



Original Research Article

Governance Policies for a “Just Transition” – A Case Study in the Rhineland Lignite Mining District

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ABSTRACT

This paper develops policy measures for a “just transition” based on a case study conducted in Germany’s Rhineland lignite mining district. Semi-structured guided interviews served as the methodological approach. Expert interviews were conducted with representatives of citizen initiatives, trade unions and the Federal State of North Rhine-Westphalia. The results reveal the need for policy measures in different areas: First, employees working for subcontractors of the lignite industry have a high risk of losing their jobs because there are virtually no support policies for them. Second, there needs to be more input by civic initiatives regarding the process of structural change. And last, land needs to be prevented from becoming a scarce resource in the Rhineland area due to current mining legislation. We use an actor-centred institutionalist framework to derive governance approaches in line with the needs of various stakeholders.

KEYWORDS

Just transition, Climate justice, Energy justice, Structural change, Low-carbon economy, Coal phase-out.

INTRODUCTION

Many regions in Europe and other parts of the world are experiencing significant economic transitions. Coal regions in particular, which for many decades were self-confident industrial centres and were perceived as the backbone of national well-being [1] now feel abandoned. Families that have been the guarantors of a country’s growth and prosperity for several generations fear for their future because coal is becoming less important as a result of national climate protection policies and the increasing competitiveness of renewable energy sources. For this reason, it is important that adequate account is taken of social aspects when following the path of emissions reduction agreed in the Paris Climate Agreement of 2015. After all, impending and ongoing transformation processes mean major changes in societies, in the world of employment and the everyday life of many families [2]. Understanding these impacts and, above all, mitigating hardship cases are crucial to retaining or winning the support of people for climate protection. It is therefore not surprising that trade union interest in the subject of “climate protection” has increased significantly in recent years. Evidence of this growing interest is that trade unionists have founded an international group on climate change,

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and the number of trade union delegates to UN climate conferences has quadrupled. The international trade union movement has recognised the importance of contributing questions of solidarity, development and justice to the global debate on climate change [3]. Against this background, the concept of “just transition” arose, which can be described as strategies that consider the interests of the potential losers of a transition at an early stage, to eliminate or minimise the risks to their jobs, incomes and livelihoods. The concept thus offers the advantage of being able to cope with the consequences of a necessary climate protection policy to engage with the workers and communities most affected and give them an active role in positively shaping their own future [2].

The concept of “just transition” is being used by a growing number of political parties, NGOs, associations and trade unions, as well as environmental organisations. The term has its origins in the US trade union movement. Initially, it was almost exclusively taken up by workers affected by environmental policies. Over the course of time, the concept has fundamentally expanded. It is primarily thanks to the active discussions of trade unions that the concept of “just transition” has been developed and refined over the years to make the transition to a green economy both environmentally and socially sustainable [4]. Today the term represents social and ecological change in a more general sense – not only in the area of consumption, but also in production. Increasingly, this concept is also becoming the subject of scientific studies. It largely corresponds to a merging of the academic debate on the concepts of “justice” and “transition”, which are explained in more detail below.

The concept of “justice”

The understanding of justice in the environmental field has gone through a long phase of political discussions, during which many conceptual derivations have been developed and elaborated upon. Typical examples include “energy justice”, “climate justice” and “environmental justice”.

Particularly in the English-speaking world, the term “energy justice” has become a subject of intense scientific debate. This is certainly due at least in part to the fact that it is explicitly named as a key issue in the UK Energy Research Council (UKERC) [5]. The first published scientific contribution explicitly dealing with energy justice from a political perspective dates from 2013 [6]. It describes the further development and clarification of scientific analyses of environmental justice from the 1970s as well as of climate justice, such as Vanderheiden’s 2008 study [7]. Vanderheiden pointed out that the policies and actions of one country or generation can have a harmful impact on other nations and future generations, resulting in extreme injustice. Conversely, this gives rise to a special national responsibility for the current generation, because anthropogenic climate change represents a global environmental threat, and is also a threat to international and intergenerational justice. Vanderheiden sees the avoidance of such injustices as a priority goal of global climate policy.

This article is about “just transition”. This concept is closely linked to the concepts of justice described so far. Originally introduced by unions around the world in the 1980s [8], it’s the core of the concept is that the promotion of “green jobs” should be a necessary part of the transition from fossil to renewable fuels. Abraham defines “just transitions” as programmes that guarantee decent, well-paid new jobs or early retirement for workers displaced by environmental and climate change policies [9]. Using two case studies of miners’ unions – Germany’s Industrie Innung Bergbau, Chemie, Energie (Mining, Chemical and Energy Industrial Union, IG BCE) and the United Mine Workers of America (UMWA) in the United States – Abraham made clear how important it was for workers’ interests to be included in policymaking in the energy sector. A certain degree of industrial democracy is therefore required for justice in transition.

The concept of “just transition” must be distinguished from the concept of “fair cost-sharing” or “burden-sharing” of the transition to a low-carbon energy supply. The present paper does not deal with the “fair” distribution of the costs of transforming the energy system,

in which the costs of energy system transformation are viewed from the perspective of social justice and include analyses of “energy poverty” and the “affordability of energy” [10, 11]. This paper represents an attempt to take the perspective of an industrial region and therefore it is about the development of new energy industries with a potential for green jobs, which is an important area of trade union debate on the issue of “justice”. In our view, the concept of “just transition” allows for the possibility of greater state intervention to create green jobs, while providing an incentive to accelerate decarbonisation policies.

The concept of “transition”

The term “transition” has become increasingly common in political parlance amidst governments’ planning for a future with less carbon dioxide emissions. In academic circles, the term derives from a series of publications on “socio-technical” transitions [8, 9], which are increasingly applied to questions of energy system transformation policy [14–16]. The term “socio-technical transition” refers to profound structural changes in systems such as energy, involving long-term and complex reconfigurations of landscapes with technology, politics, infrastructure, scientific knowledge, and social and cultural practices towards sustainable goals [15, 16].

It is becoming increasingly clear that there is a need to address both the policy of transition itself and to ensure that the proposed transitions are (socially) equitable [8]. It is also important to ensure that such transitions are ecologically equitable by not reproducing or exacerbating existing ecological inequalities with respect to disease exposure and/or local degradation [8]. At the same time, however, the global environmental threat of climate change must also be countered.

