

What does “just transition” mean for climate change mitigation?

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Abstract

During the past few years, the concept of “Just Transition”, as used in relation to climate change mitigation, has increasingly gained attention. But while there is no shortage of talk and references to just transition, what is this issue really about? What do we mean by just transition? Do all actors in the climate mitigation debate mean the same thing? And what in practical and concrete terms might a just transition look like? This paper seeks to explore and shed light on these questions. This paper argues that there is no “universal blueprint” for a just transition. However, there are some common principles –principles that ultimately relate to basic philosophical ideas of natural justice, human decency and respect, and theories of effective social change– that are likely to be more or less universal across cultural contexts. In this author’s view, these will likely need to form an important part of the governance strategies for climate change mitigation to be both effective, socially acceptable and just.

Keywords: Just transition, climate change, climate policy, structural adjustment, coal transitions.

1. INTRODUCTION

During the past few years, the concept of “Just Transition”, as used in relation to climate change mitigation, has increasingly gained attention. In fact, it has become such an area of attention that environment and energy ministries in some countries have renamed themselves to include an allusion to the idea in their names. The former Ministry for environment and energy in France, for example, was re-baptised in late 2016 as the Ministry for Ecological Transition and Solidarity,¹ even though its scope of activities was largely unchanged. More generally, it is now difficult for self-respecting experts on climate mitigation, or for environmentally progressive political parties, to talk publicly about the idea of the energy- or low-carbon transition without making mention of the essential role of a just transition.

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1 “Ministère de la Transition Ecologique et Solidaire”, <https://www.ecologique-solidaire.gouv.fr/>

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But while there is no shortage of talk and references to just transition, what is this issue really about? What do we mean by just transition? Do all actors in the climate mitigation debate mean the same thing? And what in practical and concrete terms might a just transition look like? This paper seeks to explore and shed light on these questions. To do so, it starts by exploring a very brief history of the just transition concept (section 2). It then explores some of the negative and positive understandings of just transition, as well as their implications, the kinds of societal actors that focus on each (Section 3). Section 4 then looks in more detail at what just transition might mean in practice. It notes that the practical application will need to be highly differentiated based on geographical, social and economic contexts around the world.

To give a foretaste of where this paper is heading: it argues that there is no universal blueprint for a just transition that can reliably be transposed from one place to another without adapting to local context. However, there are some common principles – principles that ultimately relate to basic philosophical ideas of natural justice, human decency and the basic desire of people who are affected by economic and societal change to be respected and have their concerns taken seriously. In this author’s view, these will likely need to form an important part of the governance strategies for climate change mitigation to be both effective, socially acceptable and just.

2. THE JUST TRANSITION CONCEPT: A VERY BRIEF HISTORY

The idea of a Just Transition was essentially brought into climate mitigation discourse by two political events. One was the Paris Climate Agreement in 2015, whose recitals explicitly referenced the necessity to “*Tak(e) into account 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...*” (United Nations, 2015a, Recital 12). Since then, the idea of the need to combine deep, transformative and sometimes disruptive change with these concepts of social justice and inclusiveness, has increasingly become a core part of policy debates on implementing the Paris Agreement.

The Paris Agreement thus identified a few key ideas as constituting essential elements of a just transition. Namely, the ideas of a) fair treatment for strongly affected workforces needing to transition, b) the importance of decent work and quality jobs as part of the new green economy, and c) the need to align the transition with national development priorities. To date, these remain core pillars of what is understood by a just transition, whether by many national and international union confederations, governments in developed or developing countries or NGOs and researchers working on the topic.

This agreement on the core pillars of a just transition is no accident. On the contrary, the language that appeared in the Paris Agreement is the result of a deeper and more far-reaching process that culminated in the International Labour Organisation's (ILO) *“Guidelines for a just transition towards environmentally sustainable economies and societies for all”*, (ILO, 2015) published prior to the Paris climate negotiations, in 2015. The ILO is a tripartite body, comprising representatives from employers, labour unions and governments in a large number of countries, between whom these guidelines were negotiated. The Paris Agreement therefore distilled down the essential elements of the ILO's Guidelines.

The ILO document is wide-ranging. However, it is nonetheless key to comprehending the concept of just transition, as it is understood by labour unions, social movements and developing countries, among other adherents to its conclusions. For instance, one key passage, defining just transition, notes that: *“a just transition for all towards an environmentally sustainable economy, as described in this document, needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty”* (ILO, 2015, Chapter 2. Paragraph 4, p.4).

Moreover, the ILO's guidelines build on existing international agreements about what these terms mean. For instance, the Guidelines references to “decent work” build on the Decent Work Agenda: *“The four pillars of the Decent Work Agenda –social dialogue, social protection, rights at work and employment– are indispensable building blocks of sustainable development and must be at the centre of policies for strong, sustainable and inclusive growth and development.”*² (ILO, 2015, Chapter 2.

² <https://www.ilo.org/asia/decentwork/lang--en/index.htm>

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Paragraph 1, p.4, CF) The references to eradication of poverty and rights to development, in turn, refer to the UN’s 2030 Agenda and the 17 Sustainable Development Goals (United Nations, 2015b).

