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BRIEFING

Exploring the social challenges of low-carbon energy policies in Europe

For climate change mitigation policies to be successful in reducing greenhouse gas emissions their potential social implications need to be considered and addressed. Together with multiple-level governance coordination and societal participation, these are the key success factors to achieve win-win social-climate policies, minimise the unfair impacts of carbon and energy taxes, and maximise environmental and health benefits.

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This briefing is co-produced by the EEA and Eurofound. It is based on the results of two complementary analyses by the EEA and the European Foundation for the Improvement of Living and Working Conditions (Eurofound) on the socio-economic effects of climate policies, in the context of the European Green Deal and the EU transition to a carbon-neutral economy. The EEA focused on the understanding of distributional aspects of climate change policies, while Eurofound sought to identify, based on national experiences, the climate policies with significant distributional effects and explore how these are being addressed in EU Member States.

This briefing focuses on the effect on citizens of climate mitigation policies in the energy, transport and building sectors, through the impacts of these policies on their daily lives (jobs, mobility, housing, etc.).

The full reports can be downloaded at:

- Ramboll (commissioned by EEA), 2021, [Social impacts of climate mitigation policies and outcomes in terms of inequality](#).
- Eurofound, 2021, [Distributional impacts of climate policies in Europe](#).

Key messages

- To achieve its objective of becoming climate neutral by 2050, the EU relies on a portfolio of policy instruments such as regulation, economic and financial incentives, education, training and R&D. Some of these measures make low-carbon options and energy efficiency improvements more economically attractive by increasing the price of fossil fuels.
- Such measures have direct effects on people's quality of life, from economic and environmental perspectives. The magnitude of these effects depends on the socio-demographic context, such as income level, location, employment situation or age.
- In addition to reducing greenhouse gas emissions, climate change mitigation policies may generate positive environmental co-benefits, such as improved air quality, with positive outcomes in terms of health and well-being. Lower income households and vulnerable groups tend to benefit more from these effects, helping to reduce environmental inequalities.
- Measures leading to increased energy prices (e.g. carbon and energy taxes) tend to disproportionately affect the finances of lower-income households. This can jeopardise the acceptability and effectiveness of such climate policies.
- Ensuring a fair transition towards climate neutrality may rely on pursuing three complementary objectives: (1) aiming for win-win social-climate mitigation policies that reduce both social inequality and greenhouse gas emissions (e.g. improving energy efficiency in buildings or investing in sustainable public transport and active mobility); (2) minimising the monetary inequalities resulting from the transition to carbon-neutral economies (e.g. recycling carbon tax revenues to compensate negatively affected groups); and (3) maximising non-monetary co-benefits, such as health co-benefits.
- Designing, implementing and monitoring climate change mitigation policies that are effective, efficient, sustainable and socially acceptable calls for the coordination of different governance levels and policy areas. It also needs all concerned stakeholders to participate: social partners, companies, academia, non-governmental organisations and other civil society organisations.
- Further efforts are needed to better document, measure and understand the social impacts and inequality outcomes of climate mitigation policies.

Policy frameworks increasingly recognise the need to integrate climate and social considerations

As a planetary environmental challenge, climate change is addressed at global level by the United Nations Framework Convention on Climate Change (UNFCCC), under which the Paris Agreement has been adopted by 196 Parties. The main goal is to limit global temperature rise to well below 2 °C — preferably 1.5 °C — above pre-industrial levels.

With the adoption of the European Climate Law in June 2021, the EU is now committed to achieving climate neutrality by 2050. The law sets out a binding EU target of a net domestic reduction in greenhouse gas emissions of at least 55 % by 2030, compared with 1990 levels.

These objectives are embedded in the European Green Deal (EGD), which reflects the broader EU commitment to support the Sustainable Development Goals (SDGs) (1). The EGD envisages further EU legislation to reach its climate targets, notably by boosting energy efficiency and renewable energy, as presented in the 'Fit for 55' package (see Box 1).

