Understanding the Just Transition Policy Landscape in the European Union

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Abstract

This working paper examines the evolving "just transition" policy landscape in the European Union in the context of the EU's accelerating decarbonisation agenda. While climate and energy policies are central to achieving the EU's mitigation targets, they can generate uneven social and territorial impacts—ranging from employment disruption in carbon-intensive regions to distributional pressures linked to energy and mobility costs. The concept of a just transition has emerged as a response to these tensions, but its meaning, scope, and operationalisation remain contested across academic debates and policy practice.

Against this backdrop, this paper provides a structured narrative review that brings together (i) core conceptual and analytical debates on just transition and eco-social policy, and (ii) the EU's policy and funding architecture relevant to "leaving no one behind," including both Green Deal–era instruments (notably the Just Transition Mechanism and related initiatives) and earlier cohesion, labour-market, innovation, and energy-poverty frameworks that have become increasingly mobilised under a just transition rationale. Synthesising these literatures, we identify recurring tensions in the EU approach—particularly the balance between territorial targeting and broader social vulnerability, the relative neglect of procedural and recognitional justice in implementation, and the challenges of monitoring and accountability in an expansive and rapidly evolving policy domain.

Finally, the paper sets out a forward research agenda and proposes an analytical framework that can support more systematic comparative work across Member States. In particular, a forthcoming paper will apply this framework to a detailed content analysis of updated National Energy and Climate Plans and associated national policy documents to assess how "just transition" is interpreted and operationalised across the EU.

1. Introduction

The global green transition is essential for mitigating climate change, reducing environmental degradation, and avoiding potentially catastrophic impacts on societies and economies. By driving the shift away from fossil fuels and promoting cleaner technologies, climate and energy policies are crucial for curbing greenhouse gas emissions and limiting the economic damages associated with climate impacts (Acemoglu et al., 2016). In this context, the European Union (EU) has positioned itself as a global leader in climate governance and has accelerated decarbonisation through increasingly ambitious targets and policy packages (European Commission, 2019a, 2024a).

At the same time, the distributional and labour-market consequences of rapid decarbonisation are now widely recognised as central political constraints on climate ambition. Transition policies can generate uneven economic impacts across regions, sectors, and households—particularly where livelihoods, local tax bases, and collective identities are closely linked to carbon-intensive activities (Carley and Konisky, 2020). Low-income households may face disproportionate burdens from energy price increases or the upfront costs of decarbonising housing and mobility without appropriate compensation and investment (Klenert et al., 2018; Markkanen and Anger-Kraavi, 2019). Similarly, workers and communities in carbon-intensive industries may experience employment disruption, industrial restructuring, and place-based decline if transitions are poorly sequenced or inadequately supported (Acemoglu et al., 2016; Carley and Konisky, 2020). These dynamics matter not only in distributive terms, but also politically: perceptions of unfairness can trigger backlash that undermines the durability of climate policy, as seen during the Yellow Vest protests in France (Douenne and Fabre, 2022).

The concept of a “just transition” has emerged as a response to these tensions, calling for climate and energy policies that explicitly address social justice, equity, and inclusion. Across its diverse interpretations, a just transition generally aims to ensure that the costs and benefits of decarbonisation are fairly distributed and that affected workers, households, and regions receive adequate support during structural change. However, while “just transition” has gained traction in both academic and policy discourse, it remains an umbrella concept with contested boundaries. It can refer to labour-market adjustment and reskilling, place-based industrial policy, poverty and vulnerability reduction (including energy poverty), or broader forms of procedural and recognitional justice in governance (Wang and Lo, 2021; Armeni,

2023). This plurality has enabled broad coalitions to mobilise around the term, but it also complicates monitoring, accountability, and comparative evaluation.

In the EU, just transition has become increasingly embedded in climate and energy strategies, most visibly through the European Green Deal and the establishment of the Just Transition Mechanism (JTM) and related instruments (refer to Section 4 for further details) (European Commission, 2021a). Yet the EU "just transition" agenda is not reducible to a single fund or governance tool. Instead, it draws on a wider policy ecosystem including cohesion and regional development funding, labour-market and social inclusion instruments, innovation policy, and more recently an expanded focus on energy poverty and affordability. As a result, the just transition policy landscape is both rapidly evolving and institutionally fragmented, spanning multiple Directorates-General, funding streams, and governance levels. This fragmentation is mirrored in the academic literature, where analyses often focus either on conceptual debates around justice (e.g., distributional, procedural, recognitional, restorative), or on discrete EU instruments (e.g., the Just Transition Fund [JTF] or the Social Climate Fund [SCF]), or on individual national and regional cases, often without a consolidated synthesis of how these pieces fit together in the EU's broader transition governance.

This working paper therefore takes stock of the field by synthesising the just transition policy landscape in the EU through an extended literature review. Specifically, it integrates (i) conceptual debates on just transition and eco-social policy; (ii) scholarship evaluating EU just transition initiatives and their governance dynamics; and (iii) the EU's wider "policy toolbox" relevant to managing the social and territorial consequences of decarbonisation. In doing so, the paper aims to clarify what is—and is not—captured when "just transition" is invoked in EU climate governance, and to identify recurring tensions and gaps that shape the effectiveness and legitimacy of this agenda.

The paper is guided by three interrelated questions:

1. **Conceptualisation and evolution:** How has "just transition" been conceptualised in the academic literature and EU policy discourse, and how has its meaning expanded beyond its labour-union origins?
2. **Policy architecture:** What are the key EU-level policy instruments and governance arrangements that currently constitute the EU just transition landscape, and how do they relate to longer-standing cohesion, social, and energy-poverty frameworks?
3. **Justice dimensions and critique:** Which dimensions of justice (distributional, procedural, recognitional, restorative) are most clearly operationalised in EU instruments, and what limitations are repeatedly identified in the literature?

Approach and scope of the review

The paper builds on and complements existing efforts to operationalise eco-social policy mixes for a just transition in Europe (Mandelli, 2022; Sabato and Mandelli, 2024). It consolidates conceptual debates and maps the EU policy architecture relevant to just transition, with the aim of clarifying the analytical terrain and identifying gaps in operationalisation, monitoring, and evaluation. Empirically, the working paper is review-based: it draws on peer-reviewed scholarship on just transition, energy/climate justice, eco-social policy, and EU climate governance, alongside EU primary and secondary policy materials (including regulations, directives, Commission communications, and official documentation on key instruments and funds). The purpose is not to evaluate the effectiveness of specific national measures, but to synthesise how "just transition" has been conceptualised and institutionalised at EU level and to identify recurring tensions highlighted in the literature (e.g., territorial targeting versus broader vulnerability, and distributional versus procedural justice).

While prior research has used NECPs and related national documents as a key empirical entry point for comparative analysis, the present working paper focuses on consolidating the conceptual and policy landscape and developing a coherent analytical framework. A subsequent paper will apply this framework to a more detailed and systematic content analysis of updated National Energy and Climate Plans (NECPs) and associated national policy strategies, enabling a more granular assessment of how Member States interpret and operationalise "just transition" in practice.

Organisation of the working paper

The remainder of this paper is structured as follows. Section 2 reviews the literature on just transition and eco-social policy, with particular attention to competing justice frameworks and the state of research. Section 3 situates just transition within the trajectory of EU climate and energy policy and the distributional pressures associated with the accelerating pace of decarbonisation. Section 4 maps the EU's just transition policy landscape, highlighting both Green Deal–era initiatives and precursor instruments that have been repurposed or reinterpreted under a just transition rationale. Section 5 concludes by synthesising the main insights, drawing policy implications, and outlining a research agenda—including a forthcoming empirical analysis of NECPs.