2.1. Just Transition as a ‘negative’ concept

All this may give the impression that the ILO’s Guidelines define just transition as a “negative” concept, *i.e.*, that just transition is understood as ensuring that the low-carbon transition to tackle climate change does not restrict or impinge on certain values or goals. Workers, for instance, are to be compensated with equivalent high quality work. This negative idea –*i.e.* of limiting or mitigating negative consequences caused by the transition– is indeed the side of the ILO guidelines that labour unions, governments whose economies have important fossil fuel dependencies, and others who are sympathetic to the precariousness of certain workers or regions, tend to focus on.

Thus, for instance, during COP24 –which took place in the Polish coal mining region of Katowice– the Polish Presidency focused a good part of its diplomatic attention on giving birth to the Silesia Declaration on Solidarity and Just Transition. This Declaration, which was signed by 48 states, and sought to “*emphasis[e] the need to lead change together with people through the solidarity and fair transformation of regions and industrial sectors*” (UNFCCC, December 2018). This was to be done by “*building low greenhouse gas emission and climate resilient economies, ... while ensuring a just transition of the workforce that creates decent work and quality jobs*” (Ibid).

The concern about what happens to workers and communities linked to the fossil fuel sector or other emissions-intensive activities has also been a key focus of the environmental NGO and think tank community. While this community has latched onto the moral importance of just transition in full sincerity –it makes no sense to commit social injustices to pursue “climate justice”– its political interest originates in the desire to remove a potential political obstacle to the low carbon transition. This strategic concern has been reinforced by the strength of the more general populist backlash that has occurred across the globe during recent years, where working class people have rebelled against the “globalist” agenda of urban

elites, and of which climate change mitigation is a part. US President Donald Trump's stated support for the coal workers of the dying US coal industry and his renegeing on the U.S.'s participation in the Paris Climate Agreement are perhaps the best known –but far from the only– example of this.

It is in this context, then, that governments and non-governmental actors have sought to put just transition at the centre of climate policy to try to avoid climate becoming victim to populist backlash. Thus, for example, the European Union in 2017 developed a range of initiatives that aimed to do this, *e.g.* the Coal and Fossil Fuel Regions in Transition Initiative, which sought to share knowledge and identify ways to accompany cities and regions and workforces in Europe's 41 coal-using regions to transition out of coal in a just way. As part of this initiative, the EU has also established a Just Transition Fund under the revised EU ETS Directive (European Commission, 2018a) and Just Transition has become a key topic for member states to plan and report on under their new National Energy and Climate Plans, under the EU's new Energy Union Governance Regulation of 2018 (European Commission, 2018b).

2.2. Just Transition as a positive concept

However, there is another important aspect to the just transition concept in the ILO guidelines, which is important not to overlook. This is the idea that climate change and environmental degradation itself is a major threat to the existence of just societies. This was a fact that was highlighted strongly in the IPCC's Special Report on 1.5°C (IPCC, 2018), which essentially argued that a > +2°C world is much less just and egalitarian than a +1.5C world. The stresses climate change will place on ecosystems, food scarcity, water availability, human health, economic activity (and thus employment and development), migration patterns, and exposure to extreme weather events will, it was argued, inevitably fall more heavily on poor countries and on the poorest within countries.

Thus, it is noteworthy that the ILO's Guidance begins with a paragraph that reads: *“Sustainable development means that the needs of the present generation should be met without compromising the ability of future generations to meet their own needs. Sustainable development has three dimensions –economic, social and environmental–*

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which are interrelated, of equal importance and must be addressed together” (ILO, 2015, p.4). This is crucial, because it posits the idea that for justice to occur, an ecological transition is required. The idea of “climate justice” is therefore embedded in the concept of just transition. This helps to explain why the idea of just transition and climate mitigation tend to fit relatively well together, and why the discourse of both unionists and environmental NGOs have tended –up until now– to align relatively well to pursue what might otherwise be considered conflicting political aims: the two groups essentially seek a more just world and a better society. It is hard to maintain a philosophical claim to one, without acknowledging the other, while still appearing intellectually coherent.

Perhaps the most salient example of this alignment –*i.e.* between the idea of a better, more just society, and a just transition to a decarbonised economy– can be found in the resolution the US House of Representatives calling for a “Green New Deal” (United States House of Representatives, 2019). With its reference to the [Social and Economic] New Deal of President Roosevelt, the Green New Deal brings together the ideas of economic progress, climate justice and a more just society into one political narrative. Historically speaking, it also conjures up the powerful symbolism of the US war-time industrial mobilisation together with the ideas of “no-one left behind” in the Great Society program. In a sense, the Green New Deal is the just transition personified in a positive political narrative, that defines a vision of a more desirable, more just society. It is perhaps also good politics – since at least it tries to essentially create an alliance between the great social and the environmental challenges of our time.

