and by providing an adequate infrastructure to connect every household and enable a fair share of costs.[4] Energy poverty in Kosovo, for example, translates as 50 per cent of households not being able to afford sufficient warmth,[5] and in sub-Saharan Africa, it prevents children from attending school. The EU is not immune either, and in 2018, on average 7.3 per cent of EU citizens stated that they were unable to keep their homes adequately warm, while in Bulgaria and Greece the corresponding figures are 33.7 per cent and 22.7 per cent, respectively.[6] On the other hand, when it comes to attitudes regarding energy policy, a European study showed that nine out of ten respondents (90 per cent) agreed it should be the EU's responsibility to »address energy poverty and ensure a fair energy transition so that no citizen or region is left behind.«[7] The situation is similar in the future EU member states: in Serbia, citizens expressed their willingness to switch from wood (as the cheapest available resource) to renewable heating solutions.[8]

It's EU's responsibility to address energy poverty and ensure a fair energy transition

90%
agree

- Alongside decentralisation and decarbonisation, democratisation of the energy system, achieved by scaling up renewables by means of local energy models such as cooperatives and municipal plants, would create local economic resilience based on trust and solidarity between citizens, as well as all the other actors involved. In order to make sure this happens, we need well-designed renewable energy laws and bylaws to create a favourable legislative framework enabling local projects, cooperatives and public facilities (hospitals and schools) to invest in renewable energy. Historical experience shows us that it was our collective action that enabled us to progress as we have on the local level: in schools, in hospitals and in advancing local economic units as a source of jobs and revenue.
- Democratic energy governance that allows citizens, communities and local project beneficiaries to play a key role in the entire decision-making and operational process by becoming an integral part of the ownership structures would strengthen the pillars of good governance itself. ***Civic participation and ownership would ensure allocative efficiency of public resources and long-term stability of the energy sector.***

But what about...

...the fact that the transition towards renewables in many countries lacks adequate policies to enable a democratic, just and inclusive transition? How can we ensure energy democracy with the transition towards renewables?

The way forward: Bottom-up energy transition

- If there are no functioning governance structures in place, front runners should try to create favourable conditions for a participatory transition on the ground, with the support of local, regional, national and international partners. Several cases throughout CEE and SEE show that this can be successfully carried out, with communities establishing participatory renewable energy generation projects, despite being hindered by an inadequate or poorly implemented legal framework. Thus, the local energy transition can even contribute to a positive societal change towards accountable institutions and governance structures, and shared benefits. There are some cases where energy transition has meant the installation of massive photovoltaic plants and wind farms, funded by foreign capital that enjoys financial incentives from the national government, but that has not necessarily been tantamount to a just transition when it comes to jobs and benefits for all.
- In order to ensure energy transition is also accompanied by energy democracy, these cases would require policies and an environment that enables the democratic inclusion of the citizens. Only then could we refer to this as a just transition. This not only means participation in decision-making processes, but also in the ***ownership structures*** of the power units, as prosumers, and as investors in energy cooperatives and other local energy projects. It is this idea of energy democracy that breathes hope into the ongoing energy transition. We need to create a sustainable energy landscape within the planetary boundaries and at the same time integrate social justice and solidarity as the main pillars of our new energy policies.

But what about...

…the different attitudes towards renewable energy projects? Some citizens or community groups may be interested in renewables because of the economic viability, others because of the environmental benefits, and some may not be interested at all. What decisions need to be made and steps taken to ensure that the energy transition is brought about in a democratic manner?

The way forward: An inclusive, just transition

- Inclusive processes with all societal groups and organisations on board, especially trade unions which call for the strategic planning of jobs transitioning, securing resources through transition funds, and sustainable and innovative solutions for the utilisation of advanced renewables can pave the way for a just transition.
- As democratisation of the energy system is measured by the share of energy produced by individuals and energy cooperatives, the success of our collective energy society should be measured by the level of interconnectedness in a diverse, mainly decentralised and decarbonised system where we all cooperate to provide mutual benefits for everyone.
- One of the most important tasks to ensure a democratic energy transition should be an ***information and awareness campaign***. Everyone has to be informed about the challenges of using fossil fuels and the severe impact they have on our environment, our health and, due to stranded assets, our economic prospects. We all need to be aware of the real price we pay for fossil fuels. This is something that can

be seen more clearly if we deduct all subsidies and tax exemptions and reliefs from the final price we are currently paying for our electricity. Workers and businesses need to know about the benefits of moving into renewables, while also being aware of the risks of not doing so. Besides information dissemination and transparency, various different tools, such as just transition funds and compensation policies are also needed to secure support from different groups to make transition possible. ***This transition is after all not meant to change our lives, but to protect the life we have today, including saving our jobs***. There are, after all, no jobs on a dead planet.

- Various positive examples have shown that this is possible if the actors involved have access to adequate information and act jointly in when it comes to defining their energy future.

But what about...

… concerns that the energy democratisation process that was facilitated by scaling up renewables might challenge the stability of the national grid, and be too costly?

The way forward: Flexibility and cooperation

- Investing in energy storage and balancing systems is instrumental in increasing the use of renewable energy and accelerating the energy transition. Prices are falling, and it is now more feasible than ever to expand and interconnect grids to create more capacity, as well as improve flexibility (through cross-border interconnectors). This, in turn, allows for regional integration of the energy market and growth in renewable energy production. The ***expansion of grids and decentralisation of electricity generation are thus not conflicting ideas***. Innovative technologies such as smart grids and

meters are more advanced than ever before and are becoming affordable, bottom-up ways of accelerating the energy transformation.

- Some years ago the EU pledged to replace at least 80 per cent of electricity meters with smart meters by 2020 with a view to creating an infrastructure for renewable energy, reducing emissions by up to nine per cent and providing households with energy savings due to reduced and better planned consumption. Since the majority of countries met this objective, they are now in the process of setting targets for 2030.[9] With the support of the EU and the Energy Community, similar initiatives are already taking place in the Western Balkans. Montenegro, for instance, is one of the European leaders in the move to introduce smart metering and smart grids with a grant provided by EBRD.[10]

But what about...

…fair access and the discrepancies in natural endowments of renewable energy resources among communities, countries and regions, which determine the level of optimal renewable energy production and consumption?

The way forward: Benefits accessible to all

- Making the idea of connectedness part of the energy system, considering the possibility of sharing the responsibility for production, transmission and distribution of power is something that is essential for countries, communities and regions to enjoy fair access to the benefits of renewable energy, regardless of the discrepancies in natural endowments. Moreover, ***fossil fuels are much more unevenly geographically distributed***, while renewables are, to a certain extent, available in every country and every region (with only minor regional disparities).
- It is therefore time to make renewables part of daily economic processes and shared cultural behaviour again. The history of solar and wind power stretches back to long before coal. They are, in fact, among the ***very first energy sources ever to be captured by humanity***, today serving as tourist attractions (e.g. windmills in Spain and the Netherlands; fulling mills in the countries of the former Yugoslavia, Ukraine and Russia).
- With an adequately integrated and connected renewable energy infrastructure, the benefits will be equally accessible to all.

But what about...

…the access to energy for the many households living in remote rural areas that are not connected to the grid and could not afford to do so, even if they were given the opportunity through grid expansion or the provision of free-of-charge solar panels for their rooftops?

The way forward: No one left behind

- ***Energy access for all is at the heart of eradicating extreme poverty*** and something that governments need to guarantee for all small communities in rural areas. As solar-powered off-grid and mini-grid systems are much cheaper, scalable and faster solutions, they also prove useful in rural areas where energy losses could be high. Leveraging renewable energy will thus contribute to mitigating the negative impact of the climate crisis on poverty and inequality in these areas, while accommodating advanced technological solutions that will enable universal access at a fair share of the cost. This ensures that »no one is left behind«: one of the main objectives of an energy-coherent society built on the basis of mutual cooperation, solidarity and trust.

But what about...

…the possibility that an energy sector dominated by renewables might, as part of the critical infrastructure, be at risk in terms of cybersecurity?

The way forward: Diversification

- Decentralisation and digitalisation of the energy system are key conditions for ensuring security in the energy sector. Reducing the power of monopolistic or oligopolistic structures is only possible through integrating renewables, as well as information sharing and cooperation between countries and different market actors. This can be enabled through digital solutions such as smart grids, which ensure a stable and secure power supply. Moreover, ***decentralised generation diversifies the risks of cyber-attack***: A highly centralised system is much more vulnerable because it depends on the generation of just a few key production facilities. In an energy democracy, citizens as prosumers play a key role in defining both the demand and supply side and, together with the state and other actors, set the institutional »rules of the game« and define the decision-making processes, resource allocation and security. This is further supported by EU institutions and NATO bodies where energy is a key element of security and is treated accordingly.

Part II: Renewable energy helps us to achieve affordable access to cheap and reliable energy for all: whether workers, consumers or businesses

Renewable energy[11] is a climate-smart solution that ultimately benefits everybody. Renewable energy sources also have ***the potential to fight poverty and inequality***. In many regions of the world, access to stable and cheap energy, particularly electricity, is still a privilege. A decentralised renewable energy infrastructure integrated into local added-value chains has the potential to electrify remote rural areas, bring cheap energy to the citizens, and benefit local businesses. Energy cooperatives can also empower local communities and democratise energy as outlined in the last section.

Investors and businesses will benefit in the long run.

1. First, unlike fossil energy sources, which have high running costs, the cost of producing an additional unit of renewable electricity is close to zero, meaning that businesses will save on energy costs once the renewable energy infrastructure is in place.[12]
2. Furthermore, the scaling-up of the renewable energy infrastructure generates new investment opportunities with modest but stable returns.
3. Even in times of economic crisis, investments in infrastructure-related services are a safe haven provided a suitable legislative framework is in place to enable this investment. This makes them particularly appealing to institutional investors, such as pension funds, which are constantly on the lookout for safe returns, especially when we consider the constantly low interest rates that have prevailed around the globe over the last ten years.

Thus, there is a unique window of opportunity for decentralised projects to become front runners with the support of, e.g. international partners, if a favourable legislative framework is in place

- ***Consumers will also benefit*** from falling and more predictable energy prices. Furthermore, consumers will also enjoy more energy security since the dependence on coal, oil and gas decreases as the renewable energy infrastructure is scaled up. This is because most countries import fossil energy sources, which means they are tied to global market price fluctuations and supply shortages. Consumers might even become energy producers or prosumers themselves. For instance, they can generate electricity through low-cost PV panels and either use the electricity they produce or feed it directly into the grid.
- With regard to workers, rolling out the renewable energy infrastructure is going to generate more jobs. New jobs are also being created because wind farms, PV panels and a more decentralised grid all require maintenance. Furthermore, ***jobs in the renewable energy sector have the potential to be healthier and safer*** provided that workers have suitable training. The key question, however, is how to support workers who are currently employed in the fossil energy sector and its supply chain, e.g. coal mining. The question of jobs and how to help workers transition has been discussed in depth in Chapter 2.
- Renewables contribute to social convergence and to ensuring that fundamental rights and freedoms once again underpin policy decisions, including energy-related ones. Besides protecting our right to clean air and an environment that is not harmful to our health, renewables also enable horizontal resources management that provides greater autonomy for every

member of society. Involving citizens instead of sticking with the existing top-down structures in thermal power plants, for instance, improves gender equality and equality in general. Recent data on gender representation in the energy sector workforce shows that female workers have ten per cent more representation in the renewable energy sector compared to the oil and gas sector. The actual figure of 32 per cent is still far from equal representation, but the trend is moving in the right direction, which is a very promising development.[13] This will enable an understanding of the gender perspective and ensure gender mainstreaming in the sector and thus take into account the particular concerns that women face in underprivileged societal groups meaning they and are much more affected by the climate crisis and the externalities arising from coal-intensive sectors (such as water shortage, air pollution etc).

But what about...

...the technological challenges? How can we make sure that we always have a safe and stable energy supply even though energy production from renewables like sun and wind constantly fluctuates?

The way forward: Storage and interconnectivity

- Electricity generation from renewable sources is fundamentally different to the current system of fossil fuel generation, which is heavily centralised. Changes in the weather can lead to fluctuations in the grid and long, cold winters might leave us with a supply shortage. It is therefore very likely that, in the medium term, we will have to rely on small, decentralised back-up units powered by natural gas, biogas or pump storage hydro. These units will also have to be designed and distributed throughout the energy grid so that they can be easily refitted to run on green synthetic gas as the back-up option in the long run.

The technologies and solutions we need to tackle the issues of stability and reliability in fact do already exist:

- ***Decentralised power storage*** units will allow us to store excess electricity to counter short-term fluctuations. Other efficient storage technologies are already available today—from mechanical solutions such as pump storage, to batteries and the production of synthetic gas. Using excess energy to produce synthetic gas allows us to store energy for a longer time period. And this is how we can make sure we don't run out of power, even during the long, dark, cold winters.
- ***Digital technologies*** provide us with the tools for efficient and automated management of the energy grid, which increases stability by

better coordinating supply and demand of electricity.

- Further ***integration of national grids*** between countries allow us to allocate electricity across an entire continent. This interconnectivity is already in place within the European Network of Transmission System Operators for Electricity. This means, for example, that if the sun is shining in Spain while demand is highest in Slovakia, the supply in the former can meet the demand in the latter. Consequently, we will need less storage capacity for renewables to keep the system stable. The Energy Union (as a strategy) and the Energy Community (as an international organisation) have also created a legal framework and key milestones for the energy transition in the power sector of EU candidate and non-EU countries in Europe.
- The possibility of decentralised generation of renewable energies turns consumers into energy citizens. Communities can run their own wind farms and families can install their own solar photovoltaic systems. This ***energy independence*** increases acceptance of the energy transition by creating ownership. It can also mobilise funding for the expansion of the infrastructure if local communities reap the benefits of feeding the energy back into the grid directly. Last, but not least, as energy citizens we will be much more connected to the energy system and its consequences, and we be much more careful when deciding on our energy demands and overall consumption. To make this happen, however, the ***adequate governance framework needs to be in place, ensuring that local and decentralised initiatives do not play second fiddle to large corporations or developers.***

But what about...

…the costs of scaling up renewables? How can we make sure that the rollout of the infrastructure does not drive up electricity prices or harm the competitiveness of industry and that it does not increase the burden on households with low and insufficient income?

The way forward: Falling prices, increasing benefits

The question of how prices are going to be affected depends on how the energy transition is governed. In the next few points, we will look at the German example and draw some lessons learned. Germany was one of the front runners and therefore provides us with valuable insights that we can learn from.

- To begin with, it is important to acknowledge that, in Germany, electricity prices for households and many small and medium-sized enterprises have doubled since the introduction of the German Renewable Energy Sources Act in 2000. Poorer households in particular were hit disproportionally hard because electricity costs make up a bigger share of their disposable income.
- One of the reasons for this, in a nutshell, is that the rollout of renewables was financed by guaranteeing fixed feed-in tariffs for green electricity. The difference between the spot market price of electricity and the guaranteed tariff was then passed on to consumers and small and medium-sized enterprises in the form of a surcharge for renewables on their electricity bills. This was immensely effective when it came to scaling up renewables, but it came at the aforementioned cost of a greater burden on households with low and insufficient income.
- However, this only explains part of the price increase. Electricity prices are also subject to several other taxes and fees that subsequently increased. Furthermore, ***large consumers of electricity, such as energy-intensive industries, were exempt*** from the surcharge for renewables, leaving all other users with a higher burden. In the last few years, however, the surcharge has been decreased.
- Moreover, ***fossil energy sources and nuclear energy have been subsidised by governments for decades***—only this does not show up on our electricity bill because it is paid for from overall tax revenues. This means that, in the past, electricity prices have never reflected the true costs of fossil-based power generation. Environmentally harmful subsidies for the German energy sectors amounted to about 17 billion euros per year in 2019. Thus, renewables are often blamed only because they are not subsidised in the same way as their fossil counterparts. ***Rechannelling these environmentally harmful subsidies frees up funds*** in state budgets, either for infrastructure investments or to fund a just transition for those employed in the conventional energy sector.
- In addition, the ***price of fossil-based electricity or fossil fuels do not account for the external costs***, e.g. the impacts of global heating, and subsequent costs, such as environmental degradation or the storage of nuclear waste. If these were factored into the calculation, we would have a more realistic picture and renewable energy sources would be competitive. Just because the environmentally harmful effects kick in with a time lag, does not mean that we should neglect to factor them into our calculation today and simply pass them on to future generations.
- Today, ***scaling up renewables is much cheaper than it used to be***. Early movers like Germany helped to create a market for renewables, enabling further research and development as well as economies of scale through mass production. As a result, today´s wind turbines and solar photovoltaic panels are much cheaper than they were in the past and a roll-out much easier than it was in the pioneering days. Countries such as Ethiopia and Morocco have recently proven that scaling up renewables is possible without increases in electricity prices.
- In addition, there is evidence that many coal power plants are actually not profitable anymore and are going to end up as ***stranded assets*** if they are not subsidised by the state to pay the operators profit margin. And this not only applies to old installations. For example, as a result of a shareholder lawsuit in Poland it was found that the company planning to build a new coal power plant had failed to demonstrate how that plant could be operated at a profit, ultimately leading them to abandon the project. This is also an important issue for non-EU countries, especially for accession candidates: Even though the EU's carbon pricing mechanism ETS does not yet apply to them, they have to consider it today before making long-term investments into energy infrastructure. Moreover, state subsidies for fossil generation might be classified as illegal state aid according to European Energy Law, which leads to non-compliance with accession requirements. Once a country has joined the EU, such violation of EU law could even result in them being forced to decommission facilities. In addition, the current discussions on the EU level regarding carbon border tax adjustments (as discussed in Chapter 2, page 45) have to be considered in terms of the long-term competitiveness of energy exports and exports of energy-intensive products to the European Union.
- When it comes to the competitiveness of businesses it is important to keep in mind that not all companies are subject to international com-

petition where energy price differentials in production costs come into play. Moreover, ***electricity costs are just one of many cost factors*** influencing the competitiveness of businesses. Proximity to markets, transport costs, overall productivity, etc. also have to be factored into the calculation.

