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Three pillars of just transition labour market policies

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ABSTRACT

In academia, just transition has received increasing interest, including the topical research on sustainable welfare states and integrative ecosocial policies. However, an analytical perspective of labour market policy has been surprisingly weak and studies associating just transition with labour security considerations in welfare states are lacking. By inductively synthesising labour-related just transition literature, this review identifies three intertwined approaches to labour market policies: green jobs approach, green skills approach, and green compensation approach. Respectively, they chime with three forms of labour security in terms of employment opportunities, skill reproduction, and income security. We argue that these three forms of labour security constitute three pillars of just transition labour market policies. Addressing three pillars in a holistic fashion is highlighted given that currently they are unbalanced in just transition discussion. Additionally, a critical reflection on the role of economic growth in labour market policymaking is advocated considering it is the labour security that unifies all three pillars. To steer the labour markets toward a greener future, more studies could focus on redefining green jobs, repurposing active labour market policy, and tackling work-welfare nexus from an ecosocial perspective. Exploring the potential of job guarantee for promoting labour security without growth is worthwhile.

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1. Introduction

Analogous to industrialisation and globalisation, the decarbonisation process is affecting labour markets dramatically. In this process, seeking the balance between ambitious climate action and stable labour markets would mean political, economic, and societal struggles. The emergence of just transition in political discourses and programs is an outcome of such struggles aiming to address the concerns of job loss in carbon-intensive sectors, potential labour shortage in green sectors, and insufficient social protection during the decarbonisation process.

In academia, just transition has received increasing interest, including the topical research on sustainable welfare states and integrative ecosocial policies (e.g. Galgóczi & Pochet, 2023; Mandelli et al., 2023). However, an analytical perspective of labour

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market policy has been surprisingly weak in just transition discussion, and studies associating just transition with labour security considerations are lacking. To close this research gap, this review paper explores what kinds of labour market policies can be found in the previous literature on just transition and how they are linked to different forms of labour security as categorised by Standing (1997). By labour market policy, we mean policies that promote the efficient function of labour markets by facilitating the supply-demand match and offering social security. In practice, this refers to unemployment benefits, social insurance, labour market training, state pensions, or targeted labour market schemes such as public employment and employment subsidies (Standing, 2011).

As a contribution to just transition discussion, this paper provides a fresh perspective for studying how labour security can be holistically promoted while at the same time decarbonising labour markets and greening welfare states. To acknowledge the essential role of welfare states in achieving a just transition and to overcome the current unsustainable work-welfare nexus linked with economic growth, we draw on the growing literature on ecosocial policy and sustainable welfare. It considers simultaneously the issues of social and environmental sustainability and develops integrated ecosocial policies (e.g. Fritz & Lee, 2023). As this research strand has focused on the critique towards traditional labour market policies and envisioned the concept of sustainable employment (Bohnenberger, 2022b; Laruffa, 2022; Lee et al., 2023), it can provide a more fitting reference point for developing just transition labour market policies than the traditional labour policy research that still tends to ignore the significance of ecological constraints (e.g. Ebbinghaus, 2020).

By applying the Critical Interpretive Synthesis (CIS) approach to reviewing previous literature on just transition, we classify three intertwined approaches to improve labour security in just transition: 'green jobs', 'green skills', and 'green compensation' approaches. Together, they cover the demand and supply side of labour as well as the social protection dimension of labour market policy design and they also jointly chime with labour security concerns using Standing's (1997) terminology. We argue that these three forms of labour security – employment opportunities, skill reproduction, and income security – constitute three pillars of holistic just transition labour market policies and that they are all necessary and equally important.

The paper is structured as follows: In Section 2, we introduce the background and the analytical concepts used in this paper. In Section 3, we present our synthesis process. In Section 4, we present the findings. In Section 5, we discuss how the ecosocial approach informs just transition labour market policymaking and give suggestions for future research agenda.

2. Just transition as a matter of labour market policy

The past decades have witnessed a flexural journey of workers confronting environmental policies and calls for a just transition. Originating from the labour movement in the 1990s, just transition represents a vision for reconciling conflicts between climate action and its 'social consequences' such as the loss of jobs and livelihoods for affected workers, which is often known as the 'jobs versus environment' dilemma (Hoffman & Paulsen, 2020; Stevis & Felli, 2015). Later, thanks to environmentalists and climate justice activists, the notion of just transition goes beyond the narrow focus on affected workers to refer to an ecologically sustainable and socially just and fair transition for all (McCauley & Heffron, 2018).

Nevertheless, social demand for job and livelihood security could be subordinated by the demand for immediate climate actions (McCauley & Heffron, 2018). Under circumstances where workers' hesitancy and fear of losing their jobs and livelihoods remain unresolved, they can be the 'last defenders of the indefensible' (Stevig & Felli, 2016).

Workers' resistance denotes the unfulfilled demands for redistributive justice in decarbonisation. And it is precisely the concern for social redistribution that makes a just transition a matter of labour market policy. From a social and labour market policy perspective, paid employment is an important source of income for the working-age population, which means that unemployment would lead to a risk to income and thus to livelihoods and well-being (Gallie, 2004). Personal employment status (i.e. employed or unemployed) therefore becomes a major generator of inequality distribution in market economies (Ebbinghaus, 2020). The goal of labour market policy is, therefore, to rebalance unemployment-induced income inequalities through social redistribution (Ebbinghaus, 2020; Schmid et al., 1996). Work-first conditional activation, such as unemployment insurance and social assistance, and active labour market policies, such as training, public employment, and employment services, represent different approaches to such rebalancing (Bonoli, 2010; Ebbinghaus, 2020; Weishaupt, 2013). In essence, policies that promote security and return to work operate with the aim of decommodifying work, while decoupling workers' living standards from unpredictable market forces (Esping-Andersen, 1990).

Just transition and labour market policy scholarships share the advocacy of fostering security for workers. Therefore, we find it helpful to utilise Guy Standing's typology of labour security to analyze various approaches to just transition labour market policies. Noticing the steady extension of labour rights and entitlements, Standing (1997) conceptualised seven forms of security in developing the postwar labour market, as depicted in Table 1.

Under the context of globalisation and growing labour market flexibility, Standing observed an orthodoxy shift from 'labor security' to 'economic growth' in social and labour policy (1997). Criticising the neo-liberal 'fervent faith in markets', he argued that such a shift erodes all seven forms of labour securities and leads to further fragmentation of labour forces, which essentially hinders the distributional justices in the process of restructuring of labour market (Standing, 1997, p. 14). Around the same time, Stiglitz's (2002) work on 'Employment, social justice and societal well-being' echoed the same idea. He maintained that enhancing labour security and improving the welfare of workers, rather than capital accumulation and growth, is the goal of development

Table 1. Forms of labour security.