The demand for a “just transition” formulated by trade unions and civil society is usually directed at states [8]. However, there was also a discussion on the idea of “just transitions” at the UN Conference of the Parties to the Climate Convention in Cancún 2010. In this case, the aim was to shape the path towards a low-carbon economy in a way that is fair, sustainable and legitimate in the eyes of citizens. In other words, the transition will only be considered legitimate if it is sustainable and equitable. At the international level, this means that economic resources and technology transfer must go to poorer countries that are severely affected by change [8]. At the level of the European Union, funds amounting to €7.5 billion will be made available in a Just Transition Fund (JTF) over the next few years. This money is earmarked in the future for the rehabilitation of heavy industry and to support the workforce currently in the fossil fuel industry. According to current information, only individual regions, such as those with a large number of “carbon-intensive” jobs, will be eligible to take advantage of the billions offered. The corresponding national governments must now draw up plans for a fair transition in order to gain access to the funds. In Germany there are a total of 18 regions, mainly in eastern Germany, that can be classified as “just transition regions”. Germany has the largest number of coal-fired power plants (53) in the EU and produces the most coal (lignite). Three coalmining areas are particularly affected: Lusatia (covering parts of Brandenburg and Saxony), the Rhineland (parts of North Rhine-Westphalia) and central Germany (parts of Saxony and Saxony-Anhalt).

This paper is an attempt to describe the concept of “just transition” and clarify how it is used. By conducting a case study in the Rhineland lignite mining district, the authors demonstrate which ideas and approaches for short and long-term strategies emerge and which types of relationship groups develop when striving for a “just transition”. It should open a broader discussion on how to use the “just transition” framework, and whether this in turn can contribute to a common vision of how to make the transition humanity is facing “just”. A successful transition in prosperous Germany is also of great interest internationally. If the transition does not work in a rich, industrialised country like Germany, less prosperous countries will not take the initiative to pursue the structural change of regions with carbon-based industries that is urgently needed for climate protection reasons.

This paper therefore also is an attempt to enrich the discussions on the topic of “just transition” in other affected regions where similar discussions are currently taking place. There are close relationships between actors in German and Czech lignite regions in particular – both in the coal industry and in the renewable energy industry [17]. Looking further abroad, a global climate policy would also affect Colombia, for example, which, as the world’s fourth-largest exporter, would be severely affected; that country currently exports more than 90% of its production [18]. In some countries, such as Canada, special regions have already been identified (Alberta, Saskatchewan, Newfoundland and Labrador) where a total of around 200,000 people will be affected by decarbonisation policies [19]. It is important that the regions concerned learn from each other, and that national policies do not repeat the mistakes of other nations. For example, in the current debate on the closure of affected regions in Germany, much can be learned from experiences in South Wales. There, for example, researchers found that regional support programmes need to be tailored to the communities affected and build on existing economic activities, and that a strong link between higher education and business can help a region overcome structural change [20]. The findings presented below will hopefully serve as a source of important information for other transformation regions as well.

This paper makes extensive use of the term “governance”, which should therefore be briefly described as well: The concept of governance is a concept formed at the intersection between economics and political science. It is considered “notoriously slippery” (Pierre and Peters, quoted in Benz [21]), because there is no fixed definition. In political science, the concept of efficient control and organisation of processes has proven to be helpful due to two developments. First, increasing denationalisation and the simultaneous multilevel interdependence of politics make it difficult to localise the place of political organisation. Second, the increasing overlap of “the state” and “society” has created new actors who shape the political landscape beyond party politics [21].

METHODS

This paper uses an actor-centred institutionalism (ACI) approach to governance. ACI is an approach to analysing the governance and organisation of “social sub-areas”. In doing so, it is able to “draw scientific attention to certain aspects of reality” [22]. However, it is not a self-contained theory, but rather a flexibly applicable research heuristic. This distinctive approach is particularly appropriate for analysing the institutional environment around large companies. More specifically, researchers can develop a better understanding of stakeholders in corporate governance [23].

According to Mayntz and Scharpf, the central assumption underlying ACI is that “certain conflict constellations can be productively resolved with some forms of interaction and under some institutional conditions, while they lead to blockades or non-decisions in others” [24]. Building on this thought, this paper analyses the institutions and constellations of actors in the Rhineland lignite mining district, and searches for possible solutions to conflicts related to structural change. It focuses on the question of the extent to which other forms of governance can contribute to solutions.

Categories of actor-centred institutionalism

ACI distinguishes between corporate and collective actors. The former include, for example, ministries or parties that can make decisions independently of their members or voters by means of a hierarchical or majority authority. They command centralised resources for action that are no longer individually controlled by members.

Collective actors, on the other hand, are characterised by the fact that collective action is sought without formal organisation. As a rule, they are composed of members with (negotiated) common interests [22]. Previous researchers have identified four types of

collective actors, two of which are of interest for the following study: 1) social movements whose members have a common goal without having access to common resources for action, and 2) associations that have both common goals and resources for action to achieve them [24].

The core concern of ACI is the structural analysis of social “sub-areas” that are co-designed by several actors with different characteristics and interests. Mayntz and Scharpf distinguished among four forms of governance, i.e. the ways actors cooperate on the way to a common outcome [22]:

- 1) Unilateral or mutual *adaptation* to a changed situation of action that does not require any agreement;
- 2) *Agreements* between actors, either bilateral or in networks, which are limited in scope and time;
- 3) *Majority procedures* in democratic associations or representative bodies, where binding decisions can be made even without the consent of all actors;
- 4) A *hierarchical authority*, which generally requires no consent at all in order to make decisions for itself and others.

A further form of interaction, which Scharpf later added and which is relevant to this paper, is called *negotiation in the shadow of democracy* [24]. The term describes a consensus-oriented form of cooperation, which can take place even under fundamentally hierarchical or majority-based institutional conditions. The reason for this is that broader participation of social actors can help solve the information problem, reduce transaction costs and promote loyalty in the political implementation of decisions. A current example of this type of control is the “Wachstum, Strukturwandel und Beschäftigung” Commission (WSB, Growth, Structural Change and Employment Commission, see “Results” below).

