
Sustainable Work and Just Transition

Policies and labour movement actors in France, the United Kingdom, Germany, Norway, Spain, Poland, Colombia, Mexico and the Philippines


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Introduction

Decades have passed since science established that climate change is real and due to human activities. Some big fossil fuel companies received the first scientific reports about the negative effects on the climate of producing and burning fossil fuels already in the late 1970s. The first UN climate change conference, Conference of the Parties 1 (COP 1) took place in 1995 in Berlin, Germany. The first agreement on emission reduction, the Kyoto Protocol, was signed at the COP3 in Japan in 1997. Many more agreements followed. In 2006 the famous Stern Review on the Economics of Climate Change (Stern 2006) was released for the UK government. The report, although heavily focussed on the economy, was alarming. Meanwhile COP 27 took place in 2022 in Sharm El Sheikh, Egypt. The results of all that are more than meagre. According to the latest report by the IPCC global net anthropogenic GHG emissions¹ in 2019, were about 12 percent higher than in 2010 and 54 percent higher than in 1990. The highest rate of growth of the emissions was 2000-2009 with an annual increase of 2.1 percent it slowed down in the period 2010-2019 to an average annual rate of growth of 1.3 percent. 42 percent of historical cumulative net CO₂ emissions since 1850 occurred between 1990 and 2019, while climate change and measures against it were broadly discussed. 17 percent of historical cumulative net CO₂ emissions since 1850 occurred even between 2010 and 2019, when several agreements were in place to stop or mitigate climate change. (IPCC 2022, 6). The debate on sustainability has also been ongoing for more than 30 years without leading to ecologically and socially sustainable societies. On the contrary. The use of non-renewable resources is increasing faster than sustainable production and consumption; inequality has increased in almost all countries, as well as the gap between the global North and the global South.

In January 2016 almost all states signed the UN Sustainable Development Goals (SDG), with 17 goals to be achieved by 2030, including the goal of decent and development-promoting, sustainable work (UN 2015). Sustainable work was supposed to be included globally in national policy agendas. Nevertheless, the topic is hardly ever explicitly addressed in government policies or public debates. Jobs and employment are a main subject in debates and policy proposals regarding the transition to socially and ecologically sustainable low or zero carbon societies, but rarely the social organization of work, other forms of work or value orientations. Technologies or their usage, on the other hand, play a central role. The policies promoted by governments and the private sector focus almost entirely on a “technological fix”. Trade unions tend to privilege the aspect of social sustainability and to neglect the ecological sustainability, aspects of the transformation of the meaning and organization of work and (especially in the Northern hemisphere) the issue of global just transition. Ecologically-oriented sustainability discourses in exchange, tend to pay little attention to the social sustainability of work, and rarely address work in general. They focus on consumers and companies as main actors. The influence on the work-oriented societies of developments such as demographic shifts (aging societies), migration, digitalization,

¹ Anthropogenic emissions are human caused emissions of greenhouse gases (GHGs), precursors of GHGs and aerosols, including fossil fuels, deforestation, land use and land-use changes, livestock production, fertilizer use, waste and industries.

flexibilization, and globalization is broadly discussed. But the ecological aspects of certain types of work and what they mean for labour and the labour market are widely neglected.

Why focus on work when human life on our planet is threatened by climate change and mass extinction? The radical transformation of production and consumption patterns alone (which does not happen anyway) will not lead to the required social and ecological transition. Employment and the labor markets are changing and we have to make sure that work itself becomes sustainable in all its aspects. It can also be reasonably questioned if the transformation of production and consumption is even possible without the transformation of the work-oriented society (and vice versa). The work-oriented society as such has to be transformed. Some alliances between trade unions, and social and environmental movements (see this report), as well as discourses in academia (see Jochum et al. 2019; Littig 2018; Rätzzel, Stevis, and Uzzell 2021) aim at making work the focus of sustainable development. We live in work-oriented societies and work is considered the medium for satisfying individual and social needs (Jochum et al. 2020). The reconceptualization, reorganisation and revalorization of work as sustainable work is therefore a decisive tool from below to push for and guarantee a just transition.

Let us first introduce three terms central to our debate: Sustainable Work and just transition as concepts for a transition to socially and ecologically sustainable societies, and green jobs as most common term in politics, administration, private sector and media regarding work for and in an ecological transition.

WHAT IS MEANT BY SUSTAINABLE WORK?

The UN and the SDG put out a framework for sustainable work which in each specific context has to be filled with content by the different actors. Considering the variety of different contexts, potentials and needs, the relevant practices to be implemented have to be developed accordingly and cannot be the same everywhere. Based on the guidelines of the UNDP and the expanding debate on the link between ecology and work in Germany (Brandl and Hildebrand 2002; Littig 2012; Diefenbacher et al. 2016; Barth, Jochum, and Littig 2016; WSI-Mitteilungen 2019) we can formulate some central aspects of the concept of sustainable work:

1) Sustainable work does not reduce development to economic or technological aspects. Sustainable work is linked to the model of decent work from the ILO (ILO 2016). Work should start from the needs and potential of the subject, and not only provide social and economic security, but also opportunities for personal development. The goal is to lay the foundations for humane work and maintain these over the long term. As the UNDP puts it: "work can enhance human development when policies expand productive, remunerative and satisfying work opportunities, enhance workers' skills and potential and ensure their rights, safety and well-being (UNDP 2015, 1).

2) Humane work that promotes development is only possible if the reproduction of labour and life are ensured (Barth, Jochum, and Littig 2016). This means that the goal of work must be to be ecologically sustainable. It may not endanger the (re)productivity of nature, and must ensure that ecological systems are capable of bearing the strains placed on them (UNDP 2015, 162), as this is the only way to guarantee the possibility of humane work that promotes

development for future generations. This means not only minimising the negative ecological consequences of work for the future but, in light of the way ecological systems are being overloaded and the way many renewable resources are being over-exploited, it also means a general “back-peddalling” in many areas.

3) The model of sustainable work is based on an expanded understanding of work. The UNDP report states that “from a human development perspective, the notion of work is broader and deeper than that of jobs or employment alone,” which fail “to capture many kinds of work that have important human development implications —as with care work, voluntary work and such creative work as writing or painting” (UNDP 2015, 3). In the course of transforming the work-oriented society, it is essential to question not only the separation but also the hierarchisation of these kinds of activity, and to analyse their interdependencies. The aim is consequently to overcome the artificial separation of productive and reproductive, commodified and non-commodified, formal and informal work, and orient all activities towards the model of sustainable work.

4) The economy, social issues, and ecological issues should be considered together as a whole in the model of sustainable work. Sustainability cannot be applied individually to each of the three allegedly separate spheres. Above all, this means that economic sustainability cannot be considered in isolation, and that a viewpoint focused only on value creation and generating added value is limited because it does not encompass the economy as a whole. Under an expanded understanding of work, the goal of sustainable work in a sustainable economy is generally to maintain opportunities for (re)productive interaction between people and between people and ‘nature’.

WHAT IS JUST TRANSITION?

Just transition is the framework used by trade unions and some environmental movements to develop demands and struggles related to the transition to an ecologically and socially sustainable economy and society, as well as preventing that transition from being carried out at the cost of workers or the socially disadvantaged. The ILO defines just transition as “greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind.” The international trade union organizations were successful in putting just transition on the agenda of global climate negotiations. Although at a national level, the North-South dimension almost disappears from the focus of trade unions, while in negotiations with employers and in conversations with the government trade union leaderships often do not mention at all ecological and North-South aspects of just transition.

In this report just transition is understood as defined by McCauley and Heffron, a definition that comes close to the framework put forward by several just transition alliances (see for example France):

“a fair and equitable process of moving towards a post-carbon society’. This process must seek fairness and equity with regards to the major global justice concerns such as (but not limited to) ethnicity, income, gender within both developed and developing contexts. By its very nature, this transition must take place at a global scale, whilst connecting effectively with multi-scalar realities.

It involves the development of principles, tools and agreements that ensure both a fair and equitable transition for all individuals and communities.” (2018, 2)

The term just transition has also become prevalent in EU declarations and accordingly in national policies and programmes. It is primarily used in the narrow sense of compensating for social disparities in the energy transition, in relation to finding new jobs for those who lose their jobs due, for example, to the end of coal mining and coal-fired power generation.

The North-South dimension is also central to just transition. Which countries are responsible for how much CO₂ emissions is highly relevant regarding the global North vs. global South relationship. The actual country data it is not sufficient to grasp historical responsibilities. Historical CO₂ emissions continue to contribute to climate change. Data on cumulative CO₂ emissions provides a more realistic view. The differentiation between CO₂ emissions caused by the use fossil fuels and CO₂ emissions caused by deforestation and land use is also important. Regarding cumulative emissions from 1850 to 2021, the USA lead the top ten with 20.3 percent of global cumulative CO₂ emission. With 11.4 percent of cumulative CO₂ emissions China comes second. The country shares following are Russia (6.9 percent), Brazil (4.5 percent), Indonesia (4.1 percent), Germany (3.5 percent), India (3.4 percent), the UK (3.0 percent), Japan (2.7 percent) and Canada (2.6 percent). CO₂ emissions from international transport, which are usually excluded from national data and emission goals, would place the sector as eleventh. In most of these countries CO₂ emissions have been caused overwhelmingly by fossil fuels, while in Brazil and Indonesia they are due to about 85 percent or more to deforestation and change of land use. Beyond the fact that the financial beneficiaries of extractive activities are mostly to be found in the global North, data on cumulative CO₂ emissions in relation to the countries' population does not even show China, India, Brazil and Indonesia in the top twenty. All in all, the four countries are responsible for 23 percent of cumulative emissions from 1850 to 2021, while they hold 42 percent of the world's population. The 10 percent of the world's population living in the USA, Russia, Germany, the UK, Japan and Canada, in contrast, are responsible for 39 percent of cumulative CO₂ emissions. (Evans 2021). Industrialized countries from the global North are the main responsible of greenhouse gas emissions and therefore for climate change. The main consequences, however, hit the countries from the global South much harder, although they are not the main responsible for climate change.

Against the narrative that we are all in the same boat, it is important to point out that not everyone is responsible for the same volume of emissions. According to a study looking at GHG emission 1990-2019 (Chancel 2022), the 50 percent of the global population at the bottom contribute 11.5 percent of the total GHG emissions. The middle 40 percent cause 40.5 percent and the top 10 percent cause 48 percent of all GHG emissions. The top 1 percent contributes even 16.9 percent of total emissions, not to mention that the super-rich are usually also the owners or big investors of the industries responsible for the main emissions. 77 million people, one-hundredth of the world population, emits 50 percent more GHG emissions than 3.8 billion people, the bottom 50 percent of the world population. A study on growth on GHG emissions 1990-2019 reveals that the emissions of the richest and especially of the super-rich, are growing at a much faster rate than the emissions of the remaining population. While the bottom 50 percent of the world population contributed just 16 percent of the growth in emissions, the top 1 percent contributed 23 percent. This reflects

the North-South inequality and the class dimension. The top 10 percent in the USA contribute 140 times more GHG emissions, than the bottom 50 percent of the population in Sub-Saharan Africa. In every country wealthy people are responsible for much higher emissions than lower social strata. The top 10 percent in Europe are responsible for six times more GHG emissions than the bottom 50 percent on the continent. Therefore, the struggle against climate change is and has to be also class struggle. As Chico Mendes² once said: “Ecology without class struggle is gardening.”

WHAT ARE GREEN JOBS?

There is no shared definition for green jobs. Generally, the term refers to paid labour in a green economy. According to the European Commission it means that it uses resources efficiently and produces low levels of CO₂ emissions. The UN environmental programme definition establishes that green jobs are any paid labour that has a positive effect on the environment. Such paid labour helps to protect and sustain ecosystems and biodiversity, reduce the consumption of material resources, water, and energy by using high-efficiency strategies, thereby achieving a high level of production efficiency and ultimately reducing CO₂ emissions (UNEP 2008, 3; UNEP 2011, 17).³

Green jobs normally do not encompass any dimension beyond paid labour, nor any consideration of the social and ecological implications of work. They do not aim at the structural transformation of the work-oriented society. Green jobs are usually linked to ecological modernisation and the idea of a technological fix, solving climate change and ecological problems through technological progress, or jobs are added to the figures that are already focused on nature conservation or avoiding waste. These might range from park rangers to employees at a water or waste water management or waste disposal plant. The term green jobs is interpreted in such elastic and different ways that, for instance, the UK includes even jobs in the nuclear industry and the national nuclear power academy in its green jobs statistics, as well as traders in emissions certificates and employees at institutions and companies providing “green accounting”.

PROBLEMS AND ALLIANCES

Although sustainable work has been defined by almost all governments in the world as political goal, the understanding has not entered yet international, supranational and national policy orientations and programs. Instead, several terms are used with many different meanings: green jobs, decent work, climate jobs, low carbon jobs, greening job etc. The different terms and their varying interpretations are not casual, they can be attributed to specific interests and interest groups. In most cases they are attempts by policy makers,

² Chico Mendes was a Brazilian rubber tapper born in 1944. He founded a trade union of rubber tappers he led. He was an environmentalist fighting to preserve the rainforest of the Amazon and for the human right of indigenous people and peasants. He was murdered by a farmer in 1988.

³ The ILO uses a similar definition, although more precise. What marks an important difference is that the ILO includes the aforementioned definition of “decent work” in its green jobs’ definition.

governments and companies to inflate numbers and let their efforts against climate change look better than they really are.

As a consequence, the preoccupations and mistrust expressed by trade unions regarding the conditions and quality of jobs labelled as “green” are fully justified. Many of the newly created “green jobs” lack quality and decent work conditions. Moreover, a small number is highly qualified (technological fix), while the vast majority is very low qualified (waste management, recycling, parks and nature services etc.). This means a devaluation of work combined with lower pay, missing agreements on worktime and flexibility, weak employment stability and a lack of unionisation in the new sectors. Recent research has also revealed concerning results from the gender point of view: 70 percent and more of the new jobs are occupied by men. All of that underlines the urgency of redefining the social organization of work, consider other forms of work and promote different value orientations.