Box 1 — The 'Fit for 55' package

The 'Fit for 55' package, proposed by the European Commission in July 2021, is a set of interconnected proposals aiming to deliver on the EU 2030 climate target as part of the European Green Deal. The package strengthens eight existing pieces of legislation and presents five new initiatives, across a range of policy areas and economic sectors: climate, energy and fuels, transport, buildings, land use and forestry.

From an energy perspective, the package proposes:

1. to increase the EU energy efficiency targets and make them binding, to achieve an overall reduction of 36-39 % in final and primary energy consumption by 2030;
2. to increase the binding target of renewable energy sources in the EU's energy mix to 40 %;
3. to apply emissions trading from 2026 for road transport and buildings.

This package also addresses the concerns of those whose employment or income is affected by the transition. The proposal includes a new Social Climate Fund, aiming to finance temporary direct income support for vulnerable households and support measures and investments that reduce emissions in the road transport and buildings sectors (and as a result, reduce costs for vulnerable households, micro-enterprises and transport users). The size of the Social Climate Fund will correspond to a dedicated share of the revenues from the auctioning of emission allowances under the new Emissions Trading System for road transport and buildings.

Source: ['Delivering the European Green Deal'](#).

These policies imply a fundamental transformation of the energy system, with deep impacts on our economies, societies, territories, and people's lives in general. At the European level, social fairness and inclusiveness are addressed in the European Pillar of Social Rights, launched by the EU in November 2017 (EC, 2017) — although environmental rights are not covered.

The EGD aims to address the social and economic effects of the transition and ensure that it leaves no one behind. A key tool for this is the Just Transition mechanism, focusing on support for regions, industries and workers who are likely to be faced with the greatest transition challenges. The Social Climate Fund proposed in the 'Fit for 55' package also aims to address part of the social and distributional challenges of the EU's transition to carbon neutrality.

There is a growing demand from citizens for fairness in the implementation of climate policies — as shown, for instance, by the 'yellow vest' movement in France. There is also growing concern among policymakers to ensure that the EGD is fair in a context where social and economic inequalities in Europe have grown significantly in recent decades (Blanchet et al., 2019) and have probably been exacerbated by the current COVID-19 pandemic (Eurofound, forthcoming).

Some national long-term strategies ⁽²⁾, setting out Member States' paths to reducing greenhouse gas emissions over the next 30 years, recognise the potential socio-economic challenges resulting from the measures designed to achieve the necessary transition to a carbon-neutral economy. This is the case for Austria, Belgium, France, Germany, Greece, Latvia, Lithuania, the Netherlands and Portugal, where the challenges identified echo the main concerns raised in relation to the transition to a carbon-neutral economy:

- the need to guarantee a secure and affordable energy transition
- the need to safeguard social justice and ensure that the transition is just
- the need to understand the specific impacts on employment, labour markets and workplaces of such a transition.

Some climate policies can positively affect people by improving their well-being. Others, such as carbon taxes, may economically hurt low-income households disproportionately, leading to further inequalities and associated social acceptance issues. The real challenge is not only making production processes more efficient. Achieving true and lasting sustainability will also require social inequalities to be addressed (EEA, 2021). EU mitigation policies respond to a global environmental challenge in a globalised economic world. In that context, the social impacts of the EGD do not stop at the EU border; they also need to be considered at the global scale to ensure a just transition.

Climate change policies bring positive and negative impacts that are unevenly distributed

Climate change policies may affect certain categories of households more than others, depending on several factors

A wide range of policy instruments can support the deployment of renewable energy, energy efficiency improvements, the promotion of low-carbon technologies and behaviour change: economic tools, such as the EU Emissions Trading System (ETS), carbon taxes and energy taxes to discourage fossil fuel use and encourage energy efficiency, economic incentives and other instruments such as standards (e.g. on cars, buildings, cooking appliances, etc.), regulations (e.g. energy labelling), education, awareness raising, training, technology transfer, research and development, and public investment in low-carbon and active mobility infrastructure.