Expert interviews as methodological choice

Six expert interviews were conducted between May and July 2019 to obtain information about actors, goals and relationships in the Rhineland lignite mining district. The interviews were conducted in a semi-structured manner, i.e. the questions to the interviewees were formulated in advance, but supplemented or reworded during the interview.

For the research project, this choice of method proved to be useful for three reasons. The first is what Robert Kaiser (whose introduction to expert interviews serves as a basis for this paper) calls a “dissolution of [the] boundaries of politics” [25]. Politics is increasingly conducted beyond national borders, making it more difficult for research to understand. The research question of this paper refers to a national political process – the lignite phase-out – that nevertheless disproportionately has an effect on the regional level. Here, too, a kind of boundary-marking could be observed: As the WSB Commission was set up (and possibly even before that), the question arose of where political decisions should be made. In the Commission, representatives from academia, trade unions, civil society, business and politics all worked on a joint recommendation concerning the German lignite phase-out; although not binding, politicians have by and large committed themselves to the document. A second development follows the dissolution of borders: Politics is becoming increasingly complex. Kaiser noted the increasing involvement and orchestration of various private and public interest groups in the decision-making process as one reason, referring to the concept of governance precisely in this context [25]. On the other hand, technical issues are also becoming increasingly relevant for politics. For the purposes of this paper, this applies above all to the area of energy system transformation, which takes place at the crossroads of politics and technological progress. Third, Kaiser described an “informalisation of politics” [25]. Although decisions are made in a way that is publicly comprehensible, prior agreement on this is usually reached in committees or coordination procedures that are not open to the public. Here too, the WSB Commission can serve as an example. No minutes of the nine meetings of the Commission have been published; only the final report is accessible. These three

observations steered our decision to use expert interviews to examine the question of a “just transition” governance in more detail.

Table 1 describes the interview partners and their affiliations relevant to this research. All data that could reveal the specific individual were anonymised.

Table 1 Interviewees and affiliations

Category	Interviewee	Affiliation	Additional description
Unions	I-1	Industrial union for mining, chemical and energy industries, Alsdorf district (IG BCE)	Union responsible for most workers in the mining industry
	I-2	“Unionists for Climate Protection” initiative	Union initiative
	I-3	Federation of German Trade Unions, North Rhine-Westphalia chapter (DGB NRW)	Largest umbrella organisation for German trade unions
Civic initiatives	I-4	Member of the Civil Society Coordination Group for Structural Change <i>and</i> Independent Member of the WSB Commission	Civic initiative in the Rhineland lignite mining district
	I-5	“Buirer für Buir” organisation	Civic initiative in the Rhineland lignite mining district
Regional politics	I-6	Ministry of Economic Affairs, North Rhine-Westphalia	Responsible state government

For the interview guidelines, the research objective of capturing the governance of structural change in the Rhineland lignite mining district was first divided into different dimensions. This was done on the basis of the recommendations of the WSB Commission. For the six interview partners, different focal points were selected depending on which actors they represented. For example, with trade union representatives, the interviews focused on the topic of employment, while with civic initiatives, the focus was on broader regional topics. The guidelines were constantly revised and refined by making use of earlier interviews for the later dates.

The semi-structured interviews were recorded. This was followed by a step-by-step, deductive-inductive procedure to evaluate the interview material known as Content-Structuring Qualitative Content Analysis [26]. Categories were developed deductively using the interview guidelines as well as inductively using the material. This had the advantage that as much of the material as possible could be incorporated into the analysis.

Furthermore, until the end of the analysis process, we stayed open for important topics that nevertheless only became apparent during the interviews. Topics that were considered important by at least two interviewees were usually included in the analysis. This was the case, for example, with the topic of land use and jobs in the service and subcontractor sectors – two aspects that only marginally appear in previous studies on structural change, but which were extremely important to several interviewees.

Some of the quotations included in the report have been smoothed for better readability, taking care not to distort the content. In the case of I-4, quotations used for this work were approved in advance.

RESULTS

The following section presents the interview results. An actor-centred perspective is adopted by analysing the organisational characteristics, interests and networks of the various actors in the Rhineland lignite mining district. This is especially helpful when looking at how actors and their relationships come together when it comes to the topics of jobs and land use.

The “Growth, Structural Change, and Employment” Commission and the Federal State of North Rhine-Westphalia

The German government launched the WSB Commission on 6 June 2018. It was given the task of submitting a plan on how national emissions targets in the energy sector could be achieved and how coal could be successfully phased out. Five representatives from the lignite regions, three from environmental associations, seven representatives from the industry, three trade unionists, and five scientists, as well as a politician from the conservative spectrum spent eight months drawing up joint recommendations. The members met a total of nine times and visited the three largest German opencast-mining regions [27]. Their recommendations were not binding. However, many actors consider them to be a social consensus that policymakers will have to implement, and they therefore have a major influence on the date of ending lignite mining and possible social policies.

The report of the WSB Commission divided all future projects for the Rhineland lignite mining district into four “future fields”: Energy and Industry; Space and Infrastructure; Innovation and Education; and Agrobusiness and Resources [27]. In line with these fields, the recommendations of the WSB Commission were grouped into four clusters of strategies for the region:

- 1) As an “Energy Region of the Future”, the Rhineland lignite mining district would test future energy supply technologies;
- 2) The “Mobility District of the Future” cluster would provide funding for innovative projects concerning personal transport and transport infrastructure;
- 3) Under the heading “Innovation Valley Rhineland”, support would be provided to universities and other scientific institutions in particular. This support is designed to encourage spin-off companies, harnessing the research findings from academia to use in the economy;
- 4) The fourth “Bioeconomy” cluster would be characterised by the further development and use of the regional bioeconomy, in which renewable biological resources are used for producing other products, including energy.

For the state politician interviewed, the Rhineland lignite mining district is to become a “field of experimentation” for companies trying out new forms of transport, for example. By financially supporting projects that fit with the strategies, questions of economic efficiency can be disregarded for the time being. But a few times, the state politician also pointed out that funding would not be provided indiscriminately. The Federal State of North Rhine-Westphalia (NRW) is pursuing a so-called “strength-oriented economic development” strategy. This means that the willingness of investors to invest in a certain area must be there. Therefore, it is possible that some opencast mining municipalities will initially be left empty-handed due to a lack of fit.