- In the end, the question of how the rollout of renewables affects electricity prices is down to governance, i.e. how the process is carried out, rather than if. In order to keep electricity prices in check, the rollout of the renewable energy infrastructure can be subsidised by the state. This can either be in the form of direct subsidies, i.e. by granting cheap loans, or by vouching for private investment. In the past, these options were often problematic due to the European Union's strict state aid rules. In the framework of the European Green Deal, however, the rules for the rollout of the renewable energy infrastructure are up for revision. Furthermore, the European Commission aims to mobilise a trillion euros over the next ten years, part of which is to help member states upgrade their energy systems. This is a real window of opportunity, also for transition economies.
- Finally, households with low and insufficient income can receive help to cover their energy bills if rising electricity costs are unavoidable while the new infrastructure is being put in place. Social problems need to be fixed with social policy instruments rather than putting the blame on the energy transition.

But what about...

...the jobs in the fossil energy sector? How can we make sure that these workers are not left behind?

The way forward: Mobilising for a just transition

- To begin with, it is important to recognise that most of the structural change, particularly in the coal sector, has already happened. ***Technological advancement and automation have contributed to a dramatic decline in the need for workers*** in the sector and thus also the actual number of people employed in mining and burning coal. A socially just transformation of the energy sector would certainly result in sustainable solutions by providing sustainable jobs at the same time (the employment dimension is explored in detail in Chapter 2).
- It is also worth emphasising that ***jobs in coal mining or in coal-fired power plants were never very attractive*** in the first place. It was (and sometimes still is) hazardous and very strenuous work—this is why miners in particular started to organise at a very early stage of industrialisation. Despite the fact that, after a decade of struggles, trade unions ultimately succeeded in improving working conditions considerably, for example in terms of wages and pensions, many miners never ended up with a peaceful retirement because they died in underground accidents, from »black lung disease« or cancer.[14] Thus, many coal miners wished one thing for their children: that they could find better jobs in other sectors that did not ruin their health.
- That said, ***mobilisation is needed for this just transition*** for workers in the energy sector. The transition will not happen on its own. Trade unions have a history of cooperating with social democratic parties when it comes to improving workers' rights. Here too, they should act together in order to ensure that this new industrial revolution can become a catalyst for the workers' movement. Chapter 2 elaborates on instruments for a just transition for workers which could form the basis of a progressive agenda.
- Beyond rather technocratic policy proposals, progressive actors must ***incorporate the heritage of the fossil-powered civilisation*** into their narratives. The workers' movement originated in the industrial revolution, forming around heavy industry and mining. A convincing narrative honours the workers contribution to civilisational progress and does not blame them for polluting the planet. However, it must also make clear that the fossil-fuel civilisation is coming to an end. Just as much as we need collective action to phase in a sustainable future for all, to phase out fossil energy, we also need solidarity with those whose livelihoods depend on it.
- Thus, the key to harnessing the benefits of renewable energies lies in rapidly scaling them up, along with the necessary distribution and transmission networks, storage backup and smart demand-side management. With enough renewable energy installations we can avoid running into problems with stability and reliability. Furthermore, by swiftly switching to renewables we avoid having to run the old centralised fossil-fuelled system alongside the new, decentralised grid. This brings down costs because it is more efficient. For transition or developing economies that still have growing energy demand, not only does this rollout have to keep pace with increasing demand, it also has to ensure that fossil-fuelled power plants are subsequently replaced. To make this transition successful for workers we need solidarity and collective action.

Part III: Renewable energy policies can help us mitigate and adapt to the climate crisis

- As renewable energy is proving to be a win-win-win solution for our economic prospects, our social stability and for democratic governance, it also remains a key instrument for environmental compatibility. Increasing the use of wind, biomass and solar power while displacing fossil fuels, which account for 60-70 per cent of electricity production worldwide,[15] ***is the cornerstone of climate mitigation*** actions and reducing greenhouse gas emissions (GHG)s.
- At the same time leveraging renewable energy allows for ***climate adaptation*** of the energy sector and other energy-intensive industries that will be significantly affected by the climate crisis. For instance, water shortage is becoming a real problem for many countries and thus presents a real threat to hydroelectric power plants used to balance energy demand and supply. Equally important is the problem of a lack of cooling water for large fossil and nuclear power plants. There is a way for us to adjust to these problems: We need to proceed with a just transition and make renewables our dominant source of energy.
- The debate on the climate crisis has been focused on the topic of security and the threat of possible conflict due to scarcity of resources including water, energy shortages and disruptions, as well as migration trends. What is often forgotten is that when renewable energy is used properly to meet the needs of a certain country or region, in other words, used in an affordable and reliable way, the ***reason for disputes*** over natural resources like fossil fuels disappears. As a result fossil resources stay where they belong: in the ground.
- Citizens with rooftop solar panels become more environmentally aware and enjoy the first-hand benefits of sustainable solutions: protecting their immediate surroundings from GHGs while at the same time becoming an important factor in the entire production chain through their role as prosumers.

But what about...

...the minimal, but nevertheless real environmental harm caused by wind and solar energy?

The way forward: The old, the new, the future

- Every form of energy conversion (or »generation«) interferes with nature and has »unnatural« side effects. But some technologies are more harmful—and some less so. Renewable technologies such as wind turbines and solar panels are the most climate compatible solutions to generating electricity and energy in general. They are not completely pollution-free due to the production process. But so far, they are the most neutral solutions that we have. ***Compared to the burning of fossil fuels—including natural gas—or the use of nuclear energy with its multiple harmful consequences for our health and the natural environment, they are undoubtedly the better solution.***
- Solutions such as green hydrogen technology are now also being developed to respond to the aforementioned challenges emerging during different industrial processes, including the process of manufacturing solar photovoltaic. It is anticipated that this issue will be completely solved in the long run (2030-2050).
- Progress has also been made in terms of reducing the noise of wind turbines and mitigating the negative effects for migrating birds. The life span of solar panels has been extended and their size reduced, so they now take up less space and use fewer resources.
- Let us also not lose sight of the damage to the environment and our health caused by coal mines not to mention lignite open pits that can in no way be compared to the minimal side effects caused by renewables. Whole villages and landscapes where turned upside down; people lost their land and had to resettle. Water pumps need to run to keep coal mines from collapsing—forever. And the ground water level is severely affected by open pits being flooded. With all its pros and cons, renewable energy is the only way that humankind can tackle global heating that it has influenced so heavily, both in terms of mitigation and adaptation. More investment in solar, wind and biomass is also needed due to the impact of the climate crisis on water scarcity in many countries and regions. Exacerbated water levels will mean that hydroelectric power will not be as reliable as it used to be. Moreover, this depends on the magnitude of the climate crisis, which can be significantly mitigated with the expansion of renewables, which, in turn, would ensure availability of drinking water in the coming years.

But what about...

...the opinions sometimes heard expressed in SEE that all this climate awareness-raising and promotion of renewables is just about providing a market for big solar and wind turbine producers like Germany?

The way forward: Leapfrogging

- The climate crisis is real and not up for debate. What we need here is to ensure the best possible use of the tools of democracy to enable a socially just energy transition towards renewables that will benefit all. Those who fail to recognise the correlation between the climate crisis and social justice today will bear the same responsibility as those who deny global heating (see Chapter 1, page 18f). Furthermore, in response to the concern that the promotion of renewables is part of the market strategy of big solar and wind turbine producers, like Germany, we should not forget the added value for developing economies entering the production and supply chain, as can already be seen in the automotive sector today, for instance (see Chapter 2, page 48).

But what about...

... promoting renewable energy, when investing in renewable energy sources itself is not enough to combat the risks arising from the climate crisis, if there are no adequate parallel measures such as energy efficiency to prevent further rising demand?

The way forward: Reducing consumption trumps energy efficiency

- Renewables are inherently more energy-efficient sources. However, it is also true that, parallel to the shift towards them, ***investment in energy efficiency is needed*** to reduce energy demand. Reducing the absolute amount of energy consumption by implementing holistic structural changes in order to minimise energy demand in all sectors should be accompanied by the use of the most energy-efficient technologies. This investment itself will be a source of new jobs that will additionally benefit the economy in the long run (see Chapter 2, page 37).

But what about...

...the fact that many countries implementing energy transition concepts are wealthy economies with enormous technological, economic and financial potential? Their situation is totally different to that of the majority of countries in CEE and SEE?

The way forward: Also a trend in the Global South

- Most countries in Eastern and Southeast Europe have a significantly higher potential for solar and wind than, for example, Germany. This can already be used cost efficiently today.
- Renewable technologies, especially wind and solar, are affordable, not exactly rocket science and are already being used successfully worldwide. No wonder an increasing number of developing countries such as Morocco are pushing for an energy transition; and no wonder strategic players such as China are focusing their innovative and production potential on the generation and production of renewables.

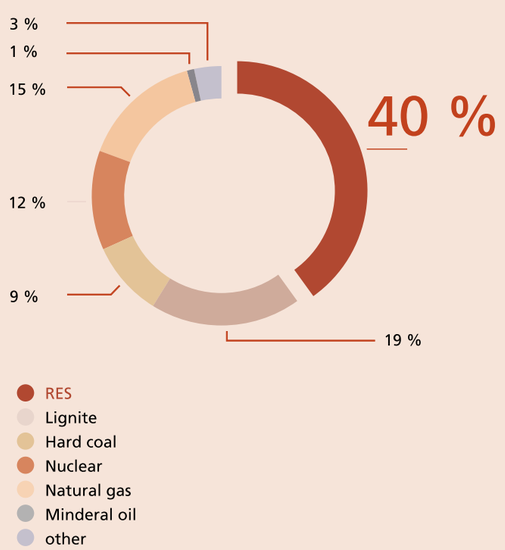
But what about...

...the fact that renewable energy is dependent on weather conditions rather than the actual energy demand?

The way forward: Even more stability

- If energy production mainly relies on renewables, energy security is no more of a concern than the previous security challenges posed by conventional energy sources. In fact, energy security is already at risk due to the critical operation of conventional, centralised energy production. It is not possible to predict when a coal-fired or nuclear plant will have to be shut down for critical maintenance. And the consequences of this in a centralised system with fewer facilities are far more severe. Not to mention the fact that most countries are highly dependent on the import of fossil energy resources such as oil and gas. This makes their energy system vulnerable to market price development and political instability in exporting countries.
- Admittedly, the flow of renewable sources is variable. But we mostly know when it is going to be sunny or windy and science allows us to make accurate and timely predictions. In combination with innovative technologies such as smart meters and grids, the ***energy flow is more secure and stable than ever.***
- Additionally, if there is adequate storage capacity and functioning regional integration of power networks, natural changes can be dealt with without having to fear a blackout. The reliability of the electricity grid in Germany has not suffered, despite the fact that RES reached a share of over 40 per cent of electricity production in 2019. Research studies and even analyses conducted by transmission system operators have shown that in many countries an electricity system run on 100 per cent renewables is already feasible.

RENEWABLE ENERGIES ALREADY COVER 40% – LET'S SPEED UP TO 100%



Part IV: Health protection and quality of healthcare as self-evident benefits of renewables

1. Health protection, for our children and for ourselves is one of the most valuable advantages of a future based on renewable energy. First and foremost, renewables will ***significantly reduce air pollution*** and ***save up to seven million lives a year worldwide***, including children, who are victims of premature deaths as a result of air pollution (see also Chapter 5, page 90).[16] While also being the biggest industrial source of arsenic and mercury in the air, the small particle (PM 2.5) emissions from coal-fired power plants, which are known to cause cardiovascular diseases, can travel over 1,000 km. Furthermore, the considerable resources in the public health system dedicated to treating respiratory diseases caused by pollution could be reallocated and used for other purposes, such as free healthcare for children. Renewable energy has the potential to bring an end to serious smog problems in many urban areas. Since research suggests that household heating and industrial activities along with transport are the main sources of emissions, replacing the coal-based plants with renewables will help clean up the air in big cities and reduce the presence of smog.
2. During the Covid-19 pandemic, many studies found that people who had been exposed to air pollution were much more likely to be in a risk group and would thus suffer more should they contract the virus than those living in areas with little pollution.
3. Coal ash—the waste from burning coal—also contains highly toxic heavy metals, which can cause cancer and diseases of the nervous system. Because coal ash is often not adequately disposed of, it contaminates surface and ground water.
- Numerous environmental catastrophes and substantial human suffering have been caused by oil spills. We are all familiar with the images of contaminated farmland or dying seabirds. While this is a well-known phenomenon, the risks of comparatively new fossil fuel technologies, such as fracking, are only now becoming increasingly apparent.
- Compared to the coal mining jobs that are known as high risk and have severe health implications, mostly experienced at a later age, ***jobs in the renewable sector provide high health and safety*** at work standards (see also Chapter 2, page 28).

But what about...

...the suggestion that the level of air pollution and smog in certain cities or areas is influenced by weather and climate conditions which are predetermined by geographical location and nature?

The way forward: Cleaning up the air

- While natural weather and climate conditions do affect the level of air pollution and smog, it is mainly the large amounts of fossil fuel burning in the energy, transport and construction industry with the addition of wood in the heating sector that create externalities, which have a huge impact on our health and the environment. In the case of Skopje, for example, it is true that the city is located in a valley and has less ventilation during the winter. But it is also true that pollution rates are skyrocketing in urban areas where population density is higher, creating »favourable« conditions for a higher concentration of airborne particles and a higher chance of pollution. There are a number of similar cases where self-sustainable renewable energy areas have been created that are proving capable of changing the direction of developments. These positive examples are

serving as a roadmap for others to follow, demonstrating how to maximise the key benefits of combining the natural endowments and technological advancements that our generation has access to. For example, helped by EU funding and local innovative spirit, the small city of Koprivnica in Croatia is becoming a recognised leader in sustainable development throughout Europe. What makes this particular Croatian city unique is its integrated policies of social and ecological urban development, where energy challenges are considered together with poverty and other issues faced by marginalised groups.

But what about...

...the concerns that renewables might not improve our quality of life or might even challenge it further due to disproportionate distribution of benefits.

The way forward: Fostering social progress

- The strong link between renewable energy and human development is supported by an IRENA study which shows a four per cent increase in human welfare, an indicator that relates directly to quality of life. Moreover, ambitious renewable energy policies will support the strong existing movements, such as the »Barefoot College« in India, which aim to tackle energy poverty and improve the quality of life and health of children and women in many communities. Decentralised renewable energy coupled with current technological advancements can improve access to clean and drinkable water in remote areas through water pumping, production and delivery both for households and irrigation, thus impacting food security as well.
- Furthermore, as the focus of security questions is shifting to non-conventional and resource-driven conflicts, leveraging renewables would undoubtedly also help us to overcome certain

security threats. In addition, by facilitating mitigation and adaptation measures, renewables will provide a response to specific climate challenges, such as climate-related migration and conflict. The lower the demand for oil, coal or gas, the more likely it is that conflicts related to fossil fuels will come to an end.

- Last but not least, this would also change the geopolitical power structures and result in new areas of interest for powerful actors and a potential reallocation of conflicts. This is exactly why it is important that the move to a decarbonised economy should only happen by means of a well-planned, structured and inclusive energy transformation conducted in a democratic and decentralised manner.

What are we striving for?