Forms	Notions	Examples
Labour market	Generating employment opportunities	State-guaranteed employment
Employment	Promoting secure employment relations	Regulations on arbitrary dismissal, hiring and firing
Job	Designating occupation/career	Job qualification
Work	Protecting against accidents and illness at work	Work time limitation, safety and health regulation
Skill	Offering opportunities for reskilling or upskilling	Apprenticeships, training
Reproduction		
Income	Protection of income	Minimum wage, social security, taxation (social transfer)
Representation	Protecting collective voice	Union's participation in decision making, strike

Source: Standing (1997).

(Stiglitz, 2002). For him, the neo-liberalist view of labour-production relations, where labour is seen solely as an input into production, de facto serves the objective of enhancing the security of 'capital'. Therefore, he argued that the neo-liberalist version of labour-production relations violates the purpose of economic activity, which is to increase the well-being of individuals (Stiglitz, 2002).

To have an in-depth understanding of the relationships between just transition and labour market policymaking in the context of ecological crisis, it is beneficial to draw on the growing literature on ecosocial policy and sustainable welfare. Sustainable welfare refers to welfare systems which aim to satisfy everyone's needs within planetary boundaries by decoupling welfare provisioning from environmentally harmful economic growth. Integrated ecosocial policies are concrete policy measures that can realise sustainable welfare goals in practice (Büchs, 2021; Fritz & Lee, 2023; Koch & Mont, 2016). Sustainable welfare scholars have criticised the strong connection between welfare improvement and economic growth, indicating that the present welfare states de facto contribute to the environmental crisis (e.g. Bailey, 2015; Hirvilammi et al., 2023). They often share the degrowth arguments that question the current level and forms of material welfare and the capacity of technological progress for decoupling production growth from emissions (Kallis et al., 2012; Schmelzer et al., 2022). As such, the sustainable welfare and ecosocial approach differentiates itself from green growth or ecological modernisation, by explicitly acknowledging the incompatibility between economic growth and carbon emissions especially in advanced welfare states (Schoyen et al., 2022).

Concerning labour-related issues, the sustainable welfare approach has criticised the unsustainable nature of the work-welfare nexus in social and labour policymaking, which has profoundly shaped the social security systems in welfare states. Historically, to build and expand the welfare system, the welfare states have used growing taxes taken from the primary income of their labour market parties, which increasingly tightened the fixation between paid labour, economic growth, and social welfare (Hirvilammi, 2020; Lee et al., 2023). In a system where social benefits are distributed according to a person's labour market status, everyone who is able to work is expected to participate in the labour market for as long as possible. Participation in the labour market entitles citizens to varying degrees of social security in the event of unemployment, sickness and old age (Dukelow & Murphy, 2022). Thus, for welfare states, enabling paid work has become an unquestioned priority for maintaining and expanding welfare provision. From an environmental perspective, however, the work-welfare nexus has a different face in terms of its dependence on continuous production growth as a way of generating labour demand in the market economy. Yet, the environmental implications of this are rarely questioned in conventional social security measures and social policy debates (Dukelow & Murphy, 2022). It is therefore worth noting that just transition policies are being developed in welfare states where an expansionary economic model has deeply shaped post-war social security systems.

Another branch of an ecosocial critique claims that current labour market policies are not best working to achieve just transition. In fact, they may considerably hinder just transition, given that many grassroots-level ecosocial innovations where socially meaningful and ecologically beneficial work is done outside the formal labour market are discouraged by employment services and social security systems. While innovative activities generate new (unpaid) work opportunities outside the formal labour market, current labour market

institutions are preventing unemployed job seekers from matching those labour demands, since for labour market administrations these works are not designated as 'employment' (Stamm et al., 2020).

The ecosocial policy and sustainable welfare literature promotes two solutions for building more sustainable labour market policies. The first calls for post-productivist employment policies and social security system including a more autonomous relationship with work *beyond* formal paid work (Dukelow & Murphy, 2022). It has been argued that the absolute desirability of employment promotion is both socially and ecologically problematic, as participating in formal and paid employment is not the only and intrinsically best way to enhance individual and collective capabilities (Laruffa, 2020, 2022). In fact, there are many different forms of work, such as care and volunteer work, that considerably enhance individuals' well-being and benefit others, yet they receive little valuation in the productivity-oriented labour market (Hirvilammi & Joutsenvirta, 2020). Rejecting to consider labour as human capital to be allocated into the productive sector in the ever-increasing economy, Laruffa (2020) calls for a post-productivist, capability-informed social policy that aims to provide sufficient opportunities for those who want to work, and meanwhile, to empower people to conduct other forms of work such as care and political participation. The second solution points to the expansion of the current market-based valuation of labour. In a growth-based economic model, the employment rate depends on expansive production and consumption of goods and services at the expense of ecological destruction (Gough, 2017). The value of economic activity is measured by its remuneration, regardless of its social value or disvalue (Gough, 2022). Consequently, some forms of labour conducted in the care and education sector are undervalued in the sense of income reward. For example, the low pay levels for many essential workers (e.g. nurses and teachers) reveal a dramatic gap between market valuation and social valuation of different forms of labour (Gough, 2022). Opposing the market valuation centralised by consumer preferences and price-based systems, the social valuation of labour refers to measuring labour's value according to the extent to which human needs are met while respecting the ecological limits of our planet. Meeting people's basic needs, which are universal regardless of geographical and cultural contexts, should be the priority of social policies increasing social justice (Doyal & Gough, 1991). These aforementioned ideas have not been much brought up in the just transition literature but could help overcome some of the challenges, as we will later discuss.

3. Methods

To explore what kinds of approaches to labour market policy can be found in previous literature on just transition, we utilise the *Critical Interpretive Synthesis (CIS)* approach to literature review (Dixon-Woods et al., 2006). We consider CIS a suitable method for two reasons. First, it matches our data selection strategy, which is to maximise and purposively sample the contribution at the level of concepts, solely filtering out those interpreting just transition (e.g. from a philosophical perspective) without labour market policy implications. The sampling, on the other hand, focuses purposively on exemplifying available literature rather than reviewing as comprehensive and exhaustive amount of literature as possible (Dixon-Woods et al., 2006). It serves our aim to explore what *kinds* of approaches to labour market policy exist, rather than to test 'what works'. Second, the critical

perspective leads us to identify the linkage between just transition and ecosocial policy and sustainable welfare research, which sheds light on future research orientations. In CIS, the critical stance features in a way that both the line-of-argumentations and the opposing arguments in literature are required to be carefully examined (Dixon-Woods et al., 2006). Attention is also paid to the normative assumptions in the construction of problematics around the phenomenon under study (Dixon-Woods et al., 2006).