However, this alignment between the climate and ecological transition and the goal of a more just society is not only “clever political messaging”. The literature on deep decarbonisation scenarios and pathways provides some support for the idea that climate mitigation can also be a motor for a progressive social agenda, as well as more general societal and economic progress [Cf. for example, New Climate Economy (2018); European Commission (2018c); IDDRI (2015a); Coal Transitions (2018a)]. The transition to a GHG neutral economy provides many opportunities to make people’s lives better and society more just. For example, investment in energy efficiency of homes and appliances can help reduce energy bills –often significantly– for those who are counted among

the “energy poor”.³ The bio-economy, more efficient farming practices and exploitation of forest sinks can help to reduce input costs and diversify income for farmers, who often are among the most economically vulnerable groups of the economy. By transitioning to electric or other non-internal combustion vehicles in cities and urban areas, it is possible to dramatically reduce the local air pollution that causes respiratory disease, and make cities more liveable. Such examples of mitigation measures that could improve the lives of citizens, and especially those who are least well-off socio-economically, as a co-benefit of climate mitigation abound. Indeed, it would be possible to write an entire paper just listing them.

The socially progressive aspects of a just transition to a decarbonised economy is not only true for rich countries either. On the contrary, examples abound of the ways in which the transition has the potential to improve the quality of life of the least well off in developing countries. For instance, in place like India or Sub-saharan Africa, there is growing evidence that decarbonised alternatives can now provide access to electricity to those without it either more cheaply or at equivalent cost, while also doing so more reliably, and being deployed more quickly (via small scale off-grid solutions), than via conventional fossil fuel power plants and grid connections [Cf. for example, IEA (2017); Coal Transitions (2018a)]. Moreover, as noted above, climate change will also very likely hit the most vulnerable the hardest and thus tend to exacerbate existing socio-economic inequalities in societies.

Against this view, it is sometimes argued that fossil fuels are nonetheless essential for the industrial development of developing countries. This, the argument goes, is why they have embraced them so wholeheartedly in places like China, India, South East Asia, etc., and continue to do so (the number of coal plants being financed by the Chinese Belt and Road Initiative is often pointed to for instance). However, this overlooks several issues. First, it assumes that the past is a good guide to the future – but given the speed at which decarbonised energy technology is developing and how recently cost parity is being attained in sunny and windy places, this is probably not the best guide to the economics

³ Energy poverty is typically defined as households paying more than 10% of income in energy bills per month, or households that regularly miss or struggle to make energy bill payments.

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of energy in the future. Second, it overlooks the realities of the politics behind these choices. It should go without saying that investment decisions in the energy sector are not always made by pure economic cost considerations alone and in this area clean energy unfortunately starts at a political economy disadvantage in many developing countries. Thirdly, it overlooks the fact that inside many developing countries, the monetary and non-monetary costs of continuing the fossil-fuel based growth are increasingly becoming a major political issue. For instance, basic issues like equal access to clean air, clean water, and clean soil, are coming into focus as major political issues for the populations –and thus for governments– in developing countries. For populations in these countries, therefore, just transition is also about these issues. It is not only about mitigating the impacts on workers or regions of fossil fuel sector phase-downs.

The positive concept of just transition thus focused on the possibility of ensuring that governmental approaches to climate mitigation are designed to contribute to the creation of a better, more equal, society, is a thus a different take on the just transition idea. Rather than seeing the transition in the traditional economic sense as something that brings a cost burden onto society that should be minimised via “least cost policy interventions” and its distributive impacted “mitigated”; this approach posits the transition as an opportunity to bring net benefits to society – if not everywhere and always, then at least across many aspects of the transition. The transition itself can thus often be the source of greater social and economic justice, rather than purely being a source of injustice to be compensated for, or somehow mitigated.

Advocates of this “positive” approach to the question of just transition and climate mitigation appear to be growing, even if they don’t always use the language of just transition to describe it. Whereas this approach was initially championed by think tanks and research institutes working on long term decarbonisation pathways (IDDRI, 2015b; New Climate Economy, 2018), –perhaps motivated by the need to make the transition more attractive to developing countries who were not attracted to thinking about minimising sets of costs– the “positive agenda” for climate mitigation is now becoming embedded in things like the Green New Deal proposal (mentioned above) or in the narrative of the European Commission about its future vision of EU climate policy (European Commission, 2018c).

3. IMPLEMENTING JUST TRANSITION: FROM THEORY TO PRACTICE

Above two broad approaches to the question were outlined, *i.e.* “positive” and “negative”. This section thus discusses experiences reflecting each.

3.1. Socially progressive approaches to a just low-carbon transition: insights from a French case study

Systematically complete examples of the “so-called” positive concept of just transition are limited, since the idea is a relatively recent one and experience is limited. As noted above, policy makers in both the EU and US have increasingly sought to create a positive narrative for climate policy, based on the numerous social and economic co-benefits of the transition itself. It remains too early to assess how effective this narrative is and how well this vision will be translated into concrete policies.

However, there are some interesting examples of countries currently making attempts to go in this direction. The case of France is interesting in this regard. Despite its reputation for having mismanaged the social aspects of the energy transition in relation to fuel taxation (one of the many factors that led to the so-called yellow vests protests), the Macron government in France was and is making an attempt to align the pursuit of environmental and social objectives via the energy transition. This example is instructive both because of what was attempted and because it highlights also how such approaches can be undermined by intrinsic and extrinsic weaknesses in policy implementation.