By acting on energy prices and providing environmental and socio-economic co-benefits, certain economic instruments may affect the living conditions of different categories of households. Which households, and how they are affected, depends on pre-existing factors such as age, income level, location (e.g. rural/urban), employment situation (e.g. sector, occupation, employment status, type of contract) and, to a lesser extent, gender and household size and composition.

Some households may be negatively affected in several ways at the same time, accumulating disadvantages, and are particularly sensitive to climate mitigation policies. Other households may accumulate advantages and could benefit from climate mitigation policies, exacerbating existing inequalities. The costs and co-benefits of mitigation policies are therefore distributed unevenly across the population and are likely to create winners and losers.

In addition to reducing greenhouse gas emissions, certain climate policies may positively affect the lives of low-income households and the most vulnerable

Mitigation policies can positively affect people's lives, e.g. by improving local air quality or noise levels, as shown in the Ramboll/EEA study. These co-benefits influence individuals' health and well-being as well as household income and purchasing power, capacity to work, etc. Although limited evidence is available, low-income and vulnerable groups in society seem to benefit more from the positive environmental impacts of mitigation policies (e.g. air quality improvement and health outcomes). Co-benefits tend to reduce environmental inequalities because low-income households are generally more exposed to health and environmental risks such as air pollution ⁽³⁾.

From an income perspective, any mitigation policy resulting in a decrease in household energy bills (e.g. promoting energy efficiency and savings or active mobility) has the potential to be progressive — meaning that it benefits lower income more than higher income households. This is because lower income households spend a higher share of their budget on energy than the higher income ones.

Other climate policies may also negatively affect low-income households disproportionately

Negative and regressive impacts of climate mitigation policies also exist: some climate policies may negatively affect people with lower incomes more severely, leading to increasing inequalities and exacerbating energy poverty issues.

Evidence on the social impacts and distributional outcomes of regulatory instruments and industry standards (e.g. energy efficiency labelling, standards for cars, building standards) is still very limited. Nevertheless, regulatory instruments could have, albeit in a 'diluted' way, regressive effects. For instance, energy labelling in the construction sector in France and measures for energy efficiency in construction in Spain may adversely affect low-income households because of the potential increase in housing prices.

More importantly, the lives of people and communities may be negatively affected through direct impacts of carbon and energy taxes on energy prices and more complex and indirect subsequent economic adjustments. Extensive evidence on the redistributive effects of energy and carbon taxes show that this tool alone cannot simultaneously achieve climate mitigation targets while avoiding all potential negative monetary distributional outcomes (see Box 2). Such policies generally result in higher energy prices, which places disproportionately more pressure on lower income households because they spend a larger share of their budget on energy bills.

Evidence shows that people working in energy-intensive sectors (e.g. steel, glass, chemicals, plastics, petroleum refining, pulp and paper) also tend to be disproportionately affected by higher energy and carbon taxes (because their jobs are more affected by the transition). The impact might differ geographically, given that the social and CO₂ abatement starting points differ by country and region. People living in areas poorly served by public transport (e.g. peri-urban or rural areas) also tend to be disproportionately affected by higher energy prices. People living in coal-mining regions, for example, are also potentially worse affected⁽⁴⁾. In such regions, the impacts are concentrated and can potentially create significant social and economic crises if not managed adequately.

Box 2 — Examples of distributional effects of energy, carbon taxes and subsidies

Taxes on heating fuels and electricity taxes are usually regressive. They have the largest impact on low-income households, which pay out a larger share of their income on energy expenses. Furthermore, low-income households generally live in less energy-efficient dwellings and consequently have higher energy needs.

Taxes on transport fuels are typically less regressive than those on residential heating and electricity, on an aggregate level. This is because middle-income, rather than low-income households, are those primarily impacted by this measure. Poor households are less likely to own a private means of transport, while rich ones generally have access to non-taxed options. Middle-income households, instead, potentially rely the most on a private means of transport to get to work and access essential services. Households living in rural areas are also proportionately more impacted when no transport alternative is available. It is reasonable to assume that, should the increase in fuel prices be substantial, a portion of the population would shift to other means of transport. However, this shift is dependent on the availability of the necessary infrastructure, e.g. cycle lanes, safe pedestrian areas and public transport. Giving up private motorised means of transport could also mean reducing individuals' access to services and/or social recreational activities.