The data was selected by asking two questions: (1) whether or not, and if so, how labour market-related issues are addressed? (2) what have been deemed as the major labour-related challenges for just transition and what have been proposed to address them at the policy level? To ensure that the included data represents different kinds of labour policy approaches as comprehensively as possible, and since the notion and scope of labour market policy have not been consistently defined or operationalised across just transition literature, we applied the following data selection criteria: first, the paper addresses labour-related issues and second, the paper has labour policy implications. The explicit use of the term 'labor /labour market policy' was not required during the data selection process.

Following the procedures of CIS (Dixon-Woods et al., 2006), our synthesis involved three steps. The first step focused on screening, sampling, and categorising dominant categories of labour-oriented discussion on just transition. Three dominant categories of labour-oriented approaches to just transition were classified. We employed the terminology – 'green jobs' and 'green skills approach' – directly from data as they are both established research fields on their own. Papers falling in the third category were centered on the idea of compensating costs of just transition as one way of providing social protection/security. Yet, there is no commonly used overarching terminology insofar. Therefore, we labeled the third category as the 'green compensation' approach. The second step focused on completing the line-of-argumentations of each category. The aim was to gain clarification regarding how the literature constructs the major labour-related challenges in the context of just transition, how concepts (e.g. green jobs) have been defined, how proposed solutions have been justified, and what concerns are deemed important insofar. On this basis, we formulated inductively an understanding of what we call '*just transition labor market policies*'. The third step focused on analyzing opposing arguments of each category and reflecting on how they speak to each other. By opposing argument, we mean arguments that fundamentally challenge the approach as a whole, by questioning the normative assumptions on which the literature draws and/or the underpinning ideas that have influenced the argumentation.

In total, 32 scientific publications were reviewed, covering the time scale from 2010 to 2023. They are published in various journals, under different headings, and they represent diverse scientific backgrounds and methodological traditions (see the list of reviewed publications in Appendix 1). As the goal of this review is to identify labour market policy approaches to just transition at the conceptual level, we gave equal consideration to publications with different geographical focuses as well as different institutional levels (e.g. international, regional, and national policymaking). The selected publications mainly discuss the just transition and labour-related issues in 'developed' countries and in welfare states. As we aim to contribute to just transition research by drawing on the research on the ecosocial policy and sustainable welfare states, we discuss our findings

in the context of welfare states where the role of the social welfare system in terms of providing social protection for citizens is strongly legislated (see in Section 5).

4. Results

We identify three major challenges present in the literature on labour market concerns and just transition: job loss in carbon-intensive sectors; labour shortage in growing green sectors; and absent or insufficient provision of social protection. To overcome these challenges, three different categories of policy proposals have been suggested. We label these categories as 'green jobs', 'green skills', and 'green compensation' approaches to just transition labour market policies.

4.1. Green jobs approach to generating employment opportunities

The prospects of green jobs in terms of promoting employment opportunities have gained the most popularity among just transition proposals, resonating with the first form of labour security as employment opportunities according to Standing's (1997) typology. Confronting the intractable 'job versus environment' dilemma, the green jobs approach embraces the idea that environmental regulation leads to increased job creation, instead of costing jobs. For example, the International Labor Organization (ILO) publication has famously estimated that by 2030, 6 million jobs will be replaced but 24 million new jobs will be created through a green and just transition (ILO, 2018). In reviewed papers, this line of argument is characterised by an emphasis on green sectors' capacity to green the labour market, in the sense of creating massive labour demand in the fields of clean energy, clean tech, and digital industries. Given the potential of absorbing a vast number of workers including those from fossil fuel industries, scholars view green job creation as a way to offset the negative impacts of decarbonisation on employment (e.g. Jaeger et al., 2021). When it comes to policy implications, the focus has been on creating new job vacancies through generous policy incentives that promote technological innovations, public subsidies, and investments (e.g. Goods, 2011).

In the green jobs approach, accessibility, quality, and qualification of the job are the main concerns. For instance, Cha (2017) views that the green transition would not be socially just if those jobs promised by green sectors were not made accessible to the displaced fossil fuel workers. Evans and Phelan (2016) call for more attention to the quality of green jobs, noting that some green sectors such as renewable energy industries lag behind fossil fuel industries in terms of offering long-term economic stability and security for workers, due to relatively weak bargaining power. Related to the qualification debates, Stilwell (2021) views that the very nature of green jobs is determined by specific tasks, meaning that neither occupation nor industry are adequate indicators for assessing the ecological dimension of jobs. Social scientists have added the social dimension of such qualification by suggesting that jobs can be qualified as green if they meet the criteria of increasing security and providing decent wages and career opportunities (Masterman-Smith, 2010). From feminist perspective, social reproduction, care work, and other so-called 'pink-collar' jobs are essentially green jobs due to their low dependency on consumption-oriented industries (Fredman, 2023)

4.2. Green skills approach to improving skill reproduction security

Investing in skill development to provide a timely labour supply is another prominent approach to just transition labour market policies (e.g. Strietska-Illina et al., 2011), resonating with the ‘skill reproduction security’ in the typology of labour security by Standing (1997). The line of argument emphasises the role of training and education for relocating laid-off workers and for directing existing labour forces into green sectors. The idea that retraining is an effective measure to relocate laid-off workers is shared among most of the reviewed papers (e.g. Ferrer Márquez et al., 2019; Green & Gambhir, 2019; Harrahill & Douglas, 2019). In a broader sense, an environmentally friendly training and education system is considered crucial for just transition (e.g. Ferrer Márquez et al., 2019; Herpich et al., 2018; Rosemberg, 2010). This is seen in the calls for ‘educational leave’ (Rosemberg, 2010), ‘retraining rights’ for workers facing risks of jobs loss (Bohnenberger, 2022a), and ‘social dialogue’ between employers and training providers when it comes to training programme design (Galgóczy, 2020). In addition, a general enhancement of coordination between environmental and skill development policymaking is suggested in order to improve the situation where these two are often dealt with in isolation from one another (Mercier, 2020; Strietska-Illina et al., 2011).