Scientists agree that what is done by governments is by far not enough to halt global warming, climate change and mass extinction, much less to reverse it. Not even the measures planned are sufficient if ever enacted.

Over the past decade increasingly larger and broader alliances of trade unions, environmental movements, NGOs, farmer and left-wing organizations, and social movements have been forming in various countries, mobilizing for a just transition. They are the most hopeful actor for a just transition. These broad alliances have developed the most advanced debates, demands and programmatic proposals around ecologically and socially sustainable work and a just transition that includes rethinking completely what is work and how it should be. To bring together the huge diversity of organizations and movements is not an easy task. The condition is on the one hand, that trade unions and more traditional leftists recognize the diversity of mechanisms of exploitation and domination and the existential threat posed by climate change and environmental degradation. They also have to realize that they alone do not (any longer) have the necessary strength and social anchoring to bring about structural changes and must develop policies that go beyond a “traditionalist class fixation or a perspective reduced to trade union-social democratic distribution policy” (Dörre 2021, 23). On the other hand, environmental movements and NGOs must fundamentally question themselves in a similar way. A successful alliance presupposes that the ecological question is not separated from the social question and linked to the class question. It is also important not only to think of these two aspects together, but also to address gender equality, anti-racism and the North-South relationship. Governments and the private sector have proven to be unwilling and unable to enact the urgently needed policies. “There is nothing to suggest that the overdue sustainability revolution can be realized primarily or even exclusively with market-based means” (Dörre 2021, 23). The necessary radical steps require broad alliances of 'unconditional solidarity', i.e., a form of solidarity practiced beyond affiliations to different political groups and their benefits in view of the urgency of action. Only massive pressure from below will lead to the necessary transformation.

The present report offers eight country case studies looking at the policies and discourses regarding work in the socio-ecological transition and labour organizations, social movements and environmental movements eventually forging alliances for sustainable work and a just transition. The European country studies create the possibility of a comparison while

contextualizing the national specificities. In the case of Mexico, Colombia and the Philippines it is not intended to make them comparable to the European countries studied. The situation differs strongly from the case studies in the global North. Movements against the dominant production and consumption model appear mainly in form of territorial struggles against mining, oil extraction, deforestation, dams, etc. In Colombia just transition is used as term by movements and communities. With the new leftist government, the concept entered also government policies and declarations. In Mexico and the Philippines, the term just transition is rarely used at all, while sustainable work is not common in any of the three countries of the global South. Many elements of both concepts are present in debates, demands and struggles in those countries, yet the terms used are different.

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1. France

Since 1900 the average temperature in France has risen 1.9° C, well above the global average of 0.9° C (1901-2012). Its coasts are impacted by rising sea levels and erosion, more flooding is occurring throughout almost the entire country, and rising temperatures endanger many agricultural growing regions, especially the wine production industry. Warm days and extremely hot summers with temperature peaks up to 46° C have become more frequent.

France had 67.7 million inhabitants in 2021. The GDP per capita was US\$ 50,544. From 2011 to 2019 annual growth of real GDP was between 1 and 2.3 percent. In the first year of the pandemic, it dropped 7.8 percent, and in 2021 it rose 6.8 percent. The public administration, defence, education, health, and social work sectors made up the largest share of value added in 2021 at 22.8 percent. It was followed by trade, repairs, transport, accommodation, food services with 17.7 percent, as well as professional, scientific and support services with 13.9 percent – the highest percentage among the European countries compared, after the Netherlands. Industry, including energy, made up 13.1 percent, the lowest of any European country in the study, while real estate with 12.7 percent was the highest. (OECD 2022q)

France has historically a high unemployment rate. In 2020 it was at 8 percent (down from 10.4 in 2015) and is slightly lower among women than men. Youth unemployment (15 to 24 year old) is very high at 20.2 percent (although it did drop by five percentage points between 2016 and 2019) (OECD 2022m). Compared to the other European countries in this study France has the highest percentage of 0-14 and 10-24-year-olds: 17.7 percent (UNFPA 2020, 144), causing a comparatively higher pressure on the labour market. Many young people have precarious employment, and the high percentage of young males in unqualified or poorly qualified green jobs, which make up the largest percentage of new green jobs (see below) suggests that the reduction in youth unemployment is due primarily to a devaluation of work.

The term sustainable work (*travail durable*) is rarely used in France, and usually refers to long-term or stable employment. The public discourse and debate focus mainly on green jobs (*emplois verts*). Governmental institutions, parties, business, research, and trade unions (such as the *Confédération Générale du Travail*, CGT, the *Union Syndicale Solidaire*, the student union *unef* and the farmer's union *Confédération Paysanne*), various civil society organisations like climate and environmental protection organisations, and social movements (right to housing to climate movement) participate in the debate. The discussions surrounding green jobs and the transition to an ecologically sustainable society are highly controversial. Trade unions and movements criticise governmental policies as not being ecologically or socially sustainable. The green jobs strategy neglects the quality of work and qualified training, and is likewise critiqued for not being comprehensive enough. Because the French administrative system is both centralised and highly decentral, however, there are also many local projects from independent civil society organisations, local administrations, and businesses.

Labour market and employment

The total employed labour force grew from 25,759,000 in 2011 to 26,995,000 in 2020. It dropped in agriculture, hunting, and forestry during the same period from 746,300 to 625,700, and in industry from 5,676,900 to 5,305,800. In the service sector, in contrast, it increased from 19,335,700 to 21,036,900. The biggest increase was registered in human health and social work (from 3,403,300 to 3,921,900), professional, academic, and technical activities (from 1,391,500 to 1,671,700) and education (from 1,730,000 to 2,109,400). How many of those are “green jobs”, cannot be determined. A higher percentage increase, although less relevant in absolute number terms, took place in information and communication (from 752,500 to 934,400), administration and support services (from 939,400 to 1,024,800) and art, entertainment, and leisure (from 375,600 to 448,500). Employment in households and own-use activities, in contrast, dropped from 620,300 to 287,000 (OECD 2022i).

Public policies and measures

France has no national sustainability strategy defined as such. In the 2001 the government created the *National Observatory for the Effects of Global Warming* to formulate recommendations for preventing and limiting climate change and adapting to it. The first *National Adaption Plan for Climate Change 2011-2015* was enacted in 2011 as a supplement to existing measures for limiting the impacts of climate change. It is evaluated and updated every five years. The second national plan for adaptation PNACC-2 (Mdtedd 2018) for 2018-2022 was enacted in December of 2018. The plans give a brief introduction to climate resilience and propose several actions. The goal of the PNACC-2, which includes COP21 results, “is to better prepare the French society to climate change, involving the main sectors of the economy (agriculture, industry, tourism) and territories” (Climate ADAPT 2018). Alongside the France *National Low-Carbon Strategy* (SNBC) of 2018, the PNACC-2 serves as the foundation for the envisioned sustainable ecological transformation, as well as for associated employment (Mdte 2018). Sustainable work is not mentioned at all. The terms used are green jobs and jobs in the green economy. The National mobilisation plan for jobs and professions in the green economy, formulated in 2010, and the National observatory for jobs and professions in the green economy Omenev (*Observatoire national des emplois et métiers de l'économie verte*), founded based on the plan, are responsible for green jobs. The task of Omenev is to identify jobs that are directly linked to activities in the green economy, to analyse developments in employment and the labour market and interactions between job training and employment in the green economy, and coordinating and discussing these topics with regional actors in employment and education (Omenev 2014, 7).

The SNBC (*Stratégie Nationale Bas-Carbone*) represents the French plan for transitioning to a low-carbon and sustainable circular economy in all sectors (Mdte 2015). France has the third highest circularity rate⁴ in the EU: 19.8 percent in 2021 (EU28 average is 11.7 percent).

⁴ The circularity rate is defined as the ratio of materials used in a circular manner out of total material usage.

Yet, still distant from the target of a circular economy. Moreover, the circularity rate was already at 17.5 percent in 2010 (eurostat 2022). The climate plan of July 2017 stepped up the reduction target for CO2 emissions even further and resolved, based on EU guideline values, to achieve net CO2 neutrality by 2050. The revised SNBC from November of 2018 includes the new emissions target, and was supplemented with a Multiannual Energy Plan (PPE) for 2019-2028, which lists some measures to achieve the goal. Closures of the last four remaining coal-fired power plants were planned for 2023. They have only around 1,000 direct employees, and are responsible for a very small percentage of electricity production. The lack of a convincing plan for the employees and the region (according to the CGT, 5,000 direct and indirect jobs are affected) has already resulted in strikes.

France has founded several institutions dealing with green jobs. The Agency for ecological transition ADEME, ascribed to the Ministry for the Ecological Transition (former Ministry of Environment) and the Ministry of Higher Education, Research and Innovation is responsible for implementing public policy in the areas of the environment, energy, and sustainable development. It offers companies, local authorities and governmental institutions and the general public professional expertise and advising to support them in defining and consolidating their ecological policies and initiatives. The ADEME has 1,000 employees and over 26 regional offices. It also finances environmentally-friendly innovations by supporting pre-industrial experiments and projects with renewable energy, as well as “green” chemistry, carbon-free vehicles, intelligent networks, and the circular economy. According to the ADEME the number of direct jobs in all sectors has grown between 2006-2017 by 75 percent, to more than 370,000 employees (ADEME 2020). The rather small size of the institution and the projects supported show that the ecological transformation is not a priority, that employment rates in the supposed green economy are still very low, that green jobs are not automatically sustainable jobs, and that the focus is on a technological fix.

In 2009, the Ministry of Environment issued the National mobilisation plan for jobs and professions in the green economy. It focuses on “adapting professions and skills to the ecological transition and the energy transformation” (Mdte 2020). To do so, needs have been identified in different sectors alongside the actors involved, pilot projects have been launched, and special programmes have been developed and initiated for specific regions.⁵ Regional institutions have been establishing training programmes for ecological construction and ecological building renovation since 2009, in response to a lack of trained professionals that persisted despite state and private business commitments to create more training opportunities (OECD 2012).

There are only minor differences regarding how the governments under President François Hollande (Socialist Party) and President Emmanuel Macron addressed the ecologically sustainable transformation of economy and society and the question of employment. The central governmental orientation for the ecological transformation, the SNBC, was formulated under Hollande in 2015. Under Macron it was revised in 2018 without experiencing any major changes. Nevertheless, President Macron’s policies so far indicate that implementing

⁵ For an overview of activities related to vocational training for green jobs in France see Cedefop 2018a.

measures –which have been broadly criticised in any case as insufficient– will be more difficult to achieve. Macron follows a neoliberal economic and financial policy. He rejects the traditional practice of social dialogue and uses his presidential power to implement measures quickly.

Of the 100-billion-euros recovery plan *France Relance* provided in September of 2020 to restart the French economy after the Covid-19 pandemic 30 billion euros were dedicated to the ecological transition. The French Green Party criticises the plan as incoherent. Nothing in the plan reflects the government’s promises surrounding greening and a paradigm shift in the economy. Instead, the economy will simply be restarted in the same old-fashioned way.

The energy policy of the French government has to be considered a total failure from the point of view of sustainability or social and ecological transition. France is heavily reliant on nuclear power. It has 56 active nuclear power plants, which produce over 70 percent of its electricity, the highest percentage in the world. 32 of the reactors are already so old that were supposed to shut down in the coming years. In February of 2021, the French government decided to extend their service lives from 40 to 50 years, and declared that using nuclear energy was part of its strategy to reduce CO2 emissions. Nuclear energy is definitely not sustainable, highly risky and not renewable, leaving behind radioactive waste emitting radiation for ten thousands of years (Scientists for Future 2021). In early 2022 the Macron government announced to prepare the steps to extend the service of the 32 old nuclear power plants from 50 to 60 years and stated that it was evaluating the construction of 14 new nuclear power plants. This despite the extreme draught and low water levels forced France to temporarily shut down several nuclear power due to drought and high temperatures in 2018 and 2019. In the summer of 2022, the river Rhône and the river Garonne become so warm, that they could not be used anymore to cool down the nuclear power plants forcing Électricité de France (EDF) to power down several reactors (in addition to more than a dozen powered down for malfunction or maintenance). The nuclear electricity production was nearly 50 percent lower than usual and France had to import electricity for the first time in decades. Water levels remained low during the winter so that the similar problems are expected for 2023. The Nordic countries face a similar problem with sea temperature that become too warm to cool down their coastal nuclear power plants. In the wake of the war against Ukraine France also announced major investments in gas pipelines and signed an agreement with Germany for the construction of a joint gas pipeline.

Green jobs – Emplois verts

According to the Ministry of Labour, between 2010 and 2014 almost four million jobs in France were green jobs or “greening jobs”. The latter are “all jobs that could be impacted by taking environmental concerns into consideration”. The definition is very vague. Regarding “greening jobs” it is unclear to what extent a transformation is planned, has started, or has already taken place (which would still not mean they are sustainable). The actual quality of the work itself is likewise not examined. This illustrates well the strategy to juggle with terms and definitions and inflate numbers. The available data on green jobs and greening jobs, nevertheless, points at some of the major problems regarding labour and just transition. The

workers in green or “greening” jobs are primarily male, and relatively young, most have no qualifications, or have a 2-year professional diploma. 144,000 jobs are green jobs in the sectors of renewable energy and water supply (45 percent), waste water disposal (35 percent) and nature and environmental conservation (20 percent). The 3,761,000 “greening jobs” are located in the construction industry (39.5 percent), transportation (19.4 percent), research (8.9 percent), agriculture and forestry, and park maintenance (6 percent) (Mdt 2017).

The overall governmental discourse is focused heavily on highlighting quantitative aspects in specific sectors, mainly renewable energy, water and waste water management, and natural conservation and park maintenance. Employment in renewable energy in France in 2020 was relatively low with only 109,400 workplaces of which approximately 30,000 each where in the sectors of solid biomass and liquid biofuels (IRENA 2020b). Especially the latter is not sustainable. Even so, the labour force in the energy sector is stagnant or tendentially decreasing – with many ups and downs (from 233,500 in 2013 to 198,200 in 2020) (OECD 2020a). Of 560,400 job advertisements for green economy jobs in 2017, only 26,400 were for green jobs and 534,000 for “greening jobs”. 80,000 employees under 30 years of age work in the green economy, primarily in energy generation and distribution (20 percent) and natural conservation (30 percent). Only 16 percent of all jobs in the green economy are held by women. The most feminised and highest qualified types of employment among green jobs are in natural and environmental conservation professions. However, women still hold only 28 percent of the jobs (Topformation.fr 2019).