Subsidies to households to increase the energy efficiency of their homes might be progressive, but the design of the policies requires attention for this to happen (see next section).

Public transport subsidies can take different forms, such as reduced fees for certain age groups or differentiated fees based on income levels. Overall, limited available evidence indicates that these policies are potentially generally progressive, as lower income households are the primary users of public transport.

Subsidies, and other incentives for individuals (or companies), for instance to purchase solar panels or retrofit buildings, if not well designed and targeted, can also have regressive impacts. The regressive effect of the subsidies is best demonstrated by the electric vehicles subsidy, as lower income households cannot afford to buy the environmentally friendly but expensive electric cars.

The fairness of climate policies is key to their acceptability and success

Overall, when regressive climate policies exacerbate or generate additional socio-economic inequalities, they are seen as unfair and less acceptable, which in turn reduces their effectiveness. While keeping the reduction of greenhouse gas emissions as a primary objective, the design and implementation of packages of climate mitigation policies and measures therefore need to consider the distribution of social impacts and how to make them fairer in the cases where they are unavoidable.

This last observation highlights the crucial need for a complete picture of the distributional effects of climate policies and a deep and systematic understanding of the extent to which the transition to a carbon-neutral economy affects social justice. This is an area where significant research gaps need to be closed. While evidence on the distributional effects of carbon taxes is abundant, there is much less data on the

distributional effects of other policies and even less knowledge of the distribution of the environmental co-benefits of mitigation policies — through effects on health and well-being — and their outcomes in terms of environmental inequalities.

Greenhouse gas emission reductions and social justice can go hand in hand

Ensuring a fair transition towards climate neutrality may rely on pursuing three complementary objectives: (1) prioritising win-win social-climate mitigation policies that reduce both social inequalities and greenhouse gas emissions (e.g. improving energy efficiency in buildings or investing in sustainable public transport); (2) minimising monetary distributional inequality of the transition to carbon-neutral economies (e.g. recycling carbon tax revenues to compensate negatively affected groups, and supporting low-carbon investment that creates jobs in sectors such as renewable energy, energy efficiency, low-carbon mobility, the electric vehicle industry and sustainable forestry); and (3) maximising non-monetary co-benefits, such as health benefits.

Prioritising and designing win-win social-climate mitigation policies

Some climate policies have the potential to perform well in terms of reducing greenhouse gas emissions while also contributing to reducing social inequalities.

Public investment in and support for sustainable transport, for instance, are seen as clearly progressive. They include actions to develop and encourage the use of public transport (better network, fare reductions) and/or active modes of transport, such as extending walking routes and cycle lanes. Concrete examples are the investment in cycling infrastructure, walking routes and public transport in Austria, free public transport in Luxembourg or the investment in charging stations for electric vehicles on major roads in Sweden.

Increasing evidence also suggests that support for energy efficiency investments in residential buildings not only contributes to reducing energy poverty⁽⁵⁾, but also has wider socio-economic outcomes. Energy-efficient improvements save on energy bills in the medium to long term and therefore potentially have progressive income effects. Building retrofits can improve the health and well-being of vulnerable groups in particular, such as the elderly, children, pregnant women and those with illnesses. Associated environmental (outdoor air quality) and health co-benefits apply to all — not just those able to access investment subsidies.

While win-win potential is embedded in these policies, the distribution of their benefits depends on how well calibrated, targeted and accessible the support and incentives are.

Policy schemes characterised as progressive are often designed with the needs of specific groups in mind, such as vulnerable groups. The social and environmental effectiveness of the policies can be improved if key contextual factors (income level, location, employment status and sector) are considered when the support is designed. Likewise, clear and fair eligibility criteria for investment support is also crucial: e.g., it is important not to automatically exclude lower income groups (e.g. support only for homeowners, requirement for high upfront co-payments, etc.).