Restriction of eligibility and misuse of training resources are the main concerns in green skills discussion. For example, Bohnenberger (2022a) points out that in addition to affected workers, all workers who are employed in the labour market should be given the entitlement to access training and update their knowledge on sustainability transformations, so that workers are motivated to shift their jobs from carbon-intensive to greener sectors or to make their daily working practices greener. The concerns related to the misuse have intensified when, for example, Cameron et al. (2020) found that six months after training financed through the Scottish Just Transition Fund, 56% of trained workers returned to the oil and gas industry. Lessons learned from this case are that retraining programmes may be misused by trained workers as ‘work subsidies’ for moving back to unsustainable sectors. Moreover, the retraining programmes may reversely subsidise the unsustainable industries, making them even more competitive and hindering the whole process of phasing out fossil fuels (Bohnenberger, 2022a). To tackle this problem, Bohnenberger (2022a) proposed to include the termination of employment contracts with unsustainable companies in retraining programmes.

4.3. Green compensation approach to ensuring income security

Compensating the vulnerable through the social security system constitutes the third approach to just transition labour market policies. The green compensation approach features especially in the EU’s Green Deal which, as stated, is committed to safeguarding the social security of hard-hit sectors, communities, and workers so that ‘no one is left behind’. Studies categorised under this approach advocate income security (Standing, 1997) oriented labour market policy. The line of argument suggests that the ‘losers’ of decarbonisation can be compensated through social redistribution of wealth. Policy measures insofar include unemployment benefits and pension protection (Abraham, 2017; Cha, 2017; Green & Gambhir, 2019; Mayer, 2018; Pollin & Callaci, 2019), unconditional payments or wage insurance schemes (Green & Gambhir, 2019; Haywood et al., 2021), job

replacement or salary compensation (Cha, 2016, 2017; Pollin & Callaci, 2019). In general, these income protection measures act as 'buffers' to ensure that all citizens are protected and to tackle transition-related increases in inequalities (Sabato et al., 2023). In addition, the provisioning of employment services and career counseling is also an important way of compensation, especially for the relocation of laid-off yet well-skilled workers (Cameron et al., 2020).

The question of 'who gets compensated' is hotly debated in this regard. Both targeted and universal approaches get support. While some argue that valuable and limited resources should be targeting to the hard-hit workers, as their vulnerability may be the source of reluctance towards the green transition (e.g. Rosemberg, 2010), some argue that a universalism-based approach to income support and employment services is necessary for ensuring a secure and environmentally favorable environment for all workers (e.g. Bohnenberger, 2020, 2022a; Cameron et al., 2020; Marais, 2018).

4.4. *Opposing arguments to just transition labour market policies*

We found two major opposing arguments that fundamentally challenge the assumptions on which the identified approaches are based and/or the underpinning ideas implied in these approaches. **Firstly**, the apolitical, technocratic, and growth-dependent feature of the green jobs approach is criticised. For example, Stevis and Felli (2015) point out that the framing of green jobs often favors the idea that achieving social justice and ecological sustainability can be mutually beneficial, which postulates an 'affirmative' rather than 'transformative' version of just transition. Bottazzi (2019) criticises that mainstream green jobs discussion favors solely certain soft interventions of the states to correct market irregularities without challenging the productivity-oriented labour process. Instead of relying on technologies and markets, the resolution of 'jobs versus environment' nexus needs to be politicalised (Healy & Barry, 2017) and stronger state intervention as well as active involvement of labour and unions are dispensable (Clarke & Lipsig-Mummé, 2020). Moreover, the productivity-oriented labour process is intertwined with the pursuit of a growth agenda. As Stevis (2011) observed, there is no explicit discourse acknowledging the need to break with the ideology of growth, rather, it is pre-assumed among workers that better working conditions are based on growth and market expansion. Consequently, green job creation may reinforce the productivity-oriented labour process thereby the economic growth model, increasing social inequality and shooting the planetary boundaries (Holemans & Volodchenko, 2022).

Secondly, regarding the compensation approach, a deep critique focuses on the work-welfare nexus in which social security measures are designed to shorten the job-seeking period. The welfare recipients thus can become welfare contributors by re-entering the labour market as fast as possible. Noting the potential of compensation in terms of ultimately delinking income thereby livelihood from employment, Bohnenberger (2022a) argues that diversifying the income sources by offering unconditional states-founded income could encourage individuals to choose or transfer to green professions regardless of being employed or unemployed. The purpose of compensation should be shifted away from shortening the job-seeking period to enabling free and secured occupational choices and transformations. The findings are summarised in Table 2.

Table 2. Three approaches to just transition labour market policies.

	Green jobs approach	Green skills approach	Green compensation approach
Line-of-argumentations	Given the potential labour demand in growing green sectors, environmental regulation leads to employment benefits instead of costing jobs. Policy incentives for technological innovation and green public spending can be used to boost labour productivity.	Green jobs need green skills. To avoid the labour shortage while guaranteeing social justice, policy should focus on offering training and education to laid-off workers and the general labour force.	Hard-hit workers and communities need to be compensated. To make sure that no one left behind, compensative measures in form of monetary benefits or employment services are crucial.
Main concerns	<ul style="list-style-type: none"> • Qualification of green jobs • Job quality. Weak union intensity in new green sectors • Accessibility of green jobs to dislocated workers 	<ul style="list-style-type: none"> • Eligibility of training recipient • Misuse or waste of training resources 	<ul style="list-style-type: none"> • Eligibility of welfare benefits
Opposing arguments	<ol style="list-style-type: none"> 1. Technology and market-driven solutions & dependency on the growth of green jobs approach 2. Work-welfare nexus & focuses on shortening the job-seeking period of green compensation approach 		

5. Discussion and conclusion

Our synthesis demonstrates that, in just transition literature, major labour-related challenges include job loss in carbon-intensive sectors, labour shortage in growing green sectors, and absent or insufficient provision of social protection. To overcome these challenges, three different approaches have been identified. We labeled them as ‘green jobs’, ‘green skills’, and ‘green compensation’ approaches to just transition labour market policies. Respectively, the green jobs approach highlights the potential of green sectors in terms of creating new employment opportunities thereby absorbing both dislocated and upcoming labour forces. The green skills approach emphasises the importance of education and training in producing skilled labour and matching the labour shortage of decarbonisation. The green compensation approach stresses the necessity of updating social security systems so as to make sure the hard-hit and vulnerable groups are not left behind.

Distinguishing three approaches to labour market policy allows us to see how the idea of labour security (Standing, 1997) has significantly influenced the content of just transition proposals, even though the reviewed papers hardly used the concept of labour security. In specific, three forms of labour security are classified: labour market security in the sense of employment opportunities, skill reproduction security, and income security. We argue that these three forms of labour security constitute three pillars of just transition labour market policies.