The Social, Economic, and Environmental Council established by the government stated, that assessing the quantitative effects of the environmental transition on employment “should not be limited to recording the number of people employed in the 'green economy' sector. It should, however, encompass all of the activities affected by the measures designed to radically alter our production and consumption patterns” (Levaux and Genty 2015). The government has neither a vision nor a policy promoting a radical change in production and consumption patterns.

Parties and trade unions

In light of experience drawn from the Covid-19 pandemic, left-wing trade unions, civil society organisations such as Attac, and scientists are all urging a democratic involvement of the population in the ecological and sustainable transformation of the economy and society, as a joint 34-point plan makes clear (see below). As Alexis Cukier, philosopher and activist at Attac and the CGT FERC Sup (union of university teachers and researchers, states: “The knowledge, initiatives, and responsibility of employees are what are most fundamentally important, not those of the state or well-meaning activists, to carrying out a transformation of the production system within the framework of an ecological and social revolution” (Cukier 2020).

PARTIES

The leftist parties Parti Communiste Français (PCF) and La France Insoumise (LFI) support the positions of the large coalitions, and their representatives are active in trade unions, foundations, movements, and associations involved in these coalitions. The French Green Party, which was previously not a major actor, saw significant success in 2019 when it drew 13 percent of votes in the European elections, then again in 2020 in the municipal elections, a reflection of the growing concern with the climate and the environment in France. The Green's positions are considered very moderate, and remain behind calls from large coalitions and the PCF or LFI. The extreme majority voting system in France fosters electoral alliances. For the national elections in June 2022 PCF, LFI, the Greens, parts of the Socialist Party and some other minor leftist party built an alliance promoting Jean-Luc Mélenchon (LFI) as presidential candidate. In the first round of the parliamentary elections the leftist alliance won 25.66 percent of the votes, only a little less than Macron's neoliberal centre-right alliance (25.75 percent). Macron, however, has also the support of conservative, liberal and centre-left parties that were part of other electoral alliances. The far-right *Rassemblement National* (RN) came third with 18.68 percent. The RN had previously dismissed climate change and placed no importance on climate policy. As the French environmental movements have gained steam since 2019, Marine Le Pen, head of the RN, suddenly declared environmental policy was as important as jobs. This is, nevertheless, not reflected in any programmatic positions.

TRADE UNIONS

Although France's trade unions, including the CGT, were long considered defenders of old industries and energy production methods (such as nuclear power and coal), for over a decade they have been undergoing a continuous process of rethinking and shifting their positions. The left-wing unions are active part of the broad just transition coalitions. The unions differ from the government primarily with respect to two overarching sets of issues. Firstly, they believe that the government's commitment has been nowhere near sufficient in terms of the extent and speed of ecological and sustainable transformation needed; therefore, they call for much heavier public investments to create many more jobs in a shorter time period. Secondly, they expressly link ecological and social questions by placing value on the quality, security, and income of jobs, and by presenting the ecological and sustainable transformation in the context of democratisation of property and administration of the means of production.

The active participation by the CGT in the broad coalitions alongside environmental and social associations is the result of a long process initiated by the former PCF trade union (in large part an industrial trade union). In contrast, the French Democratic Confederation of Labour (CFDT, *Confédération française démocratique du travail*), in 2019 a supporter of the coalition for one million jobs through a socially and ecologically sustainable transformation, is no longer listed on the campaign website. The CFDT has no ideological tenets and is consensus-oriented. It is not engaged in any labour disputes and is not mobilised. In the last Works Council elections, it overtook the CGT. However, the CFDT strategy, which is reliant on a good relationship with Macron, has failed as Macron refuses any kind of negotiations.

Coalitions for a just transition and a national sustainability plan

In recent years, broad coalitions and alliances have been formed of trade unions, environmental and social associations, and other NGOs and have presented extensive catalogues of measures among their demands which have the character of a national sustainability strategy. These are supported by numerous intellectuals. The most important catalogues of demands are the Jobs-Climate platform formed in 2016 and the *Le plan de sortie le crisis of 2020*. The demands include a shortening of working hours to 32 hours per week at full wages and without flexibilization, as well as absolute gender parity. According to the coalition, these are “a necessary part of a post-productive economy” (Plateforme Emplois-Climat 2016, 10).

PLATEFORME EMPLOIS-CLIMAT: UN MILLION D'EMPLOIS POUR LE CLIMAT

The 'Jobs-Climate' platform is an open forum for exchange, debate, and suggestions on topics that connect the challenges of the ecological transformation with those of employment, retraining, and education. It consists of around 20 major civil society organisations and trade unions. These are almost the same ones as joined the *Le plan de sortie le crisis of 2020*. The platform prepares reports and carried out a campaign for “a million jobs for the climate”. By doing so, its objective is to combine the social and ecological transition. The campaign promotes public investment and measures to re-orient the private sector and training. It encourages investment in: “renewable energy, building renovation, support for owner renovations, identifying and supporting households affected by energy precarity, ecological agriculture, sustainable traffic infrastructure, recycling, repair, and reuse, supporting small and mid-sized as well as very small businesses and communities in implementing ecological transition policies” (Plateforme Emplois-Climat 2016). They emphasise that the investments are possible, although political will is lacking. Their goal is a million net new jobs, based on seven key measures and orientations:

1. *Creating 250,000 subsidised jobs designated under the 'ecological transition'.*
2. *Creating 100,000 jobs for the 'ecological transition' in the public sector.*
3. *Investing in the private sector of the ecological transition in order to create 650,000 jobs.*
4. *Resolving the contradiction between protecting the climate and the loss of jobs in the weakened sectors through pre-emptive retraining and adapted educational services in specific territories.*
5. *Ensuring the quality and social protection of jobs in a just ecological transition.*
6. *Initiating structural changes to adapt jobs to the framework of the ecological transition.*
7. *Making support mechanisms for the private sector dependent on creating high-quality jobs, in particular in areas of the ecological transition.”* (Plateforme Emplois-Climat 2016)

The public and private investments needed are set at up to 105 billion Euro per year. The platform succeeded in bringing together a broad coalition of social forces, beyond just trade unions and environmental associations. This is expressed in the breadth of their demands, and the explicit naming of claims related to gender and migration. The only other coalitions

to make similar calls are in the UK, in Portugal, and, with some limitations, initiatives in Spain as well.

LE PLAN DE SORTIE DE CRISE (2020)

In May of 2020, a total of 18 civil society organisations and associations published a 34-point plan outlining paths out of the crisis. The plan combined some of the most important grassroots actors and organisations from different sectors, including the CGT and the Union syndicale Solidaire, the student union unef (France's largest and oldest student association), as well as major farmers' union Confédération paysanne (member of the European Farmer's Coordination and the Via Campesina), the French branches of Attac, Greenpeace, Oxfam, Youth for climate and 350.org as well as other organisations. The pandemic intensified the multiple crises, which the participating organisations saw as further evidence of the need for systemic change.

Its action plan states that a complete “ecological and social transformation of activities” is needed, and calls for the “transformation of our production, mobility, and consumption habits”. It calls for measures designed to bring about a comprehensive, sustainable, ecological, and socially just transformation of the economy and society. Its suggestions range from supporting small and mid-sized ecological agriculture to achieving food sovereignty and expanding alternative energies, with the objective of complete CO2 neutrality to an environmentally-friendly industrial conversion. The plan underlines also the key role of active worker participation in the transition to a territorialised economy guided by ecological and social objectives. In order to achieve that, workers must gain greater control of the means of production. “In order to break the vicious cycle of production and consumption, these political measures must be based on collective struggles and the development of alternative practices”. (Attac France, CGT, Oxfam France et. al. 2020)

The broad coalition achieved and the broad agreement on the catalogue of demands in 2016 were retained in the Coalition for an alternative crisis plan of 2020. However, it should be noted that, beyond listing joint demands, thus far no effective joint mobilisation has been developed in order to lend any weight to these demands.

Conclusions

France has no national sustainability strategy and the concept of sustainable work plays very little or no role in the discussion. The demands of the broad just transition coalitions come closest to the dimension of sustainable work, and clearly refer to the international debate on the *just transition*. The key driver behind the public debate and the government plans is the debate on climate change, and – in this context – primarily the national perspective on its concrete consequences for France. Public discourse, and in particular institutional action, are focused mainly on green jobs. Although there is a continuity in governmental policies across party lines, economic discourses are again and again postulated as a reaction to external impulses (such as a reaction to the election success of the Greens or as part of a climate summit). The government's plans focus on the sectors of agriculture, industry, and

tourism as the three sectors where adaptation to climate change is needed (Climate ADAPT 2018). Reports from governmental institutions always name the sectors of energy production and distribution, water supply, and sewage as well as park maintenance and natural conservation as the three sectors where the majority of new jobs are being created and will be created. Nevertheless, the number of new jobs created is not significantly greater than the number eliminated. The category of “greening jobs” creates further confusion, as the government's statistics do not indicate which jobs, or how many, are actually undergoing a process of transformation (and, if so, transformation into what). In relation to the many programmes, measures, and the extensive funding provided, the resulting surplus of new jobs seems fairly low, and their quality is lacking. France did also not achieve any of the declared climate goals.

Overall, two major camps have emerged within France. On the one hand, there is the governmental camp, which not only includes Macron's government, but also large swaths of the conservative and social democratic spectrum (past governments, of every stripe, simply solidified a realpolitik approach) that is supported by the economy. On the other, there is a broad coalition of trade unions and associations supported by left-wing parties and public intellectuals. The coalition has far-reaching programmatic ideas and proposals. It links good work and just transition to the necessity of a systemic change and includes in its analysis and demands aspects of gender, migration and North-South relationship.

2. United Kingdom

The risk report for 2017 by the Climate Change Committee (CCC)⁶ listed six central areas where the UK was exposed to a moderate to high or extremely high risk due to climate change and concluded not enough is being done in any of these areas (CCC 2016, 8). “Since the 1900s sea level has risen around the UK by around 16.5cm. [...] While the rate of increase was 1.5mm per year since the 1900s, over the past 30 years the rates of increase have risen to 3.0-5.2mm each year” (Met Office 2022). While the medium temperature rise is just a little above the global temperature rise, extreme temperatures happen more often. In 2022 a heat wave hit the UK. The Met Office measured for the first time ever temperatures above 40°C. The extreme temperatures cause storms, flooding, heatwaves and long freezing winters.

The UK had 67.9 million inhabitants in 2020. The GDP per capita in 2021 was US\$ 48,663. Real GDP growth has dropped constantly since its peak of 3.4 percent in 2014 to 1.6 percent in 2019. In the first year of the pandemic, it dropped 11 percent, and in 2021 it rose again 7.5 percent. In addition to the consequences of the pandemic the UK also faces the negative consequences of Brexit. Public administration, defence, education, health and social work made up the largest share of value creation with 19.9 percent, followed by trade, repairs, transport, accommodation, food services with 16.1 percent, then just 13.6 percent for industry including energy. The professional, scientific, support services sector made up 12.9 percent in 2021 (experiencing continuous growth since 2011). The real estate sector followed with 12.6 percent (the highest after France, but the lowest rate in more than ten years). (OECD 2022h)

Sustainable work is not addressed either in public debate nor in governmental documents. The official discourse focuses on green jobs, understood rarely in such a broad manner as by the UK government. In Scotland, discourse has long been about just transition, and a participative just transition commission was introduced in 2019. On the UK level, however, the government places no explicit focus on this issue. Trade unions and environmental movements have been collaborating and have been engaged in a wide-ranging discussion and campaign for a just transition for many years.

Labour market and employment

The employed labour force increased from 29.375 million in 2011 to 32.523 million in 2020. The unemployment rate is very low compared to other European countries, at 4.6 percent in 2020, while youth unemployment is relatively high at 13.3 percent. Employment growth was seen primarily in the service sector. The UK has one of the lowest relative employment rates in the industrial sector. Employment in the industrial sector rose slightly from 5.584 million in

⁶ The CCC is an independent body that monitors and analyses climate change and issues recommendations for the government. Its founding was a stipulation of the Climate Change Act of 2008.

2011 to 5.910 million in 2019, before it dropped again to 5.595 million in 2020. In the service sector employment increased from 23.434 million in 2011 to 26.608 million in 2020. The manufacturing industry and the construction industry were the two largest industrial sectors (OECD 2022p). Employment in the service sector grew in almost all areas. Although, it dropped (due to Covid) in the biggest sector, wholesale, retail trade, vehicle, motorcycle repairs (from 4.045 million to 3.903 million). Professional, academic, and technical activities saw the largest employment increase (from 1.873 million in 2011 to 2.669 million in 2020); followed by information and communication (from 1.069 to 1.536 million); and public administration, defence, and social security (from 1.859 to 2.281 million). Employment in human health and social work (from 3.951 to 4.484 million) also saw a significant increase, as did accommodation and food service activities (from 1.468 million to 1.625 million, but still below its peak at 1.766 million in 2017). An important relative growth of employment took also place in real estate (from 300,000 to 403,400); and in education (from 3.064 million to 3.474 million). Moderate growth was registered in administrative and support services (from 1.328 million to 1.481 million); in transportation and storage (from 1.439 million to 1.548 million); and in financial and insurance activities (from 1.190 to 1.365 million).⁷

Public policies and measures

The UK aimed to greatly reduce greenhouse gas emissions from energy production by eliminating coal (which occurred with the closure of the last three coal-fired power plants in 2020), increasing its usage of renewable energy sources, especially offshore wind energy, and using nuclear power, which covers around 20 percent of the country's electricity needs. Another 30 percent will be generated with gas-fired power plants (Plickert 2020). Greenhouse gas emissions from buildings and agriculture, in contrast, have remained essentially the same between 2017 and 2018 (the latest data currently available), and in transportation they even increased by five percent. There are also significant differences between different regions. In 2019, the UK government passed a law that stipulates greenhouse gas emissions should be lowered to net zero by 2050⁸ (Government UK 2019). The Scottish government has set the goal of net zero GHG emissions by 2045, while Wales only wants to reduce emissions by 95 percent by 2050 (ONF 2020; Shephard 2020)

The *Climate Change Act* was passed in 2008 by a labour government. It set forth an obligation to lower GHG emissions by 80 percent compared to 1990 levels by 2050 (Government of the UK 2008). At the time, climate change was one key cause for broad-based protest movements. The UK *Low Carbon Transition Plan: National strategy for climate and energy*, followed in 2009, for the purpose of increasing the number of 880,000 jobs that

⁷ The sectors other services (938,000 workers) and culture, entertainment, and recreation (878,700 workers) (OECD 2020g, 3), stopped being listed in the 2020 UK OECD statistic.