Minimising the monetary distributional inequality of the transition to carbon-neutral economies

Compensation measures may be needed to minimise regressive effects of carbon pricing and energy taxes and their potential consequences in exacerbating energy poverty⁽⁶⁾ and affecting highly vulnerable groups. The measures should target specific socially vulnerable groups and be based on income level⁽⁷⁾ and other factors, such as location (e.g. rural versus urban area), to maintain the environmental efficiency of the policy measure (greenhouse gas reduction) and ease its social impact, and therefore improve its acceptability (Laurent, 2019). Compensating citizens through direct rebates on utility bills may also address regressive impacts and social issues but does not help solve social and environmental challenges in the long run.

Some Member States are already addressing the regressive effects of carbon taxes. Germany, Ireland, Luxembourg, the Netherlands and Poland, for instance, introduced relief measures or support for low-income households, vulnerable groups, communities and companies to alleviate the negative consequences of carbon taxes. Such relief measures — including tax breaks, social assistance and energy allowances — have been possible thanks to the revenues generated from carbon taxes. The ‘green cheque’ to compensate low-income households for rising energy taxes in Denmark is another example of a compensation measure.

Maximising non-monetary co-benefits, such as health benefits

Reaching the first two objectives should contribute to maximising non-monetary co-benefits of climate mitigation policies (environmental and health) by strategically prioritising support, incentives and compensation measures to specific sectors and social groups. Within each key sector (e.g. buildings and transport), particular actions may provide more environmental and health benefits than others.

Maximising the environmental and health co-benefits suggests that they are well known, valued and considered from a distributive perspective in the political decision-making process. Yet, until now, they have been overlooked (Geoffron et al., 2020). Improving air

quality and reducing the energy poverty that mostly affects those with lower incomes might be seen as a priority in this context.

People living in energy poverty may be adversely affected in terms of their health and well-being from cold in winter, extreme heat in summer, and socio-cultural issues related to low-quality housing and energy poverty. The change in climate amplifies these effects (Thomson et al., 2019), which have been shown to have a higher impact on women and, geographically within the EU, Mediterranean countries (Oliveras et al., 2021). Secondary impacts of energy poverty include food insecurity, poor indoor air quality, noise pollution and housing insecurity (Jessel et al., 2019). Specific measures have been developed at national level to address extreme cases of energy poverty (see Box 3).

Box 3 — Energy poverty and climate mitigation

Energy poverty — defined here as the inability to adequately heat the home or use the energy needed because the cost is unaffordable — affects a large share of people in the EU: according to Eurostat, 6.9 % of the EU population reported in an EU-wide survey in 2019 that they could not afford to heat their home sufficiently. The situation varies across the EU Member States. The largest share of people who said that they could not afford to keep their home adequately warm was recorded in Bulgaria (30.1 %), followed by Lithuania (26.7 %), Cyprus (21.0 %), Portugal (18.9 %), Greece (17.9 %) and Italy (11.1 %) (Eurostat, 2021).

Many countries in Europe are reducing the regressive effects of climate policies such as carbon taxes by addressing the issue of energy poverty through policies and measures supporting the most vulnerable groups. Among the most common measures are grants and subsidies to help reduce the energy burden on household expenses by making housing more energy efficient and/or installing renewable energy sources. Grants for renovating buildings play a significant role, and the details of this type of measure are often the subject of public debate. While not all these measures may have been assessed in terms of their effectiveness, many have been deemed successful in reducing the negative distributional effects of other green measures.