- Would we have achieved democracy as we know it today without holding elections or introducing certain complex voting procedures, or if voting had been limited to certain groups? Most certainly not. To democratise the energy system, we also need to simplify the procedures for small-scale ***investment in renewable energy so that such investment is accessible to everyone and leads towards an energy-cohesive society.***
- Solutions such as one-stop-shop application systems and simplified application procedures could encourage decentralised solar generation, particularly residential rooftop installations and could contribute to the main objectives of the energy transition: ***environmental compatibility and socio-economic benefits for workers, citizens and businesses***. Transparency and good governance must be adhered to by state-owned energy companies, existing monopolies and oligopolies in certain countries. Energy policies should leave space for households and local energy projects. Best practices such as the example of the small German town of Wolfhagen, energy cooperatives and thousands of individuals and small businesses in SEE show just how feasible this approach is under different conditions. Many of these initiatives and individuals are also willing to support progressive actors in their efforts to implement a just energy transition and define the future of our life on earth.
- The European Union and the Energy Community have shown great interest in supporting energy transition projects, as has the European Green Deal, which is a strong instrument for achieving a carbon-neutral continent. At the end of the day, ***political will is also an untapped renewable resource*** that needs to be harnessed and utilised by progressive actors, ideally today.

Endnotes and Sources

Endnotes

[1] The term »prosumer« is defined as an active consumer, one who consumes and produces a product at the same time. In the energy sector, a »prosumer« is someone who both produces and consumes energy. This is made possible by the rise in new connected technologies and the steady increase in renewable power such as solar and wind along with its integration into our power grid, something that has been facilitated by the appropriate legislative environment.

[2] August, W., Valeria, J. S., Jan, P. et al. (2018): Statistical Evidence on the Role of Energy Cooperatives for the Energy Transition in European Countries (last accessed on 22.5.2020).

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[6] EU Energy Poverty Observatory (2018): Indicators & Data: Inability to Keep Home Adequately Warm, available at: https://www.energypoverty.eu/indicator?primaryId=1461 (last accessed on 30.4.2020).

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[10] Pyrkalo, Svitlana (2019): EBRD finances smart metering breakthrough in Montenegro. EBRD (last accessed on 5.5.2020).

[11] The following arguments apply mainly to the generation of electricity from renewable sources. This is because electricity is likely to play a major role in all sectors of the economy, from mobility to industrial applications, to heating. Not everything is going to run on electricity but renewable electricity will also become the foundation for the production of e.g. green hydrogen or e-fuels.

[12] Even when factoring in the costs of the larger energy grid needed for a decentralised system of renewables and the higher capital costs, a system with 95 per cent renewables would have the same costs or even be cheaper than a system run mainly on coal even at a modest CO2 price of 20 euros per tonne in 2050. By mid-2019, however, the price had already reached 25 euros per tonne.

[13] IRENA (2018): Renewable Energy: A Gender Perspective, 31, available at: Renewable energy (last accessed on 8.5.2020).

[14] The negative effects of coal and coal dust on health were already researched years ago; comprehensive studies were even published as early as the 1970s (for example https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1638110/).

[15] Our World in Data (2014): Global electricity production by source (last accessed on 7.7.2020). For more information, see https://ourworldindata.org/energy#all-charts-preview

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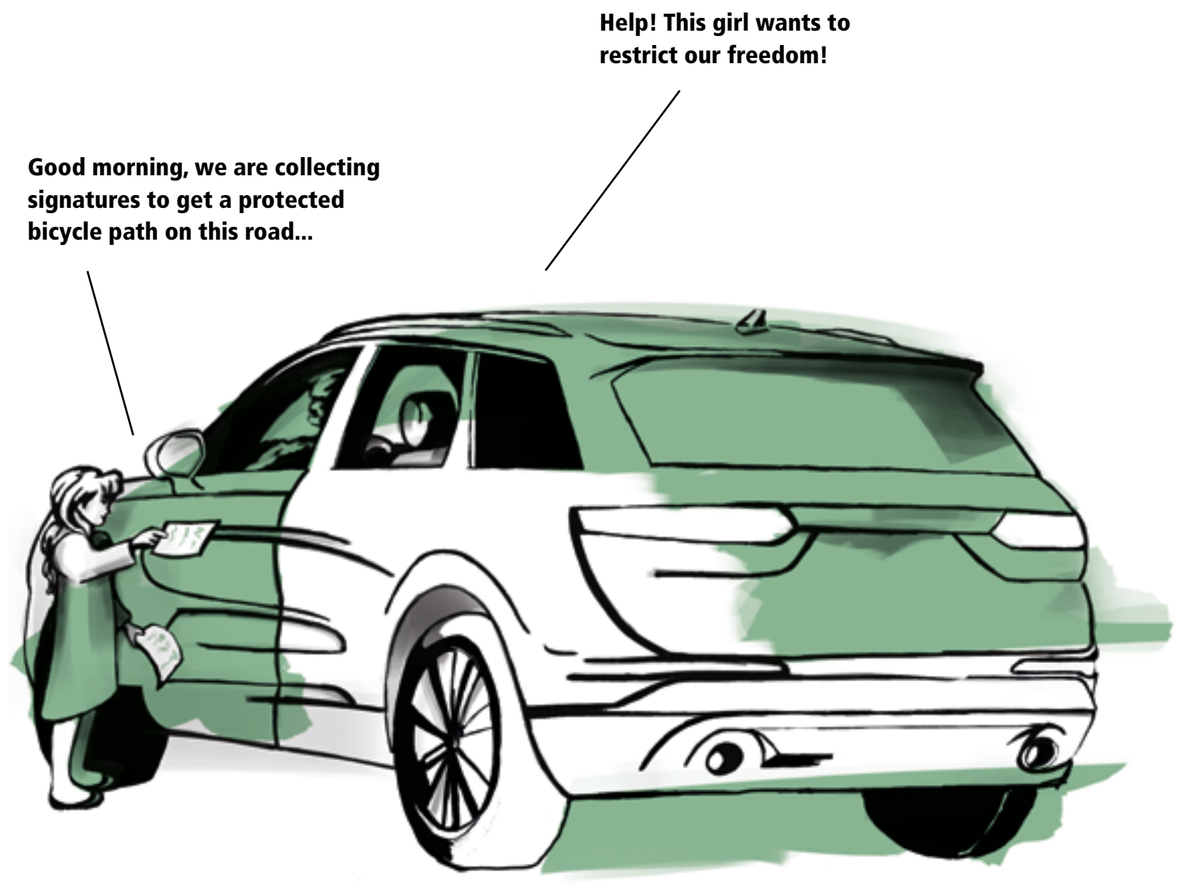
5
A Socially Just Mobility Transformation

A mobility transformation provides tremendous opportunities to improve our quality of life. Given the sector's continuously increasing CO2 emissions, a transformation is undoubtedly needed—and it is already happening, as hundreds of cities start to implement smart and sustainable mobility concepts. These initiatives are making the lives of their citizens healthier, urban spaces greener and more community friendly, local economies stronger, people's time management smarter, societies more just, and the environment cleaner for us and for the generations to come.

In this chapter, we will explore the topic of a mobility transformation from very different angles: We will start with the co-benefits of a mobility transformation for citizens and communities, looking at health benefits (part I), liveable communities (part II) and social justice (part III).

We will then take a look at the economic aspects of the mobility transition, focusing first on the co-benefits for the economy as a whole (part IV) and then on the car manufacturing industry, specifically (part V).



Part I: Sustainable mobility: Vital for a safe and healthy lifestyle

For us to be able live a healthy life today and in the future, our mobility systems have to be transformed. There are five reasons for this: air pollution, traffic accidents, noise pollution, lack of exercise, and, last but not least, to limit the climate crisis.

1. ***Air pollution is the leading environmental health risk factor in the world***, resulting in seven million premature deaths per year (see also Chapter 4, page 83).[1] While larger toxic particles get stuck in our lungs, causing lung cancer, chronic obstructive pulmonary disease or respiratory infections, smaller particles reach our circulation, leading to strokes or heart

attacks. Besides coal-fired power plants, transport is one of the main sources of this health risk. In 2015, traffic was responsible for 11.4 per cent of air pollution-related premature deaths, generating approximately one trillion dollars in health damages.[2] It is not only Asia that urban populations are severely affected by heavy air pollution from transport: Many cities in Central and Eastern Europe »compete« for the dubious accolade of worst global air quality, especially in winter: From Warsaw to Almaty, our capitals are poisoned by smog, sometimes even preventing airplanes from landing because the runway is not visible. The global population is projected to rise to 9.7 billion by 2050 and 70 per cent of these people are expected to live in urban areas. As a result, ***annual urban transport emissions are set to double***,[3] unless tough policies and measures to curb transport emissions are taken. In light of these facts, we could ask ourselves why there are health warnings on every packet of cigarettes, but not on every car?

2. For us to breathe fresh air again, ***many good examples of replacing fossil fuel-based transport with healthy and sustainable alternatives simply need to be scaled up***. A total of 800 examples of sustainable mobility in European communities have been included in the »Civitas« project alone,[4] and hundreds of new projects are presented each year during »European Mobility Week«, which is a superb source of inspiration.[5] The projects range from the improvement of zero or low-emission public transport (underground railway, e-bus fleets, trains and trams, running on renewable power) to cycling networks (including safe bike lanes and bike highways, bike repair shops, secure bicycle garages or (cargo) bike rentals), to multimodality schemes providing a flexible combination of different transport types within one route (public transport, bicycles and electric or hydrogen cars, which can be left securely at »park and ride« (P+R) facilities outside the city centre).[6] ***City centres around the world are transformed into low emission or completely car-free zones***, with the once car-centric city of Paris as one of the leading examples.[7]

3. The ***number of serious traffic accidents can also be lowered*** by a mobility transformation. A total of 70 per cent of people killed in traffic accidents on urban roads are »vulnerable road users« such as pedestrians or cyclists.[8] This means that, ***once again, the weakest members of our societies are most at risk***—marginalised people commuting by bicycle, weaving between SUVs, or elderly people crossing the road. We have become accustomed to living in cities where playgrounds are fenced in to prevent our children from being run over, rather than cars being »fenced in« to allow us to move freely. Fortunately, many countries have begun to address this problem, Poland being one of the leaders when it comes to reducing traffic accidents in urban areas.[9]

4. ***Noise pollution***, a relevant health problem especially in densely populated metropolitan areas, is also significantly reduced by cycling and walking, or for longer distances resorting to public or individual e-mobility.

5. In addition, instead of going to our expensive gyms by car, it is cheaper, and often even more effective to walk or cycle: »For most people, the easiest and most acceptable forms of physical activity are those that can be incorporated into everyday life. Examples include walking or cycling instead of travelling by car.«[10] ***Burning fat instead of burning fossil fuels helps to increase our life expectancy***, by reducing the risks of cardiovascular problems or obesity, for example.

6. Last but not least, a transformation of the mobility sector not only brings direct health benefits (such as not being run over), but also ***indirect health benefits by limiting the climate crisis*** (see also Chapter 1, page XX). The transport sector accounts for a quarter of all CO2 emissions in the EU. And it is the ***only sector in which emissions are still rising***, rather than falling. Compared to 1990, the level of emissions in the sector have increased by 25 per cent.[11] With cities being responsible for 70-75 per cent of global carbon emissions,[12] if we want to meet the essential climate goals, there is no way around intensive, targeted efforts to implement urban mobility transformation. This is being made possible thanks to initiatives such as the »C40 Cities«, which brings together 16 networks and 96 climate-ambitious cities worldwide, between them generating 25 per cent of global GDP, to help them replicate, improve and accelerate climate action in the field of mitigation, adaptation and sustainability. The project currently comprises an impressive 1,543 actions and measures in the field of urban mass transport.[13]

But what about…

…the costs of redesigning urban mobility? Cities have been planned with individual car mobility in mind for decades.

The way forward: Mobility transformation pays off

1. First, we need to take into account the costs caused by our current form of mobility—the cost to our healthcare systems, the costs caused by global heating (see Chapter 1, page XX) and of course the loss you can't put a price on—the loss of lives.

2. Second, sustainable infrastructure, such as bike lanes and pedestrian zones, are cheaper to build and to maintain than roads.

3. Third, cities and communities can introduce policies to redistribute money from people who can

afford a car to make safe and convenient mobility affordable for everyone. Possibilities range from city tolls to higher parking fees, to fixed payments (or even auctions) for a permit to own a car. Permits purchased by car owners can also include the price for an annual public transport pass, to provide additional incentive not to drive in the city centre.

4. Fourth, there are multiple external funding options, for example in the context of the EU Green New Deal. Again, the »European Mobility Week« initiative can be an inspirational starting point.[14]

But what about…

…the inadequate number of bike lanes, which do not provide a real mobility alternative?

The way forward: Shifting political priorities

- As ***hundreds of cities around the world show, a well-designed and extensive network of bike lanes*** comes down to the prioritisation of the right policies by the local authorities as well as smart urban mobility planning and management.
- The number of cities creating new bike lanes increased sharply during the Covid-19 crisis, when a growing number of citizens hauled their bicycles out of their cellars (as was the case in Georgia, for example) or bought new bikes (resulting in bikes being sold out in shops in Italy and the Netherlands), and started to cycle to work on deserted roads. Many cities quickly accommodated this behavioural change among their citizens by establishing »pop-up bicycle lanes«, with the city of Bogota a global trendsetter in this regard.[15] Some cities even turned »normal« roads into bicycle streets at almost no cost—simply by putting up a sign and spraying a symbol on the asphalt to indicate that the right-hand lane was now reserved for cyclists driving on the right side, and the left-hand lane for cyclists on the left.
- ***To reinforce this positive trend, cycling needs to be made convenient for everybody***. Studies from Denmark show that most cyclists opt to bike because it is a fast and easy means of transport, not because it is cheap.[16] Therefore, bike lanes have to be built according to three criteria: They need to be safe from (stationary and moving) cars, they need to be big enough for cyclists travelling at different speeds (i.e. a commuter overtaking a cargo bike), and they need to enable cyclists to reach their destination quickly. This can be made possible through more complex changes, such as the installation of bicycle highways or flyovers, or simply by programming traffic lights according to the average speed of cyclists, instead of cars.

But what about…

… the concern that we just aren't ready for »multimodality«? The concept sounds good for integrating different modes of transport on one route that are tailored to individual mobility needs. But for some cities it still seems more like an unachievable utopia.

The way forward: Learning from best practices

- Multimodality involves smart integration of different means of mobility—as alternatives to individual car transport—into a coordinated infrastructure, on one single journey. This is absolutely the way to go for sustainable mobility and is already practiced in numerous cities, including in Eastern Europe (Gdansk, Riga, Vilnius, Rostock and others[17]). Some of these cities have made available free apps for their citizens to plan their individual route using different modes of transport—public transport, carsharing, city bikes, bike lanes, walking. With an infrastructure that includes racks for bikes on buses/trains, enough bike parking spaces at train/bus stations, multimodality info points in public spaces, etc., multimodality can be the solution for urban travel in particular, but also for longer journeys.

But what about…

…the volume of emissions caused by commercial vehicles, such as cargo ships or public buses?

The way forward: Reducing emissions in every field of transport

- The fact that cargo ships are responsible for a significant proportion of the CO2 emissions produced in the transport sector means that they need to be more strictly regulated. Emissions statistics show that such restrictions do reduce emissions. But this does not mean that we should not switch to more environmentally sustainable means of mobility in our urban and rural areas, such as trains running on renewable energy, etc. Ultimately, we inhale toxic exhaust fumes every day, no matter how high or low the level of cargo ship emissions.
- Regarding the carbon footprint of public transport, it is true that close to 80 per cent of public bus fleets in Europe still run on diesel, with buses being the mainstay of public transport worldwide (accounting for more than 80 per cent of global public transport[18]). But the switch from diesel to biofuel or e-buses is well underway in hundreds of cities, including Paris, which plans to switch to a 100 per cent »green bus« fleet by 2025, and Berlin which is targeting 2030, with the support of various financial subsidy schemes and initiatives.[19] Moreover, a number of Central and Eastern European cities still operate electric »trolley bus« networks, which should be modernised so that it can form an integral part of a low-carbon public transport network.