2. Literature review

2.1 Origins of just transition policies

Although the term "just transition" is now frequently associated with climate change discourse, its origins can be traced to the 1980s when US labour unions advocated for aligning workers' rights and job security with environmental considerations (Abraham, 2017; Doorey, 2017; Stevis and Felli, 2015). Over time, international labour organisations began to adopt just transition frameworks in which they articulated how labour policies should be related to sustainable development and climate change, emphasising the role of green jobs in the transition from fossil fuels (Abraham, 2017). Notably, in 2009, the International Trade Union Confederation (ITUC) explicitly integrated just transition principles into climate policy demands in preparation for the Copenhagen climate negotiations (Hampton, 2015).

The prominence of just transition frameworks, initially championed by labour unions, has subsequently attracted interest from a diverse array of social actors, including environmentalists, social justice organisations, advocacy groups, intergovernmental bodies, corporate alliances, and think tanks (Stevis, 2021). As these various stakeholders have embraced and adapted the concept of a “just transition”, its definition has evolved beyond its original focus on job security. While this broader engagement has enriched the concepts of justice within the just transition and fostered the formation of more inclusive just transition alliances, it has also introduced greater complexity into its interpretation (Wang and Lo, 2021). As a result, the concept of just transition has become increasingly ambiguous, lacking a single, universally accepted definition.

Although achieving a unified understanding of just transition has become increasingly challenging, the proliferation and evolution of more complex understandings of a just transition have also mitigated critiques that emphasise a dichotomy between jobs and environmental concerns. Rather than focusing solely on labour market transformations, the concept now envisions a broader societal transition away from conventional energy sources, advocating for a shift across all economic sectors away from fossil fuels (McCauley and Heffron, 2018). Consequently, scholars argue that this “expanded” just transition framework has the potential to integrate a broader range of justice perspectives than the initial scope of just transition historically entailed, contributing to a more equitable and comprehensive transition (McCauley and Heffron, 2018; Wang and Lo, 2021).

2.2 Types of justice in just transition policies

As the concept of a just transition has grown increasingly complex, it now encompasses various dimensions of justice, including most prominently environmental, climate, and energy justice. Each of these perspectives in turn emphasises different aspects of justice—such as fairness in the distribution of benefits and burdens, inclusion in decision-making processes, and recognition of historical and present inequities. This chapter explores the key types of justice within the broader framework of just transition, focusing on their unique contributions to achieving an equitable and sustainable shift away from fossil fuels.

Environmental justice is centred on the equitable distribution of environmental goods and bads. When "the costs of environmental risk and the benefits of good environmental policy are not shared across demographic, geographic [and socio-economic] spectrums" (Armeni, 2023, p. 1033), environmental justice advocates for those who are disproportionately affected by environmental damage and the unequal impacts of environmental policies and the transition to a cleaner economy. Most of the environmental justice literature is thus concerned about how to balance the social and environmental dimensions of environmental risks and policies (Evans and Phelan, 2016; Kubanza et al., 2017; Sharma-Wallace, 2016). At the same time, environmental justice entails that agreeing on an equal balance of burdens can only be achieved if these disadvantaged communities are also involved in the development, implementation and enforcement of environmentally just policies (Wang and Lo, 2021).

Climate justice focuses on the implications of rapid climate change for vulnerable groups, particularly in the Global South (Fuller, 2017; Kortetmäki, 2016; Shaw, 2016). Additionally, it seeks to challenge the systems that create climate change and impose disproportionate environmental costs and risks on less powerful groups (Wang & Lo 2021). Climate justice therefore questions who pays the transition to combat climate change by addressing issues such as historical responsibility of emissions and who has to reduce the most based on previous inequitable use of resources, while acknowledging trade-offs between competing actors and interests (Newell and Mulvaney, 2013). Climate justice thus provides a long-term temporal aspect to just transitions by incorporating events of the past and by considering long-term future consequences (Mihr, 2017; Skillington, 2017).

Energy justice addresses the complex trade-offs between energy production, developmental needs, and carbon emissions, as well as the associated conflicts and disputes over resource distribution (Lappe-Osthege and Andreas, 2017; Liljenfeldt and Pettersson,

2017; Rasch and Köhne, 2017). This has two principal implications. Firstly, energy justice underscores that energy issues are pivotal in geopolitical and economic strategies due to their close ties to economic growth, security, and conflict. Consequently, the distribution of energy resources is inherently a matter of power dynamics, often resulting in the marginalisation of impoverished and disadvantaged communities whose needs are frequently overlooked by policymakers. This neglect highlights the critical gap in addressing the justice implications of energy access (Newell and Mulvaney, 2013).

Secondly, energy justice highlights that decarbonisation efforts may replicate existing patterns of exploitation and dispossession characteristic of fossil fuel-dependent economies. As the shift towards decarbonisation relies on the extraction of scarce natural resources, which often entails significant environmental and human rights impacts, the transition away from fossil fuels does not necessarily eliminate the exploitation of resource-rich regions. Thus, energy justice raises concerns that the burdens associated with transitioning to a low-carbon economy could be inequitably distributed if the principles of energy justice are not adequately considered (Newell and Mulvaney, 2013).

Although environmental, climate, and energy justice each emphasise unique dimensions within the context of a just transition, they converge on the foundational principles of distributional, procedural, recognitional, and restorative justice (Armeni, 2023). Distributional justice illuminates where inequalities occur and emphasises the fair allocation of both the costs and benefits associated with energy transitions, addressing the responsibilities of various stakeholders (Menghwani et al., 2020; Milchram et al., 2018). As such, distributional justice scrutinises the desirability of new technologies by considering emerging negative impacts (Jenkins et al., 2016). Essential to distributional justice is the safeguarding of human rights and socio-economic equity for all individuals, irrespective of their geographical location or the era they live in. Evaluating distributional justice involves assessing whether the spatial and temporal distribution of benefits and harms is equitable. Spatially, this means ensuring that the benefits and adverse effects of energy transitions are justly shared across different regions. Temporally, it involves considering the principle of intergenerational justice, which examines how current actions impact future generations, thereby ensuring a sustainable and equitable future (Moesker and Pesch, 2022).

While fossil fuel dependency is often seen as the primary inequality, distributional justice ought to consider broader aspects as health, education, gender, and income. Health inequalities are, for instance, a critical indicator of where targeted policy responses are needed to achieve a just transition by pointing out high levels of fossil fuel-associated health

vulnerability (Gkiouleka and Huijts, 2020). Educational systems increase the likelihood of a just transition by delivering the skills required for a low-carbon future (Sovacool and Ryan, 2016). Implications for gender inequality (Amate-Fortes et al., 2021) as well as for income inequality (Filetti and Janmaat, 2018) are also considered part of distributional justice in the transition away from fossil fuels.

Restorative justice aims to repair the harm caused by the energy transition rather than merely punishing offenders (McCauley and Heffron, 2018). This involves activities such as restoring lost jobs and addressing environmental damage. Given the significant turnover in jobs caused by transitions, restorative justice is particularly focused on those who become redundant and unemployed. Outplacement services are a key mechanism here, aiding re-employment, increasing wages, and improving overall well-being (Marzucco and Hansez, 2016; Westaby, 2004). Evaluating restorative justice involves assessing both the material outcomes, such as wage levels post-transition, and the mental impacts, which include job-related social and identity aspects (Doherty, 1998). Understanding these impacts requires analysing the experiences and emotions of workers supported by outplacement services, with a focus on perceived fairness and quality of support provided (Moesker and Pesch, 2022). As the types of employment in the renewable sector differ from those traditionally found in fossil fuel industries, this positions trade union representation and a government's commitment to employee conditions as critical to the assurance of rights protections in this new environment (Crouch, 2017; Thomas, 2021).