In 2017, the newly named Ministry for Ecological and Social Transition in France, set out its Plan Climat (Ministère de la Transition Ecologique et Solidaire, 2017) – essentially an agenda and set of policy announcements for the new government’s 5-year term. The Plan Climat included several policy ideas that sought to bridge the socially progressive and environmental:

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- Implementing bonus payments for low income households to replace their old, less efficient internal combustion vehicles with cleaner alternatives (even if a second hand vehicle).⁴
- Investing 4 billion Euros in an effort to eradicate energy poverty, notably by subsidising and prioritising the retrofitting the homes of some of the poorest households, many of whom tend to own the least well insulated dwellings.
- Supporting investments in so-called «auto-consumption» of renewable electricity, thus allowing homeowners in rural and non-urban areas to gain access to seemingly cheaper forms of electricity than via the grid.
- Establishing a process of so-called Ecological Transition Contracts (CTEs), aimed at encouraging territories and local communities in France to negotiate deals with the central government to support the creation of employment through the green economy, accompanied in the social transition away from local fossil fuel industries, and support local ownership of the transition.
- Launching a public consultation and policy development process on the theme of “better eating”. The subjects dealt with during this process included the development of organic foods to better protect consumer health, supporting the wages of farmers via the development of the bio-economy and more sustainable agricultural practices, etc.
- Announcing an end to the sale of internal combustion vehicles nationally (and thus also in cities where local pollution is known to cause major respiratory illnesses) by 2040. The purpose of this was to allow the automotive industry time to adjust, while also providing clear guidance on the direction of travel, and tackling both climate and local pollution problems simultaneously.

The Plan Climat was a well-intentioned new direction for French climate policy. However, as subsequent developments would reveal, it was not without certain

⁴ Most lower- and even middle-income households purchase second-hand rather than new vehicles, thus making them potentially ineligible for pre-existing bonuses for clean new vehicles (Sartor, Spencer and Fryatt, 2017).

weaknesses that were not fully appreciated at the time. One such weakness lay in the policy design of certain of the measures. For instance, while subsidies for energy efficiency retrofits are indeed available, the administrative complexity and monetary cost of applying for them are prohibitive for many households, especially for the targeted socio-economic groups.⁵

Another key weakness was a failure on the part of policy elites to fully grasp the nature of broader economic and political grievances being felt by some of the French working and middle class. In this context, many felt that these measures were too little, too late. For instance, while motorists no doubt appreciated the possibility of a bonus to buy a more efficient vehicle, some expressed resentment that the higher fuel efficiency would be wiped out by higher taxes on motor fuels and the longer distances they were required to travel to work, or at the need to use their car more often to compensate for a decline in rail services, or they felt stuck because of the sheer cost of changing vehicles, etc.⁶

Another major weakness, and one which served as the “spark” for the yellow vest protest movement, was the decision to simultaneously implement a significant rise in fuel taxes. This involved simultaneous decisions to raise the carbon tax (contribution climat et énergie) on motor fuels, together with a decision to quickly align diesel and gasoline taxation rates. These policies were made more visible by the fact that, by chance, fuel prices were rising because of a renewed growth in global oil prices. Interestingly, some have noted that neither the yellow vest movement, nor other political campaigners for social justice, have ever questioned the need for aligning diesel and gasoline taxes or higher carbon taxes on fuel. They point out, however that what was missing was a credible story for motorists about how this would help the environment, since motorists considered that they had no alternative form of transport, they thus felt that they had no choice but to pay the higher fiscal burden.

One should be careful not to overstate the errors of the French experiment with the social and ecological transition to date. The yellow vests movement was a complex social and economic phenomenon, and ultimately has a lot more to do

⁵ Pers comm. (15/05/19) Y. Marignac, expert on French energy policy, Association Négawatt.

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with blow-back from two decades of rapid globalisation, and a much profounder sense of political and economic disenfranchisement, than anything specific about the Plan Climat.

Nonetheless, the French case is an important lesson that the quality of policy implementation and communication matters crucially to the way that socially progressive environmental policy is ultimately perceived. However, this lesson is not unique to France. For instance, one can cite the numerous hiccups that the Chinese government has faced with replacing coal-fired heating by lower carbon alternatives (Greenpeace, 2018) — something intended to improve citizens health, but, because of implementation mistakes, ultimately led to citizens going without heating during periods of the winter.

Another relevant example is the present South African government’s decision to align the phase-in of renewable energy with the partial privatisation of the power sector through Renewable Energy Independent Power Producer Program (“REIPP Program”) (World Bank, n.d.). This has had the unintended effect of turning a progressive social and environmental policy (since in South Africa wind and solar are now cheaper than maintaining the existing coal-fleet) (Coal Transitions, 2018e) into a clash between the government and labour unions, who fear that renewables imply privatisation which implies loss of social protections for workers (Coal Transitions, 2018e). These examples highlight the extent to which implementation matters when it comes to evaluating the acceptability and real world impact of Green New Deal-type policies.