Part II: Sustainable mobility: Vital for urban development, public space and quality of life

Surveys show that cities with progressive sustainable mobility policies (such as Vienna, Munich, Amsterdam, Copenhagen or Prague, Warsaw, Vilnius and others in Central Europe) rank highest in the quality-of-life metrics, providing their citizens with the best environment and living conditions worldwide.[20]

There are two key ways of contributing to a better urban quality of life by focusing on mobility patterns:

1. The first is to allocate more space for people, and less space for cars, by upgrading existing urban structures.

- Many citizens' initiatives call for us to ***»reclaim our streets«***,[21] highlighting the mismatch between the urban space allocated for individual cars, and the space available for everyone.[22] A typical carpark (and cars are actually parked for most of their operational lifespan) is 11 m^2 in size—just imagine how much space is constantly blocked by dead metal, most of the time without the car owners paying even a fraction of the average price per square metre for land in your city. Not to mention the disproportional distribution of space allocated to streets on the one hand, and pavements, bike lanes and recreational areas on the other. This ***space should be converted into genuine »common ground«***, used not only for trees and parks, which increases air quality and is the most effective way of lowering temperatures during a heat wave, but also ***to create more vibrant, liveable cities*** with more space for people to meet, talk and get to know each other, therefore contributing to more social cohesion and cooperation.
- The basis for such a transformation of urban spaces is, in most cases, ***participatory decision-making processes***, which strengthen citizens' self-efficacy and community attachment (see also Chapters 6, page120, and 7, page 135). It has, for example, proven very effective to convert streets into pedestrian zones or to introduce new bus routes, for a ***certain trial period*** or on certain days of the week, and ***then to let local residents*** vote on whether the change should be made permanent (which more often than not, they do). The transformation of New York's famous Times Square from a congested traffic hub into a pedestrian zone started simply with some colourful folding chairs being placed there for a couple of months. Once a decision to limit or ban individual transport has been taken, local residents and shop-owners should again have a say in the design of the new urban area.
- To persuade local residents who might be reluctant to see their urban environment change, local authorities have a unique chance to use their direct contact with people to win them over by ***acting as role models*** and providing their own visible and appealing examples: mayors and members of local parliaments cycling to work or a cooperative partnership with local businesses to provide their employees with passes for public transport.

2. The second way is to reduce the need for mobility from the outset so citizens do not have to spend as much time using or being stuck in (any kind of) traffic.

- Modern, but ambitious urban concepts such as the ***»30-minute city«*** aim to engineer cities where home, work, play and other basic necessities are all within a 30-minute journey of each other. This is a complex sustainable mobility scheme, which reduces traffic and thus improves everyday quality of life in terms of health, the environment, time management, the local economy and cost of living.[23]
- ***Teleworking and homeworking*** models can also help to reduce the volume of transport. During the Covid-19 crisis in particular many employers and employees have realised that working from home can be very effective—saving both money and time. After all, nobody likes to spend hours and hours each day commuting (whether on public transport or in a car), instead of spending time with friends and family.

But what about

...shops in city centres that can no longer be reached by car if the centre is made into a car-free zone?

The way forward: Increasing the attractiveness of the city centre

- Zones with limited or no car traffic can make cities much more attractive for small businesses. There is substantial research showing that car-free city centres increase the probability of people spending their money there, as they have time to stroll around, look at different shops etc. This is an especially feasible argument in a time when city centres are being »bled dry« by competition from the Internet and shopping malls located further out (this particularly applies to Central and Eastern Europe). Liveable, clean, beautiful city centres have significant comparative advantages.
- Therefore, the solution to a potential depopulation problem lies in a well-designed public transport network, in urban development—the location of attractive services, cultural venues, entertainment, etc. in city centres and motivational schemes and measures incentivising services and shops of certain type to locate there.

But what about…

… people whose family or work commitments require them to use their cars to get them into the city, or those who live in more isolated rural locations with no access to the public transport infrastructure?

CAR SHARING SCHEMES: WORKING IN MORE THAN 2000 CITIES

The way forward: Staying connected

- For people who cannot manage their day-to-day tasks without a car, apart from zero-carbon or low-carbon individual transport alternatives, there is also the possibility of carsharing. ***Carsharing schemes*** have proven to work well in more than 2,000 cities worldwide,[24] serving around 2.5 million people[25] in Germany alone, providing car transport when needed without the costs and burdens associated with car ownership. The positive environmental impact of this alternative is indisputable. One study conducted by the French Environment and Energy Management Agency found that people using carsharing apps reduced their individual car transport mileage by 41 per cent and travel more frequently by bus, train or on their own steam. Research conducted by the collaborative mobility organisation CoMoUK found that each car which is part of a »car club« takes ten private cars off the roads.[26]
- When it comes to the ***urban-rural connection***, there are numerous examples of well-developed public transport systems around Europe making the connection of peripheral with metropolitan areas a feasible alternative, primarily through regional train networks. Until this happens in a particular region, it is true that people in these areas will have to rely on individual transport. At the end of the day, however, it is down to the local or regional government's infrastructure policy to improve public transport infrastructure in the region.
- In addition, as the goal of sustainable mobility is also to reduce the volume of transport, one of the main aims of regional and local development is to revive rural areas by providing better childcare services, health services and shops along with local economic development policies focused on using local and regional resources—agrotourism, local production of goods, etc. These policies would improve the quality of life for people in particular regions without the need for and additional cost of owning a car. As indicated above, homeworking and teleworking, at least for a couple of days per week, can significantly reduce the volume of work travel, in doing so cutting emissions and transport costs for commuters and giving them more time and money for leisure activities.

Part III: Sustainable mobility: Vital for transport affordability and social justice

Improving the quality and reach of public transport infrastructure reduces social inequalities by investing in means of transport that are affordable for everybody. So far, ***our city mobility schemes have often been designed according to the needs of upper and middle-class commuters*** driving to work by car. This means that the ***needs of large segments of our society are neglected*** for most of their lifetime: Children, the elderly or the disabled, who are unable to drive, marginalised groups who cannot afford a car, parents doing their shopping at a local market, or friends meeting in the nearby neighbourhood. How do nurses get to their night shifts at the hospital—and how does the lead consultant? It is in the interests of both the lower and the middle classes to have good, reliable, affordable public transport. Sustainable mobility policies, therefore, contribute to a higher level of social justice in our societies.

- A growing group of mayors and city government officials is starting to consider ***sustainable transport as a public good***, necessary for a functioning society, just as important as the police, health services or education. Accordingly, more and more cities are implementing policies to introduce free or low-cost public transport (currently more than 150 cities worldwide, most of them in Europe, including Poland, Czech Republic, Bulgaria, Slovenia and Lithuania),[27] with Luxembourg (and partially Estonia) being the first countries to have free public transport nationwide. The authorities in these cities see this policy as the best way of significantly reducing urban transport-related carbon emissions and also ***combatting social inequality***, as free public transport primarily significantly reduces the cost of living for middle-class and lower middle-class citizens. After all, the cost-cutting message of free public transport policy is the ultimate argument against sceptics and opponents of environmentally ambitious urban transport policies such as car-free zones, strict parking restrictions, bus lanes, etc.
- In countries like Germany, despite the contribution public transport makes to social equality, the ***automotive sector still receives disproportionally higher subsidies than public transport.*** From 2009-2019, the Federal Government invested 20 times more in research, technology and material optimisation, infrastructure, etc. for car transport than for public transport.[28]
- Less dependency on and usage of individual car transport makes people ***less vulnerable to fuel price increases***, which are no longer only influenced by the world market for oil but also by the development of CO2 pricing systems.
- Last but not least, ***most citizens welcome a mobility transformation*** that involves a shift towards affordable and convenient public transport. The interest in viable transport alternatives that increase the quality of everyday life is evidenced by a 2018 McKinsey study showing overwhelming satisfaction of residents with highly developed urban public transport systems in ten global cities.[29] This is further underscored by the fact that in cities such as New York, San Francisco and others almost half of all residents do not own cars, or that in Germany there are almost 30 per cent fewer people applying for driver's licenses than a decade ago.[30]

But what about…

…increasing parking fees in city centres hurting low-income earners far more than the wealthier members of society?

The way forward: Why subsidise the car-owners?

- The sustainable and also socially just solution to the problem of increasing parking fees in the city centre is a well-designed public transport infrastructure and extensive other low or zero-emission urban transport options, which provide more affordable, less time-consuming and healthier modes of transport than sitting in a car in an urban traffic jam. Affordable parking options should be made available at the city's outskirts for people travelling from surrounding areas which—until now—have had no connection to the city via a regional train network. Park and ride facilities like this should provide a large number of parking places with EV chargers for electric cars.
- Besides, we have to ask ourselves: ***Why should people without cars, that are financially less well off than those who own cars, subsidise car owners***? As outlined above, people with cars occupy tremendous shares of public space. How do they justify using it without paying a fair price? If the average price for a square meter in the city centre costs a lot of money, why should the wealthier car owners have it for cheap?

But what about...

…the comparatively high price of electric or hydrogen cars?

The way forward: They're getting cheaper!

- Today the price of EVs in general is still higher than petrol/diesel cars, but this is rapidly changing as the price of batteries fall, car manufacturers invest billions in EV production, standards and restrictions on fossil fuel cars get tougher and subsidies for e-cars—from the government or manufacturers—begin to be introduced. ***E-car alternatives are already avail-able at prices comparable with fossil fuel cars*** and relative »price parity« of EVs with petrol/diesel cars is forecast for as early as 2023, or 2024-2028.[31] In addition, many governments both within and outside Europe are incentivising the switch to electromobility through discounts on vehicle prices, tax exemptions and/or an exemption from car bans in certain areas of a city. City councils and retail chains (such as IKEA) are increasingly providing parking spots reserved for EVs, where cars can be parked and recharged for free. The ***lifecycle costs of EVs are also considerably lower***, because of the lower cost of »fuelling« the vehicle, because they contain fewer wear and tear parts, and because insurances offer much lower rates than for cars with combustion engines.
- However, while some of the challenges mentioned above (such as cleaner air, less noise and lower CO_2 emissions) can be addressed by switching to electric or hydrogen cars, this does not apply to every problem (such as the distribution of public space and the social question of who can afford to own a car in the first place). Therefore, it would be ***better from a social and from an environmental point of view to prioritise pedestrians, bicycle riders and passengers on public transport*** when designing urban mobility.

But what about...

…the increasing costs of long-distance mobility, especially flying, and the fact that this puts marginalised groups at a disadvantage?

The way forward: Take the train

- The ***smarter alternative here is undoubtedly rail, which is something that Europe is rapidly expanding***. According to UBS Research, investment in high-speed rail will increase by over ten per cent each year for the next decade as demand for this mode of transport rises.[32] The increase in demand also covers night train connections so that people can arrive at their (holiday) destination in the early morning, thereby also saving the cost of an additional night in a hotel. In the last six years the EU has invested 35 billion euros into rail infrastructure and, since 1996, has been expanding the high-speed rail infrastructure throughout Europe, within the Trans-European Transport Network (TEN-T). Although this network is still incomplete, it will be possible, for example, to travel from Central Europe (Bratislava) to Paris within about eight hours. Moreover, 24 EU countries have agreed on the goal of replacing short-haul flights (300-800 km) with rail connections. The Connecting Europe Facility (CEF), which, among others, is also financing the shift to sustainable mobility in Europe, will be increased from 1.5 billion euros to 14.521 billion. The European Council has also declared 2021 to be the European Year of Rail and is planning different initiatives to promote rail travel as an alternative to driving and flying. Progressive measures have also been adopted by individual countries, for example France is making its seven billion euros of financial aid for Air France conditional on the replacement of short inland flights with train connections operated by the state-owned rail company SNCF.
- The carbon footprint of this alternative mode of transport is immeasurably lower than car transport and flying, generating just 0.5 per cent of the EU's transport emissions. What is more, average urban rail energy consumption per passenger per km makes it seven times more energy efficient than private cars in cities.[33]
- Aviation, in contrast, is one of the fastest-growing sources of greenhouse gas emissions, with emissions produced by airplanes up some 70 per cent over 2005.[34] And despite the existence of low-cost carriers, the ***people flying and***

TRAFFIC CONGESTION HURTS THE ECONOMY SIGNIFICANTLY

profiting most from cheap flights are the more affluent sections of society. While a school caretaker might fly to the Mediterranean once a year, it is businessmen and the urban academic class, frequently hopping on planes as they do, who gain most from the situation, while people with lower incomes living in houses located under flightpaths suffer most from noise and air pollution, not to mention resultant global heating.[35] As we have seen during the Covid-19 crisis, many business trips by plane are in fact unnecessary—today, international meetings, and even interactive discussions, can easily be held online.

- Apart from this, what often still fascinates us about flying is the idea of experiencing exotic places, meeting with people from a different culture and broadening our horizons. Yet, what often greets us after hours on a plane is a week-long stay in a gated community, where we spend more time in conversation with other European neighbours on the lounger next to us than with local residents. Thus, for residents of today's European cities, it might be even more »exotic« to engage in a genuine exchange with rural residents in neighbouring countries.

Part IV: Sustainable mobility: Vital for the economy and politics

As the challenges faced by urban communities increase, with growing urbanisation and 70-80 per cent of the world population living in cities by 2050,[36] population growth, an ageing transport infrastructure (especially in rural areas) and the climate crisis, it becomes increasingly clear that technologically, economically and environmentally sustainable mobility is a precondition for future economic progress. ***Cities and regions with ambitious plans, actions and accomplishments in making their mobility more environmentally sustainable will have an economic advantage***. They will profit from enhanced productivity, for example due to less traffic congestion, more efficient energy consumption, etc., but also from the higher quality of life attracting human potential, creativity and skills as key sources of economic progress.

- ***Traffic congestion*** caused by extensive car use in cities, metropolitan and suburban areas contributes not only to significant environmental harms, but also ***causes economic losses (lower productivity) to the tune of billions***—in the year 2017, such losses cost the economies of the US, Britain and Germany 461 billion dollars combined, or 975 dollars per person.[37]
- A shift from fossil fuel to low or zero-carbon mobility contributes to the sustainability of a society but also to the competitiveness of an economy. As such, this shift is in the interests not only of the government and the public in general, but also of commercial actors. Bearing this in mind, ***sustainable mobility policies should also involve commercial actors as key investors*** in the development of smart mobility technologies, but also in the build-up of the infrastructure for low-carbon mobility, such as EV infrastructure or smart public transport systems.
- A well-developed public mobility infrastructure' as a viable alternative to car transport (city bikes, e-scooters, shared transport, etc.) is also a relevant factor in the ***attractiveness of a city to tourists***, which, in turn contributes to its economic performance.
- Last but not least, reducing use of fossil fuel transport makes our ***economies and countries less dependent*** on autocratic oil exporters.

But what about…

…the concern that limiting fossil fuel transport will slow down economic growth, because economy and trade are inextricably linked to transportation?

The way forward: Innovation and local growth

- Reality contradicts this assumption: Real economic development shows that technological solutions and policies on the European, national or municipal level that impose ***strict emissions limits and subsidise the development of low or zero-emission mobility in fact do not harm but rather contribute to competitiveness, international trade and the economy in general***. These technological solutions are also promoted and supported by the European Commission and many national governments.
- Moreover, one of the goals of sustainable mobility is to put a brake on the ever-increasing long-distance transport of goods. This will not only significantly reduce emissions but also ***create more growth potential for local and regional economies*** and contribute to global social justice. It would also open up new growth opportunities for local economies or locally manufactured products (e.g. food), while

at the moment local products with their higher prices often have no chance of competing with products from huge factories, which are delivered to all corners of a country at no significant cost.

- Cargo planes, ships and trucks are responsible for a significant share of the global carbon footprint and, at the same time, also exacerbate global injustice because they are dominated by huge multinational companies accumulating massive profits. Yet, these forms of transport are often not part of the discussion because »if you can't see it, it doesn't count« and this is the type of transport that is often »invisible«.

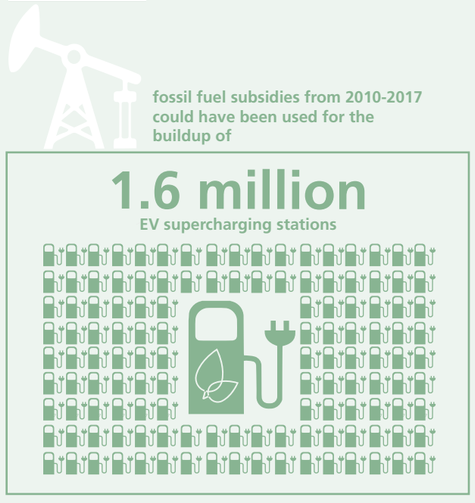
But what about...

…the justification for subsidies for new forms of mobility, such as e-mobility or hydrogen?