Procedural justice, on the other hand, focuses on the inclusivity and fairness of decision-making processes related to energy transitions (Milchram et al., 2018). It mandates that stakeholders are included and supported in these processes in a non-discriminatory manner (Moesker and Pesch, 2022). Effective procedural justice requires symmetrical selection of actors, facilitating non-hierarchical dialogues between experts and local actors. A case-specific approach is necessary, allowing flexibility to incorporate new knowledge as it emerges. A level playing field ensures all actors can voice their concerns, and an ex-ante agreement on the rules of engagement honours normative diversity and plurality (Pesch et al., 2017).

Additionally, political legitimacy is crucial; decisions made by the public must be considered politically valid. This further means that stakeholder inclusion must be complemented by accountable systems and structures (Sareen and Wolf, 2021). In the EU, scholars have pointed towards various levels of informal and formal corruption taking place in member states, most notably in Eastern Europe (Bates et al., 2020; Jastramskis et al., 2021). This relates to an additional element of procedural justice in the literature, namely, political

trust. High levels of trust in policymakers are needed for the long-term buy-in of a member state's populace on the subject of reducing fossil fuel-based CO2 emissions (Uslaner, 2019).

Recognitional justice, a relatively recent concept and closely related to procedural justice, emphasises the importance of acknowledging and respecting the diverse identities, needs, and contributions of different groups within the energy transition framework (Fraser, 2000). Misrecognition occurs when individuals or groups are not seen as equals, preventing their full participation in social interactions. To uncover issues of misrecognition, one can evaluate existing stakeholder groups and compare them to those identified in literature and media. Disparities between these groups can indicate instances of misrecognition (Cuppen, 2018). Recognitional justice requires consultation and parity in participation, ensuring that all groups, especially those traditionally marginalised, are recognised and included in decision-making processes (Armeni, 2023; Bennett et al., 2019). This approach is crucial for addressing the social structures and institutional contexts that underpin distributional, procedural, and restorative justice.

2.3 Current state of research

Even though scholars have tried to advance a common understanding of a just transition (e.g., McCauley & Heffron, 2018), the literature is still heterogeneous in its approaches and assessments. This has led to different understandings of who should be considered "vulnerable" and what a just transition should entail (Wang and Lo, 2021). Wang & Lo (2021) classify just transition into three key dimensions. First, they frame just transition as a theory of socio-technical transition, which emphasises deep structural changes in systems involving long-term, complex reconfigurations of technologies, policies, infrastructure, scientific knowledge, and social and cultural practices. Second, they conceptualise just transition as governance strategies that capture the growing complexity of institutional structures, political processes, and social relations involved in the collective pursuit of public, common, or individual interests. These governance modes vary significantly across socio-political contexts, and a key challenge lies in finding a balance between ensuring procedural justice and addressing the urgent concerns of climate change (Wang & Lo, 2021). Finally, just transition is also seen as a matter of public perception, where stakeholders' attitudes toward energy transitions are shaped by a range of factors, including unemployment levels, environmental awareness, and the extent of communities' reliance on the fossil fuel industry (Wang & Lo, 2021).

Besides theoretical debates, there is also a dedicated literature engaged in assessing just transition processes in multinational contexts (Armeni, 2023; Cigna et al., 2023; Crespy

and Munta, 2023; Leppänen and Liefferink, 2022; Moesker and Pesch, 2022; Sabato and Mandelli, 2024) and national (García Vaquero et al., 2021; Milchram et al., 2018; Schuster et al., 2023; Snell, 2018; Streimikiene et al., 2021; Voicu-Dorobanțu et al., 2021). In these cases, the scope of the just transition policies is usually the focus of the literature, assessing which types of justice are prioritised.

2.4 Just transition in the eco-social policy debate

Just transition has also been integrated into welfare and eco-social debates of academic literature. Bohnenberger (2023) reviews the academic progress that has been made in linking ecological and social policies and points out that social compensation for climate policies, economic inequality in the climate crisis, energy use patterns in housing, mobility and nutrition, as well as political conditions for eco-social policy and varieties in eco-social country regimes are well understood. However, open questions remain in understanding how to reduce the environmental burden through a change in demand structures by welfare states, how to make social security growth independent, how to support socio-ecological transformations by altered financing of welfare states and how ecological mainstreaming in the domains of social security takes place.

By directly addressing the capabilities of welfare states, Gough (2022) argues that expanded public provision is a necessary component to accompany net zero carbon strategies. Gough (2022) suggests that welfare state interventions could even go further by building sufficiency economies with ceilings to income, wealth and consumption. García-García et al. (2022) hypothesise that social-democratic regimes are in a better position to accomplish a just transition through a well-functioning welfare state but finds that while social-democratic regimes in Europe display the best social conditions, they also display the worst environmental performances, indicating that society and environment are not yet sufficiently linked.

Otto & Gugushvili (2020) categorise four distinct attitude groups in relation to welfare and climate change policies by distinguishing between individuals in favour of ecological and social policies, individuals supporting only either ecological or social policies and individuals in favour of neither of them. Assessing European countries, they find that support for both ecological and social policies is the highest in Nordic countries and that at the micro level, political ideology and trust in public institutions are the most important drivers for the support of eco-social policies, providing valuable insights for the successful implementation of just transition frameworks.

Furthermore, international organisations play a pivotal role in incorporating the just transition in proposed eco-social policies. Cigna et al. (2023) highlights the difference between the International Labour Organization (ILO) for which the just transition refers to an ambitious eco-social agenda, and the International Monetary Fund (IMF) which emphasises rather on macroeconomic adaptation while the EU takes a middle position by promoting a “green growth” strategy with medium emphasis on environmental and social risk mitigation. The varying interpretations of just transition by these international organisations underscore the complexity and multifaceted nature of integrating eco-social policies into global sustainability efforts.

3. EU decarbonisation policies and just transition

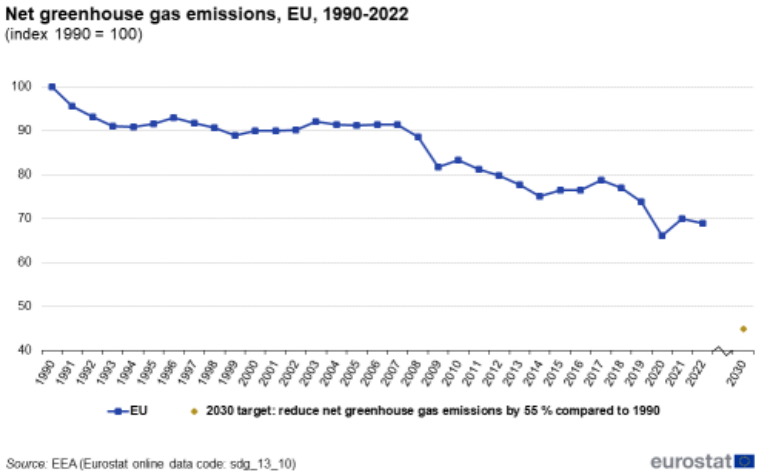
Since the early 1990s, the European Union has pursued ambitious climate policies, establishing itself as a global leader in the field (Skjærseth 2016). From 1999, climate policy was framed by the European Climate Change Programme (ECCP, 1999–2006; European Commission, 2005, 2000), which aimed to implement the EU's commitments under the Kyoto Protocol. Even at this stage, climate policy was closely linked to energy policy, given that around 75% of the EU's greenhouse gas (GHG) emissions stem from energy use, including transport *(European Environment Agency, 2024)*. This interdependence led to fragmented measures, often shaped by EU energy policy priorities. As a result, key climate and energy policies—particularly on renewables and energy efficiency—were initially regulated under environmental and internal market law. It was only with the Treaty of Lisbon that climate and energy policy became explicit EU competences, codified in Articles 191 (climate policy) and 194 (energy policy) of the Treaty on the Functioning of the European Union (TFEU).