3.2. Who deserves dedicated “just transition” policies?

Turning from the “positive” to the “negative” concept of just transition, there is a broader literature, detailing lessons from historical cases of industrial transitions in response to various kinds of economic shocks. There is also a growing literature on just transition policy options. Moreover, there are some recent examples (albeit based on “unfinished” processes), of “just transition” deals or policy frameworks between governments and civil society stakeholders for specific fossil fuel (essentially coal) phase out policies.

The literature on just transition in this context tends to focus on two key dimensions: labour force transition and regional economic resilience and transition. However, before discussing these dimensions, it is important to reflect briefly about which kinds of sectors and situations give rise to a need for dedicated just transition policies.

To date, the call for just transition policies has largely occurred in the context of phase down of fossil fuel extraction, essentially coal. In this case, a need for a dedicated policy has tended to be justified because of the geographical concentration and remoteness of mining activities, as well as the specific nature of the impacts of the activities on the workers and the regions. The geographical concentration of extraction activities, as well as the fact that fossil fuels extraction often tends to crowd out other economic activities (due to local pollution, land-lock, unbalanced work between men and women, the health impacts on workers, etc.), means that the transition to new jobs and new sources of economic self-sufficiency will be much harder in these regions. Indeed, history of past coal transitions has repeatedly shown that such regions often experience systematically higher rates of unemployment, lower rates of workforce participation, poorer health and education outcomes, higher crime rates post coal phase down. Moreover, such effects have often lasted for generations, thus disadvantaging not only the displaced mining workers, but also their children and the broader community.

The geographical concentration of coal and arguably also oil or natural extraction activities is therefore an argument as to why “special treatment” could be justified –in the form of dedicated just transition policies for the workers and regions– even though such special assistance is not provided to workers in other parts of the economy. For instance, it may appear hypocritical or unfair to spend significant resources on a just transition for workers or regions affected by climate change, and not those affected by other, everyday economic forces, such as automation, globalisation and digitalisation. However, in some cases, these economic activities are more diffuse, suggesting that it is the broader social safety net and macro-economic performance of the country which are at issue. Admittedly, however, this is not always true – as evidenced by the extent to which globalisation has tended to significantly punish specific geographically concentrated regions of countries at the expense of denser urban areas.

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There is, therefore, an open question of broader social fairness that is raised by calls for a just transition for fossil fuel extraction sectors that is somewhat unresolved. Not least of all, because the transitions of coal regions to date have seen very significant amounts of public funds invested in helping workers or regions. For example, Germany’s recent Coal Exit Commission (Clean Energy Wire, 2019) –a body of coal sector stakeholders established to reach a set of recommendations on when and how to phase out coal mining and use– ultimately called for 40 billion Euros to spend on the transition over a period of 20 years. Although part of this money was meant to partially also compensate companies with stranded assets (a dubious proposition from a just transition standpoint) and also compensate regional electricity consumers for possible higher power prices, the deal nonetheless included around 20 billion for workers and regions. For 30,000 workers in the broader coal sector (DIW Berlin, 2018), this amounts to roughly 667,000 € per worker. While much of this will also benefit the regions, and not just workers, the sums are nonetheless considerable and not necessarily something that can be easily replicated across other, sometimes larger sectors of the economy. For instance, Germany’s automobile sector numbers in the order of 250,000 workers (DIW Berlin, 2018).

It is perhaps reassuring then to realise that in other heavily emitting sectors, the social implications of the transition to a net zero emissions economy may be quite different from coal, gas and oil. For instance, in the automobile manufacturing sector –where there will likely be significant job turnover as it moves from internal combustion to electric or hydrogen and e-fuels vehicles– the sites themselves will probably not change location. Moreover, the onus of government to take responsibility for compensating workers (or companies) may not be the same, since the companies are likely to remain in place, but simply to change their business models to adapt to the low carbon economy.

In the buildings sector, where energy retrofitting and fuel switching are the main drivers of emissions reductions, the transition is expected to create jobs, and provide opportunities to up-skill, rather than to destroy them. Similarly in the forestry sector, where wood harvesting as a construction material or new forestry and land use management activities call for new jobs to be created.

In the manufacturing sector, most business models are not put into question by the idea of decarbonisation, with the possible exception of very specific processes, such as some sites with Blast Oxygen Furnace Steel-making. Even many oil refineries can, at least in principle, be redesigned to support the bio-economy, chemical recycling of CO₂, etc. (although in practice some may indeed close).

In the agriculture sector, long-term scenarios for achieving net zero compatible production suggest agricultural activities will in large part continue and actually expand to serve the bio economy. However, as in manufacturing, the issue will be about how to create viable business cases for farms to change their product mix and adopt greener production methods, while remaining economically viable.