⁸ Emissions certificates and investing in "CO2 reservoirs" such as forestry, tree planting, or restoring moors either domestically or abroad can be used to lower CO2 emissions by more than 100 percent, while still emitting CO2.

supposedly existed in the low carbon and environmental sectors by over 50 percent. Its goal was to create half a million jobs in the renewable energy sector by 2020 (HM Government 2009, 114). In 2013 and in 2018, the government passed national programmes of adaptation to climate change.

The 256-page future industrial strategy published by the government in 2017 speaks in general of the need to increase productivity, as well as of the need for comprehensive investments in infrastructure and technical and mathematical education, and of funding for companies and individuals (Government UK 2017, 14, 21, 42). How to do so, and what impact this will supposedly have on *green skills*, remain unclear. National consultations should be held with companies, trade unions, and employees for this purpose – although there is no coordination to do so (Cedefop 2018c, 14). Overall, the government of the UK primarily focuses on increasing “green finance and social impact investing” (Robins et al. 2019a, 3). Estimates assume that around 21 percent of all jobs in the UK, 6.3 million workers, will be impacted significantly by a transition to a green economy. Around half of these jobs require skills that will be in greater demand in a green economy, while the other half will require retraining. The sectors likely to have the greatest need for retraining will be the construction (30 percent), transportation (26 percent), and the manufacturing industry (17 percent) (Robins et al. 2019b, 2).

In October 2020, the UK government announced further measures to turn the UK into a global leader in wind energy: £160 million are to be invested in harbours and infrastructure, thereby drastically increasing offshore wind energy capacity (which covers 10 percent of the national electricity supply). The investments would create 2,000 jobs in the construction industry and another 60,000 direct and indirect jobs for support in harbours, factories, and manufacturing chains for the next generation of offshore wind turbines by 2030 (Government UK 2020).

The UK’s circularity rate in 2018 was 16.3 percent, up from 14.2 percent in 2010, and well above the EU28 average. The slow growth indicates that the EU28 target of a 100 percent circular economy by 2050, to which the UK remains obligated even after Brexit, is very unlikely to be achieved.

Sustainable work, good work, and just transition play no role in government documents. The main focus is on a technological fix and on qualifying employees to meet the needs of an economy which will be even more focused on exports.

SCOTLAND

Scotland has its own climate policy, which is much more ambitious and comprehensive than that of the UK, although still insufficient. Since the restoration of the Scottish parliament in 1999, Scottish policies have focused on creating jobs through low carbon and renewable energy. The *Scottish Renewables Action Plan* was passed in 2009. In 2010 the Scottish government passed the *Low Carbon Strategy* for the economy, that stated that green jobs could grow by over four percent annually through 2020, from 70,000 to 130,000, making up over five percent of total employment. Expanding offshore wind energy alone could generate up to 20,000 new jobs, turning Scotland into Europe’s centre for green energy (Scottish Government 2010). In 2011, the transition to a low-carbon economy was declared as one of

the Scottish government's strategic priorities. An update and supplement to the Renewables Action Plan passed in 2011 set the goal of covering all of Scotland's electricity needs with renewable energy by 2020, as well as eleven percent of its heating energy needs. In particular, it emphasised professional training measures to prepare workers for the new requirements, in particular for the estimated 40,000 new jobs to be created in the renewable energy sector (Scottish Government 2011).

In 2018 the *2018-2032 Climate Change Plan* was enacted. It stipulates to reduce GHG emissions by 66 percent by 2032, reaching net zero emissions by 2045 (Scottish Government 2018). It also resolved to create a Just Transition commission and citizen's meeting on climate change in order to develop recommendations for how to carry out the zero emissions transition, and what aspects must be taken into consideration with respect to qualifications, the labour market, and education (Scottish Government 2019). The commission also includes two trade union representatives.

The Scottish government has made "fair work" the centre of its economic strategy. Scotland intends to be a leader in fair work by 2025. To do so, corporate funding and public contracts are linked to obligations for companies to invest in qualification and professional training, to not use zero hour contracts inappropriately, to work to close the gender pay gap, and to pay a living wage (unionlearn 2020, 11). Since the commission was created, there has been an increase in local efforts to mobilise funding for climate protection measures. Trade unions and environmental associations, in particular, have taken a leading role in setting out the agenda.

Another update to the climate change plan was passed in 2020 (Scottish Government 2020b). It includes a wide range of concrete measures to promote professional training, for companies to create green jobs, retraining for workers that lost their jobs during the pandemic, green vocational guidance and job training for young people, and – besides other measures – funding of £1.6 billion, already included in the government's budget for 2020-2021, for energy-efficient building renovations that will be projected to create 3,000 to 5,000 new jobs (Scottish Government 2020a, 49). The *2018-2032 Climate Change Plan* and all subsequent governmental documents do not use the term sustainable work; however, they speak of creating good, high-quality, secure, and well-paid green jobs, and do discuss just transition.

Green Jobs

Green jobs have been a topic of discussion in the UK for over 15 years. Governmental documents sometimes differentiate these into "light green" and "dark green" jobs. The former include green skills as part of the requirements for currently existing jobs, while the latter are "completely green" jobs. Interestingly, a governmental study of private business from 2011 stated with respect to light green jobs that it is unclear "whether they will ever be able to clearly articulate this type of need in light of the complexity, even if the CEOs emphasise sustainability" (HM Government 2011, 25). The criteria for green jobs are dubious. They are equated with employment in the low carbon sector, although this is certainly not the same.

In the UK employment at nuclear power plants and in the nuclear sector is counted among green jobs, as are jobs trading emissions certificates or financial accounting specialised on low-CO₂ activities. A study from 2011 indicated that 900,000 people were already working in the low-carbon sector in the UK, as well as adjacent value creation chains. The declared aim was to increase this number to 1.3 million by 2017. However, there is not one generally recognized method to count employment in low-CO₂ activities and renewable energy. In 2015, around 335,000 people (one percent of the population) were employed in the low carbon and environmental goods and services (LCEGS) sector. This includes water and waste water management, waste management and recycling, renewable energy, environmental conservation and environmental consulting (ONS 2018). In 2018 the low carbon and renewable energy sector (LCREE) employed 224,800 people (compared to 200,800 in 2015). This includes jobs in renewable energy, the nuclear industry, manufacturing energy-efficient products, in the energy-efficient lighting sector, energy monitoring systems, and manufacturing and infrastructure for vehicles with low emissions values, as well as all services and trade linked to these sectors (ONS 2020a, 4, 6, 8). Data on employment in the renewable energy sector contradicts strongly all governmental discourses. In 2020 only 114,500 people were employed in the sector. 25,000 of the jobs were in solid biomass and 10,000 in liquid biofuels (IRENA 2020b).

Parties and trade unions

Measures taken by the British government(s) to fight climate change have been criticised on many sides as wholly inadequate. The government's critics include environmental associations, scientists, leftist organisations, and medical professionals. In June of 2019, over 1,000 physicians quickly signed on to a document outlining the health-related consequences of climate change and calling for peaceful resistance. In December of 2020, the CCC declared that the UK needed to reduce greenhouse gas emissions by 78 percent compared to 1990 levels by 2035, in order to achieve zero emissions by 2050 (Carbon Brief 2020).

PARTIES

The extreme right parties all oppose measures to fight climate change. The Tories, in power since 2010, say they are in favour of a CO₂-neutral future with clean energy. However, previous development in green jobs under conservative governments, the consequences of Brexit, and the often-stated interest in reducing environmental and labour standards in order to improve competitiveness indicate that developments will move in a different direction.

Labour promised in its 2019 electoral platform to fight climate and environmental crisis with a plan “to improve the standard of living by converting our economy to a low-carbon economy that it is rich in good jobs, radically just, and democratic” (Labour Party 2019). Labour wanted to initiate a green industrial revolution through a Green New Deal in order to create a million jobs in the UK and transform industry, energy, transportation, agriculture, and buildings. The goal of the GND was a substantial reduction in emissions by 2030. It stated that run-down communities should be rebuilt, with better and more well-paid jobs, and lower energy costs.

It indicated a Labour government should collaborate closely with employees and trade unions so that they could lead the transformation of their industries. Sustainability should be a guiding principle behind the transformation, alongside social justice. Costs for the green transition should be paid mainly by the rich and persons responsible for the problem (Labour Party 2019). Since the left wing of the Labour party lost much of its influence after party chair Jeremy Corbyn lost the general elections, and since the neo-liberal wing of the Labour party dominates in parliament, these ambitious positions have also been abandoned.

In its electoral platform for 2019, the Green Party suggested a GND based on combined investments of over £100 billion per year, with the goal of leading the UK to zero emissions by 2030. It included providing subsidies to industry for decarbonisation, as well as offering extensive financing for professional training, in order to create millions of new jobs. These jobs were to be created in renewable energy, transportation, land usage, and other sectors that would be transformed by the transition to a zero-emission economy. The GND also had the goal of transforming the food and agricultural system, and facilitating a transition in which jobs would be retained, while new, green employment opportunities would be created. The millions of new jobs it aimed to create would be high-quality jobs, well-paid and secure, and would be distributed throughout the entire country, with priority given to communities that had been most affected by economic changes in past decades (Green Party 2019a, 13, 18). The added annual investment in professional training would be £2 billion, and would primarily be paid out to local administrations, which would decide how to spend the money in order to give their residents access to new employment (Green Party 2019b, 19). It stipulated that a more comprehensively financed plan for agriculture, with funding, new land division and distribution, and professional training programmes would facilitate a conversion to ecological agriculture within ten years, associated with efforts towards food sovereignty, building up local food systems and markets, where the production and sale of food would primarily be in the hands of workers and communities (Green Party 2019b, 21, 41). The programme did not expressly use the term sustainable employment, however, the wide-ranging transformation, the use of concepts such as sustainability and just transition, and the way employment is characterised in the GND do touch on many aspects of sustainable employment.

TRADE UNIONS

UK trade unions have promoted green jobs intensively for more than a decade. The Trade Union Congress (TUC) has over 6.6 million members and 52 member unions. The trade union professional training institution, TUC unionlearn, supports member unions in funding training services, campaigns, and partnerships, in order to advance the agenda of a green economy and develop a trade union policy for a green agenda (Cedefop 2018d, 28). The University and College Union (UCU) has formed the Greener Jobs Alliance (GJA) to back a training strategy focusing on green skills. The GJA funds local and regional trade union initiatives, with the goal of influencing educational activities through this funding. In 2013, it passed a Green Skills Manifesto, followed by a joint declaration with environmental associations and trade unions in 2018 to promote a just transition and concrete regulatory measures (Greener Jobs Alliance et al. 2018).

Just transition is a central concern of the TUC. In order to achieve a just transition that overcomes inequality and that reaches all employees, the TUC outlined four basic principles

in July of 2019: a clear path to a low-carbon economy; employees must be in the centre of developing plans; all employees should have access to measures to improve their skills; and new jobs must be good jobs (unionlearn 2020, 8). Its efforts on the issue are embedded in the call for an ecological transformation of the economy and society. It advocates for an industrial plan that addresses regional inequalities, that ensures good, sustainable, and well-paid jobs throughout the country, and that tackles the climate crisis. The campaign backs a national and regional just transition commissions. The TUC promotes to shorten working hours, with a just transition to new technologies and the right to flexible working hours from the first day. (TUC 2019b, 5, 7, 8).

The TUC criticises governmental plans, since they do not mention a just transition. It participates in alliances with environmental associations, is heavily focused on social partnership, and always works to involve employers on all levels. It demands that the government implements an approach based on social partnership and that the state becomes more active setting “market ideology aside” (TUC 2019a, 5; 2019b, 5).

The TUC estimates that 1.24 million jobs could be created from governmental investments of £85 billion in clean energy infrastructure. The organisation states it is essential that employees have a right of co-determination. Then plans could be agreed with the government and companies to ensure job security and protect the quality of employment. This would improve local approval, and measures could be implemented more quickly due to higher levels of acceptance (TUC 2020, 4).

The TUC calls for a sustainable national industrial policy, focused on creating high employment standards, and supplemented by regional, sub-regional, and local planning levels, as well as comprehensive collaboration between companies, administrations, and trade unions. Regional and local administrations would also have to work together with trade unions to ensure that each investment programme was accompanied by a plan for good work, and that each infrastructure project included employment and professional training opportunities for the local population (TUC 2020, 4).

Upon closer analysis, the TUC is impacted by a variety of sector-specific interests and political alignments that result in contradictory statements in some cases. The TUC defines gas and nuclear power an important part of the energy mix of the future. The Public and Commercial Services Union (PCS), which is part of the TUC and the campaign for a million climate jobs, is against gas and nuclear power. In addition, the PCS clearly states “we will only achieve an energy transition by ending the capitalist basis of the energy system and the inequality and injustices that go hand-in-hand with it” (PCS 2017, 27).