In line with its international commitments, the EU has set ambitious climate targets. By 2020, it aimed to reduce emissions by 20% compared to 1990 levels. It now targets a 55% reduction by 2030 and carbon neutrality by 2050, with discussions underway on an intermediate 90% reduction target by 2040 *(European Commission, 2024a)*.

The EU established the first multinational emissions trading scheme with the European Emissions Trading System (ETS). The ETS currently covers around 10,000 installations across the EU-27, Northern Ireland (post-Brexit), Iceland, Norway, and Liechtenstein. It primarily covers emissions from energy production and heavy industry (e.g., steel, pulp, and paper), accounting for roughly 40% of the EU's GHG emissions. Since 2012, intra-EU aviation and since 2024, maritime transport (within the EU) have also been included *(European Commission, 2024b)*. From 2027, a parallel system (ETS2) will extend emissions trading to buildings and road transport. These sectors are currently covered by the Effort Sharing Regulation *(European Parliament and Council, 2018)*. Under this regulation, Member States have individual targets based on GDP per capita, ranging from 0% to 40% reductions compared to 2005. Additional sectoral legislation, particularly in energy, transport, and industry, further reinforces the EU's climate framework.

Overall, these policies and measures have contributed to a 30% reduction in EU GHG emissions compared to 1990 levels (Figure 1).

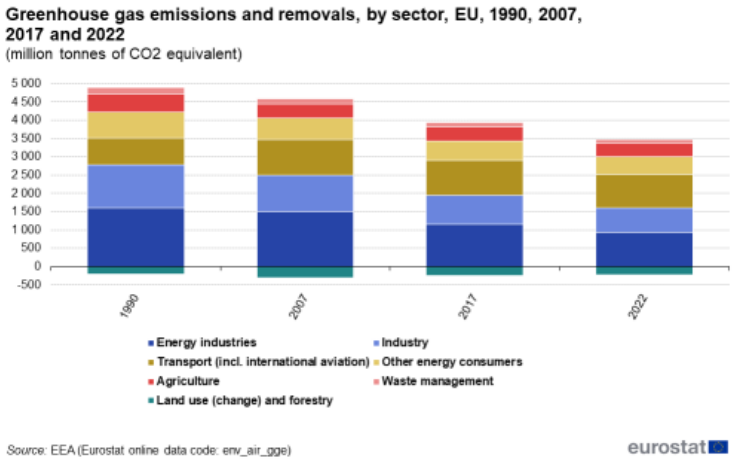
Figure 1: EU net GHG emissions 1990-2022



Source : Eurostat, 2025a

In a sectoral overview, reductions largely in the energy sector have led to significant emission reductions, whereas other sectors contributed less to decarbonisation (Figure 2).

Figure 2: EU GHG emissions and removals by sector



Source: Eurostat, 2025b

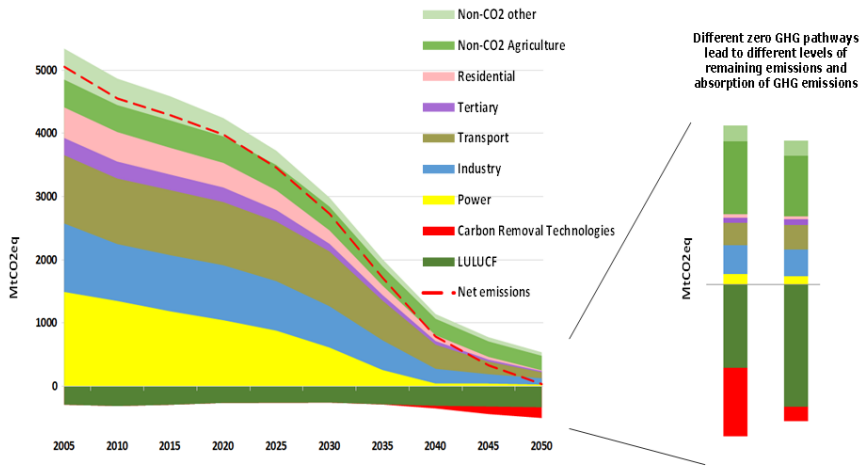
Against this backdrop, the "European Green Deal" *(European Commission, 2019a, 2019b)* and the "European Climate Law" of 2021, which enshrines the 55% emissions reduction target by 2030 and full decarbonisation by 2050, do not represent a fundamental shift in policy. Rather, the Green Deal's commitment to carbon neutrality by 2050 is a logical continuation of the EU's long-standing climate policy.

What sets the Green Deal apart from earlier strategies is its heightened ambition. Previous EU climate scenarios, such as those in the 2011 "Roadmap for a competitive low-carbon Europe,"

considered an 80% GHG reduction by 2050 a feasible target. In contrast, the Green Deal, supported by the 2018 "Climate Roadmap" *(European Commission, 2018a)*, significantly raises this ambition, aiming for near-total decarbonisation and structural transformation across all economic sectors (Figure 3).

To underpin this strategic goal, the European Commission introduced the "Fit for 55" package, a comprehensive set of policies designed to drive transformation across the economic sectors of the EU, particularly in energy, industry, and buildings *(Erbach and Jensen, 2022)*. The urgency of this transition was further reinforced by the EU's response to Russia's war of aggression against Ukraine: The "REPowerEU" plan *(European Commission, 2022a)* accelerated the shift away from fossil fuels, as rising energy prices heightened the economic case for increased energy efficiency and further deployment of renewable energies across both industry and households.

Figure 3: Decarbonisation by sector according to the European Green Deal



Source: European Commission, 2019a

The expanded scope, ambition, and pace of Europe's green transition have significant implications for the principle of a "just transition", formulated by the EU's commitment to "leave no one behind": First, sectoral transformations were limited to individual industries, such as coal mining (see Section 4), allowing displaced workers to find employment in other sectors. However, the simultaneous transformation of multiple industries now limits labour absorption capacity, necessitating more comprehensive reskilling policies.

Second, the accelerated pace of transition requires equally rapid requalification efforts, reducing the time available for phasing workforce adjustments. Third, rising carbon prices and energy costs further exacerbate social challenges, particularly for vulnerable groups,

intensifying issues such as energy poverty (Makridou et al., 2024). Lastly, the economic strain and instability caused by rising costs risk eroding political support for the transition, undermining the broader change management strategy behind Europe's green transformation (Durdovic et al., 2025).

To address these challenges, ambitious and comprehensive "just transition" policies were seen as a necessary component of the 2019-2024 European Green Deal. Likewise, it is an integral part of the current strategic goals of the EU, as outlined in "Europe's Choice". The 2024-2029 strategy emphasises the link between decarbonisation, competitiveness, and social equity. The strategy states: "People and their jobs must always remain at the heart of our social market economy, even as our industries and economies change shape. We need to ensure a just transition for all" (European Commission, 2024a). The Commission intends to further underpin this ambition through proposals such as the "Union of Skills" and the "European Strategy for Vocational Education and Training". This aspect of reskilling European workers is also taken up in the "Clean Industrial Deal" (European Commission, 2025a), while the aspect of affordable energy and the fight against energy poverty is addressed in the "Affordable Energy Action Plan" (European Commission, 2025b).

Financial support for a just transition is also expected to increase significantly in the next long-term EU budget, with multiple initiatives reinforcing this goal. These include a "Pact for European Social Dialogue", an "EU Anti-Poverty Strategy", a "European Affordable Housing Plan", a "Pan-European investment platform for affordable and sustainable housing", and the expansion of the "Social Climate Fund", which will support home renovations and improve access to energy-efficient housing. Collectively, these initiatives reflect the European Commission's strategy that Europe's future prosperity depends on its ability to balance sustainability, economic growth, and competitiveness while ensuring social fairness and preserving the "European way of life" (Ringel and Thompson, 2025).