We utilise the term ‘pillar’ to emphasise that three forms of labour security are equally important and therefore need to be addressed in a holistic fashion. Our synthesis reveals that currently, three approaches are unbalanced in the just transition discussion. Noticeably, the critical discussion that fundamentally challenges the green skills approach as a whole is missing (see Section 4.4). Through the lens of ecosocial approach, investing people’s human capital to improve their employability can be detrimental to green

transition if employability is defined according to a worker's ability to generate profit and productivity (Laruffa, 2020). As such, normalising employability in current labour policy-making prioritises the economically instrumental function of training and education, which in effect subordinates the crucial role that education could play in sustainability transformation when developing people's agency and autonomy (Laruffa, 2020; 2022). Thus, it is beneficial to take this critical stance into account when discussing what kinds of training and education are needed to enhance the second pillar of just transition labour market policies.

More importantly, in general, the green jobs and green skills approaches are well established with the debates covering a variety of perspectives and aspects. However, the overall discussions on the green compensation approach are more at a superficial level. For instance, social security provision is mostly perceived as a way to smooth the transition. This implies that social security systems are meant to protect citizens from negative labour market changes during the decarbonisation process (e.g. Sabato et al., 2023). This may explain why suggested measures, such as unemployment benefits and job-searching services, are compensatory by nature. However, what has been largely neglected is the potential role of the social security system in terms of empowering citizens to proactively *drive* the labour market change favorable for decarbonisation. For example, compensation has not been discussed in a way that could allow workers more freedom to leave their current 'brown jobs' (Bohnenberger, 2022b) or liberate them from paid employment.

Therefore, studies focusing on improving income security via a green compensation approach need to be strengthened. In light of ecosocial policy and sustainable welfare research, we suggest the following directions for future research agenda. First, to strengthen research on compensation as a driver of the transformation, studies should focus on tackling the work-welfare nexus by systematically incorporating other forms of work (outside the formal labour markets) within the welfare system. Rather than focusing on paid work and encouraging people to participate in the labour markets by improving their attractiveness to employers, active labour market policy measures could be used to support participation in unpaid work that is socially meaningful and ecologically beneficial (Dukelow & Murphy, 2022). Going beyond employment objectives, new kinds of active labour market policies could enable the working-age population to 'take up' various forms of work (Brodkin & Marston, 2013; Dukelow & Murphy, 2022). Repurposing the active labour market policy from an ecosocial perspective would mean that policy design allows people to freely choose sustainable employment as defined by Bohnenberger (2022b) and conduct various forms of work that they find meaningful and valuable. In doing so, a connection between welfare and other forms of work outside the formal labour markets would be gradually built up. Participation income could be one concrete policy proposal for these (McGann & Murphy, 2023).

Moreover, the potential of public employment as a traditional active labour market policy measure to ensure labour security is worth revisiting in future research. By sharing the critique on the environmentally detrimental work-welfare nexus (Laruffa, 2022) and following the ideas for degrowth policy solutions (Hickel et al., 2022), we suggest studying the potential of job guarantee programme in promoting labour security in just transition. 'Green jobs guarantees' could be used to ensure that the work needed for urgent social and ecological goals will be done (Hickel et al., 2022). This would include,

for example, work in social and health care, education, installing renewables, or retrofitting buildings. Job guarantees could also improve the collective bargaining power, which could make it an attractive policy proposal in the eyes of trade union actors.

In general, trade unions could have a significant role in addressing not just green jobs or green skills pillars but also the compensation approach. However, in the context of neo-liberal orthodoxy, trade unions have been marginalised and they have not managed to shape policy decisions towards improved labour security. We thus suggest, along with Korkut et al. (2017), that union revitalisation should be linked with a broader alternative agenda challenging the current economic paradigm and that national trade unions should be mobilised with the help of wider international movements.

Last but not least, the idea of ‘pillar’ denotes that there is a unifying principle holding three pillars together. This study reveals that this unifying principle is labour security, rather than economic growth. The focus on green skills and green compensation, in particular, hints that time is over for what Standing (1997, p. 14) called ‘fervent faith in markets’. Labour security concerns are gaining new ground. We suggest that the three-pillar perspective offers a new angle for critically reflecting on the role of economic growth for just transition labour market policymaking. In a just and green world, labour policy should be evaluated in accordance with the extent to which it contributes to labour security improvement rather than economic growth measured by GDP. Based on our findings, nevertheless, the expansionary economic model is still strongly present as the structural background of just transition policy proposals, especially within the green jobs discussion. In line with Laruffa (2020), we argue that stimulating labour demands by incentivising green sectors can indeed reinforce the growth dependency if the generated employment is meant to maintain constant production and consumption. More broadly speaking, social and labour policy can be environmentally detrimental and socially harmful if the normative core is restricted to the employment rate in a growth-driven economy (Laruffa, 2020). After all, the increase in employment rate does not necessarily deliver social and environmental justice which are necessary policy goals of just transition.

Therefore, we suggest that more research exploring labour security in the absence of environmentally harmful economic growth is urgently needed. Drawn on the sustainable welfare and ecosocial approach, it is worthwhile to redefine the concept of ‘green jobs’ based on its outcomes and its relation to social and ecological value (Bohnenberger, 2022b). Moreover, green jobs could be evaluated according to the extent to which they contribute to human needs while also respecting the ecological limits of our planet (Gough, 2022). Downplaying the market valuation and underpinning the ecosocial value of the jobs is essential for steering the labour market toward a greener future.