Building a Just Transition: Alliances between trade unions and environmental movements

In 2009, the Campaign against Climate Change trade union section, alongside the PCS, Unite, UCU, the Bakers, Food and Allied Workers Union (BFAWU), Communication Workers Union (CWU), Fire Brigades Union (FBU), National Union of Students (NUS), Public and

Commercial Services Union (PCS) and the Transport Salaried Staffs Association (TSSA) published an initial, 70-page plan to create one million climate jobs. It suggested a series of different measures. It stated that, with sufficient political will and investments, jobs could be created in building wind turbines, energy efficiency renovations of homes and public buildings, and the construction of an integrated transportation network for local and long-distance transportation operated using renewable energy (PCS 2017, 26). The plan emphasises “‘Climate jobs’ are not the same as ‘green jobs’. Some green jobs help the climate, but ‘green jobs’ can mean anything –park rangers, bird wardens, pollution control, or refuse workers. All these jobs are necessary, but they do not stop climate change. Climate jobs are jobs that lead directly to cuts in emissions of greenhouse gases, and so slow down climate change” (Neale and Campaign against Climate Change 2014, 4)

The Greener Jobs Alliance (GJA) has existed in the UK since 2010, as a confederation of trade unions, student organisations, environmental associations, campaign groups, and a policy think tank that back a just transition. The founding members of the GJA are the UCU, the TUC, Greenpeace, Friends of the Earth, the National Union of Students, People & Planet and the Institute of Public Policy Research. In 2013, the GJA published a Greener Skills Manifesto which establishes a variety of requirements for a low-carbon skills strategy. These include, for instance, a long-term strategy for employment and professional training, in contrast to the current short-term strategy; partnerships with civil society on both national and local levels to promote employment, job opportunities, and inclusion; and the participation of employees and workers in commissions on the opportunities for and threats facing employment in all economic sectors (GJA 2013). The GJA calls for a just transition based on supporting the communities most heavily impacted by industrial transformation through local investment in new employment and skills, with the goal of building up local supply chains. It calls for the government to include the principles of a just transition in all of its programmes and plans, in particular in the obligation to implement the Paris Climate Agreements, and to form a national just transition commission. It also calls for the government to enact laws to ensure that employees are represented appropriately on the local level, and that they have a right of co-determination in trade unions on all decisions regarding the economic restructuring that will take place.

Conclusions

Climate policies in the UK can be summarised by stating that there is strong, non-partisan support for wide-ranging targets to reduce greenhouse gas emissions, however politicians resist discussing how these targets are to be achieved. The UK always represents itself as a pioneer in climate protection. But the climate protection targets –which are criticised as insufficient in studies commissioned by the government– are never achieved in most areas. The Climate Change Act passed in 2008, and the following stricter climate targets and plans, are legally binding - however none of these resolutions indicates who should ensure they are complied with. In general, as well, maintaining nuclear power and the stated intention to expand nuclear energy and build nuclear fusion reactors, as well as classifying jobs in the nuclear sector as green jobs represent a complete distortion of any concept of an energy transformation, environmental protection, or sustainability. The government’s policy is

focused wholly on fulfilling or anticipating the needs of private industry, since investigations do not consider private business capable of identifying these needs itself. Sustainable work is rarely addressed in government programmes and discourses. Aspects of good work and the quality of work are likewise not mentioned, except for the often-repeated goal of creating “good jobs”. There are, however, no criteria or measures to do so, nor any intention to set out a legal framework.

In light of past experience and results, any hope that the policies that have been set forth will be successful is completely unfounded; what is worse, these policies appear to be nothing more than a programme to subsidise business with no obligation of achieving climate targets. Under these policies, the labour market will be further deregulated, regional inequality will increase, and wages will continue to drop. The policies of the Scottish government are quite different from these, and deserve closer consideration.

Debates regarding a just transition, definitions of good work, or stricter criteria for good jobs are promoted most intensively by environmental movements and trade unions. The concept of sustainable work as such does not appear. Discussions instead focus on a just transition and good work, although this is defined more or less widely in different contexts, with aspects of sustainable work being included to varying extents. Trade union policies are also contradictory. On the one hand, they place great value on coalitions with environmental associations, social movements, and local initiatives. On the other hand, they also always promote the close collaboration with employers and industrial companies. To implement a sustainable ecological transformation of the economy and society through harmonious collaboration with private capital is an illusion. The TUC’s calls for a massive expansion of infrastructure, an industrial growth strategy, and the expansion of nuclear energy as integral parts of a zero emissions strategy, are mostly not compatible with ecological sustainability.

One central question is what consequences Brexit will have on environmental policies, green jobs, and sustainable employment. Brexit proponents often argued that EU environmental, social, and labour laws were too strict, and would negatively impact the UK’s capacity to compete on the global stage. Climate protection was a central area of dispute during Brexit negotiations. The parties to the agreement committed to continued close, long-term collaboration on climate protection issues. Both partners stated they would “strive” to increase climate protection beyond the stipulated 40 percent reduction in greenhouse gas emissions by 2030 (in the meantime, the EU has resolved a target of 55 percent and the UK 68 percent), and confirmed their “ambition” of achieving full CO₂ neutrality for their economies by 2050. The conflict resolution mechanisms set forth for all other areas of the Brexit agreement explicitly do not apply to the environment or sustainable development. Therefore, it is unclear how any environmental or climate targets are to be implemented, as only consultations involving experts are required should the contract be breached. These will then issue non-binding recommendations – and only if there are impacts on trade and investment.

3. Germany

Since weather recordkeeping in Germany began in 1881, the average temperature has risen by 1.5 °C, far more than the global average of approximately 1 °C. 2018 was the warmest year since 1881 with an average temperature of 10.5 °C. 13 of the warmest years recorded in German history happened in the 21. Century. Winters become milder and wetter. Snow cover has been decreasing for more than 40 years, especially in the Alps, where glaciers are melting. In 2018, Germany was listed for the first time among the three countries most affected by extreme weather. Heavy rains, hailstorms and floods, have become much more common. The sea level of the Baltic and the North Sea rose more than 10 cm over the past four decades. In recent years Germany experienced several floods as they are supposed to happen only once in a century: Oder flood in 1997, Elbe flood in 2002, Elbe/Danube flood in 2013, and the worst floods in July 2021 in several regions of West and South Germany, causing the death of 180 people, damaging 90,000 houses, and causing losses for several billion Euros. Summers became hotter, drier and longer, the number of days with more than 30 °C has increased from less than 3 days a year (as a Germany wide medium) in the 1950s to 17.3 days in 2022. In 2003, 2015 and 2018 Germany counted even between 18 and 20 days with temperatures above 30 °C. Drinking water supplies are endangered, agriculture is threatened. Wildfires are more frequent, certain types of trees cannot handle the higher temperatures, draughts are more frequent and longer. German forests are dying because of the high temperatures. 2022 was another year breaking records. On July 20 temperatures in Hamburg reached 40.1 °C, it was the first time, temperatures above 40 °C were measured in Northern Europe. Germany, as well as France, Spain, Italy and other European countries, experienced an extreme draught in the summer of 2022: The main rivers had so little water that freight transport by ship (around 7 percent of all goods transport) had to be reduced and in part interrupted during several months. (lpb 2021).

In 2021 Germany had 83.129 million inhabitants. The GDP per capita was US\$ 58,386. From 2014 to 2019 annual growth of real GDP was between 1 and 2.7 percent. During the first year of the pandemic, it dropped by 3.7 percent, and in 2021 it rose again 2.6 percent. Industry, including energy built the largest share of value added in 2021 at 24 percent. Followed by public administration, defence, education, health, and social work sectors at 19.3 percent; trade, repairs, transport, accommodation, food services at 15.9 percent; professional, scientific and support services at 11.6 percent; and real estate at 10.5 percent. (OECD 2022c). The unemployment rate in Germany, according to the OECD, was at 3.8 percent in 2020⁹ and youth unemployment (15 to 24 year old) at 7 percent (significantly lower than in other European countries). (OECD 2022j).

⁹ Data on unemployment can differ from data provided by national agencies. International agencies as the ILO or OECD employ their own methods trying to eliminate differences between national statistics. For example, the German unemployment agency sets unemployment in 2020 at 5.9 percent.

In 2021 Germany ranked seventh among the biggest emitters of CO₂ globally, being responsible for 1.82 percent global CO₂-emissions.¹⁰ In terms of global cumulative CO₂ emissions from 1850 to 2021 Germany's share is 3.5 percent. Between 1990 and 2021 Germany's GHG emissions (land use, land-use change and forestry emissions, LULUCF, excluded) decreased by 38.7 percent from 1,242 to 763 million tons of CO₂ equivalents, an average annual decrease of 1.2 percent. In 2021 GHG emissions increased by 4.5 percent compared to 2020. This was mainly due to the restart of regular economic activities after the restrictions during the peaks of the pandemic. One sector with almost continuously increasing emissions is, however, the transport sector, which is also one of the main problem areas of Germany's supposed transition. The GHG emissions from transport decreased in 2020 because of the Covid policies, but in 2021 and 2022 they continued to increase as before the pandemic. 88 percent of passenger traffic and 79 percent of freight transport were conveyed by road in 2019, relying on vehicles powered almost exclusively by oil (92 percent). As to the fuel mix for the total energy supply (electricity generation, heating, cooking and transport fuels) in 2021, fossil fuels had a share of almost 77 percent (31 percent oil, 27 percent fossil gas, 18 percent coal). The share of renewable energy was at 14 percent, nuclear power at 6 percent and others at 2 percent. While the share of coal and oil decreased over the past years, the share of fossil gas has continuously increased. With a share of 28 percent in power generation it is the biggest source of GHG emissions, second comes transport with 24 percent and industry with 22 percent, the buildings sector with 19 percent, the energy sector (own use) with 7 percent and agriculture with 1 percent. (Climate Transparency 2022a, 6). Looking at the use causing the GHG emissions across sectors reveals that 84 percent of the total GHG emissions are caused by energy. Adding indirect emissions to the sectors offers a different view. E.g., 14 percent of total energy-related CO₂ emissions are also caused by the buildings sector. (Climate Transparency 2022a; Evans 2021; Ipb 2021; Umweltbundesamt 2022).

In December 2021 a coalition government built by the Social Democratic Party (SPD), the Greens and the Liberals (FDP), led by Chancellor Olaf Scholz (SPD) took office and promised to make climate policies an absolute priority. The declared intentions did not last for long. Despite that the climate policies of the coalition government were considered insufficient by experts they were also contradicted by various government measures in support of fossil fuels.

In Germany there is no common term to refer to jobs in the transition. Green jobs, sustainable jobs and environmental jobs are terms used in part by media and on the labour market. Green jobs were present in policy documents a decade ago. Policy discourses and media refer mostly to jobs in specific sectors. Sustainable work is also rarely used in the public debate. However, in German academia, more than in any other country, there is an ongoing and growing debate and body of literature on sustainable work (Azzellini 2021; Azzellini, Brandl, and Matuschek 2023; Barth, Jochum, and Littig 2016; Diefenbacher et al. 2016; Jochum et al. 2019; 2020; Littig 2018; WSI-Mitteilungen 2019). The connection between work and

¹⁰ China ranked first with 30.9 percent and the USA ranked second with a share of 13.49 percent (Statista 2022).

sustainability has been a topic in German academia over the past two decades. Trade unions refer to just transition and good work, and urge that jobs in and for the transition have to be also good jobs. Social and environmental movements refer to just transition.

Labour market and employment

Germany's total employed labour force increased from 38,786 million in 2011 to 42.399 million in 2019 (and dropped to an estimated 41.859 million in 2020, however, the newest data available for single sector employment is from 2019). Employment fell in agriculture, hunting, and forestry during the same period from 637,800 to 510,500. In the industrial sector the labour force grew from 10.952 million to 11.525 million, due to an increase of 5 percent in manufacturing and of 10 percent in construction. In the service sector employment increased from 26.198 to 30.363 million. A drop in employment in the service sector happened only in financial and insurance activities (from 1.289 million in 2011 to 1.249 in 2019); in real estate activities (from 269,000 to 213,000) and slightly in employment in households and own-use activities. The biggest increase was registered in human health and social work (from 4.767 to 5.614 million); employment in professional, academic, and technical activities rose from 2.008 to 2.470 million; in education from 2.419 to 2.883; and in wholesale, retail trade, vehicle and motorcycle repairs, employment grew from 5.232 million to 5.780 million. A relevant increase took also place in transport and storage, from 1.835 million to 2.142 million. In the remaining sectors the increase of the labour force was more moderate: Public administration, defence, social security (from 2.745 to 2.907 million); accommodation and food service activities (from 1.473 to 1.586 million); information and communication (from 1.238 to 1.369 million), administration and support services (from 2.038 to 2.144 million) and art, entertainment and recreation (from 529,100 to 589,900). (OECD 2022j).

Public policies and measures

Germany has a long history of programs and laws related to climate, renewable energies, energy efficiency etc., especially since the 2000s. In 2008 the German government passed the German *Strategy for Adaptation to Climate Change* which still serves as political framework for the adaptation to climate change. It defines goals and possible measures, mainly regarding energy and resource efficiency, low-carbon technologies, renewable energies and some other topics. The climate strategy of the German government follows the Climate Protection Programme 2030 (CPP) passed in 2019 by the coalition government of SPD and CDU/CSU. Despite the clear orientations laid out in the CPP the SPD-CDU/CSU coalition government continued to prioritize fossil fuels, the car industry and highway construction. From the US\$6.75 bn spent by the German government in public finance for energy projects, 53 percent were for fossil fuels, almost exclusively gas. Several climate policy targets, considered by experts anyway as insufficient, were not met.

In June 2021 the government, forced by the Constitutional Court, passed a revised version of the Climate Law contained in the CPP. It sets a 2045 net zero target. CO₂ emissions are to be reduced by 65 percent until 2030 and GHG emissions by 88 percent until 2040.¹¹ The revised version includes annual maximum emission quantities for the sectors energy industry (no limit for 2021!), industry, buildings, traffic, agriculture and waste management and others. The permitted quantity is decreasing every year. The CPP introduced CO₂ pricing for heating and transport of €25 per ton of CO₂ starting 2021 and until 2025. Thereafter, the certificates are supposed to be part of an emissions trading scheme (ETS) and the price for the right to pollute is supposedly established by offer and demand. The CPP includes several measures to lower emissions in energy generation, industry, buildings, transport, agriculture and forestry, and waste management. Many of the measures aim at increasing energy efficiency of buildings, promoting electric vehicles and climate friendly heating systems through financial and tax incentives. However, the German government does not have a coordinating body for its climate strategy. The drawback becomes evident in the conflicts between Ministries about measures and laws to adopt and priorities to establish.