The way forward: Financing the future, not the past

- All transport technologies have been subsidised in one form or the other. The absence of a kerosene tax or the lower diesel tax in Germany are just two typical examples. Not to mention externalised costs, especially medical treatment for city-dwellers suffering from respiratory diseases, paid for by the public health system.
- The principal duty of a responsible government is to support sectors, services or activities that are relevant or necessary for the progress or sustainability of a society (see Chapter 2, page 49 and Chapter 6, part 115). One of these sectors is electromobility and other modes of low or zero-carbon transport because, without the development of low-carbon modes of transport, climate goals, which need to be achieved to avert an all-out environmental crisis, will remain nothing more than pipe dreams.
- Besides, if we look at the subsidies for e-mobility in Europe against the subsidies received by the fossil fuel industry, there really is no comparison. In 2017, the fossil fuel industry, with all its pollution and environmental destruction, received direct and indirect subsidies to the tune of 87 billion dollars from national governments and the EU. This was 2.5 times more than in 2010. These subsidies targeted the production sector (direct payments, loans, funds, tax policy, research, etc.) as well as fuel consumption (regulated prices, tax breaks).
- The ***combined sum of fossil fuel subsidies from 2010-2017 could have been used to create of 1.6 million EV supercharging stations***, promoting greater market penetration of EVs and significantly reducing air pollution from car transport. ***Or*** it could have been used ***for 20,000 kilometres of high-speed rail tracks***, which would in turn have reduced the volume of car and air travel and thus also the pollution caused by these modes of transport.[38]

SUBSIDIES SHOULD PROMOTE HEALTHY MOBILITY, NOT FOSSIL FUEL



- As the examples of the current European leaders in e-mobility Norway or the Netherlands show, policies promoting e-mobility (tax exemptions, the creation of publicly financed charging stations, research, urban transport measures such as bus lanes for EVs, privileged parking, toll-free travel for EVs, etc.) are already having a significant impact. In 2019, in Norway, the number of electric car registrations exceeded registrations of combustion engine vehicles for the first time and the e-charging network almost matched the petrol pump network.[39] Since 2018, the Netherlands has seen the registration of EVs almost double, now accounting for 15 per cent of all car sales.[40]
- In conclusion, we can safely say that e-mobility costs us much less than fossil mobility. What is more, thanks to its contribution to the much-needed mobility transition, which will ultimately preserve our ecosystem, ***the benefits of e-mobility go far beyond just costs.***

Part V: Sustainable mobility: Vital for future employment opportunities

The mobility transition described above would mean the creation of new, sustainable jobs in za variety of fields:

First of all, in order to make our transport system environmentally sustainable, cities and countries will have to upgrade their infrastructure, which means ***huge investment***: to create bike lanes, EV charging stations, new buses and trams, and thousands of kilometres of railway tracks. And this will ***require countless workers*** (see also Chapter 2, part I).

- The transition from individual mobility to public transport will generate ***demand for more workers in logistics and traffic***. Today, the upscaling of public transport in major cities such as Berlin, which has been in response to demands from the population, is already being hampered by a lack of qualified drivers, for example.
- As a solution that falls somewhere between public and individual mobility, new forms of vehicle sharing developed some years ago already, parallel to the emergence of a new market for rental agencies. ***Carsharing agencies were only the beginning***. Today, agencies renting out conventional bikes, e-bikes, bike trailers, cargo bikes or e-scooters, be it for a single ride or for long-term rental, are flourishing.[41]
- The »greening« of the share of mobility that remains individual mobility will trigger ***demand for different types of vehicle***: e-cars, e-bikes, but also ordinary bicycles and cargo bikes which—up till now—have been manufactured by hand in a labour-intensive process in several European countries. Of course, a ***supporting industry*** of repair shops etc. will evolve together with these new markets.
- Nevertheless, the car manufacturing industry is an important sector in a lot of countries. However, with our know-how about cars, and the capital accumulated in Europe over the last century, our car industry should still be able to catch up with US and Asian firms and ***move into a leading position in the development of e-vehicles. But only if we act now***. If the switch to e-mobility in some European countries is delayed further, they will lose large parts of the car manufacturing industry completely, because it will end up being overrun by innovative firms from other parts of the world. That said, although Asian or US firms are—in some regards—more advanced than European firms when it comes to the e-mobility market, this does not mean that no new jobs are created in Europe. A major car firm from South Korea recently opened a new car factory in the Czech Republic, creating 12,000 jobs, while the US company Tesla plans to build a factory in Germany, to be closer to European consumers, for example. As described above, combustion engine cars are already being phased out as governments around the world restrict their use and incentivise their replacement by EV or other forms of mobility. This is why Tesla seemed to appear almost out of nowhere to become the most valuable car manufacturer worldwide in 2020.

- While the market for electric cars is already highly contested, the ***market for sustainable (electric or hydrogen) vehicles for commercial use***, such as excavators (which cause considerable air pollution in cities), or tractors (not only for eco-farms) is still very much underdeveloped. Since many European manufacturers have a substantial experience in building commercial vehicles of all types, it is still possible for them to get a head start in this new sustainable market segment.
- Last but not least, the employees of the car manufacturing industry are predominantly highly skilled. Not only are their skills and knowledge valuable for the car manufacturing industry but they can also be put to good use in certain other sectors. ***There are future prospects for these workers both within and outside the car industry—in fact, there is even a risk that there will be a lack of qualified workers in Central and Eastern Europe in future*** (see Chapter 3, page 54). There are already some tried-and-tested solutions that will guarantee a smooth transition to another sector, if that is what an employee wants. For example, the German trade union IG Metall proposed a transition-related short-time work arrangement that would also be applicable to the automotive sector. Workers would reduce their working time and simultaneously acquire a new set of qualifications. The wage differential between short-time hours and full-time employment should be covered by the state (see also Chapter 2, page 42).

But what about...

...the concerns that the restrictions on the usage of combustion engine cars will harm national economies with car factories being such important employers?

The way forward: For e-mobility, it's now or never

- Automation and digitalisation have already and will continue to fundamentally change the car manufacturing industry anyway. Because there are very few steps left on today's production line that cannot now be managed by robots, car factories full of blue-collar workers are a thing of the past (see also Chapter 2, page 41). Employment in innovative segments of the vehicle manufacturing industry might be more secure than jobs producing combustion engine vehicles. The reason for this is that the ***production of the parts traditionally used for car manufacturing has been increasingly standardised and automated, while in the field of e-mobility, and especially mobility based on hydrogen, there is still scope for a lot of technical innovation.***
- The demand for clean mobility is rising fast, also driven by ***consumer preferences***. This big change offers big opportunities. The car manufacturing industry is a strong industry with a lot of technical know-how. By using smart employment policies and innovations it will be able to handle these big challenges, and by doing so it can help to make the world a better place.
- According to research, over 30 per cent of new car sales are projected to be zero emission and

plug-in hybrid by 2030,[42] which represents a ***potential for a market worth one trillion dollars***. As electric vehicles will become as affordable as conventional petrol and diesel cars in the near future, the shift to e-car production provides huge profit opportunities for car manufacturers.

- ***Green mobility will also lead to just, local growth***. Instead of paying for imported fuel and funding foreign companies and countries, green car mobility will ensure the money stays in our own economies, although, in the case of e-mobility (not hydrogen), the raw materials needed to build the battery still have to be imported for now. In a decentralised energy system (see Chapter 4), the shift to clean mobility will support local producers of energy and the local economy will benefit.

But what about…

…the need to recharge electric vehicles—how will we pay for this?

The way forward: E-car range is no longer an issue

1. First, the density of the network of EV charging points in Europe is increasing dramatically, from 4,000 charging stations in 2011 to over 190,000 in 2019 (an increase of 4,750 per cent).[43] Most importantly, there is EU funding and other financial schemes in place for increasing the number of electric charging stations and developing electric mobility in general. Therefore, it is just a matter of fundraising and management capacities and the ability of the local, regional or national authorities to access these schemes.[44] As described above, many chain stores are also installing EV chargers, drawing customers to shop at their store by recharging their vehicle for free.
2. Second, the range of electric cars has improved considerably in the last few years. In 2020, the maximum range of an individual e-car was almost 1,000 km, and many (lower-priced) vehicles reached ranges of 400 km or more—after which any responsible driver should normally take a coffee break anyway.

But what about…

…the environmental footprint caused by electric vehicles?

The way forward: EVs are a better solution, but not the best

- Generally speaking, a comparison of emissions from electric vehicles and conventional combustion engine (petrol or diesel) powered cars reveals different results in different countries, depending in particular on the different energy mix used to fuel the car after its production. However, the fact remains that in almost all European countries, ***EVs—including indirect emissions from battery production—have significantly lower carbon footprints***. Reliable studies have shown that the carbon footprint of EVs is up to 40 per cent lower over their lifespan than that of conventional diesel or petrol combustion engines. With the ongoing transformation of electricity production, this difference will rise in favour of e-cars,[45] making them a far more sustainable choice.
- However, because of the resources used in producing batteries, and because many of the benefits described above could not be harnessed, ***a blanket replacement of combustion engine cars with electric cars is not enough***. Especially when we look at social factors (who is able to afford and drive any kind of private vehicle and who gets what share of public space), replacing one type of privately owned car for another is not the best option.

What are we striving for?

- ***The future mobility we are striving for, one that does not contribute to the collapse of our ecosystem but in fact makes our lives better and our societies more socially just, is anything but wishful thinking***. Admittedly, the trends and the figures show that the transformation of our transport system poses a challenge that we will need to confront by changing our infrastructure, our economic model and our daily habits. But, as we have tried to demonstrate, also backed up with facts and figures, ***there is an almost bottomless pool of good and best practices from hundreds and thousands of cities, regions and states, which make the switch to ecological transport absolutely real***. There are countless examples of policies, measures and initiatives in different sectors. The expansion of quality public transport has resulted in more than 150 cities with free public transport policies.
- The rapid switch to electromobility and other zero or low-carbon car transport has created, among other benefits, many ***new employment opportunities***. Carsharing schemes in more than 2,000 cities have significantly reduced car congestion in urban areas and made travel more affordable. The continued expansion and development of the high-speed rail network in Europe offers a feasible alternative to short-haul flights. Multimodality schemes facilitating smart integration of different modes of travel on one route are seen to be working well in a number of cities. These transport solutions for tomorrow, these new jobs of tomorrow show us just how possible the transition is.
- Anyone who is aware of the situation and dares to be more ambitious in bringing our mobility more into line with the limits and needs of our environment—and creating a liveable habitat for our children—only has to ***take a look at what is already being done, take inspiration from these ideas and put these measures in practice.***

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Endnotes

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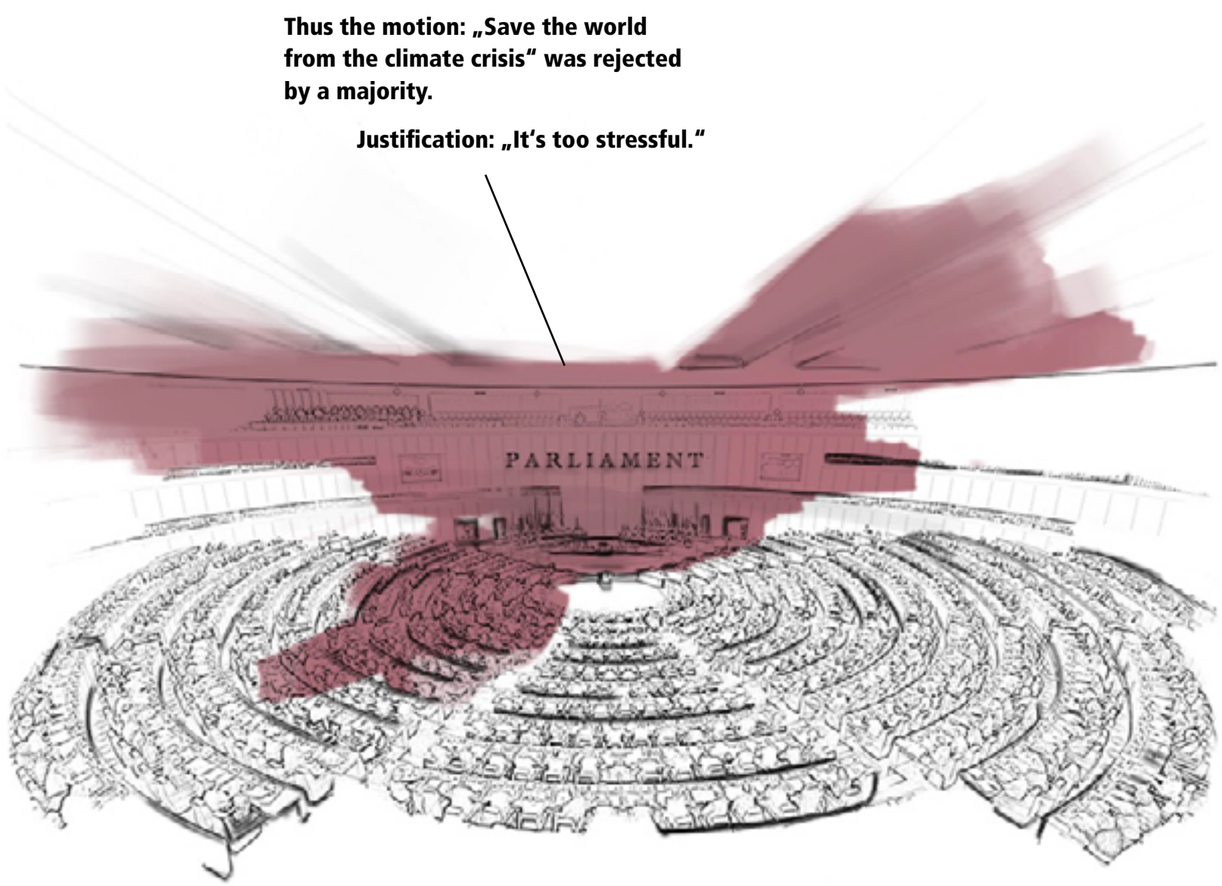
6 Political Instruments to Mitigate the Climate Crisis

All the necessary political instruments to combat climate change are already available—they simply need to be applied. Preferably in the form of an effective mix of supranational, national, subnational and individual tools.

International climate governance has made significant progress in combating climate change by adopting the Paris Agreement and the 2030 Agenda for Sustainable Development. The international framework is thus set, providing states with various tools and mechanisms to undertake further action. These will be addressed in more detail in Part I. In light of the lack of political will shown by governments in some countries, Part II and III will describe some of the tools available on a subnational and individual level. If adequately supported by progressive actors and the citizens themselves, the latter will overshadow the climate ignorance of their governments, allow progressive actors to connect with each other and acquire the power to effect a positive change.



Part I: What supports our argument on a state level?

For many years, the ***state has been regarded as a decisive actor in climate politics***. It was nation states (196 in total) who came together in September 2015 and made a commitment to end poverty, mitigate the climate crisis and fight injustice with the 2030 Agenda for Sustainable Development and 17 Sustainable Development Goals (SDGs). It was the nation states again who shortly afterwards adopted the ***Paris Agreement***, which sets the global framework for mitigating the climate crisis, and agreed to develop their own plans for Nationally Determined Contributions (NDCs) to embody their efforts to reduce greenhouse gas emissions and adapt to the anticipated impacts of the climate crisis.