Union actors

Within the trade union landscape, there are several organisations affected by the structural change in the Rhineland lignite mining district. The local office of the DGB NRW (NRW Office of the German Trade Union Confederation) plays an important role as an umbrella organisation in the coordination of trade union interests. It is responsible for formulating a common position of all its member unions on structural change. In addition, it advocates at the national level for the unions to have a say in the political process of structural change. The association’s goal is for the recommendations of the WSB Commission to be fully implemented without amendment. It also demands membership in all relevant working groups on structural change in the Rhineland lignite mining district. According to the DGB NRW, in NRW a “culture of participation” is cultivated which does not exist in other federal states. For example, since 2014, the DGB NRW has been a member of the “NRW Climate Discourse”, which brings together actors from politics, business, academia and civil society.

There is a division of labour between the DGB NRW on the one hand and the two trade unions responsible for employees in the lignite industry on the other. IG BCE (the Mining, Chemical and Energy Industrial Union) represents the interests of employees in opencast mines, while ver.di (the United Services Union) represents employees in power plants. The two trade unions are mainly responsible for interest representation at the company level. This means that they deal with specific issues of employment protection. The interviewee from IG BCE in Alsdorf, a mid-sized town threatened by the transition, reported that, parallel to legislation at the federal level, he and his colleagues were already preparing new collective bargaining agreements. In particular, they were eagerly awaiting the first regulations concerning the “lignite adjustment fund” (“Anpassungsgeld Braunkohle”, APG-B). This is a legal option for older employees who wish to retire earlier. A similar measure already exists for the hard-coal industry in Germany. The adjustment allowance is granted to employees in the black-coal sector for up to five years before retirement and thus facilitates the transition to retirement [28]. Like the DGB NRW, the interviewee from the IG BCE’s local office in Alsdorf was generally satisfied with the Commission’s recommendations, as they provided clarity and enable planning for his organisation. The union is in close contact with important regional players such as local politicians, chambers of industry and commerce, and the Federal Employment Agency, as well as with its sister organisations in the other German lignite regions.

In the interview with IG BCE Alsdorf representative, the representative expressed a general desire for platforms that would enable exchange among the various groups of actors in the Rhineland lignite mining district. As a specific example, the interviewee mentioned citizens’ meetings. The goal of the exchange should be joint reflection on the future orientation of the region: “How do you imagine the future here in the Rhineland Region? And what do you actually need, what do you want?” Furthermore, the ver.di member from Unionists for Climate Protection criticised the fact that the trade union debate on structural change currently takes place mainly among shop stewards and in closed bodies. This would not reflect the full spectrum of opinions. He therefore called for an opening of the discussion and the development of a vision with all union members: “How should things continue in general? And what are our visions? Do we wait for a new company to come and keep us all practically employed somehow?”

Citizens’ initiatives and organisations

“Shaping their own environment”: That is how one member of the Buirer für Buir ((roughly translated as “Buir’s citizens for Buir) described the main concern of the initiative, which was formed into an association 12 years ago and has been active in the Rhineland hunting district ever since. The neighbourhood of Buir has a population of about 4,000. It belongs to the town of Kerpen and is located about five kilometres from the Hambach opencast mine. The citizens’ initiative has been working on the topic of structural change since 2016, when the group published the “Rote Linie A4” (“The A4 Red Line”), a counter-concept to ongoing lignite mining. According to their concept, mining would be halted in the near future and recreational opportunities, cultural events and a museum about the history of the area should be built on the areas saved from mining [29].

Parallel to the establishment of the WSB Commission, another civil society actor was founded. The “Zivilgesellschaftlicher Koordinierungskreis Strukturwandel” (Civil Society Coordination Group for Structural Change, ZKS) consists of about 25 organisations, from the environmental organisation BUND to local churches, to the Buirer für Buir group, as well as private individuals. Together, they developed a document entitled “Revierperspektiven Rheinland – gutes Leben, gute Arbeit” (“A future for mining areas in the Rhineland – good life, good work”). The concept formulates guidelines for structural change in the region. The interviewee from Buirer für Buir, who contributed to the concept, described its participatory

nature: “[T]he people should get involved: Which industries should be created here, which types of business should be created here and, above all, what should not be created here.”

In both ZKS and Buirer für Buir, there was dissatisfaction with the possibilities of citizen participation. Even though citizen participation was mentioned in the WSB Commission’s report, there was a lack of specific proposals, said the interview partner from Buirer für Buir. The civil society groups wanted to be involved in coordinating bodies such as the “Zukunftsagentur Rheinisches Revier” (“Rhineland Mining District Future Agency”, or Zukunftsagentur for short), for example, by occupying a seat on the supervisory board. The Zukunftsagentur was established in 2010, and is funded mainly by the Federal State of NRW. It is designed to promote and coordinate structural change at the regional level. According to the recommendations of the WSB Commission, the Zukunftsagentur should steer developments in the Rhineland lignite mining district. The two civic initiatives indicated that they wanted to have a say on issues such as land use and project funding, said the interviewed member from the ZKS. This is currently not the case. According to the interviewee from Buirer für Buir, giving civil society organisations a seat on the Zukunftsagentur would be politically undesirable, as the organisations “have their own ideas and above all their own concepts, which are completely contrary to what is happening here.”

It is unclear whether the organisations will be formally given a position in the Zukunftsagentur. Should this be the case, the details of participation would have to be discussed. Even now, the voluntary work in the civic initiatives entails considerable effort. The work of one of the “civil society” representatives of the WSB Commission can serve as an example: While most of the commission members were supported by an organisation, the two civil society representatives from Lusatia and the Rhineland were appointed to the commission as independent players. This was accompanied by an unequal distribution of resources, said the representative of the Rhineland. Although the two had been given specialist support, they had to deal with a large part of the organisational tasks and commission business themselves: “[The other members] represent large organisations that have their own fixed catalogues of demands and have a huge apparatus behind them. ... We were our own speakers, our own scientific staff, our own office staff, our own public relations people and press people.” She therefore advocated for all appointed members in future commissions to be provided with additional personnel resources, for example in the form of a staffer.