The Climate Law created an *Expert Council for Climate Issues* (ERK) in charge of examining the emission data presented by the Environmental Agency and prepare a risk report for the government. It has the authority to comment government assumptions on GHG emission reductions in follow up programs, and every two years the ERK publishes a report on the development of GHG emissions and if the German climate policies are apt to achieve the goals established by the Climate Protection Program. The authority of the ERK is far more limited than of the Committee on Climate Change in the UK. The CCC is also in charge of annual reports on the advances for the evaluation of the CO₂ budgets and for achieving the climate goals, while the ERK does not even have the authority to examine the Climate Protection Report of the German government.

In 2020 Germany passed a coal-exit law to phase out of coal-based power generation until maximum 2038, if possible, by 2035. Until 2027 the phase out is supposed to happen with tendering schemes and the main phase out is planned for 2028-209. The owners of lignite powered plants are paid €4.35 bn compensation. In return the companies abstain from any dismissals for redundancy and from presenting any legal demand against the government. The law does not follow several proposals of the “coal commission.” The commission was set up by the government to elaborate broadly supported recommendations. The commission members are representatives from parties and energy companies, science, environmental organizations and from some affected regions. Environmental organizations and former members of the coal commission criticized the law. The compensations for the energy companies are much too high and the phase out to slow. The Scholz government set a 2030 target for the coal power plants phase out.

The *Act on Structural Change in Coal Mining Areas* passed also in 2020 establishes a support of €40 bn until 2038 for a structural transition of the regions affected by the closure of coal power plants and coal mining, and to create new jobs. €14 bn serve to improve the

¹¹ The German government has been criticized by environmental organizations that emissions from international flights and international ship traffic are not included in its emission data.

railway network, digital connectivity, educational facilities, higher education and research, and to recultivate post-coal regions. The goal is to promote sectors linked to digitalization and green technology, and tourism. €26 bn are dedicated to projects in the affected regions, that support the creation of new jobs and a strengthening of the local and regional economic structures. The government also commits to the creation of 5,000 new jobs in the federal agencies and offices present in the affected regions. The law does not mention any other job creation targets. The quality of the jobs is not a specific topic beyond the occasional mention of “high-quality jobs.”

The emission targets set in the Climate Law for the sectors traffic and buildings were missed in 2021 and 2022, and the energy industry did not even have a target for 2021. According to the agreements of the coalition government in charge since December 2021 every Ministry has to take care of the emission reductions in the own resort and in case of not complying, acquire climate certificates from its own budget (which does in fact not happen). With rising energy prices and the fear of gas shortages because of the boycott of Russian gas purchases as reaction to Russia’s attack on Ukraine, Germany’s failed renewable energy policies became evident. The supposed climate government decided to reactivate coal-fired power plants that were supposed to go offline in 2022 and 2023 to phase out of coal, and allowed new lignite open pit mining destroying a forest and a town, against a strong resistance. A temporary tax reduction on petrol and diesel was enacted, commuter tax deduction was raised and the construction of LNG import infrastructure support and the expansion of gas imports and international gas investments decided. The green Minister of Economy, Robert Habeck, negotiated an agreement with the religious dictatorship Qatar to acquire liquid gas without limits for 15 years from 2026 on. Chancellor Olaf Scholz proposed to revise the decision to stop financing fossil fuel projects outside Germany. All these measures are strengthening Germany’s dependency from fossil fuels and contradict strongly the goals to phase out of fossil fuels, comply with the 1.5 °C target of the Paris Agreement, and achieve climate neutrality by 2045.

Green jobs or jobs for the transition

Considering the absence of a common term to refer to jobs for the social and ecological transition, we look at different relevant sectors. Some of the data overlaps. According to the Federal Office of Statistics about 311,000 workers had green jobs in 2020.¹² They are defined as jobs producing goods and services for the conservation of the environment. Compared to 2019 the increase was only 2 percent, much less than the annual almost 7 percent in prior years. 65.6 percent or 204,000 of the green jobs were in manufacturing, 8,800 less than in 2019. The job loss happened mainly in machine construction, where 68,500 of the supposedly green manufacturing jobs concentrate: 9,500 jobs were lost (see renewable energies). 59,000 or 19 percent of the green jobs were in the construction sector,

¹² It is the only document from German government agencies in several years that mentions the term green jobs.

and 46,900 or 15.1 percent in the service sector. Both showing a strong growth of respectively 27.7 percent and 23.2 percent compared to 2019. The green jobs in the service sector include, for example, project planning and development for renewable energy projects. (Statistisches Bundesamt 2022).

Organic farming is not included in the statistics. At the end of 2021 in Germany there were 36,000 organic farms (14 percent of all farms), with production on 1.8 million ha (10.9 percent of all arable land) (BMEL 2022). Still very distant from the 30 percent share of organic farming established as 2030 target. There is no data on employment in organic farming. In 2020 about 937,900 people worked full time or part time in agriculture, 434,400 were family members of the farm owners (only 33.7 percent were employed full time), some 228,900 were permanent employed (55.4 percent full time), and 274,700 were seasonal workers. Roughly 10 to 15 percent of the workers employed in agriculture could be employed in organic farming (mainly not full time).

The circularity rate in Germany in 2021, was only 12.7 percent (down from 12.9 percent in 2020). This is slightly higher than the EU-28 circularity rate in 2021 (11.7 percent, down from 12 percent in 2019). Considering that Germany's circularity rate was at 11.4 percent in 2010 (and that of the EU at 10.8) and the total material use has increased since then, it becomes obvious that discourse and policies regarding circular economy are far from reality (eurostat 2022). As to employment, according to the European Environment Agency the circular economy in Germany in 2020 employed 680,199 workers, 1.5 percent of total employment (EU average is at 1.7 percent) (ETC CE 2022). Following a study by business associations, the circular economy employed 310,470 workers in 2019. Only about 12 percent more than in 2010 (277,300). At the same time the gross value added grew more than 30 percent and the number of firms in the sector diminished from 11,600 to 10,700. The share of women in the circular economy in Germany is only at 17.4 percent. (TafelmitKollegen KG 2022).

RENEWABLE ENERGY

The share of renewable energies of the total gross electricity consumption in 2022 was 46 percent (up from 6.3 percent in 2000). The share of renewable energies of the total gross energy consumption (electricity, heat/cold and transport) in 2022 was only 20.4 percent (6.2 percent in 2004). The increase of the share of renewable energies of the total gross energy consumption is significantly slower because of the slow transition to renewable energies for heating /cooling and transport. The share of renewable energies in heating was 17.4 percent in 2022. The share of renewable energies in transport remained between 5 and 6 percent from 2008 to 2019, went up to 7.6 percent in 2020 and down again to 6.8 percent in 2021 (Umweltbundesamt 2023c; 2023a; 2023b). In 2021 88 percent of passenger transport (percent of passenger and km) was by road, 11 percent by rail, and 1 percent by airplane. Freight transport in 2021 (percent of tonne-km) was 79 percent by road and 21 percent by rail. (Climate Transparency 2022a)

The share of electricity generated with renewable energies in 2022 (according to the network load) was 48.3 percent. Wind energy alone had a share of 25.9 percent, solar energy of 11.4 percent, biomass of 8.2 percent, and hydropower and other renewables of 2.8 percent. Electric energy generation from renewable energy sources increased about 8.5 percent from

2021 to 2022. Onshore wind energy generation increased 12.4 percent, offshore wind energy 2,9 percent, solar power 18.7 percent. Compared to a total share of renewables of 42.7 percent in 2021 it seems to have grown considerably. But the share of renewables was already at 48 percent in 2020. Electricity generated from renewable energy fell 7.7 percent in 2021 while electricity generated from non-renewable energy increased 11 percent (from gas 1.7 percent, from lignite 5.4 percent and from coal 21.4 percent). This indicates that the growth of renewables in Germany is much too slow for an energy transition. The 2021 dip in renewable energies was due primarily to slow installation of wind turbines. There are multiple reasons for the decline, as the very restrictive policies on a regional level, lower prices for energy feed-ins, and the long and complex process to obtain permits for the installation of wind turbines. (Bundesnetzagentur 2022; IRENA and ILO 2021).

In 2021 the renewable energy sector in Germany employed 344,100 workers. The number of jobs declined since its peak in 2011 with 415,700 jobs to 309,000 jobs in 2019. On a long term, job losses happened mainly in the solar energy sector which had 156,700 workers in 2011 and dropped to 39,900 workers in 2017, and in the wind energy sector in which employment dropped in onshore wind energy from its peak of 137,900 jobs in 2016 to 95,200 jobs in 2019, and in the offshore wind energy where employment fell from 29,800 jobs in 2016 to 21,700 in 2021. Employment in the bioenergy sector remained relatively stable since 2006, employing 113,800 workers in 2021. Geothermal and solar thermal energy employment has been growing constantly reaching 35,900 jobs in 2021. Employment in hydropower was at 5,700 in 2021, the lowest number since 2002. (BMWK 2022)

To increase the share of renewable energies in Germany's energy mix faster, the prior and the current government have enacted a series of urgent programs and laws. In 2020 the *Offshore Wind Act* (WindSeeG) was amended raising the 2030 target by a third. Government agencies began to offer job training for offshore wind turbine installation. As to solar energy, a cap on the energy generated was eliminated otherwise feed-in tariffs would have had to be limited. In July 2022 the government passed the *Renewable Energy Act* (EEG). The EEG sets the 2030 target for the share of renewable energies at 80 percent of electricity consumption and simplified the approval procedure for the installation of solar panels. It also established to expand the power supply system, increase offshore wind turbines, assign more land for wind energy and simplify the approval process, promote green hydrogen power storage and power plants, increase support for private roof top solar panels, exempt wind and solar energy projects of citizen energy communities from open competitive bidding, and enable local governments' participation in wind energy projects. The quality of work and new jobs in the sector is not mentioned at all in the EEG. (IRENA and ILO 2021; Bundesregierung 2022a; 2022b).

One tendency that can be seen also in other countries is that the current transition is creating mainly jobs for male workers. The percentage of women working in renewable energies in Germany is very low. In the solar energy industry, for example, it is only at 24 percent while the average in 90 companies investigated worldwide was 35 percent (IRENA 2017, 15).

Parties, trade unions and environmental organizations

PARTIES

Germany is governed by a coalition of the SPD (25.7 percent in the 2021 general elections, 20.5 in 2017), who puts also the chancellor Olaf Scholz; the Greens (14.8 percent in 2021, 8.9 in 2017); and the FDP (11.5 percent in 2021, 10.7 in 2017). The SPD climate policies are reflected in past and current government policies. It has always been easier for the SPD to agree to the lax and industry-friendly CDU/CSU climate policies than to support stricter policies. The FDP represents mainly the interests of businesses and of a well-situated bourgeoisie. It rejects stricter climate policies in many areas. The FDP controls the Ministry of traffic which is the Ministry that less has contributed to emission reduction. Germany is the only country in Europe that does not have a speed limit on its highways because the FDP opposes it. A speed limit would reduce accidents and GHG emissions significantly. The FDP also advocated for a continuation of nuclear energy, although Germany decided to phase out of it many years ago and there were only three nuclear power plants in use, that were shut down definitely in April 2023. The Greens have always mobilized with demands for stricter environmental policies. However, during the coalition negotiations, they gave up several positions. In government the Greens allowed agriculture in natural preserves, agreed to not to take off the grid coal power plants, continue open pit lignite mining and to subsidize fossil fuels.

The Christian Democrats from the party alliance CDU/CSU (24.1 percent in 2021, 33 in 2017) are less committed to far reaching climate policies than the SPD, but when in government, the differences tend to diminish. The basic orientations of Germany's climate policies were set by the CDU/CSU governments led by Angela Merkel, governing in a coalition with the SPD 2005–2009 and 2013–2021. The extreme right-wing AfD (Alternative for Germany, 10.3 percent in 2021, 12.6 percent in 2017) denies human made climate change and rejects climate policies. The leftist/socialist party Die Linke (4.9 percent in 2021, 9.2 in 2017) is the party with the most coherent climate policy proposals, close to many social movements and in line with the envisioned emission targets, just transition and sustainable work (although the term is not part of its discourse). However, where Die Linke is part of local or regional governments, it does not stick always to its declared policies.

TRADE UNIONS

Trade unions in Germany are organized in eight major unions according to branches and those are part of the national union confederation DGB. The DGB unions organize the overwhelming majority of union members in Germany. Officially they are unitarian and not politically oriented unions. Different political orientations can be found in all unions. Moreover, there are also diverging interests, for example between export oriented industrial trade unions and the service unions with the domestic market as reference. The DGB and all member unions supported the international union efforts to put just transition on the agenda of climate talks and demand a just transition. The term is widely present in union documents.

What is meant by just transition differs according to sectorial interests and political orientation. The North-South dimension of just transition is usually secondary, despite being present in the official discourse. The main union focus is on a socially just transition. The trade union discourse and demands are about good work according to the ILO criteria.

Regarding the interpretation of the ecologically just transition, the union IG Metall in the car industry is, for obvious reasons, very concerned regarding a socially just transition. Through the German works council system workers' representations should get access to company papers, have a representation in the company and in the directors' board, and can advance proposals as to labour processes and work organization. Through this system the IG Metall participates on a company level in debates and planning regarding the transition to electric vehicles and digitalization (industry 4.0). The focus of the IG Metall is entirely on electric vehicles, on how to provide necessary job training and upskilling for workers, and on agreements to avoid redundancies. Critical voices questioning the sustainability of a car-based individual mass mobility are present up to the IG Metall leadership. However, they remain a minority. On a local level, IG Metall sections have cooperated with Fridays For Future (FFF). The service union ver.di, especially its public transport section, has included demands and proposals for a faster and different ecological transformation of the transport sector. Ver.di has also coordinated protests with FFF several times during the pandemic. In early March 2023, while ver.di was striking in different sectors, ver.di public transport and FFF organized a common day of protest. Public transport workers went on a 24-hour strike in 200 cities and FFF and ver.di marched together for a socially just and sustainable transport policy including better work conditions in public transport, more personnel, affordable tickets, expansion of the railway network and a higher train frequency combined with higher salaries and good work conditions. In the railway sector there is also a second relevant union, the EVG, which limits its discourse mainly to wage increases and good work conditions. It does not position itself regarding political issues but demands often higher wage increases than ver.di and organizes effective and disruptive strikes.