- These commitments would not have been possible without the ***support of international organisations such as the United Nations***, which facilitated the process of adopting both the SDGs and the Paris Agreement. Other supranational actors such as the European Union have played a leading role in fostering climate policies that »leave no one behind« and developing a comprehensive framework for a carbon-neutral continent with initiatives such as the European Green Deal.
- In parallel, the ***EU*** has also developed supporting tools and instruments for both member and candidate states, including Horizon2020, IPA and others. The energy and climate component of the Berlin Process, launched specifically to support the energy integration of the Western Balkans Six, as well as many other forms of joint climate initiatives, including the Green Agenda (initiated in 2014), are just some of the tools developed to decarbonise the region in line with the EU 2050 ambitions arising from the European Green Deal. Other important players when it comes to achieving progress have been ***development banks*** such as the World Bank, the European Investment Bank, and other international financial institutions such as the European Bank for Development and Reconstruction, which, for example, enabled Montenegro to become one of the European leaders in the digitalisation of the energy sector creating the conditions for deploying renewables (see Chapter 4, page 72).
- Along with the supporting mechanisms stemming from strategic partnerships and international cooperation, many political tools and instruments are available at the state level for introducing effective climate policies and thus fulfilling their obligations under the Paris Agreement. In order to significantly reduce pollution and eradicate poverty at the same time, political decision-makers have to apply an effective mix of all the instruments at hand: a) investments, b) financial incentives, c) regulations and d) new narratives. Although we will touch on these tools and instruments below, they are discussed in more detail in Chapter 7, since they are applied more effectively in democracies (see Chapter 7, page 129)

a) Investments:

- ***Many individuals and companies alike are prepared to change their behaviour if socio-ecological alternatives are provided***. By presenting such alternatives, the state can »nudge« decisions towards more climate-compatible behaviour without the need for regulation. For example, if regular, direct, convenient and affordable train routes connect major cities as well as rural areas, then fewer people will use a car.
- Of course, ***the state also has to scrutinise and ensure that every investment decision meets high environmental and social standards***—from major infrastructure projects to office supplies used by public servants—such that public procurement decisions are based on social and environmental standards (see also Chapter 5, page 102).

b) Tax system and incentives:

- Innovative initiatives that provide sustainable solutions and climate-compatible alternatives, be it on an individual or local level, whether cooperatives or social enterprises, should be further supported by the state. The state has various supporting policies such as incentives and tax instruments that can facilitate fair distribution of the resources at its disposal, which it can use to ensure the right decisions are taken when implementing these initiatives in order to make them both climate compatible and beneficial to human societies as well.
- ***The state has the authority and the capacity to shape the character of economic growth through the distributive function of tax policies in a way that stimulates development in line with planetary boundaries and social needs***. While the main idea behind sustainable development is first and foremost to increase the consumption of the less privileged by supporting economic activities and thus reducing inequalities, at the same time this development needs to have the smallest possible ecological footprint. Setting out the conditions for this is exactly where the state comes in. The state can have a major influence on defining how economies grow and develop in future.
  - First, it can establish an adequate level of ***carbon tax***, which requires a fair carbon offset. Second, it can combine this measure with restrictions and carbon-neutral production solutions ***emission quotas, as well as technological requirements*** for. This is also the main idea behind the carbon pricing reforms suggested in the European Green Deal, which identify the

need for defining mechanisms to prevent carbon leakage in or outside the EU. Carbon offset through simple reallocation of production facilities is neither just for society nor is it beneficial to the environment, as pollution and the climate crisis do not recognise borders (see Chapter 2, page 45 and Chapter 4, page 77)

c) Regulations:

- ***While prices can act as an incentive, they can never fully determine behaviour***. In Germany, the combined fees imposed on a litre of petrol amount to 237 euros per ton of CO2; a much higher amount than ever discussed for carbon tax. Nevertheless, Germans still drive big, polluting cars. A recent study among cyclists in Copenhagen revealed that the low price is not the decisive factor in choosing this means of transport, but rather that cycling is faster and easier.[1]
- Of course, a city should invest in »bicycle highways« to take these interests into account, but ***the ultimate goal of protecting the fundamental rights that are threatened by the climate crisis can, in some cases, only be reached through regulations*** limiting the behaviour that causes high GHG emissions.
- If the fundamental rights to life, housing, food or water, and health are at risk because of global heating, then it is perfectly legitimate to limit motorway speeds to 100 mph or prohibit people from taking a flight for a short trip from Brussels to Strasbourg. The basis for such regulation often already exists—for example, the »clean air acts« in many countries, which can be drawn upon to facilitate the introduction of car-free city centres.
- ***This is also the most »social« way of designing climate policies because it prevents the wealthier parts of society from simply »buying their way out«***, be it by paying city tolls and parking fees, or by buying an electric vehicle, while others are left behind.

d) Narratives and the »new normal«: the way forward:

- ***Government officials should lead by example, showing that climate-smart behaviour is the »new normal«***, both by sending messages and through political tools. They can also use a variety of different instruments to reshape the public discourse:
- First, this can be done by ***highlighting the co-benefits of ambitious climate policies*** (i.e. making public space more accessible to all, improving air quality, reducing traffic noise, ensuring fewer traffic accidents, more exercise for citizens and thus longer life expectancy, and better quality of life in general etc.).
- Second, they can ***reframe the discourse*** and show that climate-smart behaviour is the »new normal« (see above). Their own behaviour, can, for instance, influence people's perceptions of the following questions: What should be seen as a standard part of people's fruit consumption in Europe—the mango from Thailand cultivated using a raft of pesticides, or an organically grown apple from a nearby tree? And should coal-fired power plants still continue with »business as usual«, despite the fact that a considerable part of Europe's electricity is already being produced from renewable sources?
- Third, political decision-makers should also ***warn citizens about the consequences of inaction*** and tell the scientific truth about the disaster we face. Our very recent experience has shown that »telling the truth« eventually led to dramatic behaviour changes during the Covid-19 crisis.

- ***Summing up, we can conclude that a state is prepared to act and has all the tools and instruments required to do*** so.
- ***However, in line with the growing popularity of the neoliberal doctrine, the concept of a »night-watchman state« has gained broad acceptance***, and instilled a widespread scepticism, particularly regarding any new regulations or taxes introduced by the state. This is especially true for many countries in CEE and SEE, where governance challenges and the experience of total state collapse after the dissolution of the Soviet Union have incentivised people to cling to the notion of individual benefit. This is also manifested in the massive tax evasion in the employment sector, for example.
- ***From a social democratic perspective, this is highly problematic, because the state needs to play an active role to protect marginalised groups from threats (such as the climate crisis), and regulations need to be passed to ensure this protection is provided.***
- Therefore, ***the state has to be the »visible hand« ensuring social justice through the power of the redistributive instruments at its disposal***, such as carbon tax, subsidies and other forms of incentives for protecting and promoting the social and economic wellbeing of all citizens while preserving the environment. Once again, we can see that the perception of the state is already changing now, as is shown by the quite dramatic example of the Covid-19 crisis. A more active role of the state is vital and is already the subject of discussion.

But what about...

...the social implications of carbon tax policies for less privileged parts of society? How can we make sure that the »polluter pays« approach adequately compensates everyone and reduces inequalities?

The way forward: Redistributing wealth, protecting the disadvantaged

- The main function of tax policies, according to social democratic principles, is to determine the wealth redistribution and influence the nature of growth. In the case of carbon tax policies, this means promoting climate-neutral growth designed to benefit society as a whole, while protecting the environment. Carbon tax is one of the fiscal instruments used by social democrats in order to promote equality by disincentivising carbon emissions and preventing anyone from »buying their way out« of carbon-neutral solutions. Combined with other policy instruments, such as a carbon-neutral plan that envisages a gradual reduction in emissions within a certain time period, technological requirements and subsidies, the ***suitable taxation of carbon emissions will help us move towards a decarbonised society*** and adequately protect the hardest hit and most marginalised groups of society, while protecting the environment at the same time.
- Another tool that democratically elected governments have at their disposal is the concept of ***reimbursing the revenues on a per capita basis, which would facilitate the redistribution of wealth*** and ensure sustainable development. The revenues from carbon taxes can also be used to improve reskilling and increase the social support offered to the regions and individuals affected by the transition, or to fund low-carbon technological innovation. For a discussion of further aspects of carbon taxation, see Chapter 1, page 20 and Chapter 2, page 45.

Part II: What supports our argument on a subnational level?

Another available instrument with substantial potential are global networks committed to mitigating the climate crisis on a subnational level:

- The ***Covenant of Mayors*** is an ambitious European Commission initiative with the objective of bringing together local governments that have voluntarily committed to ambitious climate and energy targets.
- The Climate Action Network is an alliance connecting over 1,700 environmental ***NGOs*** in more than 130 countries, with well-established regional network hubs to coordinate and support joint efforts to protect the atmosphere while allowing for sustainable and equitable development.

- ***Networks of sustainable municipalities***, such as ICLEI or LAG 21 NRW, which connect local governments with the aim of supporting them in an exchange of best practices and joint efforts to create ambitious climate policies.
- A number of cities and municipalities across Europe are interconnected through the aforementioned global initiatives, which bring together subnational actors even from countries ruled by dictatorship such as Turkmenistan. It is vital that the political tools available at subnational level are harnessed by progressive actors and used to support citizens in countries where governments are unwilling to take action. But, as will be shown in Chapter 7, all this is much more effective in a democratic context (see page 129ff).
- ***Community-led energy projects*** are also becoming popular around the globe. Solar rooftops are becoming a run-of-the-mill sight these days, whether in small communities in transitioning economies such as Makedonska Kamenica in North Macedonia, or in larger districts in Germany like Rhein-Hunsrück, both of which are known as pioneers in the field of green energy transition. In Makedonska Kamenica, residents installed their own rooftop solar panels and accessed the grid as prosumers with the goal of reducing emissions and making the most of the small regulatory adjustments that the state had recently made. Additional support instruments, including subsidies planned by the local government could scale up the initiative and help turn the entire community into a microcosm of sustainable energy. In the Rhein-Hunsrück district, local residents have formed a partnership with local companies and local and national government have used the available legal framework to develop and implement a community-owned energy project that has allowed them to play an active role in building social capital, combating energy poverty, reversing migration and creating jobs.[2] The benefits to citizens are of course much higher when these projects are developed bottom-up, rather than via the top-down, state-led approach taken with similar projects in China, for example (see Chapter 7, page 132).
- Working with cities is crucial for effective climate action because of the high levels of emissions caused by massive urbanisation and the corresponding increase in energy demand that is expected, as two-thirds of the world's population is forecast to be living in cities by 2050 (see Chapter 5, page 101). To respond adequately to these trends, many cities are already taking the lead in carbon-neutral development policies, either through energy self-sufficiency strategies, or by promoting green jobs, and supporting carbon-free mobility schemes that provide economic resilience and improve the population's health and quality of life. In the last decade alone, we have seen various large European cities such as Hamburg and Copenhagen, as well as other smaller towns such as Croatia's Koprivnica and Krk become leaders in creating ambitious climate policies, transitioning towards zero-carbon public transport and promoting alternative food and energy production systems. The UN 2030 Agenda along with active citizens' campaigns promoting a ***»glocal« approach (global goals, local solutions)*** to the implementation of SDGs, these cities are skilfully and successfully integrating sustainable solutions into national legislation, further enhancing their role and authority on an international level. This power is utilised by the state to increase the NDCs, create a network of sustainable cities and municipalities, and facilitate closer cooperation and replication of positive examples.
- Along with publicly owned city utilities and community-owned ***energy projects, energy cooperatives are important enablers of the energy transition*** to carbon-neutral development, and they coincide with the development of supporting schemes in different countries.[3] These local units of economic organisation driven by citizens focus on community-based interests such as low environmental impact and affordable energy access for all, while being both a source of energy and revenue. The Feldheim energy experiment initiated in 1995 by a young engineer with the support of the local community is one of the many successful local-level milestones in the energy sector achieved

by means of a cooperative format that allows for environmental preservation, while providing revenues for the local population. The reliable electricity and heating prices are another benefit, as are the jobs created in this small community southwest of Berlin. Today, Feldheim is a hugely popular energy cooperative with visitors from all around the globe. This just goes to show that community engagement and a favourable legal framework are vital for enabling sustainable and affordable energy for all. For more positive examples of energy cooperatives in democracies, see Chapter 7 (page 131).

But what about...

...the misconceptions about cooperatives due to the fate of many that were created in the early 19th century, as well as the many that still lie dormant and do nothing more than breed corruption?

The way forward: A democratic business model

- Misconceptions about cooperatives have been passed down from generation to generation, despite them serving as the ultimate source of supply, service provision, and an effective way of balancing prices during times of war, flood and drought. ***In comparison to the financial failure and corporate fraud we have seen in all other forms of capital, cooperatives continue to be lambasted for no justified reason***. Valid records show that some cooperatives have been closed down because of poor governance and corruption due to inefficient governing boards and a lack of accountability, but public and private organisations have not exactly been immune to such behaviour either. The idea behind cooperatives is to provide members a platform for self-help, mutual responsibility, equality and equity, as well as to help the community at large. They can serve as a light in the darkness for marginalised and disadvantaged groups in society by providing financial support and basic services for their families and children in the form of education and health, for example.
- ***Cooperatives are both the most important form of democratically organised economic activity and the most democratic form of doing business. This is why social democrats have often promoted the establishment of cooperatives***. Bearing this in mind, and accounting for the benefits they provide when it comes to helping us, our families and our natural environment in the form of climate action, the state simply has to support these democratic forms of economic activity where authority is derived from opening membership up to the many, and not just making it accessible to the few. Favourable tax treatment and subsidies can ensure fair competition of energy cooperatives on the market and provide their members and the larger community with secure supply and stable prices, while protecting the environment.

Part III: What supports our argument on an individual level?

Just as a journey of a thousand miles begins with a single step, the number of individual ways of mitigating the climate crisis are limitless. It is up to us to take that rusty bicycle out of the garage and bike into the carbon-free world we want to live in, instead of taking our cars to work. And of course, the health benefits are numerous too.

- Alongside individual behavioural changes like this, taking part in collective actions and demonstrating public engagement is also important when it comes to action on the individual level. And, ***the number of individuals taking part in climate action events, such as the »Fridays for Future« demonstrations has increased sharply around the globe***. A peak was reached in 2019, when 1,160,000 people took to the streets in 166 countries calling for climate action.[4]
- ***Global support for climate action*** has not fallen during the Covid-19 pandemic either: In a worldwide survey, 71 per cent of participants stated that global heating is (at least) as serious as the Covid-19 crisis. Interestingly, the highest support for this statement was found in middle-income countries, not in the West.[5]
- ***Among EU citizens, support for ambitious climate policies reached a new record high*** in 2019:[6] 92 per cent of EU citizens want a climate-neutral EU by 2050. This is in keeping with the fact that 93 per cent of EU citizens see the climate crisis as a »serious« and 79 per cent as a »very serious« problem. And now, just a year later, the majority of Europeans, or 58 per cent would like EU countries to reduce their carbon emissions to no excess emissions by as early as 2030.[7] And most of them believe the government should bear the primary responsibility for addressing the climate crisis, followed by the EU, then local governments, business and of course the individual members of the community through the choices available to them.[8]
- Even more importantly, 93 per cent of EU citizens are changing their behaviour and have taken at least one specific measure to fight the climate crisis. These numbers had already increased EU-wide by spring 2019—in other words, even before the mass demonstrations and large-scale citizens movements peaked in the summer/autumn of that year.
- This very broad support and readiness to change behaviour is crucial because climate policies—apart from major political decisions such as arms control treaties or Free Trade Agreements—cannot be decided by the government alone. These policies have to be put into practice by individual actors. In essence, this is about changing the social norms of sustainable

PEOPLE UNITE BEHIND THE CAUSE OF CLIMATE PROTECTION

behaviour to achieve a critical mass of citizens who adopt climate compatible measures on an individual level.

- More good news is that there are ***increasing calls for measures that are not directly related to ambitious climate policies, but do have a positive environmental effect***, such as the demands for more pedestrian zones in urban areas, to create more recreational space, or the call to reduce working hours to a four-day-week.[9]
- The increasing support for such measures also indicates a ***general shift in the mindset: Many people are now prioritising the quality of their life over the quantity of goods they can accumulate***. Having enough

time for friends and family, doing something »meaningful« for society (be it helping out the neighbours or volunteering work), and appreciating that a liveable environment is far more valuable than material wealth alone. People recognise that it makes no sense at all to spend part of their growing personal income on mitigating environmental effects—buying face-masks and air filters to be able to cope with air pollution, or buying bottled water and water filters, because of impure tap water.

- ***Climate-smart behaviour is progressing and becoming a very important factor for general behaviour of citizens in many of our societies***. While, in the past, it might have been a status symbol to own a big car, to eat meat every day, or for young people to fly to Barcelona for a weekend, nowadays many citizens (from the same privileged groups) would choose carsharing instead, or would tend to opt for a vegetarian/vegan lifestyle and travel by train to their holiday destination. The term »flight shame« that is being bandied about at the moment is a good illustration of this marked shift where ***environmentally compatible rather than environmentally harmful behaviour is now associated with social rewards***. This shift occurred within just a few years.
- It is encouraging to see that so many people are independently adopting a new lifestyle.

However, when it comes to having an impact on a larger scale, ***it is important to provide and promote socio-ecological solutions as the »new normal« in all areas of life***. Eco-friendly food (organic, regional, vegetarian/vegan, unpackaged) has become available in most European countries and the market for other sustainable goods is also beginning to grow (household items, clothes, cosmetics). A mobility shift has begun (new focus on bikes/cargo bikes, public transport and trains) and communities are already showing their support for climate-smart »energy citizenship«, sustainable construction and community gardening projects. But much more can still be done to scale up these initiatives. And in some areas, socio-ecological alternatives are still only available to a very limited extent (e.g. green banks, bonds and insurances or electronic devices).

- Last but not least, we have seen during the Covid-19 crisis that ***societies are very flexible and that the majority of citizens can rapidly adopt new routines.*** If social distancing and wearing masks can become an—albeit unpleasant and inconvenient—»new normal« within a few short weeks, why should it not be possible to get used to biking through a car-free city centre to our community garden, where we can enjoy a sunny Friday off work with friends and family? The good news is that such changes often result in a snowball effect: ***People tend to mimic the habits of others, particularly neighbours or friends, when those habits seem to be socially appreciated***. Ultimately, as more and more people use trains instead of cars, or become vegetarians, they will create sustainable social norms, which will inspire even more people to tag along, thus generating an upwards spiral towards a greener future.

But what about...

…the fact that less privileged parts of society might not be able to afford climate-compatible products (organic food, e-cars, solar panels for their own houses) etc.?