Another approach to solving the resource problem could be the “planning cell” procedure, according to the civic initiatives. This is a procedure that was developed in the 1970s by sociologist Peter Diemel. According to its inventor, it is a “task-oriented, precisely timed action for everyone to solve a concrete problem politically” [30]. The exact procedure is reproduced here in the words of civic initiative member from Buirer für Buir: “[P]eople are randomly drawn together from the population register, put into small groups, and assisted by experts who advise them. And these people work out solutions and ideas or develop questions that need to be answered.” Proposals for solutions, which a small group of randomly selected citizens in so-called “planning cells” would work out together with experts, could then be passed on to political decision-makers in the form of binding expert opinions. The interviewee noted that such a procedure could only be implemented by the state government, as it would be very expensive and complex.

Jobs in the Rhineland lignite mining district

According to the WSB Commission, around 9,000 people work in the opencast mines and power plants of the lignite industry in the Rhineland lignite mining district [27]. The trade union representatives interviewed were generally relaxed when it came to the subject of these jobs. But the interviews also showed that a distinction must be made between jobs for older workers on the one hand and young entrants into the lignite industry on the other. The interviewee from IG BCE Alsdorf assumed that, if the recommendations of the WSB Commission were implemented, none of the current employees would lose their jobs directly.

The APG-B would provide “extensive protection” for older employees. The interviewee from the DGB NRW confirmed this position. He suspected that a large proportion of lignite workers would still be able to work for RWE until they retired. This is also due to the high average age of lignite workers: in 2016, two-thirds of the employees in opencast mines were older than 45. By 2030, therefore, this proportion will already be 60 or older, and will thus probably be able to retire directly from mining. In addition, employees aged 55 and over have already been able to take advantage of an early retirement programme in recent years [31].

However, the interviewee of the IG BCE Alsdorf saw a problem in recruiting new high-skilled workers. There is a great deal of concern among younger employees: “If I say to someone who has a permanent employment contract, ‘Yes, your employment relationship will end ten years before you retire,’ he asks immediately, ‘What will happen to me then?’” In order for school leavers to continue to choose this industry, it will be necessary to offer attractive working conditions, opportunities for further training and a clear path for the period after the lignite mining phase-out. Both trade union representatives we interviewed pointed out that, if lignite is phased out for political reasons, the state has a duty to ensure that old jobs are safeguarded and new ones are created, and to provide appropriate training: “Well, we are not only talking about the consequences for those now employed, but we are also talking about the consequences for children and grandchildren.” Here, citizen initiatives, trade unions and local authorities agree: They want new jobs to be created in the region, not only in the big cities nearby.

The WSB Commission has assumed that one “indirect” and one “induced” job in the mining district or the wider region depends on each lignite job [27]. Indirect jobs refer to those jobs that depend on the existence of the lignite industry, for example due to subcontracting. Induced jobs, on the other hand, are created by the income or consumption of mine workers. Civic organisations such as *Buier für Buir* fear redundancies, especially in companies that supply the lignite industry or provide services for it. These are often in sectors that have been outsourced by RWE, the local energy provider, and are therefore extremely dependent on the company as a client: “People who do these kinds of unpleasant jobs, like cleaning the boilers or laying the conveyor lines. These are very simple jobs that have been outsourced to small and medium-sized companies in the area.”

The interviewee from *Buier für Buir* estimated that several thousand employees in the Rhineland lignite mining district would be affected. The WSB Commission counted around 500 service and supply companies throughout Germany with around 16,000 employees “directly and indirectly dependent on the coal and energy industry” [27]. These employees have no access to the special programmes developed for lignite workers. Most of them are not even represented by trade unions. And indeed, the service and supply companies were not brought up in the interviews by the union representatives from DGB NRW and the Alsdorf local office of IG BCE.

The regional importance of Rheinisch-Westfälisches Elektrizitätswerk AG (RWE)

The state government as well as civil society and trade unions agree: They hope that Rheinisch-Westfälisches Elektrizitätswerk AG (RWE), a major energy company active in the Rhineland, will continue to invest in the region after the lignite phase-out. This would probably solve some of the problems connected with the topic of future employment. All energy providers that have to shut down their lignite-fired power plants are to be compensated by the federal government. In the case of RWE, it would be economically rational to invest these compensation payments in areas that are particularly well suited for solar or wind energy. North Rhine-Westphalia is not one of these areas, as the interviewed state politician confirmed: “...all the expert reports tell us that we [NRW] are changing from an energy exporter to an energy importer, and the situation is better in southern Germany for solar energy and the situation in northern Germany is better for wind energy.” However, the state government

expects to be able to develop an expansion strategy for renewable energy sources in the region together with RWE.

The energy provider is important for the Rhineland not only because of its economic impact; RWE is also the largest land owner in the region. The land used for lignite mining has been transferred to company ownership over the years. The basis for this is the so-called Mining Act, which grants mining companies the right to acquire land under which mineral resources such as lignite are located. In the past, this included private land as well. With the lignite phase-out in 2038, part of the land RWE has already acquired will probably never be used for lignite mining. This raises the question of what will happen to these areas and who will take ownership of them. Civic initiatives see a high risk in this situation. One interviewee feared that, due to RWE’s large amount of land ownership, locals will continue to be highly dependent on RWE, and the possibility of free economic development of the region could be severely restricted: “You still can’t practically emancipate yourself from RWE, because you have to develop the land together with RWE.” Another interviewee, from a community organisation, described the energy company’s land ownership as “unfathomable leverage”, even if RWE stops mining lignite in the Rhineland in the future. One conceivable scenario is that companies from the renewable energy sector will find it more difficult to invest in the region, as they would first have to purchase land from their competitor RWE. The union representative from DGB NRW also pointed out the risk that some areas could remain unused. This would be a “disaster”, especially for the siting of new industries. Interviewees from civic organisations therefore demanded that the compensation payments for the phase-out be conditioned on RWE returning its land to the municipalities. This could create new development opportunities for non-profit organisations as well.

The role of academia in structural change

The Rhineland lignite mining district has good logistical links to a large number of research institutions. The renowned RWTH Aachen University, as well as one of the largest research institutions in Europe, the Forschungszentrum Jülich, are both located in the heart of the lignite region. Cologne, Bonn, Düsseldorf, and other university cities are in the immediate vicinity as well. The area’s integration into a dense research landscape is a fundamental advantage for structural change in the Rhineland lignite mining district. However, the focus in Jülich and Aachen has so far been on basic research. In order to promote economic growth through research, strong applied research will also be needed.