4. Just transition within the EU

4.1 Precursor initiatives to just transition policies

Many initiatives, programmes, and funds that form an integral part of just transition policies have been developed on an ad hoc or standalone basis far earlier than the European Green Deal. This is notably the case for the European Social Funds (set up in 1957) or the European Regional Development Fund (ERDF), set up in 1975.

Following the classification of the Multiannual Financial Framework, Verdolini et al. (2024) propose a categorisation along the five work streams. To these, we add the work stream on "energy poverty", which strongly emerged with increased energy prices:

(1) Support for sector and regions with dominant coal and fossil fuel production.
(2) Support for workforce development.
(3) Support for businesses.
(4) Funding for infrastructure.
(5) Funding for research and development.
(6) Alleviating energy poverty.

The aspect of *(1) regional and sectoral transition away from coal and other fossil fuels* has gained prominence within the EU policy landscape since 2017. A key initiative was the launch of the *Coal Regions in Transition* Platform, which aimed to support economic diversification and technological development in regions dependent on coal, peat, and oil shale (European Commission, 2017). These regions were home to approximately 240,000 workers in coal mining and coal-fired power generation and faced structural employment challenges due to skill gaps and limited alternative job opportunities (EIB, 2020; European Commission, 2018b). The platform brought together a wide range of stakeholders, including 41 regions across 12 member states, national and regional authorities, coal companies, trade unions, academia, and civil society organisations working on just transition and climate policy (EIB, 2020). Its objectives included facilitating the development of transition strategies and projects, promoting peer-to-peer learning, and sharing best practices across regions.

Workforce development (2) has been supported through a range of longstanding EU instruments, most prominently the European Social Fund (ESF), established in 1957. The ESF has aimed to improve employment opportunities across the EU by supporting public and private projects that promote labour market participation, particularly for vulnerable groups and individuals with obsolete skills (European Commission, 2015, 2007). While the ESF did not

explicitly target employment challenges related to the energy transition, its institutional focus on upskilling, social inclusion, and poverty reduction offers valuable infrastructure for addressing labour market disruptions caused by decarbonisation. Access to ESF funding was broadly open to all EU regions, with a requirement that at least 20% of funds support actions to combat poverty and discrimination (European Commission, 2007).

Complementary initiatives reinforced this workforce development framework. The Youth Employment Initiative (YEI), launched in 2013, specifically targeted young people not in education, employment, or training in regions with youth unemployment above 25%, with funding split between the ESF and additional EU allocations (European Commission, 2022b). The Employment and Social Innovation (EaSI) program further supported labour market inclusion through its PROGRESS, EURES, and Microfinance/Social Entrepreneurship axes by promoting mobility, stakeholder engagement, and social enterprise development (European Commission, 2019c; European Parliament and Council, 2013a). The European Globalization Adjustment Fund (EGF) provided short-term, individualised support for workers displaced by globalisation or crises, offering retraining, mobility allowances, and entrepreneurship services (European Commission, 2022c). Although not initially designed for decarbonisation transitions, these programs form a robust institutional base for future workforce support measures under just transition strategies.

Support for businesses (3) is another foundational element of the EU's approach to regional development and economic transition. The European Regional Development Fund (ERDF), the largest of the EU structural funds, plays a central role by co-funding projects aimed at promoting structural adjustment and development in economically lagging regions, including industrial areas undergoing significant economic transformation (European Parliament, 2025). Access to ERDF funding is tiered based on regional GDP per capita, with less developed regions required to contribute a smaller share of co-funding, making the instrument particularly relevant for supporting declining or transitioning economies. Through national partnership agreements and collaboration with regional and social partners, ERDF supports projects that create new economic opportunities, including in sectors compatible with climate neutrality. In addition, Interreg, the ERDF's territorial cooperation program, strengthens cross-border, transnational, and interregional partnerships, which are essential for developing integrated regional responses to transition challenges (European Parliament, 2025, 2019).

Beyond structural funds, other key instruments addressed specific business needs, especially for small and medium-sized enterprises (SMEs). The COSME program (Competitiveness of Enterprises and Small and Medium-Sized Enterprises) enhanced access

to finance through guarantees and equity investments, helped reduce administrative burdens, and promoted entrepreneurship, especially in regions and sectors affected by industrial decline (EIF, 2015, 2014; European Commission, 2011a). Similarly, the Investment Plan for Europe, known as the Juncker Plan, sought to unlock private investment by providing guarantees for high-risk, economically viable projects through the European Fund for Strategic Investments (EFSI), complemented by technical assistance from the European Investment Advisory Hub and project visibility through the European Investment Project Portal (EIB, 2022a, 2022b; European Commission, 2019d). Initiatives such as the Green Action Plan and the Entrepreneurship 2020 Action Plan complemented these efforts by promoting resource efficiency, circular economy practices, and structural reforms that facilitate business growth and resilience in a transitioning economy (European Commission, 2016). Together, these instruments have laid important groundwork for enabling business adaptation, fostering innovation, and supporting job creation in the context of a just transition.

(4) Infrastructure funding has long been central to EU cohesion policy, which aims to reduce economic and social disparities between regions and promote more balanced territorial development. Infrastructure investments are particularly relevant to just transition policies because they open up economic opportunities, enable diversification in fossil-dependent areas, and help communities adapt to structural changes. Under the Multiannual Financial Framework (2014–2020), infrastructure development was supported primarily through the Cohesion Fund (CF), the Connecting Europe Facility (CEF), and the European Fund for Energy, Climate Change and Infrastructure (Marguerite Fund) (Commission and Communication, 2018; European Commission, 2022d). The CF targeted member states with gross national income per capita below 90% of the EU average, supporting environmental and transport infrastructure in countries like Bulgaria, Romania, and Poland. Relevant CF-supported activities included regenerating brownfield sites, promoting noise reduction, and rehabilitating rail systems (European Parliament, 2017; European Parliament and Council, 2013b).

In parallel, the Connecting Europe Facility (CEF) supported cross-border and trans-European transport, energy, and digital infrastructure projects to better connect peripheral and economically lagging regions. With a budget of €30.5 billion, CEF focused on building integrated, smart, and sustainable infrastructure networks that underpin both competitiveness and decarbonisation (EIB, 2022c; European Parliament and Council, 2021). Infrastructure co-financed under CEF included strategic clean energy and transport systems, helping address the challenge of regional economic fragmentation. Another instrument, the Marguerite Fund,

functioned as an equity and debt vehicle for long-term, capital-intensive infrastructure investments. Launched in 2010 and expanded through Marguerite II in 2017, the fund invested in both greenfield and brownfield projects across sectors such as renewable energy, energy security, and digital infrastructure, thus acting as a catalyst for over €10 billion in total investments by 2023 (Caisse des Dépôts, 2015; Marguerite, 2023).

(5) Funding for research and development (R&D) also plays a pivotal role in advancing a just transition, particularly by generating knowledge and innovative solutions tailored to the challenges of coal- and carbon-intensive regions. A distinguishing feature of EU R&D policy is its emphasis on not only technological progress but also social, policy, and business model innovation, extending beyond the conventional focus on hard sciences dominant in other global contexts (European Commission, 2022e). EU R&D programs are centrally managed and funded under each Multiannual Financial Framework with work programs providing predictable, long-term guidance for funding priorities. Calls for proposals are published by the European Commission and assessed through an expert-led evaluation process based on novelty, feasibility, and impact potential. The requirement for multi-partner consortia, including actors from both EU and non-EU countries, ensures collaboration across disciplines and geographies, enhancing the systemic understanding of transition dynamics and embedding R&D within wider territorial development strategies (European Commission, 2022e).