The following are good examples of well-targeted measures:

- Support for solar panel installation and energy efficiency improvements in social housing, and discount vouchers for purchasing energy-efficient household appliances (Belgium).
- Assistance with heating for vulnerable groups to offset regressive effects of the Eco-design Regulation (Bulgaria).
- The energy allowance for vulnerable electricity end-users to tackle energy poverty (Poland).
- The Save Energy at Home programme to fund improvements to properties to reduce energy costs (Greece).
- Transition plans for the peatlands area in the Midlands, including retrofitting social housing stock, protecting the most vulnerable from rising energy costs and improving electricity distribution infrastructure (Ireland).
- State support for modernisation of apartment buildings (Lithuania).
- The Warm Home Discount Scheme, offering a lump-sum discount on energy bills for vulnerable and low-income groups (United Kingdom).

Compensating by recycling carbon tax revenues and addressing 'non-take-up'

The different incentive and compensation measures can be based on carbon tax revenue recycling. For instance, revenues from carbon taxes can be used to correct market distortions or regressive distributional effects caused by the introduction of the tax (e.g. subsidies to support improving energy efficiency in residential buildings of lower income households). Compared with using carbon tax revenues to reduce other taxes (e.g. labour or income taxes, social security contributions), earmarking for specific climate change purposes increases the transparency of the policy — and therefore its acceptability — while also contributing to greenhouse gas emission reduction.

The issue of non-take-up of social benefits is also significant. Non-take-up occurs when households and individuals do not receive the benefits they are entitled to. It is often the case that the people foregoing the benefits they are entitled to are the ones living in the most vulnerable circumstances (Eurofound, 2015). For support measures to be fully effective, it is therefore essential to raise awareness of them and provide the means for potential beneficiaries to easily get the support they need. This is essential to maximise the environmental and health-related co-benefits.

A green, socially fair transition needs a multilevel approach and multistakeholder involvement

A socially acceptable transition requires coordination between different policy governance levels and policy spheres

Climate policies and social actions are developed at different governance levels within Member States (e.g. region level, city level). Sound, strong articulation of all governance levels (supranational, national, regional, local) — appealing to the principle of subsidiarity espoused by the EU—, will determine the success of climate policies in environmental, economic and social terms, and ensure that no one is left behind. For this to happen, it is essential that there is regular dialogue between policymakers in the environmental, social and other policy spheres, and at the various governance levels to ensure that a balanced policy package is designed, achieving both environmental and social goals, and that compensation measures are effective.

At EU level, the Just Transition platform promotes exchange of best practice between stakeholders on the particular circumstances of territories facing the greater challenges, and the EU initiative for coal regions in transition offers a similar forum for EU coal regions ⁽⁸⁾.

The advantage of broader stakeholder coordination for designing and implementing fair and publicly acceptable policies

Sharing the costs of the transition to a carbon-neutral economy among citizens and reconciling environmental and social goals can be achieved more effectively through early involvement of relevant stakeholders — including non-governmental organisations (NGOs), workers' and employers' representative organisations (social partners), companies, social and environmental movements, regional authorities, political parties and the academic community. It may mitigate, or even prevent, the undesired effects of some climate policies while increasing buy-in from all parties concerned.

Some Member States and regions have already engaged in this kind of approach by introducing wide stakeholder consultation processes to determine the required transition measures. Citizens' assemblies in France and Ireland have been asked to discuss national climate policies.

A wide stakeholder consultation for the Just Transition programme has been organised in Ireland's Midlands region. Concern about the effects on industry and jobs of an energy transition away from peat, as well as the potential for regional degeneration, triggered an unprecedented engagement of relevant regional bodies. The funding to support such regional transition — mostly earmarked revenue from carbon taxes — will be used in consultation with the Midlands Transition Team, composed of local government representatives, regional bodies dealing with employment and education, and institutes of technology, among others. The transition plan for the region spells out the intention to explore opportunities for all those affected through employment programmes and rural social support schemes.

The Dutch national climate agreement concluded in June 2019 is another relevant example. The agreement, which is the result of the joint work of more than 100 representative organisations, including the social partners, comprises regulatory policies, agreements between enterprises at sectoral level, and measures to encourage voluntary changes in people's behaviour. The sectoral agreements set out what the relevant sectors — electricity, industry, construction, transport and agriculture — will do to help achieve the climate goals. The ex-ante analysis of the distributional effects of this agreement on different groups according to income level and source, and household type and composition, showed very limited differences between them in 2021 and 2030.