Unions emphasised yet another role of academia in structural change: it is in a position to analyse and solve conflicting goals in dialogue with various social actors. In North Rhine-Westphalia, there is a relatively high level of exchange between academia and trade unions. Moreover, exchange with a partner working in the field also helps scientists to hone their questions. It is important that exchange takes place on a level playing field and that research results are published promptly. The conditions are basically good for this kind of cooperation in NRW, with its dense university landscape. The “NRW 2020” programme already serves as a successful example of exchange between academia and trade unions. The DGB NRW launched it in 2015 with the aim of creating half a million jobs subject to social security contributions in NRW by 2020. A scientific advisory board provided technical support for the trade union initiative.

Comparing results in the context of transition management

The results presented here show that coordinated transition management would be helpful for the Rhineland lignite mining district. One experience from the Netherlands that has also dealt with “just transitions” is another example of successful governance. In the Netherlands, the establishment of an expanding network of different actors has created good conditions for companies to facilitate and upscale innovation [32]. At the heart of this success is transition management, which was introduced and firmly anchored as official government policy in the

Netherlands’ fourth National Environmental Policy Plan. The most important conditions for a successful transition management were:

- To deal with uncertainties, for instance through the use of scenarios;
- To keep options open and deal with fragmented policies;
- To keep a long-term orientation, but use it to shape short-term policies;
- To pay attention to the international aspects of change processes;
- To stimulate, mediate, engage in brokering services, create the right conditions, enforce its laws and engage in steering [32, 33].

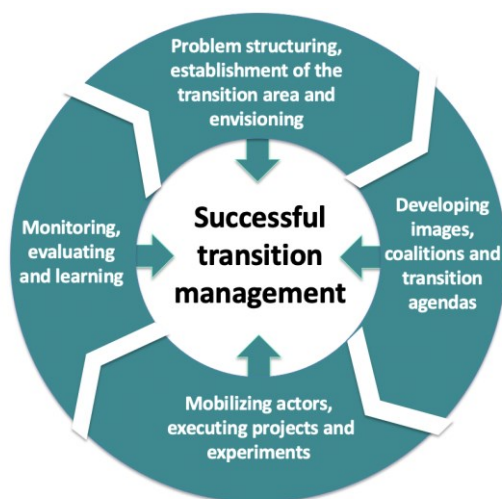


Figure 1 Components of the transition cycle (Authors’ illustration, based on Loorbach and Rotmans [32])

Our interview results confirm the experiences from the Netherlands. Above all, the mobilisation of local actors and the implementation of projects and experiments adapted to the region with the involvement of those affected are important aspects that should be sought in the sense of a just structural change.

CONCLUSION AND OUTLOOK

This paper has been an attempt to contribute to the ongoing discussion about “just transitions” by providing a case study and accompanying analysis about structural change in Germany’s Rhineland lignite mining district. Special emphasis was placed on the involvement of unions and civic organisations in the establishment of policy measures as a key to a “just transition”. This chapter outlines one possible concept for a just structural change in the Rhineland and the policy measures that would be necessary to carry it out.

The above figure depicts how the research results could be included in a framework of a “just transition”. It shows two premises for just structural change to occur: a development concept by the state and the establishment of academia as a facilitator. Furthermore, the inner circle shows three specific fields of action and the corresponding policy measures needed. As the interviews showed, the Federal State of NRW is a corporate actor that influences the process of structural change through its policy and funding guidelines and legislation. NRW can earmark one-third of its federally allocated structural-change funds for projects and funding according to its own priorities. The state published an “Economic and Structural Programme” in December 2019, which developed funding guidelines that will point the way forward for structural change in the Rhineland for years to come. The interviews showed that the Ministry of Economic Affairs has been in favour of strength-oriented economic development and otherwise sees its role primarily in the administration of structural change.

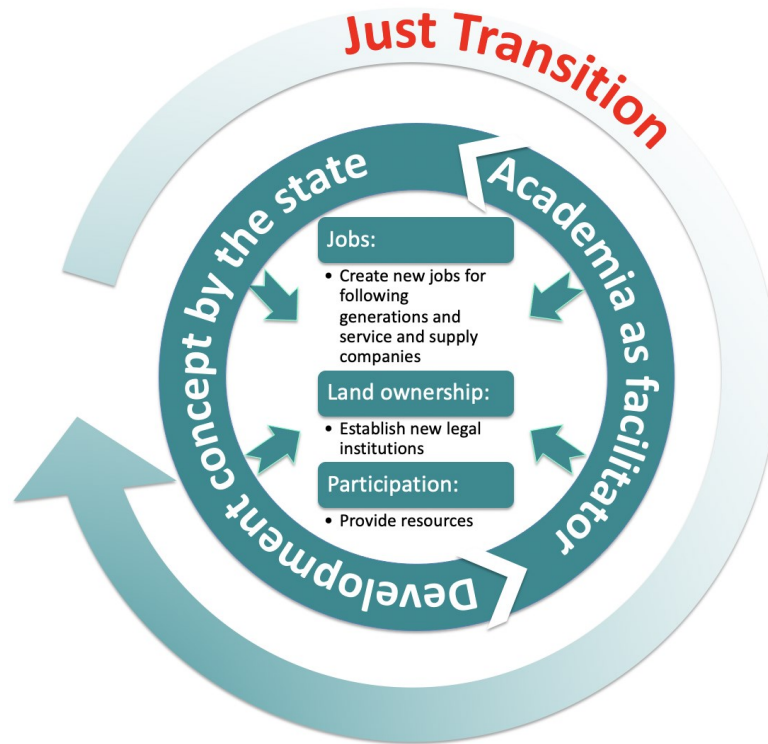


Figure 2 Overview of the results from the perspective of a “just transition

This role was critically discussed several times in the interviews by representatives of unions and the citizens’ initiatives. An exclusive strategy of strength-oriented economic development leaves out questions of justice: above all, some municipalities may be left empty-handed. The state will only meet its responsibility of a “just transition” if it takes into account differences among municipalities and responds to them with an integrative development concept. Ideals, such as SDGs, must play just as important a role as the promotion of economic potential. A successful transition management programme for the Rhineland lignite mining district would have to address three open problems in particular that interviewees raised.