Within the Multiannual Financial Framework (MFF) 2014–2020, Horizon 2020 served as the EU's flagship R&D instrument, with a budget of nearly €80 billion (European Commission, 2011b). The program financed a range of activities from fundamental research to market replication through instruments such as research, innovation, coordination and support actions (European Commission, 2014). These instruments funded not only technological solutions but also studies, networking activities, and policy dialogue crucial for implementing just transition strategies. Horizon 2020 included specific calls addressing the socioeconomic transformation of carbon-intensive regions, aligning with the EU's increasing climate ambition and helping develop regionally tailored pathways for decarbonisation. This R&D focus has supported the development of low-carbon technologies and alternative business models, while fostering institutional learning on effective approaches to regional transformation. As such, EU R&D funding mechanisms are instrumental in both conceptualising and operationalising a just transition across diverse European contexts.

The issue of *(6) energy poverty* was first referenced in the 2009 Third Energy Package (European Commission, 2011c), updating the EU electricity and gas market directives, asking for the identification of energy poor households. It was further addressed in the 2010 Energy

Performance of Buildings Directive (EPBD) and the 2012 Energy Efficiency Directive (EED) that required Member States to support energy poor households by targeted information. As the implementation showed, further research was needed to comprehensively understand the phenomenon and establish clear definitions and indicators for energy poverty. In 2016, this led to the set-up of the EU Energy Poverty Observatory (EPOV; Energy Poverty Advisory Hub n.d.b.), that by now is integrated in the more comprehensive structure of the Energy Poverty Advisory Hub (EPAH; Energy Poverty Advisory Hub n.d.b.) that supports policy making at the EU, national, and local levels.

In October 2022, against the unfolding energy and cost of living crisis, the European Parliament adopted a resolution on the EU's response to the increase in energy prices in Europe (European Commission, 2022a), urging Member States to ensure people could afford to heat their homes and to avoid evictions for vulnerable households. Updated energy poverty policies have been integrated into the updated EED of 2023, which obliges Member States to achieve a share of energy savings among vulnerable customers and those affected by energy poverty (EED 2023; European Commission, 2023) and into the updated EPBD of 2024 (European Commission, 2024c), asking Member States to renovate the worst segments of the national building stock first. The Commission released a recommendation on energy poverty in October 2023, highlighting that energy poverty needs to be addressed at different levels and mainstreamed through several policy fields (European Commission, 2023b).

A summary of key initiatives under the six work streams can be found in the Annex.

4.2 The European Green Deal and just transition policies

In 2015, both the Paris Agreement and the ILO Just Transition Guidelines highlighted the importance of the concept of a just transition. The "imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities", as formulated in the 2015 Paris Agreement, gained momentum when, in 2018, governments first mentioned the just transition as a policy goal in a final communiqué. In 2019, a "Just Transition Commission" (JTC) was introduced through legislation in several countries (e.g., Canada, Germany, Scotland, Australia, Ireland, New Zealand, the US, South Africa) and the European Union also began integrating just transition principles into its policy framework, most notably through the establishment of the Just Transition Mechanism as part of the European Green Deal.

Investigating the role of the European institutions in the promotion of just transition policies, Graziano (2024) argues that the European Commission mainly developed the eco-social agenda of a just transition to obtain further institutional (i.e. internal) and social-political (i.e. external) legitimation. At the same time, the European Commission has made little effort to reflect on what a just transition should entail and how it could be monitored (McCauley and Pettigrew, 2022). Indeed, the EU focuses primarily on inequality as a matter of fossil fuel dependency, which varies in magnitude across member states and regions. This basic dichotomy, prominently embedded in the EU Just Transition Mechanism, is criticised for hindering meaningful engagement on which member states are leading the broader just transition agenda, who are falling behind, and where resources and policies should be targeted (McCauley et al., 2023).

4.2.1 The EU Just Transition Mechanism

The EU Just Transition Mechanism (JTM) is a key initiative in the European Union aimed at supporting regions most affected by the transition away from fossil fuels. It provides both policy frameworks and financial solutions to facilitate this shift, particularly for vulnerable regions with strong ties to coal and other fossil fuel industries. Its main components are the

- Just Transition Fund (JTF)
- InvestEU
- European Investment Bank (EIB) public sector loan facility (European Commission, 2021a).

These instruments collectively support the development of territorial just transition plans, which are strategic blueprints designed to achieve decarbonisation while addressing the socio-economic challenges posed by the energy transition (Pietzcker et al., 2021).

The JTF is a key financial instrument of the European Union aimed at alleviating the socio-economic costs associated with the transition to a climate-neutral economy by 2050. Its primary objective is to assist the regions and communities most affected by this transition, supporting them in addressing the social, employment, economic, and environmental impacts of the shift. The fund focuses on enabling economic diversification and the reconversion of carbon-intensive regions, while also preparing workers for emerging opportunities in a changing labour market. To achieve this, the JTF provides support for a range of activities, including productive investments in small and medium-sized enterprises (SMEs), the creation of new firms, environmental rehabilitation, and investments in clean energy technologies. Additionally, it plays a crucial role in upskilling and reskilling workers, offering job-search assistance, and implementing programs that actively include job seekers. The JTF also

supports the transformation of existing carbon-intensive installations, provided such investments result in significant emission reductions and contribute to job protection (Regulation (EU) 2021/1056).

The InvestEU Scheme is designed to foster investment across all policy windows of the InvestEU Programme, specifically targeting territories identified in the Territorial Just Transition Plans, in accordance with the JTF Regulation. The primary objective of the InvestEU Scheme is to facilitate a wide range of investments that are crucial for aiding these regions in their transition to a climate-neutral economy. Projects may include investments not only within the designated just transition territories but also in projects outside these areas, as long as such investments are critical for the success of the transition within the affected regions. The scheme ensures projects funded under InvestEU not only support the transition of high-emission regions but also contribute to the broader objectives of sustainable development, economic diversification, and resilience-building across the EU (Annex to Regulation (EU) 2021/523).

Additionally, the EIB public sector loan facility supports public sector investments in regions identified in the Territorial Just Transition Plans. These investments focus on projects that do not generate sufficient revenues to cover their costs but are essential for the sustainable development of these regions. This approach prevents the substitution of potential alternative resources while addressing the development needs of vulnerable areas. The facility combines loans from the EIB with moderate grants from the European Commission. In addition to financial support, the facility also provides advisory assistance for project preparation and development, aligning with the InvestEU Advisory Hub. This ensures that public authorities receive guidance and expertise throughout the project lifecycle, from application preparation to project implementation (Regulation (EU) 2021/1229).

Despite its strengths, the JTM has faced criticism for its narrow focus on regions dominated by fossil fuel industries, primarily in Eastern Europe (Volintiru and Nicola, 2024). This approach assumes that such areas are the most vulnerable to changes in energy systems and therefore require the greatest financial assistance (European Commission, 2021b). Critics argue that this concentrated investment overlooks other regions that may also experience significant environmental or economic disruptions, leading to an uneven distribution of resources (Voicu-Dorobanțu et al., 2021). Furthermore, the JTM has been criticised for neglecting the broader social and environmental impacts of the energy transition, focusing too heavily on economic restructuring without sufficiently addressing the broader social inequalities exacerbated by climate policies (Sarkki et al., 2022).

Further, the JTM is complemented by the EU Just Transition Platform, which serves as a collaborative and knowledge-sharing platform that supports stakeholders—including local authorities, businesses, and civil society—in the development and implementation of just transition strategies through capacity building, networking and policy guidance (European Commission, 2021b). Further policy instruments include the Initiative for Coal Regions in Transition and the Social Climate Fund. The Initiative for Coal Regions in Transition aims to enable multi-stakeholder dialogue on policy frameworks and financing for a successful transformation of coal mining and carbon-intensive regions (European Commission, 2024d). The Social Climate Fund (SCF) is planned to be funded by revenues from the Emissions Trading System (ETS2) on buildings and transportation starting from 2026 and aims at green investments to reduce fossil fuel consumption in the long run and temporary direct income support to alleviate the price impacts of the ETS2 for vulnerable households in the short run (Eden et al., 2023).