One sector that may risk facing a highly negative impact from climate policy, but which may be quite different from fossil fuel extraction in nature, is the tourism industry. In 2019, as tourism continues to grow, this may seem a far-fetched scenario. However, based on the current status of technological development of zero carbon passenger flight solutions, and given the long lived capital stock of the aviation sector, long-term scenarios under which the world achieves net zero and then net negative emissions reductions often point to a need for a decline in the use of passenger air travel (IPCC, 2018). Policies such as significantly raising the (currently low) tax levels on the fuels of short haul flights as compared to those of road transport have been proposed. Such scenarios would obviously have strong implications both for equality of access to flights (*e.g.* on the wealthier would be able to fly) and, although alternative options like train or decarbonised road transport may be available, this is likely to be contentious. However, perhaps most significantly, tourism is a major source of revenue for many regions around the world, and, as such, these regions are often highly geographically concentrated and highly specialised in related services. Thus, while these sectors would not necessarily need to be phased out completely, as in the case of coal, some form of structural adjustment assistance may eventually be needed.

Nevertheless, in many sectors just transition will not necessarily require similar levels of public money to be spent on compensation and rebuilding communities post-carbon. However, it will require attentiveness to the distributional impacts of policy choices across numerous sectoral interventions. For example, this will

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be true for carbon taxation policy, where care will need to be taken that taxes and the use of the revenue gained from green taxes are not (or are not perceived to be) regressive or punitive. Similarly, subsidies for early adopters of green technology (e.g. electric vehicles, smart meters, etc.) may well be justifiable as necessary green innovation support policies. However, as early adopters tend to be higher income households, care will be needed to ensure that lower income brackets do not find themselves excluded from the benefits of the transition. In policies targeted towards lower income brackets, such as building retrofits, policy design will need to reflect the fact that such consumers are often “low-information” or “late adopters” for a variety of reasons. Careful policy design to ensure that the intended effects are realised will therefore be crucial.

3.3. Policy priorities and options for just transition in the context of phase down of fossil fuel extraction

For the extraction sectors, how specific policies will be implemented depends crucially on local conditions. In a country like Germany, where coal workers number in the order of 30,000 nationally, and are concentrated in four main centres of activity, the requirements of a just coal transition policy will have certain implications. However, in a country like China or India, where coal sector employment numbers in the millions of workers, where major public infrastructure and services are paid for by the sector’s activities and managed by semi-governmental state owned enterprises, the solutions reflecting the form of a just transition are likely to be somewhat different. In such situations coal sector transition is essentially a macro-economic (rather than just a microeconomic) issue, given the scale of the problem. That said, many of the issues are arguably similar, and thus the following discussion remains relevant.

3.3.1. Workers

Workers want to be consulted on the transition and for meaningful social dialogue to take place concerning their future. When they are consulted, workers’ demands are typically quite common. They want to know how they can have an alternative job, of equivalent quality. They want to know who will pay for the transition. They also want to know why they should trust the party offering them a deal.

Once dialogue can take place and workers concerns are heard, a range of solutions can and have typically been used to facilitate a fair transition, that workers often find broadly acceptable. Solutions can include things like (Coal Transitions, 2018a):

- Setting a timeline for the phase down of activities (depending on scale, this could be, say, a 5, 10, 15 or even 20-year period), ceasing the training and hiring of young workers and allowing existing workers to either retire naturally or leave the workforce through natural attrition.
- Providing a bridge to pension (retirement benefits) for older workers who may struggle to find alternative employment.
- Supporting workers who have appropriate skills and/ or are willing to change roles take on alternative roles within the company.
- Offering voluntary redundancy packages to workers who have a credible alternative professional plan.
- Developing regional worker transfer programmes to support the direct transfer and on-the-job retraining of workers with appropriate skills to move to an alternative local job.
- Offering employees who may struggle to find work in other roles or sectors the option to transfer their skills to alternative coal-based sites with the company (as some sites will close faster than others).
- Establishing retraining programmes for specific subsets of workers identified as likely to succeed (often younger workers with some post-secondary education) (Kluve *et al.*, 2017).
- Providing relocation assistance programmes for more isolated regions, to support workers willing to relocate to pursue an alternative professional plan.

However, workers are not an homogeneous mass and solutions need to be careful of “one-size-fits-all” approaches. What works in one region or with one set of workers

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may not be appropriate for others, depending on their profile. The key for policy makers and company transition programs is therefore to aim for as differentiated and individualised approach as possible, reflecting, to the extent possible, the desires, potential, and opportunities available to different categories of workers.

A key challenge for ensuring successful worker transition (and also for strongly affected regions) is often the issue of starting the dialogue. It is ideal if dialogue and planning and management of the transition can start as early in the process as possible, as the more time to anticipate and adapt to the transition, the easier the adjustment process is. (For example, a gradual but managed transition over 15 years can allow most workers to retire or leave the workforce through natural attrition and for other local industries to be developed, while an abrupt closure with one or fewer years’ notice is much harder to manage) (Wiseman, Campbell and Green, 2017). However, initiating the process requires trust. Actors, whether on the labour unions side, companies, or regional and national governments, will often have powerful incentives to avoid bringing the transition issue “from the future into the present”. In Germany’s recent experience, for example, some experts note that it required the crystallisation of the perceived need to phase out coal from the national long-term climate strategy (BMV, 2016) and national climate targets discussion,⁷ along with the promise of money from the federal treasury, that helped orient the debate towards seeking a deal on a managed process.⁸

3.3.2. Regions

Managing the economic transition at the regional scale as local fossil fuel or other activities decline is a crucially important matter for a just transition. This is not just for former coal sector employees, but also for their dependents, their children, and other economic activities in the region that depend indirectly on fossil fuels. This is a complex issue and arguably the biggest governance challenge of the energy transition. A failure to address the aspects of the local economic

⁷ Germany has been engaged in a discussion on how to make up for missed CO₂ emissions reduction targets for 2020 and potentially 2030 that has also led to a discussion on the need to explore coal phase down.