These examples suggest that the wide involvement of stakeholders — including social partners and NGOs — in the design and implementation of climate policies pre-empts better understanding of potential distributional effects and how to tackle them. Introducing policies that have been developed with wide(r) consensus, as in the Dutch example, strengthens their desirability, political attractiveness and effectiveness, both environmentally and socially.

Such multistakeholder involvement can and should take place at the various levels of governance. European institutions can play an important role by encouraging (through guidance and resources, for instance) the participation of all stakeholders at European, national, regional, sectoral and local levels.

Social dialogue also matters for climate policy

Employers are key actors in a fair transition, as they respond to climate policies through adjustments in their business models, goods and services, production systems, work organisation, etc. Research carried out by Eurofound suggests that social dialogue can have a crucial role in ensuring that climate policies deliver the reduction in greenhouse gas emissions in a fair way. Discussions, consultations, negotiations and joint actions involving the social partners — or social dialogue⁽⁹⁾ — on these subjects is slowly becoming widespread.

There are a few examples of initiatives carried out by, or with the participation of, social partners that aim to design and implement solutions to problems raised by the transition to a climate-neutral economy. The main goal of these initiatives, taking place at EU, sectoral and company level, is to achieve a coordinated approach generating mutual gains for present and future generations — environmentally, economically and socially. Some are bipartite (between workers and employers); others are tripartite (between workers, employers and public authorities).

At the EU level initiatives taken by both sides of the automotive industry invite companies in the sector to support training and upskilling of their workforces, wage and job security, and investment in technology. At national level, agreements in the energy sector (Italy, Spain) or agreements concluded between trade unions of the coal sector and government (Germany, Poland) have regulated the training and reskilling of workers affected by the transition, with the aim of maintaining local employment or transferring workers to other plants. Some multinational companies in the oil and gas, and wind energy sectors reached global framework agreements with their workers' representatives. These agreements deal with potential distributional effects on workers, indicating that social dialogue at company level can also play a role.

There is evidence that the undesired effects of some climate policies, especially if they affect firms and workers in certain sectors or regions, can also be addressed by the social partners, and solutions can be developed through social dialogue. In some instances, trade unions have joined forces with NGOs to address those challenges. For instance, the Austrian Just Transition initiative was formed by over 20 civil society organisations, including several trade unions and NGOs (including Attac, Greenpeace and Global 2000). These initiatives may create an additional impetus for the social partners to not only

engage in dealing with current problems but also proactively anticipate potential effects on sectors, companies and society as a whole.

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Endnotes

(¹) The 17 SDGs recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality and spur economic growth — all while tackling climate change and working to preserve our oceans and forests (source: [The 17 goals](#)).

(²) The [long-term national strategies](#) of EU Member States are available on the European Commission website.

(³) Replacing fossil fuel energy by deploying renewable energy sources, such as solar and wind energy, and increasing energy efficiency generates several substantial environmental and health co-benefits, but it is not impact free for the environment and can also have adverse effects on people's health (ETC/ATNI, 2020; Symonds et al., 2019).

(⁴) In Poland for instance, stopping coal use would involve the closure of mines that, in December 2019, employed 83 300 people, including 64 000 working underground.

(⁵) Nearly 34 million Europeans are unable to afford to heat their homes (Eurostat, 2019).

(⁶) Tovar Reanos (2021) estimates that a 1 % increase in carbon taxes will raise the number of people experiencing fuel poverty by 0.5 %.

(⁷) The distributional outcomes across households with similar incomes also matters. Evidence shows that the inequality outcomes of carbon taxes within income groups could be greater in magnitude than across different income groups. This is explained by the fact that, even within the same income group, households may have significantly different preferences, consumption patterns and vulnerability/context factors.

(⁸) See: [Just Transition Platform](#) and [Coal regions in transition](#).

(⁹) See definition of social dialogue in the [European Dictionary of Industrial Relations](#).



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