The way forward: Ecological consumption is cheaper

Socio-ecological consumption and behaviour must be possible for everyone. There are four ways to ensure this—some of which can be organised on an individual level, and others, which require more support:

1. First and foremost, ***consuming less costs less***. In terms of eating habits, it is also healthier to consume less meat and dairy. Many manufactured goods should also be provided on a cost-saving rental basis—goods such as power drills or sewing machines which are typically used for just a few minutes a year, or cargo bikes.
2. Second, ***long-lasting and repairable products are cheaper*** than ultra-cheap t-shirts, irreparable smartphones or washing machines that stop working just as the warranty period expires. Of course, the individual is powerless to facilitate this change: Communities should offer affordable rents for »repair cafes«, and eco-design directives prescribing that products must be reparable finally have to be enforced. A national or European legislative framework (»right to repair«) would also boost the options for and affordability of sustainable consumption.
3. Third, online and offline ***second-hand shops offer cost-saving, sustainable alternatives***—especially for goods such as kids clothes, which are only used for a few months.
4. Fourth, ***subsidies for eco-products must be assessed regarding their distributional effects***: Is it only possible for house-owners to

profit from feed-in tariffs for solar photovoltaic, or can everybody join a cooperative investing in renewable energies or use a renewable energy instrument for tenants? Is it better to subsidise e-cars, which even at the slightly lower price are still only affordable to a minority, or trains and (cargo) bikes?

In many cases, the most socially just solution is also that which will help limit the climate crisis best.

But what about…

…the argument that the discourse about limiting consumption is dominated by individuals in wealthy countries who already have everything and now want to prevent others from consuming in the same manner?

The way forward: A discourse led by the Global South

- The change to a socio-ecological lifestyle is not a development that is exclusive to rich industrialised countries. In fact, many of the discourses in the West are based on concepts for alternative development paths that come from the Global South, such as »Buen Vivir« from the Andes or »Ubuntu« from Southern Africa.[10] Around the world, younger people in particular are very worried that their generation and the generations to come will inherit an uninhabitable planet. This drives them to search for sustainable alternatives. In the end, ***we gain nothing if we enable maximum consumption for a limited number of wealthy citizens around the world, who just happen to be born in this generation***.[11] Instead, we should focus on ensuring a good life for all members of society, and for our children and grandchildren.

- A sustainable economy will also provide us with new services, new products and new economic development opportunities—without the negative consequences of the »old« economy. If countries decide to stick to the old consumption and production patterns, they will lose the competitive edge and diminish their chances of improving living standards and quality of life.

But what about…

…the potential social consequences of individual choices to limit the climate crisis and preserve the environment for the world economy?

The way forward: Reorienting global trade

- Changing individual choices would certainly have an impact on the global economy, and although the intention is to save the planet, there may be some unwanted effects, such as job losses in the flower industry in Kenya which was the result of the promotion of the purchase of locally grown flowers in the UK, for example. Climate policies are complex, this has never been disputed, and, as a result, challenges like this may arise when the objective is to make policies inclusive and just for all generations and regions. Alternative development solutions are needed, providing for decent social and environmental standards that prevent businesses from relocating their ecological footprint away from their national economies and benefiting from cheap labour abroad at the same time.[12]
- Apart from the flower example mentioned above, why would Kenyans export fruits and vegetables to the UK or elsewhere when their government has just announced a state of emergency because of a lack of food? Covid-19 has once again shown us that ***we have come to a point when we really need to gear domestic production towards domestic demand*** and create more resilient local communities, instead of simply continuing along a globalisation path that does not benefit everyone equally and where the right to employment is defined as a benefit.
- After all, as highlighted at the start of this Chapter, ***social and ecological issues are not mutually conflicting, but arise as a result of a long-established unjust economic model***. We only need to look at the textile industry, which enables us to consume huge quantities of textiles at ultra-low prices, something that is only made possible by the poor wages and working conditions in production facilities in Bangladesh and other developing countries. Free movement and allocation of capital has not been followed by adequate taxation and redistribution policies which would ensure everyone benefits equally. And while many argue that the jobs are an opportunity and a source of income for many workers in these countries, should we still allow for a job to be defined as an opportunity rather than a fundamental right? In a democracy, this shift can be achieved with the help of the institutional power that trade unions have acquired over the years and can guarantee better alignment of social and ecological progress in society.

What are we striving for?

- ***Changing behaviours to achieve more sustainable ways of living on an individual and local level are becoming our reality***—starting with increased awareness of personal accountability to a shared sense of belonging and acknowledgement of the indispensable connection between human beings and their environment.
- From supranational to subnational, from governmental to individual levels, this chapter has outlined ***numerous tools and instruments that we already have at our disposal***, be it in the form of an energy cooperative or individual consumption choices. Let us use them wisely and stop defining carbon dioxide management as a global dilemma.
- It is time to understand the language of nature which, translated into numbers, means keeping the rise in global temperature below 1.5°C. We need to make sure that this is ***at the heart of our political, economic and individual decisions to save our planet and create better jobs, reduce inequalities and improve quality of life for everyone.***

Endnotes and Sources

Endnotes

[1] See http://www.cycling-embassy.dk/wp-content/uploads/2017/07/Velo-city_handout.pdf (last accessed on 24.5.2020).

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[5] See https://www.swissre.com/risk-knowledge/risk-perspectives-blog/will-our-behavioural-change-from-covid-19-help-us-fight-climate-change.html (last accessed on 24.5.2020).

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[7] Garton Ash, Timothy and Zimmermann, Antonia (2020): In Crisis Europeans Support Radical Positions, BST-Vorlage 2013. Bertelsmann Stiftung.

[8] European opinions captured in our special survey

[9] This is something that is supported by a majority of US and UK citizens and could help mitigate the climate crisis. See https://www.theguardian.com/commentisfree/2019/jun/21/help-the-planet-work-a-four-day-week (last accessed on 17.4.2020).

[10] See, for example Buen vivir: the social philosophy inspiring movements in South America or Post-Development concepts? Buen Vivir, Ubuntu and Degrowth (last accessed on 20.4.2020).

[11] A third of all people with the highest ecological footprints live in middle-income countries; see Chapter 1 or Human Development Report 2019, page 179 (last accessed on 20.4.2020).

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Sources

15 National and Sub-national Policies and Institutions

7
Mutual Benefits of Democracy and Ambitious Climate Policies

Democracies are best suited to ensure effective and just climate policies. And, conversely, with ambitious climate policies, we can also protect our democracies.

Debate about the correlation between countries' political systems and policymaking has been a persistent feature in the field of climate change. In this chapter, we will first describe how our democratic societies are threatened by the climate crisis today. And secondly, we will go on to argue that it is precisely these democratic systems that are so very well suited for the development of effective climate policies.

Part I: Ambitious climate policies stabilise our democracies.

To preserve the democratic and pluralist systems we fought so long to establish, ***it is vital we act on the climate crisis. During times of crisis, democratic decision-making processes tend to be suspended and personal freedom often restricted***. The executive is required to take swift and far-reaching decisions, for example when forest fires rage across a country, millions of climate refugees arrive at a nation's borders, or when electricity production fails because of water shortages leaving hydro dams, nuclear power plants, and coal-fired power stations struggling to operate. In such scenarios, there is no time to discuss countermeasures with opposition parties in parliament, to prepare expert hearings, to wait for the results of opinion polls, or even for the next elections to show the will of the true sovereign, the citizens.

- ***Our democracies are based on compromise but this reaches its limits when circumstances render it impossible to respect the needs and fundamental rights of the whole population***: It is not possible to adhere to the principle of »leaving no one behind« when the population of an entire capital city has to be evacuated, or when millions of people have to be resettled due to sea level rise. ***No state budget has enough funds to provide sufficient compensation for all the groups effected by the climate crisis over the decades***—marginalised members of society who have to rebuild their houses after a major storm, farmers facing repeated crop failures or firms going bankrupt having invested in a harbour on a dried-up river (see also Chapter 1, page 16).

The Covid-19 crisis, which fostered authoritarian-style decision-making procedures, led to fundamental rights being infringed, caused economic distortions and increased social injustices, seems like a prelude to the recurrent state of emergency we will have to face when the climate crisis fully unfolds. This will not be something we have to cope with for just a few months, but for more centuries than we care to imagine.

During the Covid-19 pandemic we also saw how debates representing the diverse needs and opinions of many different interest groups, which are a typical asset of democratic systems, almost came to a standstill. ***When crisis hits, public and media attention remains heavily focussed on this one single topic***. Skyrocketing rents, the gender pay gap and other social concerns, which used to dominate the headlines, almost completely disappeared from public discourse.

The good news is that democracies are especially well suited to deal with the climate crisis, as we will show in the next section.

Part II: Democratic systems are well suited to develop and implement ambitious climate policies.

Statistics show that there is a ***strong correlation between democratisation and environmental policies: Fully developed democracies score much higher in international ratings of ambitious energy*** policies than authoritarian states (a picture that is often skewed by some prominent counterexamples, such as the US and Australia).[1] The Aarhus Convention regulating »access to information, public participation in decision-making and access to justice in environmental matters« has been signed almost exclusively by democratic states.[2] ***Even on an individual level, people with a preference for authoritarian values show (on average) less concern for environmental issues***.[3]

This correlation can be explained by three features of democratic systems: a) freedom of expression, b) inclusive policymaking and c) a higher degree of transparency.

a) Freedom of expression:

- ***While people living in autocratic states depend on whether or not their authoritarian leaders decide that global heating is a problem***,[4] as citizens of democratic states we have access access to numerous ways of expressing our political will, and as more and more citizens acknowledge the impacts of the climate crisis, ***democratic governments are pushed to act***. In a global survey, almost 70 per cent of respondents emphasised that »if their governments do not act now to combat climate change, they will be failing their citizens.« And almost 60 per cent said, »they would be put off from voting for a political party whose policies do not take climate change seriously.«[5] Of course, authoritarian leaders do not have to pay as much attention to such opinion polls, or, indeed to petitions, mass demonstrations or school strikes (if such instruments of political expression are even allowed).
- In a democracy, there should be no »us and the government«. The role of democratic institutions is to ensure that public facilities meet citizens' needs, including young people, who can't yet vote, but whose say still matters. Democratically governed societies provide institutionalised mechanisms for adequate participation and representation. Thus, it is the mandate of the governing bodies and institutions to provide an environment that makes it possible for a sustainable shift to happen. There is an increasing trend, evidenced by the many individual and collective citizens' initiatives, of growing awareness, particularly among young people, of the need to create an infrastructure allowing for carbon-neutral solutions that are both environmentally compatible and beneficial to human society.

b) Inclusive policymaking:

- ***As a partner of the citizens, a democratic state does not need to reinvent the wheel but can embrace civil society initiatives and proposals that were designed to meet citizens' needs.*** Best practice examples initiated by a) communities, b) parties c) NGOs and citizens' initiatives or d) cooperatives can easily be scaled up. In a democracy, ***these subnational actors have the freedom to experiment***, i.e. they don't have to wait for instructions or for approval from »above«, and they play an important role in channelling information about successful projects to the state, or even to institutions at an international level.
- ***Cities and communities*** play a dual role

when it comes to innovative climate projects: First, ***communities try out new approaches***, which can be reproduced on a national level and beyond. Second, ***they provide a space in which citizens can experience self-efficacy*** and learn to have confidence in their own ability to change things for the better. Many social democratic mayors are fond of supporting initiatives for the citizens by the citizens that ensure social-ecological policies are in place, in a manner that benefits everyone. The broad range of instruments which can be used by communities to limit the climate crisis, has been described in Chapter 6 (see page 112). Of course, it is easier for communities to implement progressive regulations if their local politicians have a say in the matter. This is why many communities expand their competencies again by remunicipalising utilities. In Hamburg, for instance, a successful referendum initiated by the citizens pushed local government to buy the city's energy grid back from one of Germany's biggest energy companies, which largely relied on coal and nuclear power, and to embark on a transition towards renewable energy and sustainable heating systems.[6] Likewise, the city of Skopje recently decided to remunicipalise its waste management.

- ***Parties:*** As political leaders in communities and provinces, ***party representatives can also implement innovative projects on the ground***—and thereby prove to voters and their political opponents in government that they can provide better solutions. It is very encouraging to see ***that more and more social democratic parties are embracing the idea of ambitious social and environmental policies***, including the collective effort to confront the climate crisis. More and more social democrats are fighting for ambitious climate action to protect the values we stand for—social justice, solidarity with marginalised groups in our national societies and on an international level, and a liveable future for our children. We can see evidence of this around the world: Bernie Sanders setting up a dedicated »climate platform« for his US presidency campaign, Frans Timmermans' Green New Deal for Europe, the current shift in Germany's SPD advocating for a mobility transformation, and the ambitious election manifesto of the social democratic party of North Macedonia, to name just a few. As described in Chapter 1 (page 26), these social-ecological concepts are not new to social democracy, but they have become more important over the last few years—sometimes because politicians realised the social impacts of the climate crisis, sometimes because they realised that failing to support climate action would lose them voters as the citizens' concern about the climate crisis sharply increased.
- ***NGOs and citizens' initiatives:*** Together with communities, ***NGOs and increasingly also citizens' initiatives are becoming drivers of ambitious climate policies around the world***. While small initiatives might generate local best practices, exchange between established climate NGOs about best practices takes place on the national or even international level—making sure that successful mobility projects developed in Bogota are also implemented in Berlin, for example. In democratic societies, NGOs not only act as »watchdogs« continuously placing political decisions under scrutiny, but in many countries also act as partners to decision-makers, providing politicians with innovative ideas or studies. While established NGOs often have long-term supporters and professional staff to rely on, citizens' initiates have become attractive to people fighting for a specific cause (for example, against the construction of a new coal-fired power plant in their province), or who want to use their skills on a voluntary basis. While citizens' movements focusing on climate action have been on the rise for many years, 2019 saw unprecedented support for new (mass) movements, such as »Fridays for Future« or »Extinction Rebellion«.
- ***Trade unions*** ***can help to foster social-ecological innovation*** in individual companies (such as energy-saving measures in the operation of specific machines), in whole sectors (such as the shift towards more sustainability in the German chemical industry), or in society as a whole (such as advocating for a reduction in working hours, which has positive environmental co-benefits). As described in Chapter 1 (page 27), in many cases, ***the trade unions of today are allies striving for just ecological transition, standing united behind the slogan that »there are no jobs on a dead planet«***. In fact, countries with higher levels of unionisation actually have lower per capita carbon footprints.[7] Thus, workers and employees having a say is not only a necessity from a democratic perspective, but also when it comes to having the power to change society for the better from below.

- Cooperatives are the fairest and most effective format supported in strong democratic societies to ensure inclusive and progressive climate policies from an economic perspective (see Chapter 6, page 117). Here, it is important to note that cooperatives work much better in a democratic context, where citizens are able to freely participate in established projects. Very few cooperatives have been set up (in a top-down manner) in authoritarian states.[8]

What is unique for projects initiated by communities, parties, NGOs, citizens' initiatives or cooperatives in democracies is that ***it only takes a small number of people to lead such progressive initiatives and bring them into the public arena***. Active citizens, committed to social improvements for all are devising solutions to localise the production of food, textiles and energy (to name just a few examples) in an innovative, powerful and accountable manner. The collective action we are seeing on a local level today, which is also adequately supported by the local or national government, will benefit the generations of tomorrow. The democratic tools of public participation and inclusive decision-making processes allow for ideas and changes, underpinned by a bottom-up structure, to be proposed and implemented by active citizens, who should, with the support of city planners, engineers and other experts, be able to co-shape a sustainable future for their community. Therefore, communities deserve to be given the chance to experiment and decide for themselves on the best solutions for a sustainable future, on the basis of the Paris Agreement and the 2030 Agenda. All the positive experiences of community projects so far, local, sustainable and climate-compatible energy, food production and transport projects are a vital part of this process.

- ***Subnational actors also contribute to evidence-informed decision-making***: Representatives of citizens' initiatives can, for example, bring a successful project to the attention of their MP during one-to-one meetings, or NGOs can explain in a hearing why a certain idea failed. A good example of this process of channelling information upwards is the »grassroots climate plan«, which collects and evaluates numerous ideas for reducing CO2 emissions as quickly and in as socially fair a manner as possible.[9]
- In ***democratic welfare states, the circumstances of marginalised groups are factored in from the outset*** when new policies are introduced. Thus, there is a higher likelihood of climate policies being designed in a way that ensures more social justice and prevents social gaps from widening (as we have seen in Chapter 1, page 16).

In contrast, the »top-down« decision-making style of authoritarian regimes often fails: Authoritarian leaders are more likely to adopt climate strategies quickly—without much prior debate among cabinet members, the parliament or the public. ***However, even if these strategies look good on paper, their implementation is often hampered***, because the needs and capacity of subnational actors have not been taken into account. Communities might not have the qualified people or the interest in implementing strategies that have nothing to do with the realities on the ground.[10] In these regimes, experts have limited influence when new policies are being formulated, and there is neither regular exchange with representatives of civil society, nor open discussions with constituents. As a consequence, there is no process ensuring the applicability of policies before they are implemented.