⁸ Pers. Comm. S. Karcher, German Environment Ministry Official (23/05/2019).

transition for citizens of fossil fuel dependent regions can have negative social and economic outcomes (Coal Transitions, 2017). If unaddressed, historical examples show that it can lead to higher intergenerational unemployment and persist social problems.

At the same time, coal-related activities, especially coal mining, often impose significant costs on local communities. For instance, coal intensive regions in South Africa exhibit higher unemployment rates than the national average (Coal Transitions, 2018f), and this is true across many coal mining locations, both present (*e.g.* Appalachia, Germany's and Poland's lignite areas) or past (*e.g.* Limburg in the Netherlands). This is related to a socio-economic phenomenon known as "lock-in" in specialised literature, whereby fossil fuel extraction activities paradoxically weaken the ability of the region to attract alternative industries, thus increasing dependency on fossil fuels (Campbell and Coenen, 2017; Herpich, Braners and Oei, 2018). Attention should therefore be paid not to mischaracterize the complex interplay of costs and benefits that coal mining brings to local economies.

As in the case of workers, the literature suggests that there is no universal blueprint for regional economic transition strategies. The nature of the challenge and range of possible solutions depend crucially on local context. Based on experience from past coal and industrial transitions, Coal Transitions (2018a) identifies issues such as the geographical proximity of the local community to other centres of economic activity; the size of the coal sector in the local or regional economy (GDP and employment); the financial links between the coal sector and the local government and provision of local services; the degree of mobility of workers in the region (*e.g.* are they fly-in/ fly-out workers or local residents? Do they have children and families living in the region, etc.).

Depending on how these questions are answered, different solutions can be envisaged. For example, in places such as Polish Silesia, with a relatively high population density, some existing economic diversity and potential for further economic diversification, but where coal represents an important but minority share of the local economy, an optimal strategy can be to promote greater economic diversification, invest in new industries, infrastructure and environmental remediation.

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At the other extreme, for an isolated mining region in Australia, where over 90% of the local economy and employment is supported by mining, workers are mostly flown in and on temporary jobs, and coal is largely sold to overseas customers rather than locally, an optimal strategy may be a managed decline post-coal. Ultimately, solutions will need to be context dependent and developed with the strong involvement of the local actors who will be tasked with carrying out the bulk of the economic transition strategy.

Depending on how the above questions are answered, the literature (Coal Transitions, 2018a) has identified a range of options:

- “Related diversification”: this involves developing industries that are related to existing economic activities and industries but do not depend on coal for their existence.
- “Smart specialisation”: related to diversification, this involves supporting the growth of economic activities that build on an assessment of the region’s strengths and competitive advantages. In coal regions, this could include existing power, rail or port infrastructure, land availability, cultural and industrial heritage, skills of the local workforce, existing industries with growth potential, etc.
- Strengthening of local entrepreneurial networks: Smart specialisation strategies often require creating or strengthening networks between higher education and professional training organisations, local companies and entrepreneurs, local government, organised labour, in order to identify and support the growth of suitable entrepreneurial activities.
- Improvement of local infrastructure: Improving infrastructure can be a way to increase the local economic attractiveness of the region for investors, increasing opportunities for economic linkages between the region and other zones of economic activity and employment, increasing the productivity and growth potential of local industries, creating opportunities for former coal workers to stay in their regions despite missing local jobs.
- Improvement of “soft attractiveness factors”: This can support re-investment in the area, underpin land-value and thus the wealth of the local community,

and limit or reverse demographic outflows. Soft factors of attraction include cleaning up local pollution from mining, land reclamation and beautification, good internet access, access to local amenities for families and educational opportunities for children, policies to limit drug use, etc.

- Location of public sector activities in the region: This can help mitigate demographic decline, provide additional economic demand for the region, and potentially support the development of new strategic industries. It can include military bases, university or higher education facilities, new schools or hospitals, research hubs, regional government administration offices, etc.
- Location of nationally-relevant innovation or energy transition projects in the region: Often regions with a strong link to the energy sector are keen to retain it as it is part of the local identity, and they may possess the infrastructure to do so.
- Managed decline: In some cases, *e.g.* in remote mining regions, the only realistic solution may be to accept that it makes no sense for the town to survive beyond coal.