Coalitions for a just transition do not exist in Germany, although the increasing cooperation between trade unions and FFF could be the base to develop a more formal just transition alliance in the future. In 2021, DGB, IG Metall, ver.di, several interest groups representing the socially disadvantaged (workers, veterans, disabled, retired etc.), the environmental organisations BUND and NABU, and the protestant church of Germany, built an alliance for a "socially responsible turn in transport policies." The alliance considers the ecological transformation of transport policies as urgent and elaborated a list of proposals. Unfortunately, the alliance has not really done anything else since then.

ENVIRONMENTAL MOVEMENTS AND ORGANIZATIONS

The *Climate Protection Programme 2030* passed in late 2019 had originally established to achieve climate neutrality by 2050. A group of young environmental activists and a farmer from a small island in the North Sea introduced a constitutional complaint, supported by one of Germany's biggest environmental NGOs Bund für Umwelt und Naturschutz Deutschland (BUND) and an NGO promoting solar energy. In April 2021 Germany's constitutional court ruled that parts of the Climate Law were not compatible with fundamental rights because high emission reduction burdens were shifted to the time after 2030. The judges argued that the

German Constitution protects the means of livelihood also out of responsibility for future generations. Global warming had to be limited well below two degrees and possibly even 1.5 degrees, in line with the Paris Climate Agreement. The reductions pushed by the program until after 2030 would then need to be so drastic, that all freedom is potentially affected by necessary restrictions. Two months later the German government passed the revised version of the law with higher targets to reach earlier.

Over the past years various movements formed demanding stricter climate policies and a quick phase out of fossil fuels. Beyond many local or regional movements against coal power plants, open pit mining, and megaprojects, there are some Germany-wide movements. Among the best known there are Fridays For Future (FFF), Ende Gelände (EG) and Last Generation (LG). Fridays For Future, the movement inspired by Greta Thunberg's school strike for climate, grew quickly in Germany. From 2019 on thousands of school students participated in FFF demonstrations all over Germany every Friday. After pausing the demonstrations during the peak of the pandemic, the demonstrations restarted and are still taking place in more than 250 cities. FFF asks for a 2030 net zero GHG emission target, coal phase out by 2030 and 100 percent renewable energy by 2035. In support of and inspired by FFF groups like Students For Future, Scientists for Future and others were founded.

Ende Gelände is a movement organizing mass civil disobedience and direct action against open pit mining and fossil fuels. EG has organized blockades and occupations of lignite open pit mining, mining machinery and railway tracks and roads to coal power plants with thousands of people. The movement is organized in open local groups all over Germany. The Interventionist Left, the biggest radical left organization in Germany, is also part of EG. FFF and EG have converged for protest marches and the occupation of lignite mining sites.

Last Generation is a network of local groups that fight against climate change with methods of civil disobedience and direct action. The group goes back to the "hunger strike of the last generation" by young activists in 2021 demanding from the government a commitment to stricter climate policies. The protests of LG are carried out by small groups. One strategy consists in protesters gluing themselves to the asphalt to block streets and highways. LG did that at least 276 times in 2022. The second type of action aims at maximum media attention and consists in throwing food or colour on artworks in museums, monuments and government buildings (making sure no artwork gets damaged). Among some other spectacular actions LG activists scarified the sidewalk in front of the German Ministry of Economy and laid out a symbolic pipeline to protest the agreements on huge gas imports from Qatar. In 2023 LG focused increasingly on rich people targeting private jets and expensive yachts.

FFF, EG and LG, they all see a climate emergency and the need to force an end of fossil fuels. They defend a radical just transition that includes the North-South dimension and social and ecological aspects, demanding that the costs of climate change are paid by the rich. Sustainable work is not a term used by these movements. Work in the socio-ecological transition is rarely present in their discourse, although FFF cooperates with trade unions.

Conclusions

The government coalition agreement includes a series of measures decisively accelerating climate policy implementation. The planned measures were supposed to achieve Germany's 2030 emission target to reduce GHG emissions by 65 percent below 1990 levels. Climate Action Tracker (CAT) rates Germany's overall climate targets, policies and finance as "Insufficient." Germany's climate policies and commitments need substantial improvements to be in line with the Paris Agreement's 1.5°C limit. Generally, GHG emissions would have to be reduced by at least 69 percent by 2030 and the government would have to increase significantly its financial support for other countries' climate policies to comply with the Paris Agreement. The implementation of all measures and policies announced, would reduce emissions only by 49 to 51 percent below the 1990 levels (CAT 2022b). CAT projections expect a higher electricity demand than in earlier projections, coal power plants were more in use than assumed, and COVID-19 had less of a negative impact on economy than assumed in prior calculations. Moreover, several of the coalition agreements on climate policies, were not implemented.

15 months after the coalition government assumed power, the Climate Law, the Climate Protection Programme and the coalition agreement as to climate policies, have been eroded and abolished regarding central issues. Fossil fuels and the car industry are highly subsidized. Highway construction is prioritized and has a bigger budget than railway construction although the coalition agreement established to prioritize railway construction. While the railway network has been shrinking constantly since the 1980s, the highway network is still expanding every year. The missing oil and gas imports from Russia due to sanctions, in combination with the total failure to increase the share of renewable energies substantially over the past decade, led Germany to subsidize fossil fuels even more and to increase the use of coal, gas and lignite for electric power generation.

The 2021 and 2022 emission targets in transport and buildings were missed by far. Emissions in transport are growing, and it is impossible to meet the sectoral target without immediate drastic measures. Instead of accelerating the transition in the transport sector and make the Ministry of Transport meet the targets, the government decided in March 2023 to eliminate sectoral emission targets. The plan to replace all oil and gas heating with climate friendly heating by 2045 was also cancelled. Moreover, the coalition decided to accelerate 144 in part highly controversial highway construction projects, declaring them of "outstanding public interest," which means that the environmental impact assessment can be skipped. CO2 pricing for heating and transport becomes the main instrument of the government to reduce emissions. The measure alone has not been effective in other countries and increases social inequality because the wealthy and the rich can afford to pay the additional costs.

It should not surprise that the transformation of transport shows little results in Germany. The car industry is Germany's key industry and an important factor for Germany's export-oriented economy. The car industry has "currently about 800,000 employees including the components suppliers (Conti, ZF, Bosch etc.), with an annual turnover of €500 billion and profits of €30 billion only for the »big three« (VW, Mercedes, BMW)" (Krull 2023). All German governments of the past decades have held talks with the car industry before important economic decisions were made. During the coalition negotiations for the current government

the head of the FDP was in constant exchange with Oliver Blume, Chairman of the Volkswagen Group Board of Management and Chairman of the Executive Board of Porsche.

The quality of jobs is not a topic in any of the climate laws and programs. The deregulation and devaluation of work over the past decades has deeply eroded German labour rights, work conditions, quality and duration of work contracts, unionization rates and bargaining power. The quality of jobs in and for the ecological transition cannot be downgraded to an issue to be resolved on the company level like it is happening in many industries. This will increase precarization and the inequality between core employees and other workers with many different types of contractual relations. Workers of smaller and mid-sized companies are exposed to far bigger pressure to agree to a devaluation of work. Finally, the transformation of work needs also intersectoral planning. The government policies for regions affected by the coal phase out do not mention the quality of future of work, do not include any binding declarations about the quality of work, and do not set any concrete targets regarding employment.

No German government tackles the climate emergency seriously. There will be no coherent and sufficient climate policies in Germany if they are left at the mercy of governments and industry. Germany has broad movements for stricter climate targets and a quicker social and ecological transformation. Trade unions are aware of the urgency and there are cooperations with environmental and other movements. This is important and necessary considering that neither the trade unions nor the other movements have enough leverage alone to force the needed drastic measures. For that the unions have to make just transition also a topic of their strikes and negotiations as a holistic issue and not just on the company level.

4. Spain

The Mediterranean is experiencing temperature increases 20 percent faster than the global average. In comparison to pre-industrial eras, the temperature has already risen by an average of 1.5°C. Without further measures to prevent global warming, the rise is projected to be 2.2°C by 2040. Within the Mediterranean, Spain has the highest risk of serious desertification (over a third of its territory). In addition, extreme weather events and a sea level rise of the Mediterranean of up to one meter by 2100 will impact the country (Planelles 2019). Nevertheless, climate change played a minor role in Spanish media, until alarming reports from Spanish climate researchers gained more attention in 2018. Since then, reporting on environmental problems and climate change has increased steadily.

Spain had 47.327 million inhabitants in 2021. Over the past 7 years it experienced almost zero population growth. The GDP per capita in 2021 was US\$ 40,775. Spain was hit hard by the 2008-2011 crisis and economic growth recovered only from 2014 on. From 2014 to 2019 annual growth of real GDP was between 1.4 and 3.8 percent. During the first year of the pandemic, it fell 11.3 percent, and in 2021 it increased again 5.5 percent. Household income dropped in 2011 by 1.4 percent, in 2012 6.6 percent, and in 2013 by 1.3 percent. Despite an increase after 2014, it has not recovered to its previous levels. The largest share of value added in 2021 with 21.6 percent came from trade, repairs, transport, accommodation, food services, followed by public administration, defence, education, health, social work with 20 percent, industry including energy with 16.9 percent, and real estate with 12 percent. (OECD 2022g).

With 20 percent of its population over 65 years of age and only 14.1 percent of 0-14-year-olds, Spain has an older population than most EU countries. The age structure and stagnation of population growth are caused largely by the economic migration of young people because of the poor labour market situation. (OECD 2022o).

Spain has ground to make up to achieve a socially and ecologically sustainable transformation and meet international obligations: “In 2017, Spain's greenhouse gas emissions increased by 7.4 percent, and data on waste management and recycling are likewise negative” (Martín and Sánchez 2018, 90). In debates and institutional documents on employment and climate change the main term used for work in the transition is *empleo verde* (green jobs). Sometimes it is roughly differentiated between employment in the core sector, and direct or indirect green employment. Regarding to the transition from fossil fuels and nuclear energy to renewable energies, actors speak explicitly of a just transition (*transición justa*). Actors from trade unions, environmental movements, and academia also address questions related to quality, social security, and the sustainability of work, and even of a transformation of the working society.

The governments led by social democratic President Pedro Sánchez since 2018 have formulated a wide range of national plans and policies. They explicitly mention sustainable employment. The coalition of the PSOE and the leftist electoral alliance Unidas Podemos, in power since January 2020, boasts that, after a decade of political disorientation, it is working to “present a strategic framework for energy and climate policy that establishes a foundation for a path to decarbonise our society by the middle of the century in a cost-efficient manner,

and with solidarity” (Carles 2019, 188). The Autonomous Community of the Basque Country (CAPV)¹³ and Catalonia formulate and implement specific regional climate policies.

Labour market and employment

Spain's unemployment rate is among the highest in Europe (15.6 percent), and youth unemployment (15-to-24-year-old) in 2021 was even at 38.3 percent. The highest peak in recent years was in 2013, with an unemployment rate of 26.2 percent, and youth unemployment at 55.5 percent. The total employed labour force increased from 18.421 million in 2011 to 19.202 million in 2020. Employment in agriculture, hunting, and forestry is stagnant (755,300 vs. 765,400). The industrial sector registered a slight decrease from 4.008 million in 2011 to 3.942 million in 2020. Job losses in the industrial sector were almost entirely in construction. Employment in manufacturing, in contrast, increased. In the service sector employment increased from 13.657 to 14.495 million. The increase took place in human health and social work activities (from 1.463 to 1.769 million); education (from 1.206 to 1.323 million); professional, scientific and technical activities (from 853,000 to 1,034,800), administrative and support service activities (from 914,700 to 1,002,700); transportation and storage (from 899,300 to 992,100); information and communication (from 533,300 to 613,000), real estate activities (from 96,300 to 151,900); and arts, entertainment, and recreation (from 325,200 to 374,500). A notable decrease of the labour force employed happened in public administration, defence, education, health, social work (from 1.453 to 1.356 million) and in households as employers and own-use activities (from 686,900 to 537,800). (OECD 2022o).

Public policies and measures

The most important framework of reference for public policies for adapting to climate change has been the *National Plan of Adaptation to Climate Change* (PNACC) (OECC 2006), first enacted in 2006. In 2018 a new PNACC followed. In September of 2020, the Spanish government passed PNACC 2021-2030, known as PNCACC II (MITECO 2020b). It formulates 81 action areas, intended to create a “more secure and less vulnerable economy and society”. These areas include, among other things, health, coastal regions, water management, the construction industry, general industry, energy, forestry, biodiversity, fighting desertification, and tourism. It will be necessary to enact many new laws, and reform existing laws, in order to implement the plan. No timeline has been provided for this. The Ministry for the Ecological Transition (MITECO) is responsible for the implementation. In addition, it suggests that the concrete consequences of climate change in different sectors be evaluated, and that the action areas be updated at least every five years.

¹³ The CAPV consists of the three Basque provinces of Gipuzkoa, Biskaya and Álava.

The plan states it “promotes a transformation in the production, energy, and consumption model, focused on strengthening inter-relationships between industry and companies, creating good jobs, reducing inequality, increasing the value of rural development, creating more sustainable and safer cities, and protecting biodiversity, environmental capital, and our health” (MITECO 2020b, 12). The goals include countermeasures against job losses because of climate change, creating new employment and job training (MITECO 2020b, 62). The plan discusses briefly the impacts of climate change on employee health and the need to develop preventative measures. It refers to the government declaration on the climate and environmental emergency of 21 January 2020, which already included a pledge by the government to “advance, support, and enable” the transformation of the industrial model and service sector, “giving preference to sustainable economic activity and focusing on the quality of employment”. This should be completed via just transition agreements (Gobierno de España 2020).