4.2.2 Review of EU just transition progress

The academic debate on just transition efforts within the EU questions whether current governance design and implementation can genuinely deliver social justice. As significant variation remains in how countries integrate social and ecological goals, cross-national inequalities are more likely to increase rather than decrease without EU-wide strategies (Cigna et al., 2023). Current EU policies, at the same time, are falling short of addressing social justice concerns more systematically in order to compensate for insufficient policies on the national level (Crespy and Munta, 2023). In this context, Sabato and Mandelli (2024) highlight the need for a coherent EU framework that integrates welfare policies (e.g., providing financial 'buffers' to citizens) into socio-ecological transitions to address this issue.

Recent literature has also focused more closely on the Just Transition Fund (JTF) and Social Climate Fund (SCF), comparing the funds in their objectives, allocation mechanisms, and effectiveness in addressing socio-economic disparities during the energy transition. The findings support the critique that the EU's approach to a just transition is largely reactive, primarily focusing on complementing existing social investment initiatives with an emphasis on reskilling workers affected by decarbonisation. The current strategy therefore fails to address the intersection of environmental and social issues in a holistic manner, neglecting deeper systemic inequalities and broader social impacts. (Crespy and Munta, 2023; Mandelli et al., 2023). In this context, Moesker and Pesch (2022) question whether the JTF has sufficiently

incorporated lessons from previous structural transitions, pointing to persistent regional disparities and institutional weaknesses.

Increasingly, literature on the implementation of just transition policies in EU member states or regions highlights the complex interplay between socio-economic, technical, and governance challenges that shape the outcomes of national and regional transitions toward greener economies. García Vaquero et al. (2021) analyse Spain's Recovery Plan and its impact on green job creation, emphasising the need for aligning public and private sector initiatives and fostering the necessary reskilling for new green employment opportunities. They highlight the potential for improved labour well-being through this transition but stress the importance of coordination across sectors. In Sweden, Moodie et al. (2021) find that the development of Territorial Just Transition Plans (TJTPs) for regions like Gotland and Norrbotten was primarily driven by technical rather than socio-economic considerations, indicating a need for more inclusive policy approaches that consider spatial and social dimensions. This focus on technical solutions risks undermining long-term socio-economic growth and environmental sustainability unless regional stakeholders are fully engaged in the process.

Research on other EU countries also highlights the challenges of addressing the social and distributive impacts of energy transitions. Pavloudakis et al. (2023) examine Western Macedonia, Greece, where the phase-out of lignite has led to significant economic and demographic decline, highlighting the crucial role of participatory governance in ensuring a fair transition. Meanwhile, Schuster et al. (2023) explore the lignite regions of Germany, Poland, and Romania, finding that the Just Transition Mechanism (JTM) falls short of achieving procedural and distributive justice due to insufficient stakeholder involvement and funding difficulties. In Romania, Voicu-Dorobanțu et al. (2021) and Volintiru and Nicola, (2024) point to a lack of institutional capacity and coordination as major barriers to implementing just transition policies, especially in coal-dependent regions like the Jiu Valley, where distrust between local actors and national authorities further complicates the process.

While the EU's commitment to a just transition represents significant progress in addressing the socio-economic challenges posed by the transition away from fossil fuels, it is evident that deeper systemic issues remain unaddressed. The narrow focus on regions heavily dependent on fossil fuel industries often overlooks the diverse challenges faced by other areas, leading to potential inequities in resource distribution and support. Additionally, the lack of participatory justice and the reactive nature of funding mechanisms raise concerns about the inclusivity and effectiveness of current policies. As various member states navigate their transitions, it is crucial that the EU not only promotes economic restructuring but also actively

engages with communities, prioritises broader social inequalities, and learns from past transitions to ensure a comprehensive and equitable approach to the green transition. Without such measures, the risk of exacerbating existing disparities and undermining the legitimacy of the just transition movement remains a significant challenge for the European Union.

5. Conclusion

This working paper set out to understand the just transition policy landscape in the European Union by synthesising the conceptual literature on just transition and eco-social policy with an overview of the EU's evolving governance and funding architecture. The central takeaway is that the EU's "just transition" agenda should be understood less as a single instrument and more as a multi-layered policy ecosystem. While the Just Transition Mechanism has become the most visible symbol of EU commitment to "leave no one behind," the operational content of just transition in the EU also depends on how cohesion policy, labour-market and social inclusion instruments, innovation funding, and energy-poverty measures are aligned with decarbonisation goals—and how they are implemented across Member States and regions.

From a conceptual perspective, this paper underscores that the strength of "just transition" lies in its capacity to connect climate action to distributive and democratic concerns. However, that same breadth creates persistent challenges of definition and measurement. The literature consistently highlights a tension between "just transition" as a flexible political paradigm—capable of coalition-building across labour, environmental, and social actors—and "just transition" as a measurable policy framework requiring clearer criteria, indicators, and accountability mechanisms (McCauley and Heffron, 2018; Wang and Lo, 2021). In the EU context, this tension becomes particularly salient because the policy landscape is both expansive and institutionally fragmented, spanning multiple governance levels and objectives.

Three recurring issues stand out across the reviewed scholarship and policy debate:

First, the **territorial and sectoral targeting** of EU just transition policy remains a core point of contestation. A large share of EU-level attention and funding has focused on coal and carbon-intensive regions, reflecting a plausible concern with concentrated transition risks. Yet this approach can under-capture other forms of vulnerability, including households exposed to energy and mobility costs, regions facing broader industrial restructuring, and communities affected by new extractive pressures linked to clean-tech supply chains. The literature therefore suggests that the EU faces an unresolved design challenge: how to maintain the strategic clarity of place-based support while expanding the lens to encompass wider socio-economic vulnerabilities and distributive consequences of climate policy (Crespy and Munta, 2023; Voicu-Dorobanțu et al., 2021).

Second, the EU approach has been repeatedly criticised for insufficient attention to **procedural and recognitional justice**. Even where distributive goals are acknowledged, the extent to which affected communities can meaningfully shape transition strategies—through

participation, consultation, and accountable governance—remains uneven and frequently limited in practice (Armeni, 2023; Pavloudakis et al., 2023). This matters not only normatively, but instrumentally: perceived procedural unfairness can erode trust, weaken legitimacy, and reduce the durability of transition pathways. The review therefore points to procedural justice not as an "add-on," but as a key condition for effective implementation and sustained public support.

Third, the literature suggests that EU just transition policy has often been **reactive**, in the sense that social measures are frequently framed as compensatory responses to transition pressures rather than as constitutive elements of transition strategy. This is visible in debates about whether EU instruments are sufficiently integrated with welfare and social protection systems and whether they address deeper structural inequalities, rather than only the most visible transition "losers" (Sarkki et al., 2022; Crespy and Munta, 2023; Mandelli et al., 2023). As the EU expands climate policy into domains with direct household salience (notably buildings and transport), this reactive tendency may become increasingly politically costly—particularly if affordability and distribution are not anticipated ex ante.

These findings have two broad policy implications. One is the need for greater **conceptual clarity and monitoring capacity**: if "just transition" continues to function as an umbrella term, EU institutions and Member States will face ongoing difficulties in demonstrating progress, comparing outcomes, and identifying where gaps persist. The second is the need for improved **policy coherence** across funding streams and governance levels. A just transition agenda that spans regional development, skills policy, energy poverty, and industrial strategy will depend on coordination mechanisms that connect these domains in practice—rather than assuming that new funds alone can deliver systemic integration.