1) **Participation:** The WSB Commission report described structural change as a “long-term task for society as a whole” [27]. The key to solving this is an equitable allocation of resources to all actors and ensuring participation. There is already a cooperative mentality at the state level working to mediate interests and common goals. ACI describes this mode as “negotiating in the shadow of democracy”. To tackle structural change in the Rhineland lignite mining district, the first few networks and institutions have already been created to reflect this mode of negotiation, primarily the Zukunftsagentur and specialist working groups. Following this strategy would have the advantage of increasing the chance of successful political implementation because it coordinates all interests. This is one of the strengths of the Federal State of NRW with respect to structural change. However, this mode of design raises the question of who is represented in the networks – and who is not. At present, the state, some businesses, and trade unions are represented in the main commissions addressing structural change, sometimes with the participation of academic representatives. At the same time, the interviews made it clear that there is a great unfulfilled desire for participation by citizen initiatives.

The fundamental question arises of how collective actors that only have a few resources of their own can get involved in the political process. Here, an institutional solution needs to be facilitated by the Federal State of NRW, which is the only actor with adequate financial resources and the authority to issue directives. Above all, the state must provide citizens’

organisations with additional resources. These resources include advice from independent experts, financial support, and organisational support – for example through a staffer. Furthermore, the use of planning cells for more detailed questions concerning structural change would be conceivable. These elements would shift governance of structural change from one-sided “adaptation” on the part of citizens to “agreements” and cooperation in networks according to ACI.

2) **Land ownership:** As has been shown, state policy is currently endeavouring to keep RWE in the region even after the lignite phase-out. The energy provider will decide about that on an economically rational basis, in particular the favourable situation for renewable energy sources. This is reflected by the governance mode of “agreements”, which also includes market-based decisions. Land ownership poses a problem for other stakeholders in the Rhineland mining district, as RWE owns a large number of sites in the region. This is an important situation for future structural change that needs to be addressed. Without the availability of land, the future economic development of the area will be strongly restricted to cooperation with RWE. The report of the WSB Commission, for example, recommended that former lignite sites be given special consideration for the expansion of renewable energy. If a large part of the land remains in the hands of RWE after the lignite shutdown, the development of renewable energy in the region will depend exclusively on the company’s wishes. RWE would either have to invest in sustainable energy production in the Rhineland mining district itself, or sell its land to a competing energy supplier. The timely creation of new legal mechanisms, accompanied by a shift of governance mode from “agreement” to “majority decision”, can counteract this situation: for example, the representatives of civil-society organisations interviewed for this paper recommended that the compensation payments for the lignite phase-out should be conditioned on RWE returning its land to the municipalities.

3) **Jobs:** The interviews revealed that employees in service and supply companies would be among the biggest losers of structural change. A development concept building on the states’ “hierarchical authority” should therefore contain specific proposals and programmes for sustainable, high-quality jobs and retraining positions for low and medium-qualified workers. In particular, the situation of employees in service and supply companies in the Rhineland mining district should be further investigated. As a companion to structural change, academia could provide important analyses and approaches to solutions in this field of action.

In general, this research shows that there is further need for investigation on the mode of collaboration between civil society, unions and state actors. It is especially important to further explore the topic of political economy in the coal phase-out, and investigate how (and how not) to structure possible future stakeholder commissions in such a way that civil society will be able to fully participate.

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REFERENCES

1. A. Mustata, „Eight steps for a just transition“, guide, Nov. 2017. Zugegriffen: März 04, 2020. [Online] <https://bankwatch.org/publication/guide-eight-steps-for-a-just-transition>, [Accessed: 20-Dec-2020]
2. A. Rosemberg, „Strengthening Just Transition Policies in International Climate Governance“, Stanley Center for Peace and Security, Muscatine, Iowa 52761 USA, Apr. 2017. [Online]. <https://stanleycenter.org/publications/pab/RosembergPABStrengtheningJustTransition417.pdf> , [Accessed: 20-Dec-2020]