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References

- Abraham, J. (2017). Just transitions for the miners: Labor environmentalism in the Ruhr and Appalachian coalfields. *New Political Science*, 39(2), 218–240. <https://doi.org/10.1080/07393148.2017.1301313>
- Bailey, D. (2015). The environmental paradox of the welfare state: The dynamics of sustainability. *New Political Economy*, 20(6), 793–811. <https://doi.org/10.1080/13563467.2015.1079169>
- Bohnenberger, K. (2020). Money, vouchers, public infrastructures? A framework for sustainable welfare benefits. *Sustainability (Basel, Switzerland)*, 12(2), 596.
- Bohnenberger, K. (2022a). Greening work: Labor market policies for the environment. *Empirica*, 49(2), 347–368. <https://doi.org/10.1007/s10663-021-09530-9>
- Bohnenberger, K. (2022b). Is it a green or brown job? A taxonomy of sustainable employment. *Ecological Economics*, 200, 107469. <https://doi.org/10.1016/j.ecolecon.2022.107469>
- Bonoli, G. (2010). The political economy of active labor-market policy. *Politics & Society*, 38(4), 435–457. <https://doi.org/10.1177/0032329210381235>
- Bottazzi, P. (2019). Work and social-ecological transitions: A critical review of five contrasting approaches. *Sustainability (Basel, Switzerland)*, 11(14), 3852.
- Brodin, E., & Marston, G. (Eds.). (2013). *Work and the welfare state: Street-level organizations and welfare politics*. Georgetown University Press.
- Büchs, M. (2021). Sustainable welfare: How do universal basic income and universal basic services compare? *Ecological Economics*, 189, 107152. <https://doi.org/10.1016/j.ecolecon.2021.107152>
- Cameron, A., Claeys, G., Midões, C., & Tagliapietra, S. (2020). *A just transition fund: How the EU budget can best assist in the necessary transition from fossil fuels to sustainable energy*. Publications Office.
- Cha, J. M. (2016). Labor leading on climate: A policy platform to address rising inequality and rising sea levels in New York state. *Pace Environmental Law Review*, 34(2), 423. <https://doi.org/10.58948/0738-6206.1807>
- Cha, J. M. (2017). A just transition: Why transitioning workers into a new clean energy economy should be at the center of climate change policies. *Fordham Environmental Law Review*, 29(2), 196–220.

- Clarke, L., & Lipsig-Mummé, C. (2020). Future conditional: From just transition to radical transformation? *European Journal of Industrial Relations*, 26(4), 351–366. <https://doi.org/10.1177/0959680120951684>
- Dixon-Woods, M., Cavers, D., Agarwal, S., Annandale, E., Arthur, A., Harvey, J., Hsu, R., Katbamna, S., Olsen, R., Smith, L., Riley, R., & Sutton, A. J. (2006). Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology*, 6(1), 35–35. <https://doi.org/10.1186/1471-2288-6-35>
- Doyal, L., & Gough, I. (1991). *A theory of human need*. Macmillan.
- Dukelow, F., & Murphy, M. P. (2022). Building the future from the present: Imagining post-growth, post-productivist ecosocial policy. *Journal of Social Policy*, 51(3), 504–518. <https://doi.org/10.1017/S0047279422000150>
- Ebbinghaus, B. (2020). Changing work and welfare: Unemployment and labour market policies. In N. Ellison & T. Haux (Eds.), *Handbook on society and social policy* (pp. 291–305). Edward Elgar Publishing.
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Polity Press.
- Evans, G., & Phelan, L. (2016). Transition to a post-carbon society: Linking environmental justice and just transition discourses. *Energy Policy*, 99, 329–339. <https://doi.org/10.1016/j.enpol.2016.05.003>
- Ferrer Márquez, A., Gil, B. M.-T., & López Maeztu, O. (2019). *The contribution of social dialogue to the 2030 agenda promoting a just transition towards sustainable economies and societies for all*. Trade Union Development Cooperation Network. <https://www.ituc-csi.org/IMG/pdf/sdjt-final-en.pdf>
- Fredman, S. (2023). Greening the workforce: A feminist perspective. *International Journal of Comparative Labour Law and Industrial Relations*, 39(3/4), 337–358. <https://doi.org/10.54648/IJCL2023023>
- Fritz, M., & Lee, J. (2023). Introduction to the special issue: Tackling inequality and providing sustainable welfare through eco-social policies. *European Journal of Social Security*, 25(4), 315–327. <https://doi.org/10.1177/13882627231213796>
- Galgóczi, B. (2020). Just transition on the ground: Challenges and opportunities for social dialogue. *European Journal of Industrial Relations*, 26(4), 367–382. <https://doi.org/10.1177/0959680120951704>
- Galgóczi, B., & Pochet, P. (2023). Just transition and welfare states: A largely unexplored relation. *Sociologia Del Lavoro*, 165(165), 46–67. <https://doi.org/10.3280/SL2023-165003>
- Gallie, D. (2004). *Resisting marginalization: Unemployment experience and social policy in the European Union*. Oxford University Press.
- Goods, C. (2011). Labour unions, the environment and “green jobs”. *Journal of Australian Political Economy*, 67(67), 47–67.
- Gough, I. (2017). *Heat, greed and human need: Climate change, capitalism and sustainable wellbeing*. Edward Elgar Publishing.
- Gough, I. (2022). Two scenarios for sustainable welfare: A framework for an eco-social contract. *Social Policy and Society: A Journal of the Social Policy Association*, 21(3), 460–472. <https://doi.org/10.1017/S1474746421000701>
- Green, F., & Gambhir, A. (2019). Transitional assistance policies for just, equitable and smooth low-carbon transitions: Who, what and how? *Climate Policy*, 0(0), 1–20.
- Harrhill, K., & Douglas, O. (2019). Framework development for “just transition” in coal producing jurisdictions. *Energy Policy*, 134, 110990. <https://doi.org/10.1016/j.enpol.2019.110990>
- Haywood, L., Janser, M., & Koch, N. (2021). The welfare costs of job loss and decarbonization—Evidence from Germany’s coal phase out. *IDEAS Working Paper Series from RePEc*.
- Healy, N., & Barry, J. (2017). Politicizing energy justice and energy system transitions: Fossil fuel divestment and a “just transition”. *Energy Policy*, 108, 451–459. <https://doi.org/10.1016/j.enpol.2017.06.014>
- Herpich, P., Brauers, H., & Oei, P.-Y. (2018). *An historical case study on previous coal transitions in Germany*. <https://coaltransitions.files.wordpress.com/2018/07/2018-historical-coal-transitions-in-germany-report2.pdf>
- Hickel, J., Kallis, G., Jackson, T., O’Neill, D. W., Schor, J. B., Steinberger, J. K., Victor, P. A., & Ürge-Vorsatz, D. (2022). Degrowth can work—Here’s how science can help. *Nature*, 612(7940), 400–403. <https://doi.org/10.1038/d41586-022-04412-x>