Research agenda and suggested future work

The review also highlights clear priorities for future research. In particular:

- **Systematic comparative analysis of national strategies:** Cross-country mapping of just transition policies to better understand how the concept is applied in practice has begun to emerge. For instance, Mandelli's (2022) comparative work provides an EU-wide assessment of eco-social policy mixes for a just transition through a manual textual analysis of EU documents and the 27 final NECPs (submitted in 2019). Yet the policy landscape has shifted substantially in recent years, notably since the operationalisation of the EU's Just Transition Mechanism and Fund, alongside the broader Green Deal expansion of climate policy into more socially salient domains. The 2024 NECP updates (final submissions were due 30 June 2024 but handed in by some

Member States as late as October 2025 and in one case a finalised plan still missing[1]) offer a timely basis for reassessing how Member States now define, prioritise, and operationalise "just transition" in national climate planning.

- **Linkages to energy poverty and affordability:** Recent scholarship has begun to map how energy poverty is addressed within national climate planning. In particular, Mandelli and Lee (2025) assess EU Member States' policy mixes on energy poverty as outlined in their 2023 updated NECPs, using qualitative content analysis and an original analytical framework. Even so, two issues remain comparatively under-examined: (i) how energy-poverty measures are integrated (or not) into wider "just transition" strategies beyond the energy-poverty silo, and (ii) how national approaches will interact with the Social Climate Fund framework (2026–2032), which will be implemented via national Social Climate Plans.
- **Operational indicators and evaluation designs:** Advancing from "concept" to "measurable practice" requires shared metrics and mixed-method evaluation strategies that capture distributional outcomes, procedural inclusion, and longer-term structural change.
- **Implementation and political economy of delivery:** Beyond formal policy design, research should examine administrative capacity, multilevel coordination, social partner involvement, and the politics of resource allocation across regions and groups.

Finally, as a concrete next step, this working paper lays the groundwork for a forthcoming paper that will apply the analytical framework developed here to a detailed content analysis of updated NECPs and related national policy documents. That analysis will enable a more granular assessment of how "just transition" is referenced and operationalised across Member States, the policy instruments attached to those references, the sectors and target groups prioritised, and the extent to which "just transition" reflects new policy development versus relabelling of existing instruments. Together, the present synthesis and the planned empirical work aim to strengthen both conceptual clarity and evidence-based assessment of just transition in EU climate governance.

[1] Checked on 9 February 2026, see https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

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Annex: EU-level funds and programmes relevant for just transition under the MFF[2] 2014–20

Program	Approximate amounts	Purposes relevant for just transition
1. **Programs supporting sectors and regions experiencing structural change away from coal and fossil fuel production**		
Multi-Stakeholder Platform for Coal Regions in Transition (2017)	NA	Support the identification and development of projects and strategies for successful transformation of coal-mining and carbon-intensive regions; facilitate sharing of best practices, peer-to-peer learning, and new partnerships with the aim of kick-starting the process of diversification and transition.
2. Support for workforce development		
European Social Fund (ESF) (1957)	€100.35 billion funding plus €36.6 billion national funding (European Commission, 2022c)	Provide funds to member states for the implementation of active labour market policies helping citizens, particularly those at greatest risk of poverty, find and retain jobs. ESF funds are accessible by all countries in the EU.
Youth Employment Initiative (YEI) (2013)	€8.95 billion funding plus €1.5 billion national funding (European Commission, 2022b)	Support young people who are not in education, employment, or training, including the long-term unemployed or those not registered as job seekers, through the funding of apprenticeships, traineeships, job placements, and further education leading to a qualification.
Employment and Social Innovation (EaSI) program (2006)	€899.6 million funding (European Commission, 2022f)	Coordinate EU and national actions on employment, social affairs, and inclusion; modernise EU legislation and implementation; support development of social protection systems and labour market policies; promote geographic mobility and boost employment opportunities by developing a more open labour market; increase the availability of and access to microfinance for vulnerable groups and microenterprises; increase access to finance for social enterprises. Managed directly by the European Commission and organised around three programs: PROGRESS, EURES, and Progress Microfinance.
European Globalization Adjustment Fund (EGF) (2006)	Maximum annual financial ceiling of €150 million (in 2011 prices); maximum amount over the MFF 2014–20 period of €1.05 billion (European	Provide one-off financial support, limited in time, to member states for the provision of support to people experiencing unemployment as a result of the global economic and financial crisis or major structural changes in world trade patterns due to globalisation (e.g., if a large

[2] Multiannual Financial Framework

	Parliament and Council, 2013c)	company shuts down or production is moved outside the EU).
Social protection policies	NA	Provide an overarching framework of regulation ensuring that, among other things, new jobs are available for stranded workers, and communities are in line with given minimum standards of protection and benefits.
3. Support for businesses		
European Regional Development Fund (ERDF) (1975)	€228.11 billion funding plus €78.72 billion national funding (European Commission, 2022g)	Provide co-funding for projects promoting the development and structural adjustment of regions lagging behind or the conversion of declining industrial regions. The ultimate goal is to help reduce regional imbalances in the EU. All regions of the EU can access funds, but depending on the level of development, the amount of co-funding with member state resources varies. Within the ERDF, the European Territorial Cooperation program, also known as Interreg, was established in the 1990s to provide funds to projects with a specific cross-border, transnational, or interregional dimension (i.e., involving regions from more than one member state), including those focused on declining local industries.
Competitiveness of Enterprises and SMEs (COSME) (2013)	€2.3 million, with 60 percent allocated to financial instruments (European Parliament and Council, 2013d)	Improve access to finance for small and medium-sized enterprises (SMEs) in the form of equity and debt (60 percent of the budget); improve access to markets, particularly inside the EU but also at the global level (21.5 percent); improve framework conditions for the competitiveness and sustainability of EU enterprises, particularly SMEs (11 percent); and promote entrepreneurship and entrepreneurial culture (2.5 percent).
Investment Plan for Europe (Juncker Plan) (2015)	€16 billion guarantee from the EU budget and €5 billion from the European Investment Bank, which aimed to mobilise about €315 billion in investments (European Commission, 2018c)	Promote growth and investment in the EU after the economic crisis. Structured around three axes: the European Fund for Strategic Investments; the European Investment Advisory Hub and EU Investment Project Portal; and improvement of the European regulatory environment.
EU-wide SMEs policies	NA	Remove administrative burden, share best practices, and promote conditions favouring sustainable development of SMEs.
4. Funding for infrastructure		
Cohesion Fund (CF) (1994)	€61.46 billion funding plus €11.22 billion national funding (European Commission, 2022h)	Provide funds for environmental and transport infrastructure projects to member states whose gross national income per capita is less than 90 percent of the EU average.

Connecting Europe Facility (CEF)	Transport, €24.05 billion (€11.31 from Cohesion Fund); telecommunications, €1.07 billion; energy sector, €5.08 billion (European Parliament and Council, 2013e)	Provide funds for infrastructure development program in three main areas—transport, energy, and telecom—to improve the connection and integration of EU regions, with a specific focus on peripheral regions.
European Fund for Energy, Climate Change and Infrastructure. (Marguerite I/II) (2010, 2017)	Marguerite I (2010): €710 million commitments Marguerite II (2017): €745 million commitments (Marguerite, 2023)	Provide access to funding for capital-intensive infrastructure investments within the EU. This equity fund was established with the backing of six major European public financial institutions and the European Commission.
5. **Funding for research and development**		
Horizon 2020 (H2020)	€80 billion, with small part targeted for projects in coal-intensive regions (European Commission, 2022e)	Fund EU research and innovation. Includes several calls for projects focusing on carbon-intensive regions and supporting just transition in these regions, as well as other topics relevant for the energy transition more broadly, such as innovation in low-carbon technologies.

Source: (Verdolini et al., 2024)