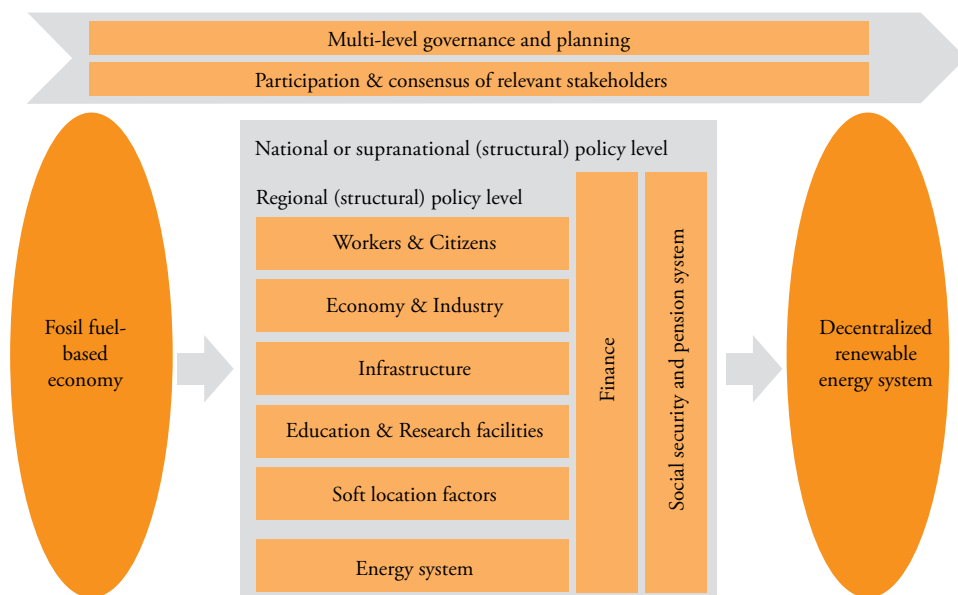
While many possible solutions exist in principle, expectations need to be managed. Historical experience shows that, where fossil fuel extraction is a significant part of the local economy and a major local employer, regional economic regeneration can be a generational or even multi-generational process (Coal Transitions, 2017). Today, in sectors like coal mining, it is often less important in regional economies as an employer than it has been in the past. However, structural economic change still takes significant time, resources, and a process of trial and error. Beginning the process of economic diversification is therefore a matter of urgency for all coal-and fossil-fuel intensive regions that wish to survive and provide equivalent or better economic opportunities for the next generations.

Moreover, given the long-term nature of the problem, adequate governance to manage a process over time will therefore be crucial. Historical experience tends to suggest that multi-level governance is important to link local level knowledge and competence with competences at the national level (Cf. Exhibit 1).

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Exhibit 1

Key elements of fossil fuel transition policy



Source: DIW Berlin, www.coaltransitions.org

4. CONCLUSION

The concept of just transition as originally envisaged and negotiated by the International Labour Organisation in 2015, and embedded in the Paris Agreement, is a more complex concept that is sometimes appreciated. Although it is often understood in the environmental movement as essentially a way of mitigating opposition to the transition, via the negative impacts on fossil fuel extraction regions, or as an argument for compensating workers by labour organisations, the concept has broader significance and more positive potential than is commonly appreciated. Just transition, more fully understood, is about making the transition to a decarbonised world in a manner that is compatible with basic principles of justice.

A transition compatible with basic justice means, first and foremost, ensuring “climate justice”. At least seen from a utilitarian perspective, the threat to fossil fuel sector-related workers and regions is quantitatively small compared to the threat posed by $>+2^{\circ}\text{C}$ climate change. However, utilitarianism is not the only metric of

justice. Depending how the transition is implemented, the post-carbon transition also has the potential to have meaningful impacts on human development, on employment and economic security, on empowerment of consumers, on human health and on the quality of life of citizens in various ways. These impacts can be positive or negative depending on policy design and implementation. The call for just transition is therefore a call to policy makers to exploit these opportunities and avoid these risks when making important choices. This relates to concepts of justice that have to do with human progress and distributive justice.

Finally, there are cases where it is important to anticipate and mitigate the disproportionately negative social impacts of the transition to clean energy. This relates largely to geographically concentrated sectors –essentially fossil fuels extraction and perhaps tourism– who, it can be argued, have a special claim to be treated as an exception and for whom dedicated efforts are required that go beyond to the social safety net. In these cases, solutions exist, but must be tailored to local contexts. Just transition in these cases is most important not only for workers, but typically for future generations who may be affected by the opportunities (or lack thereof) that they face in the region. Long-term, integrated governance is therefore required to accompany these communities over time. Thus, even in such cases, just transition is not simply an issue of compensation, nor of pure acquiescence to the demands of workers and citizens. It is rather again about principles of equality of opportunity for future generations. Meanwhile, for present day workers and citizens, it is fundamentally about engaging with respect and good faith in order to seek mutually acceptable solutions. Deals implementing “just transition” for such communities will of course always be political, and resources will always be limited to meet all demands. However, what arguably matters most is the process of engagement between parties and the extent to which it is founded on a respect for different perspectives and good faith attempts at integration of their (legitimate) concerns into decision making.

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