- In authoritarian regimes, there are also fewer examples of best practice developed: Community leaders often have neither the political freedom, nor the available finances to test innovative climate policies. They may also have no motivation to do so because the reappointment of their political advocates depends not on their popularity among the voters, but rather on the whims of the authoritarian leader. And if citizens' initiatives or independent NGOs are not even allowed to exist, they evidently cannot establish any best practices at all.
- In authoritarian regimes, there is also a ***higher risk of corruption and inefficiency rendering climate strategies obsolete on all levels***. With public discourse and media freedom severely restricted, corruption and fraud can flourish. If it is possible—and cheaper—to bribe an auditor, for example, then the filters in coal-fired power plants will remain switched off. And if judges base their decisions on the size of the envelope they receive »under the table«, then that auditor will never be held accountable. Last but not least, if independent journalists do not have the freedom to uncover such scandals, then climate strategies might continue to look good on paper—but emissions will not be reduced.
- Of course, there are cases of fraud and corruption in democratic societies too. The activities of lobbyists in particular are frequently a cause for concern—and many of these organisations oppose a shift towards a sustainable future. However, statistics show that established democracies have significantly lower levels of corruption—for the simple reason that such cases can be exposed by the independent media or whistle-blowers, and because politicians known to be corrupt can be voted out of office.[11] This is especially important for the implementation of climate and other environmental policies, which can only work if implementation is secured on every level; i.e. if companies or car drivers violating pedestrian zones cannot »bribe their way out« at the expense of everyone else.
- ***From a social democratic perspective, it is important to promote precisely these features of our democratic systems: Freedom of expression, inclusive policymaking as opposed to top-down decision-making, as well as anti-corruption and transparency*** have all been high on the social democratic agenda—essentially since the birth of social democracy. ***It is therefore very good news that these very features of our government systems provide an ideal framework for the formulation of ambitious climate policies.***

But what about…

…the concern that democratic systems, which have the ultimate aim of settling on a good compromise for all interest groups, cannot deal with the climate crisis because you can't make political deals with the earth's atmosphere? Should we not set up citizens' assemblies to tackle the challenge?

The way forward: Public consultation as an addition to established democratic procedures

Democratic decision-making processes take time, and, when it comes to the 1.5°C target, time is not on our side. That said, as shown above, democratic, participatory decision-making is simply more effective in the long run and is certainly an element we want to enshrine in a social-ecological future. For many social democrats and progressive citizens, new tools of direct democracy are very appealing, but establishing them would also take time. It is simply not feasible for us to wait for the implementation of political reforms first, and then prepare to act on the climate crisis—because by then the 1.5°C target will most certainly be out of reach.

So, what is the solution?

1. First, as demonstrated above and in Chapter 6, ***our current representative democratic***

systems are perfectly capable of dealing with the climate crisis, provided that politicians use all the instruments they have at their disposal (just as they did during the Covid-19 crisis).

2. Second, ***instruments of public consultation***, such as citizens' assemblies or commissions, ***can be a very good addition to established political processes, but must not replace them***. Two positive examples would be the referendums held in North Macedonia in 2016 about the opening of new gold mines,[12] and, in Ireland (and subsequently also in the UK and France) the establishment of citizens' assemblies which developed recommendations for limiting the climate crisis.[13]
3. Third, because we cannot negotiate with our climate, ***compatibility with the Paris Agreement has to be ensured from the outset***. »Coal commissions«, for example, should bring all relevant stakeholders together to discuss a socially just exit strategy by a certain date that is in line with the 1.5°C target—while the phase-out date itself cannot be negotiable (see also Chapter 1, page 28).
4. Fourth, ***we should address today's problems using the instruments and resources we have right now—and we should never give up***. Even if certain countries do not adopt CO2 reduction targets in line with the Paris Climate Agreement in 2020, the public awareness is still there, the pressure is rising, and monitoring instruments are available. If a coal phase-out date fails to take the 1.5°C target into account, it will have to be renegotiated. If not this year, then next.

But what about...

...ensuring an adequate level of representation of all citizens in bottom-up policymaking processes?

The way forward: Shaping a social-ecological transformation together

- ***Many climate projects not only benefit marginalised groups (as shown in Chapter 1, page 16) but are also developed in collaboration with them***—in doing so strengthening their sense of self-efficacy and encouraging them to participate more actively. The social democratic aim of increased participation of less privileged groups is an integral part of these climate projects: Numerous communities provide social funds for climate projects implemented by less well-off citizens, such as the Rhein-Hunsrück county in one of Germany's poorest rural regions. In the Polish town of Słupsk, energy-efficient light bulbs were installed in homeless shelters not only for, but by the homeless themselves, for example. And community gardens established in marginalised neighbourhoods around the world in collaborative initiatives with the citizens have not only had positive effects on individual health and wellbeing, but also improve social cohesion and enhance the »sense of community«.[14]
- While not every citizen or member of a community is interested in or has the time to participate in decision-making processes, even in the most democratic societies, it is still vital that we strive to ensure our democratic societies open up further and provide the tools and mechanisms that will ***encourage and enable everybody to shape our social-ecological future***. New concepts lowering thresholds for active citizenship should be scaled up, such as the social innovation platform SynAthina created in Athens to facilitate consultation and engagement with citizens, community groups and civil society initiatives with a view to finding solutions to urban problems that can be shared and discussed with local government, the business community and political leaders.[15]

But what about...

...the notion that some environmental NGOs are more interest oriented than citizen oriented?

The way forward: A key actor for ambitious climate policies

- The NGO sector plays a vital role when it comes to tackling issues of vested interests and corruption as it fights to make sure that citizens' voices and interests are heard. Yet, this does not make all NGOs immune to corruption and does not stop some of them from representing vested interests, especially during a time when greenwashing is becoming a real threat. As Canadian author and social activist Naomi Klein has suggested, NGOs sometimes do more harm than good, especially when they are not able to act truly independently but rather depend on the financial support of governments or lobbyists. However, the ***democratic tools and mechanisms for promoting good governance at all levels are capable of tackling such negative externalities***. Moreover, these tools can prevent one rotten apple from ruining the image of an entire pillar of society, a pillar that breathes life into climate crisis adaptation and mitigation, while also pursuing the humanitarian aspect. Environmental NGOs have played and continue to play a key role in pursuing a sustainable future for all. The abundance of great initiatives, be it on a local level like the SynAthina platform or an international level like »Fridays for Future«, are only possible thanks to a civil society that is a strong and powerful actor and participant in democratic decision-making processes.

But what about...

…the difficulty of securing broad acceptance for specific climate policies—for example, people protesting against windmills being constructed in their neighbourhood?

The way forward: Overwhelming support

- ***There is considerable support among citizens for the adoption of ambitious climate policies*** (see Chapter 1, page 7, and Chapter 5, page 94). ***In representative democracies such as ours, this is sufficient backing for ambitious action***. Not every policy has to be discussed and fully approved by every citizen. It is astonishing to see politicians asking for universal support for the adoption of ambitious climate policies, while acting against the will of the majority in other political fields (supporting Free Trade Agreements, for instance). ***If the wellbeing of so many citizens and the functioning of our democratic system are at risk, politicians also have the mandate to lead***—this is why they were elected for, after all.[16]

If the state shies away from this duty and burdens citizens with the decision about how climate-compatible they want their lives to be, two negative effects will come about:

1. A widening gap in society: If the atmosphere at the Christmas dinner table is ruined because of discussions over vegetarian alternatives to turkey, or if villagers end up battling in court for years over a new windmill, we risk creating a divided society.
2. Socially and environmentally aware citizens feeling cheated: Many people want more guidance from the government, because they simply don't have the capacity to base every decision on prior research into social, labour and environmental standards, and then weigh those standards against the convenience and the price of a product.[17] These citizens, who are ultimately benefiting all of us by adopting a climate-compatible lifestyle, also get frustrated when the state fails to prevent other members of society from ruining our common future.
   - While there is no need to convince each and every citizen of climate and other policies, a balance between inclusive decision-making, enhanced by elements of direct democracy, and politicians leading a country must be found. Here, intermediary actors between the government and the individual citizen can play an important role.
   - Last but not least, ***it is vital that we enable those concerned to co-shape their future in a positive way***: If people are given the opportunity to invest in windmills in their community (for example as a part of a cooperative), and have a say in where the windmills should be placed, then opposition to such projects becomes support.

But what about...

...the neoliberal doctrine pushing our states to prioritise (short-term) economic decisions over citizens' wellbeing and environmental concerns?

The way forward: We need a social state anyway!

- ***Putting environmental concerns to one side, we need to rethink the role of our state, and return to democratic systems that put the wellbeing of their citizens and a healthy environment at the heart of their actions***. To put the interests of the people, not economic interests, first has been one of the main aims of social democracy for decades. National development policies need to be designed to look beyond election cycles and place sustained priorities on the political agenda for the long term.

- As Covid-19 measures were being implemented, states around the world demonstrated that they were capable of acting when the lives of citizens were at stake—even against economic interests. We put people's health first, especially that of vulnerable groups, such as the elderly and sick, even though this meant months of total economic shutdown. So, looking at the climate crisis, the argument that a certain action »is not politically feasible« because short-term economic interests are more important than the lives and wellbeing of the people, has certainly lost credibility. Now, we must make sure that the recovery packages needed in the wake of the pandemic are driven by green and social innovation that will prioritise the wellbeing of the many, instead of the few.

What are we striving for?

- ***In a democracy, you are the change you want to see when it comes to tackling the climate crisis!*** Let's harness the potential of engaging millions of citizens around the world, not only to build a social-ecological future, but also a more inclusive one, taking up the social democratic call to strengthen the voices of the disadvantaged. There are many ways to hear these voices—in citizens' assemblies, at protests, during (school) strikes or in neighbourhood projects.
- ***Instead of the climate crisis undermining the foundation of our democracies, let us empower citizens, communities, cooperatives and NGOs to shape our common future together.***

Endnotes and Sources

Endnotes

[1] »In 2015, the twenty countries grouped by the EIU (The Economist's Intelligence Unit) as democracies had an average ranking of 34.2 on the energy sustainability index, while the 27 authoritarian regimes for which climate data existed scored much worse, with an average ranking of 85.6.« It is important to note that this also holds true for democratic states with low per capita income, so the wealth of a nation (which often corresponds with democratisation and high emissions) is not a decisive factor. See https://foreignpolicy.com/2016/06/01/democracy (last accessed on 23.5.2020).

[2] See https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-13&chapter=27&clang=_en (last accessed on 25.7.2020).

[3] Schultz and Stone (1994): Authoritarianism and Attitudes toward the Environment.

[4] See https://foreignpolicy.com/2016/06/01/democracy (last accessed on 23.5.2020).

[5] See https://www.ipsos.com/sites/default/files/ct/news/documents/2020-04/earth-day-2020-ipsos.pdf (last accessed on 21.6.2020). This provides a strong counterargument against the claim that democratic decision-makers might neglect the climate crisis because they focus on decisions affecting the whole period of their political mandate. The danger that future risks could be neglected might (!) have been relevant in the past, but with the climate crisis unfolding also in the Global North, it no longer affects climate action.

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[7] Huerta Alvarez, Camila, York, Richard and Mcgee, Julius Alexander (2019): Is Labor Green?, in: Nature and Culture, March 2019, pp. 17-38.

[8] Germany has the largest number of active energy cooperatives (824 in June 2018), which is approaching Denmark's former peak of 931, reached in 1999.

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[10] See Wu, Jing, Zuidema, Christian and Gugerell, Katharina (2018): Experimenting with decentralized energy governance in China: The case of New Energy Demonstration City Program, in: Journal of Cleaner Production 189, pp. 830-383.

[11] See Warren, Mark E. (2004): What Does Corruption Mean in a Democracy?, in: American Journal of Political Science 48, no. 2, pp. 328-343.

[12] See https://globalvoices.org/2017/04/25/one-small-towns-referendum-on-gold-mining-is-a-big-victory-for-citizen-participation (last accessed on 22.6.2020).

[13] See https://www.citizensassembly.ie/en/how-the-state-can-make-ireland-a-leader-in-tackling-climate-change/recommendations/ and https://www.climateassembly.uk/ (last accessed on 22.6.2020).

[14] See http://www.slupsk.pl/zielonypunkt/ and https://www.strongtowns.org/journal/2018/8/16/the-case-for-community-gardens, for example.

[15] SynAthina maps citizens' initiatives, increases their visibility and helps them connect with the private sector, various experts, and local administrations. By evaluating citizens' activities and acknowledging the best practices from civil society, SynAthina constantly informs the municipal authorities about the citizens' priorities and pushes for updated regulations, simplified procedures and creative synergies with citizens in order to enhance the administration's efficiency in responding to citizens' needs. For more information, see https://www.synathina.gr/en

[16] The climate crisis is not the only political field in which political leadership is needed. In recent years, LGBT rights were strengthened in many countries despite the protests of a (very loud) minority because continued discrimination would have been at odds with human rights standards.

[17] It should not be necessary to investigate the social and environmental conditions under which smartphones are produced, but the import of products manufactured using child labour and causing environmental disaster should simply be banned. See https://www.zeit.de/kultur/2019-06/konsumverhalten-verbote-gesetze-veraenderungen-gewohnheit-freiheit/seite-2 (last accessed on 22.4.2020).

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A good overview of the nexus between democratic systems and climate policies can be found here:https://foreignpolicy.com/2016/06/01/democracy

Interesting statistics demonstrating strong support for ambitious climate policies on a global level, and especially in democracies, can be found here: https://www.ipsos.com/sites/default/files/ct/news/documents/2020-04/earth-day-2020-ipsos.pdf

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I increasingly realised that this challenge was not about »protecting the climate«, but about protecting all of us in Europe, our social achievements, and our way of life.

Robert Zanony / Author

Seeing the climate crisis as an urgent threat and ambitious climate policy as a necessity is—thankfully—now common sense. Adequate action is of course another story. Ensuring that ambitious climate action is conducted in a socially just way is a pivotal part of the agenda that social democrats must adopt and underpin with decisive political steps. This was the essence of our common effort behind this publication and I am more than glad to have been part of it.

Victoria Stoiciu / Author

Writing is also about discovery. When writing is a collective process it becomes a real learning experience. I hope this handbook will be as enriching for the reader as it was for me as a co-author.

Thomas Oellermann / Author

Working on this project showed me how complex and thus complicated climate policy really is. Climate policy is no longer just an issue like all the others, but an entire dimension.

Ivana Vuchkova / Author

The question is not whether there will be life on Earth, but who will live there and under what conditions. We want to secure a sustainable future for all, and for that, we need to make Climate action. Socially. Just.

Max Ostermayer / Author

The deeper you delve into a topic, the more layers of complexity you uncover. It has been an incredible experience navigating this complexity together with an ambitious and committed team working towards a common goal: showing that it is in our hands to shape a just and sustainable future.

Eva Junge / Author & Adviser

As an environmental psychologist, I strongly believe in the significant overlap between socio-ecological policies and strategic climate communications. They say that the future belongs to those who tell the better story—in this publication, the reader will find a great collection of inspiring stories for social democratic transformation.

Toralf Staud / Adviser

Our aim at klimafakten.de is to help people find »their« way of talking about the climate. This publication adds a powerful social democratic voice to the climate choir—it was impressive to witness it grow.

Imprint

Friedrich-Ebert-Stiftung | Dept. for Central and Eastern Europe
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To order publications:
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ISBN: 978-3-96250-641-4

Layout: facts and fiction GmbH
Print: Druckerei Brandt, Bonn

Printed on RecyStar Polar (100 % recycling paper; distinguished with eco-label Blue Angel)

Image Sources

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Acknowledgements

This publication would not have been possible without the support of so many project partners and colleagues. Drafts were reviewed by project partners in Brussels, Germany, North Macedonia, Romania and Slovakia and more than 30 FES colleagues from around the world provided us with valuable feedback on individual sections. Our language editor Ms Carla Welch helped us create a “united voice” from the individual writing styles of eight co-authors. And, last but not least, our FES colleague Marie Meier supported the whole process of the creation of the manual from beginning to end, tending to every detail with great personal and professional dedication.

Ambitious climate action and social progress must go hand in hand. What is more, the climate crisis undermines the social progress and democratic development achieved over the last decades.

In this manual of arguments, we scrutinise the seven most important topic areas, in which social and environmental concerns are—mistakenly—often played out against each other. We present arguments showing that ambitious climate policies can, in contrast, help us to build fairer and more social societies.