3. A. Rosemberg, „Building a Just Transition: The linkages between climate change and employment“, *IJLR*, Bd. 2, Nr. 2, 2010.
4. D. Stevis und R. Felli, „Global labour unions and just transition to a green economy“, *Int Environ Agreements*, Bd. 15, Nr. 1, S. 29–43, März 2015, <https://doi.org/10.1007/s10784-014-9266-1>.
5. K. Jenkins, D. McCauley, und A. Forman, „Energy justice: A policy approach“, *Energy Policy*, Bd. 105, S. 631–634, Juni 2017, <https://doi.org/10.1016/j.enpol.2017.01.052>.
6. D. McCauley, R. Heffron, H. Stephan, und K. Jenkins, „Advancing Energy Justice: The triumvirate of tenets“, *International Energy Law Review*, Bd. 32, S. 107–110, Jan. 2013.
7. S. Vanderheiden, *Atmospheric Justice*. Oxford University Press, 2008.
8. P. Newell und D. Mulvaney, „The political economy of the ‘just transition’: The political economy of the ‘just transition’“, *The Geographical Journal*, Bd. 179, Nr. 2, S. 132–140, Juni 2013, <https://doi.org/10.1111/geoj.12008>.
9. J. Abraham, „Just Transitions for the Miners: Labor Environmentalism in the Ruhr and Appalachian Coalfields“, *New Political Science*, Bd. 39, Nr. 2, S. 218–240, Apr. 2017, <https://doi.org/10.1080/07393148.2017.1301313>.
10. P. Heindl, R. Schüßler, und A. Löschel, „Ist die Energiewende sozial gerecht?“, *Wirtschaftsdienst*, Bd. 94, Nr. 7, S. 508–514, Juli 2014, <https://doi.org/10.1007/s10273-014-1705-7>.
11. O. Wagner und J. Wiegand, „Prepayment metering: Household experiences in Germany“, *Renewable and Sustainable Energy Reviews*, Bd. 98, S. 407–414, Dez. 2018, <https://doi.org/10.1016/j.rser.2018.09.025>.
12. F. W. Geels, „Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study“, *Research Policy*, Bd. 31, Nr. 8–9, S. 1257–1274, Dez. 2002, [https://doi.org/10.1016/S0048-7333\(02\)00062-8](https://doi.org/10.1016/S0048-7333(02)00062-8).
13. J. Schot und F. W. Geels, „Strategic niche management and sustainable innovation journeys: theory, findings, research agenda, and policy“, *Technology Analysis & Strategic Management*, Bd. 20, Nr. 5, S. 537–554, Sep. 2008, <https://doi.org/10.1080/09537320802292651>.
14. F. Kern und A. Smith, „Restructuring energy systems for sustainability? Energy transition policy in the Netherlands“, *Energy Policy*, Bd. 36, Nr. 11, S. 4093–4103, Nov. 2008, <https://doi.org/10.1016/j.enpol.2008.06.018>.
15. K. Berlo, O. Wagner, und M. Heenen, „The Incumbents’ Conservation Strategies in the German Energy Regime as an Impediment to Re-Municipalization—An Analysis Guided by the Multi-Level Perspective“, *Sustainability*, Bd. 9, Nr. 1, S. 53, Dez. 2016, <https://doi.org/10.3390/su9010053>.
16. O. Wagner, T. Adisorn, L. Tholen, und D. Kiyar, „Surviving the Energy Transition: Development of a Proposal for Evaluating Sustainable Business Models for Incumbents in Germany’s Electricity Market“, *Energies*, Bd. 13, Nr. 3, S. 730, Feb. 2020, <https://doi.org/10.3390/en13030730>.
17. S. Schulz und J. Schwartzkopff, „European Lignite-Mining Regions in Transition Challenges in the Czech Republic and Germany“, Published by the Prague Office of the Heinrich-Böll-Stiftung and Deutsche Umwelthilfe in cooperation with EG3 and Glopolis, Prague. Zugriffen: März 10, 2020. [Online] https://cz.boell.org/sites/default/files/final_report_eng_online_kb.pdf, [Accessed: 20-Dec-2020]
18. P.-Y. Oei und R. Mendelevitch, „Prospects for steam coal exporters in the era of climate policies: a case study of Colombia“, *Climate Policy*, Bd. 19, Nr. 1, S. 73–91, Jan. 2019, <https://doi.org/10.1080/14693062.2018.1449094>.
19. H. Mertins-Kirkwood, *Making Decarbonization Work for Workers: Policies for a Just Transition to a Zero-Carbon Economy in Canada*. 2018.

20. T. Merrill und L. Kitson, „The End of Coal Mining in South Wales: Lessons learned from industrial transformation“, International Institute for Sustainable Development, Winnipeg, Manitoba Canada and Geneva, Switzerland, Mai 2017.
21. Benz, Hrsg., *Governance — Regieren in komplexen Regelsystemen*. Wiesbaden: VS Verlag für Sozialwissenschaften, 2004, <https://doi.org/10.1007/978-3-531-90171-8>
22. R. Mayntz und F. W. Scharpf, „Der Ansatz des akteurszentrierten Institutionalismus“, in *Gesellschaftliche Selbstregulierung und politische Steuerung*, R. Mayntz und F. W. Scharpf, Hrsg. Frankfurt ; New York: Campus, 1995, S. 39–72.
23. R. V. Aguilera und G. S. Yip, „Corporate Governance and Globalization: Toward an Actor-Centred Institutional Analysis“, in *Creating Value through International Strategy*, A. Ariño, P. Ghemawat, und J. E. Ricart, Hrsg. London: Palgrave Macmillan UK, 2004, S. 55–67, https://doi.org/10.1057/9780230005563_5
24. O. Treib, „Akteurzentrierter Institutionalismus“, in *Handbuch Policy-Forschung*, G. Wenzelburger und R. Zohlnhöfer, Hrsg. Wiesbaden: Springer Fachmedien Wiesbaden, 2015, S. 277–303, https://doi.org/10.1007/978-3-658-01968-6_11
25. R. Kaiser, *Qualitative Experteninterviews: konzeptionelle Grundlagen und praktische Durchführung*. Wiesbaden: Springer VS, 2014.
26. U. Kuckartz, *Qualitative Inhaltsanalyse: Methoden, Praxis, Computerunterstützung*, 3., überarbeitete Auflage. Weinheim Basel: Beltz Juventa, 2016.
27. Commission on Growth, Structural Change and Employment, „Final Report“, Federal Ministry for Economic Affairs and Energy, Berlin, 2019. Feb. 18, 2020. [Online]. https://www.bmwi.de/Redaktion/EN/Publikationen/commission-on-growth-structural-change-and-employment.pdf?__blob=publicationFile&v=3, [Accessed: 20-Dec-2020]
28. Federal Office of Economics and Export Control, „Anpassungsgeld“. 2019 [Online] https://www.bafa.de/DE/Energie/Rohstoffe/Anpassungsgeld/anpassungsgeld_node.html, [Accessed: 20-Dec-2020].
29. Buirer für Buir, „Projektskizze ‚A4alt - Rote Linie‘“, 2016. Zugegriffen: Feb. 18, 2020.[Online] https://www.buirerfuerbuir.de/images/pdf/A4_linie.pdf, [Accessed: 20-Dec-2020].
30. P. C. Dienel, „Die Planungszelle: eine Perspektive für die Demokratie“, *Sozialwissenschaften und Berufspraxis*, Nr. 24 (2), S. 171–174, 2001.
31. SRU, „Kohleausstieg jetzt einleiten. Stellungnahme.“, Berlin, 2017. [Online]. Verfügbar unter: https://www.umweltrat.de/SharedDocs/Downloads/DE/04_Stellungnahmen/2016_2020/2017_10_Stellungnahme_Kohleausstieg.pdf?__blob=publicationFile&v=30, [Accessed: 20-Dec-2020].
32. D. Loorbach und J. Rotmans, „The practice of transition management: Examples and lessons from four distinct cases“, *Futures*, Bd. 42, Nr. 3, S. 237–246, Apr. 2010, <https://doi.org/10.1016/j.futures.2009.11.009>.
33. J. Rotmans u. a., *Transitions & transition management: the case for a low emission energy supply*. ICIS, 2001.



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