- Hirvilammi, T. (2020). The virtuous circle of sustainable welfare as a transformative policy idea. *Sustainability*, 12(1), 1–15. <https://doi.org/10.3390/su12010391>
- Hirvilammi, T., Häikiö, L., Johansson, H., Koch, M., & Perkiö, J. (2023). Social policy in a climate emergency context: Towards an ecosocial research agenda. *Journal of Social Policy*, 52(1), 1–23. <https://doi.org/10.1017/S0047279422000721>
- Hirvilammi, T., & Joutsenvirta, M. (2020). Diverse work practices and the role of welfare institutions. In T. Eskelinen, T. Hirvilammi, & J. Venäläinen (Eds.), *Enacting community economies within a welfare state* (pp. 47–70). MayFly. http://mayflybooks.org/wp-content/uploads/2020/03/ECEAWS_final_e-book.pdf
- Hoffmann, M., & Paulsen, R. (2020). Resolving the ‘jobs-environment-dilemma’? The case for critiques of work in sustainability research. *Environmental Sociology*, 6(4), 343–354. <http://doi.org/10.1080/23251042.2020.1790718>
- Holemans, D., & Volodchenko, E. (2022). Different perspectives on a just transition: From decent jobs in a greener society to a good life for all within planetary boundaries. In D. Holemans (Ed.), *A European just transition for a better world* (pp. 39–68). London Publishing Partnership.
- ILO. (2018). *World employment and social outlook 2018: Greening with jobs*. International Labour Office, Geneva. https://www.ilo.org/weso-greening/documents/WESO_Greening_EN_web2.pdf
- Jaeger, J., Walls, G., Clarke, E., Altamirano, J. C., Harsono, A., Mountford, H., Burrow, S., Smith, S., & Tate, A. (2021). *The green jobs advantage: How climate-friendly investments are better Job creators*. World Resources Institute.
- Kallis, G., Kerschner, C., & Martinez-Alier, J. (2012). The economics of degrowth. *Ecological Economics*, 84, 172–180. <https://doi.org/10.1016/j.ecolecon.2012.08.017>
- Koch, M., & Mont, O. (2016). *Sustainability and the political economy of welfare* (1st ed., Vol. 42). Routledge.
- Korkut, U., de Ruyter, A., Maganaris, M., & Bailey, D. (2017). What next for unions in Central and Eastern Europe? Invisibility, departure and the transformation of industrial relations. *European Journal of Industrial Relations*, 23(1), 65–80. <https://doi.org/10.1177/0959680116677141>
- Laruffa, F. (2020). What is a capability-enhancing social policy? Individual autonomy, democratic citizenship and the insufficiency of the employment-focused paradigm. *Journal of Human Development and Capabilities*, 21(1), 1–16. <https://doi.org/10.1080/19452829.2019.1661983>
- Laruffa, F. (2022). Re-thinking work and welfare for the social-ecological transformation. *Sociologica (Bologna)*, 16(1), 123–151.
- Lee, J., Koch, M., & Alkan-Olsson, J. (2023). Deliberating a sustainable welfare–work nexus. *Politische Vierteljahresschrift*, 1–20.
- Mandelli, M., Cacciapaglia, M., & Sabato, S. (2023). *EU eco-social policies for a «Just Transition»: Comparing the just transition fund and the social climate fund*. in *Politiche Sociali, Social Policies 1/2023*, pp. 81–98.
- Marais, H. (2018). The employment crisis, just transition and the universal basic income grant. In V. Satgar (Ed.), *Climate crisis* (pp. 70–106). Wits University Press.
- Masterman-Smith, H. (2010). Green collaring a capital crisis? *Labour & Industry (Brisbane, Qld.)*, 20(3), 317–330. <https://doi.org/10.1080/10301763.2010.10669406>
- Mayer, A. (2018). A just transition for coal miners? Community identity and support from local policy actors. *Environmental Innovation and Societal Transitions*, 28, 1–13. <https://doi.org/10.1016/j.eist.2018.03.006>
- McCauley, D., & Heffron, R. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy*, 119, 1–7. <https://doi.org/10.1016/j.enpol.2018.04.014>
- McGann, M., & Murphy, M. P. (2023). Income support in an eco-social state: The case for participation income. *Social Policy and Society*, 22(1), 16–30. <http://doi.org/10.1017/S1474746421000397>
- Mercier, S. (2020). *Four case studies on just transition: Lessons for Ireland*. National Economic and Social Council, Research Series Paper No.15. <https://ssrn.com/abstract=3694643>
- Pollin, R., & Callaci, B. (2019). The economics of just transition: A framework for supporting fossil fuel-dependent workers and communities in the United States. *Labor Studies Journal*, 44(2), 93–138. <https://doi.org/10.1177/0160449X18787051>

- Rosemberg, A. (2010). Building a just transition: The linkages between climate change and employment. *International Journal of Labour Research*, 2(2), 125.
- Sabato, S., Büchs, M., & Vanhille, J. (2023). *A just transition towards climate neutrality for the EU: debates, key issues and ways forward*. https://www.ose.be/sites/default/files/publications/2023_Sabato_Buchs_Vanhille_OseResearchPaper52.pdf
- Schmelzer, M., Vetter, A., & Vansintjan, A. (2022). *The future is degrowth: A guide to a world beyond capitalism*. Verso Books.
- Schmid, G., O'Reilly, J., & Schömann, K. (Eds.). (1996). *International handbook of labour market policy and evaluation*. Edward Elgar Publishing.
- Schoyen, M. A., Hvinden, B., & Leiren, M. D. (2022). Welfare state sustainability in the 21st century. In B. Schoyen, M. A. Leiren, & M. D. (Eds.), *Towards sustainable welfare states in Europe: Social policy and climate change* (pp. 2–27). Edward Elgar Publishing.
- Stamm, I., Matthies, A.-L., Hirvilammi, T., & Närhi, K. (2020). Combining labour market and unemployment policies with environmental sustainability? A cross-national study on ecosocial innovations. *Journal of International and Comparative Social Policy*, 36(1), 42–56. <https://doi.org/10.1017/ics.2020.4>
- Standing, G. (1997). Globalization, labour flexibility and insecurity: The era of market regulation. *European Journal of Industrial Relations*, 3(1), 7–37. <https://doi.org/10.1177/095968019731002>
- Standing, G. (2011). Labour market policies, poverty and insecurity. *International Journal of Social Welfare*, 20(3), 260–269. <https://doi.org/10.1111/j.1468-2397.2010.00778.x>
- Stavis, D. (2011). Unions and the environment: Pathways to global labor environmentalism. *Working USA*, 14(2), 145–159. <https://doi.org/10.1111/j.1743-4580.2011.00329.x>
- Stavis, D., & Felli, R. (2015). Global labour unions and just transition to a green economy. *International Environmental Agreements: Politics, Law and Economics*, 15(1), 29–43. <https://doi.org/10.1007/s10784-014-9266-1>
- Stavis, D., & Felli, R. (2016). *Green transitions, just transitions?* Broadening and Deepening Justice. http://www.beigewum.at/wp-content/uploads/KuWe-3_16-Stavis-Felli_Green-Transition-Just-Transition.pdf
- Stiglitz, J. E. (2002). Employment, social justice and societal well-being. *International Labour Review*, 141(1), 9–29. <https://doi.org/10.1111/j.1564-913X.2002.tb00229.x>
- Stilwell, F. (2021). From green jobs to Green New Deal: What are the questions? *The Economic and Labour Relations Review: ELRR*, 32(2), 155–169. <https://doi.org/10.1177/10353046211009774>
- Strietska-Illina, O., Hofmann, C., Durán Haro, M., & Jeon, S. (2011). *Skills for green jobs: A global view*. International Labour Office.
- Weishaupt, J. T. (2013). Origin and genesis of activation policies in “old” Europe: Toward a balanced approach? In I. in Marx & K. Nelson (Eds.), *Minimum income protection in flux* (pp. 190–216). Palgrave Macmillan.

Appendix 1: Reviewed publications

1. Abraham, J. (2017). Just Transitions for the Miners: Labor Environmentalism in the Ruhr and Appalachian Coalfields. *New Political Science*, 39(2), 218–240.
2. Bohnenberger, K. (2020). Money, vouchers, public infrastructures? A framework for sustainable welfare benefits. *Sustainability (Basel, Switzerland)*, 12(2), 596.
3. Bohnenberger, K. (2022a). Greening work: Labor market policies for the environment. *Empirica*, 49(2), 347–368.
4. Bohnenberger, K. (2022b). Is it a green or brown job? A Taxonomy of Sustainable Employment. *Ecological Economics*, 200, 107469.
5. Bottazzi, P. (2019). Work and social-ecological transitions: A critical review of Five Contrasting Approaches. *Sustainability (Basel, Switzerland)*, 11(14), 3852.

6. Cameron, A., Claeys, G., Midões, C., & Tagliapietra, S. (2020). *A just transition fund: How the EU budget can best assist in the necessary transition from fossil fuels to sustainable energy*. Publications Office.
7. Cha, J. M. (2016). Labor leading on climate: A policy platform to address rising inequality and rising sea levels in New York State. *Pace Environmental Law Review*, 34(2), 423.
8. Cha, J. M. (2017). A just transition: Why transitioning workers into a new clean energy economy should be at the center of climate change policies. *Fordham Environmental Law Review*, 29(2), 196–220.
9. Clarke, L., & Lipsig-Mummé, C. (2020). Future conditional: From just transition to radical transformation? *European Journal of Industrial Relations*, 26(4), 351–366.
10. Evans, G., & Phelan, L. (2016). Transition to a post-carbon society: Linking environmental justice and just transition discourses. *Energy Policy*, 99, 329–339.
11. Ferrer Márquez, A., Gil, B. M.-T. & López Maeztu, O. (2019). *The contribution of social dialogue to the 2030 agenda promoting a just transition towards sustainable economies and societies for all*. Trade Union Development Cooperation Network. <https://www.ituc-csi.org/IMG/pdf/sdjt-final-en.pdf>
12. Fredman, S. (2023). Greening the workforce: A feminist perspective. *International Journal of Comparative Labour Law and Industrial Relations*.
13. Galgóczi, B. (2020). Just transition on the ground: Challenges and opportunities for social dialogue. *European Journal of Industrial Relations*, 26(4), 367–382.
14. Goods, C. (2011). Labour unions, the environment and “green jobs.” *Journal of Australian Political Economy*, 67(67), 47–67.
15. Green, F. & Gambhir, A. (2019). Transitional assistance policies for just, equitable and smooth low-carbon transitions: Who, what and how? *Climate Policy*, 0(0). 1–20.
16. Harrahill, K. & Douglas, O. (2019). Framework development for “just transition” in coal producing jurisdictions. *Energy Policy*, 134. 110990.
17. Haywood, L., Janser, M., & Koch, N. (2021). *The welfare costs of job loss and decarbonization—Evidence from Germany’s coal phase out*. IDEAS Working Paper Series from RePEc.
18. Healy, N., & Barry, J. (2017). Politicizing energy justice and energy system transitions: Fossil fuel divestment and a “just transition.” *Energy Policy*, 108, 451–459.
19. Herpich, P., Brauers, H., & Oei, P.-Y. (2018). An historical case study on previous coal transitions in Germany. <https://coaltransitions.files.wordpress.com/2018/07/2018-historical-coal-transitions-in-germany-report2.pdf>
20. Holemans, D., & Volodchenko, E., (2022) Different perspectives on a just transition: from decent jobs in a greener society to a good life for all within planetary boundaries. In Holemans, D. (Ed.) *A European just transition for a better world* (pp. 39–68). London Publishing Partnership.
21. Jaeger, J., Walls, G., Clarke, E., Altamirano, J. C., Harsono, A., Mountford, H., Burrow, S., Smith, S., & Tate, A. (2021). *The green jobs advantage: How climate-friendly investments are better job creators*. World Resources Institute.
22. Marais, H. (2018). The employment crisis, just transition and the Universal Basic Income Grant. In *Climate Crisis* (pp. 70–106). Wits University Press.
23. Masterman-Smith, H. (2010). Green collaring a capital crisis? *Labour & Industry (Brisbane, Qld.)*, 20(3), 317–330.
24. Mayer, A. (2018). A just transition for coal miners? Community identity and support from local policy actors. *Environmental Innovation and Societal Transitions*, 28, 1–13.
25. Mercier, S. (2020) *Four case studies on just transition: Lessons for Ireland*. National Economic and Social Council, Research Series Paper No.15. <https://ssrn.com/abstract=3694643>
26. Pollin, R., & Callaci, B. (2019). The economics of just transition: A framework for supporting fossil fuel-dependent workers and communities in the United States. *Labor Studies Journal*.
27. Rosemberg, A. (2010). Building a Just Transition: The linkages between climate change and employment. *International Journal of Labour Research*, 2(2), 125.

28. Sabato, S. & Büchs, M., & Vanhille, J. (2023). *A just transition towards climate neutrality for the EU: debates, key issues and ways forward*. https://www.ose.be/sites/default/files/publications/2023_Sabato_Buchs_Vanhille_OseResearchPaper52.pdf
29. Stevis, D. (2011). Unions and the environment: pathways to global labor environmentalism. *Working USA*, 14(2), 145–159.
30. Stevis, D., & Felli, R. (2015). Global labour unions and just transition to a green economy. *International Environmental Agreements: Politics, Law and Economics*, 15(1), 29–43.
31. Stilwell, F. (2021). From green jobs to Green New Deal: What are the questions? *The Economic and Labour Relations Review: ELRR*, 32(2), 155–169.
32. Strietska-Illina, O., Hofmann, C., Durán Haro, M., & Jeon, S. (2011). *Skills for green jobs: A global view*. International Labour Office, Geneva.