In 2020 the government enacted the National integrated climate and energy plan 2021-2030 (PNIEC 2021-2030) with the following goals for 2030: (a) reducing greenhouse gas emissions by 23 percent, (b) 42 percent share of renewable energy in total energy consumption; (c) 39.5 percent improvement in energy efficiency; and (d) 74 percent share renewable energy in the generation of electrical energy (MITECO 2020a, 11). The PNIEC 2021-2030 is also expressly presented as a plan for creating jobs. The measures would create 242,000 to 348,000 new “high-quality jobs” annually by 2030 compared to a scenario without the plan. The new jobs would stem primarily from investment in the industrial sector, linked to improvements in efficiency (especially through energy efficient modernization of buildings), innovation, renewable energy (this should contribute an annual net growth of 107,000 to 135,000 jobs), as well as in services, and through the effects of the changing energy model starting in 2025. The plan predicts the highest growth in employment in the service sector (175,000 to 228,000). This is followed by the manufacturing industry with 38,000 to 61,000 jobs annually, especially in the decarbonisation sector, in which Spain plans to play a leading role. The construction industry falls into the third spot (33,000 to 48,000). The only sector with a net loss in jobs is mining. An increase of approx. 7,500 jobs is even predicted in the primary sector. (MITECO 2020b).

In May 2021 the Government passed the “Law on climate change and the energy transition”, to implement a range of specifications from the PNIEC 2021-2030 (Gobierno de España 2021). It is the first law in the world to require that new just transition strategies be resolved and approved every five years, in order to continuously optimise results on employment and social consequences of the transition (MITECO 2020e). Critics do emphasise some positive aspects of the law: “a) The clear signals it sends to economic and legal actors. b) The obligation to provide financial resources. c) The definition of funding measures in the renewable energy sector. d) The support for decarbonisation with just transition measures. e) The inclusion of financial impacts on the risks associated with climate change. f) The draft governance model” (Pallares Serrano 2020, 2). However, these stand in contrast to significant deficits. The goals to reduce greenhouse gas emissions by 2030 are the same as in the PNIEC, which in themselves do not even meet the new EU target. In 2020 the EU increased its target for 2030 to a reduction of 55 percent. Regulation of waste management is not addressed, no taxation system for greenhouse gas emissions is established, and no tax reform is undertaken to promote decarbonisation, with respect to motor vehicles or homes

(Pallares Serrano 2020). Sustainable, good or decent work and employment is not addressed at all, although its first paragraph defines the “implementation of a model of sustainable development that generates decent employment” as a goal (Gobierno de España 2021, 17).

The state vocational training institution Fundae is one of the country’s key tools for influencing vocational training for employees. A closer look to the last available figures reveals several problems. Of a total of 2,535,038 employees (13.8 percent of the total workforce) that took part in professional training measures in 2016, only 2.5 percent went through training in “green skills.” Although this was double the figure for 2009, since then the average length of training measures has been cut from 33.9 to 16.9 hours. There is also a gender imbalance. 77 percent of the participants in green skills training programmes were men (Cedefop 2018b). The low level of just four percent of employees from the construction industry stands in stark contrast to the fact that the construction industry is the largest source of waste, and the largest consumer of raw materials.

The circular economy employs two percent of the employed labour force (with the highest peak in the Basque Country with 2.08 percent). This is above the EU average and more than in Germany (1.71 percent), but still very low. (Administración de la CAPV and DMAPTV 2019). Spain’s circularity rate in 2021 was 8 percent. In 2010 it was at 10.4 percent, but dropped in subsequent years under conservative governments (eurostat 2022). In June of 2020, the Spanish government announced a circular economy strategy to be enacted by all relevant ministries. The document establishes waste reduction targets for 2030. addresses different sectors, and specifically the extremely disproportionate use/waste of raw materials and generation of waste in the construction industry, compared to the number of jobs in that sector. It emphasises the need to adapt training to the new requirements –above all in the industrial sector, generating 17.7 percent of GDP and 14 percent of employment– to maintain a competitive position (MITECO 2020e). No specific figures or targets for employment are included, nor is the quality of work addressed.

The government of the Basque Country enacted its own policies against climate change. Although they are still not sufficient in light of the challenges, the climate policy in the Basque region still goes further than that of Spain as a whole. The former industrial and heavy industry sector is investing more in conversion, and engaging in better planning. In January of 2020 the Basque Country enacted its 2030 Circular Economy Strategy with the objective of creating over 3,000 new jobs in the circular economy. Thus far, there are 18,463 jobs in activities associated with the circular economy (Administración de la CAPV and DMAPTV 2019). It discusses sustainability in depth, however not explicitly in relationship to work. Nevertheless, it does state that the jobs should be good quality and anchored in the region.

The government of Catalonia also enacts its own policies against climate change since 2008. They include the advancement of electro-mobility and the development and production of electric vehicles, the production and use of bio-fuels, the promotion of efficient traffic management technologies, the optimisation of infrastructure, an increase in building energy efficiency, and the promotion of buildings able to autonomously cover their energy needs. The Catalan strategy for adaptation to climate change (ESCACC) for 2013-2020 contains 30 measures for adapting to climate change, including a programme to increase building energy efficiency. In 2017, the Catalan government enacted a law on climate change, to promote

the transition to a zero GHG emissions model, and to supposedly transform the production model and access to natural and energy resources. The goal is to reduce dependency on external energy resources, and promote decarbonisation and denuclearisation. This should be done through establishing a government round table, with the participation of select representatives from different societal actors, such as trade unions, neighbourhood organisations, trade associations, research and science, and environmental associations (PGC 2017).

JUST TRANSITION STRATEGY

The heart of the just transition strategy (MITECO and ITJ 2020) are the just transition conventions (*Convenios de Transición Justa*). Their primary objective is to maintain jobs and create new jobs in regions affected by the closure of coal-fired and nuclear power plants. They do so through an analysis of the situation by those affected and the different economic and social actors in these areas, alongside institutions, in order to develop potential solutions. The strategy is modelled after ILO directives and indicates it is based on endogenous economic, social, and ecological resources, and should lead to investments that will result in ecologically, economically, and socially sustainable improvements (MITECO 2020f). A newly founded Institute for Just Transition, adjunctive to the MITECO, is tasked with developing, coordinating, and implementing the convention.

Representatives of the union CCOO (Comisiones Obreras) and the union UGT (Unión General de Trabajadores), which is close to the PSOE, were involved in developing the just transition strategy. Which includes the primary requirements and suggestions formulated by the CCOO in advance (CCOO 2018). The different affected parties stated they were very satisfied with the conventions already concluded on the national and regional level as part of the strategy, as well as with the carbon plan (Plan de Carbón), the just transition for coal mining operations and mining regions, as well as the closure of power plants and the just transition conventions still negotiated on lower levels (Maschlanka 2020).

The just transition strategy focuses on “promoting training for employment in production sectors in the so-called green and circular economy, and promoting re-qualification for employees in sectors affected by or already engaged in reconversion” (MITECO and ITJ 2020, 38). It also establishes active employment policies and social security measures to achieve these goals. These include integrating the greening of the economy into employment programmes; integrating women by including gender perspectives in the measures; having labour bureaus increase coordination with regional institutions and social actors; developing specialised employment programmes for particularly hard-hit regions; developing training plans for the ecological transition or trainers; and promoting cooperatives and non-profit companies.

Green employment - Empleo verde

The most common term for jobs in the transition is *empleo verde*. As in other countries, various definitions of *green jobs* exist, as well as different methods for counting them. Male

workers dominate in all categories, and the dominance has increased in core employment over time (Heras, Ares, and Carcedo 2016, 20–21). Green jobs are also spoken of in public discourse as one potential solution for lowering high unemployment rates. Existing investigations, at least, do not confirm this outcome as of 2018.

The crisis beginning in 2008 and its policy consequences lay the foundation “for blocking or delaying *greening*” and not a lack of skills (Cedefop 2018b). Several investigations from 2006-2010 showed that green jobs in Spain had seen strong growth, although only 2.2 percent of total employment was in this sector in 2010. Based on estimates, there was the possibility of creating up to two million green jobs by 2020, if appropriate political measures were taken (Martín and Sánchez 2018). Depending on the counting method used, green jobs core employment during the second trimester of 2014 made up 2.3 percent of the total workforce, or 401,100 workers (OSE), or 2.1 percent, or 364,400 workers (EOI), or 7.7 percent, 1.274 million workers, employed in green jobs either directly or indirectly (GHK) (Heras, Ares, and Carcedo 2016).¹⁴ The percentage of core employment in green jobs in 2014 was around the same as that in 2010, while total employment in Spain dropped from 18.75 million in 2010 to 17.344 million in 2014 (OECD 2020b). The impacts of the crisis resulted in a wholesale destruction of jobs. Green jobs, which withstood the impacts of the crisis much better in other EU countries, were impacted by an above-average drop in Spain, due to the anti-ecological policies of the Rajoy government (December 2011 through June 2018) (Martín and Sánchez 2018). Spain was one of the three worst-performing countries in terms of employment in *eco-industries* (European Commission 2020).

Since Sánchez came into office, there seems to have been a fundamental change of course, albeit a still insufficient one. One particular feature is that governmental plans in Spain to create green jobs particularly emphasise rural regions. This is linked to the “National strategy to manage demographic challenges”, enacted in March of 2019 (MPTFP 2019), which is designed to counteract depopulation in rural regions. It includes “the promotion of renewable energy sources such as biomass or biogas, support of the bio-economic strategy to generate economic value by activating local markets for products and by-products, or revising the Spanish forest plan” (MITECO and SEEG 2019, 34).

After six years of falling employment in the renewable energy sector, levels stabilised again starting in 2015. However, with 76,150 workers, the sector had only half of 144,300 workers it had in 2008. With 34,400 workers, most jobs were in biomass (IRENA 2017, 17). Despite another increase following 2015, employment in renewable energy technologies remained well below levels in 2008. By 2020 the total number of renewable energy employment was 89,200 (IRENA 2020b). The very low percentage of women working in renewable energies in Spain is also notable, just 26 percent in the solar energy industry while it was, on average, 35 percent in 90 companies investigated worldwide (IRENA 2017, 15).

¹⁴ EOI is the state university Escuela de Organización Industrial, the second is the methodology often used by governmental institutions and developed by the Observatorio de la Sostenibilidad en España (OSE) and Fundación Biodiversidad. The third is the methodology of the private company GHK Consulting.

Parties, trade unions and environmental associations

PARTIES

All significant parties were part of governments in recent years. The right-wing, conservative and neoliberal Partido Popular governed alone and in a coalition with the new neoliberal party Ciudadanos (citizens). The results of right-wing governments in terms of an ecologically sustainable transition and social policy are disastrous. Laws and support for an ecologically and socially sustainable transition were weakened or eliminated entirely, the crisis and governmental policies resulted in an above-average loss in green jobs compared to other European countries, while the environmental balance deteriorated drastically. Ecological transition and just transition were not even mentioned in the Ciudadanos election platform for 2019. Neither coal and nuclear plants nor fossil fuel-burning vehicles were mentioned in the PP election platform for 2019.

The positions of PSOE and Unidas Podemos are reflected in their governmental policies. The late 2019 coalition agreement stated that “growth and creating and consolidating good-quality work” is a key goal; to do so, sustainable employment should be promoted and an active social and labour policy should be implemented that “guarantees dignified, stable, and high-quality work and just pensions”, with the goal of “making the ecological transition a reality, and laying the foundation for sustainable and inclusive growth” (PSOE and UP 2019, 3). It also established goals for renewable energy, the closure of coal-fired and nuclear power plants, and to develop just transition strategies for impacted regions. While several of these suggestions have already been implemented, the quality and sustainability of work has received little or no attention.

TRADE UNIONS

Only 13.7 percent of workers in Spain are organised in trade unions. Since 2015 membership numbers are increasing once again, especially in the CCOO, which continues to advocate for a socialist society as the most class-oriented trade union. The CCOO had around 935,000 members in 2018 (14,000 more than in 2017), and represented 35.7 percent of elected company trade union delegates. The UGT followed with 32.6 percent of delegates and slightly more members (941,000, or 2,000 more than in 2017). Trade unions can only take part in collective bargaining negotiations if they make up at least ten percent of delegates in the whole country or at least 15 percent of delegates in a region. On a nation-state-level, only the CCOO and UGT fulfil the criteria. On a regional level only the Basque unions ELA (Eusko Langileen Alkartasuna) and LAB (Langile Abertzaleen Batzordeak) achieve to gain more than 15 percent of the regional delegates. ELA is a non-party-bound, Basque national “class union”, and was the largest union in the CAPV in 2017, making up 40.44 percent of delegates, while in Navarra it was the third largest with 22.74 percent. LAB, close to the Basque leftist nationalist movement, was the second largest union in the CAPV in 2017 with 19.1 percent of delegates, and the fourth largest in Navarra with around 17 percent of delegates (Peña González, Bermúdez-Figueroa, and Roca 2021; Vicente 2019).

The CCOO, UGT, ELA and LAB declare their support for a just transition and an ecological transformation. The degree of mobilisation and willingness to engage in labour disputes are relatively high in the CCOO, ELA, and LAB. In addition, there are numerous other trade unions in a radical left-wing spectrum, with tens of thousands of members and strong regional or local importance. The ELA and LAB, above all, primarily focus on labour disputes and confrontation alongside smaller trade unions. The CCOO, in contrast to the UGT, promotes greater state intervention, requirements for companies, stricter laws to protect workers, and a higher level of national investment (CCOO 2018). Unai Sordo, General Secretary of the CCOO, stated that the debate on ecological transition is a difficult topic in trade unions, therefore the transition must be fostered through social support policies. The ecological transition is a necessity, and it is only feasible if employees play a part in it (Sordo 2019).

ENVIRONMENTAL ASSOCIATIONS

Ecologistas en Acción, *Greenpeace* and *Oxfam Intermón* submitted a joint complaint against the government to the Supreme Court of Spain in December of 2020 due to “a lack of activity against climate change”. Spain is the EU country with the largest increase in GHG emissions between 1990 and 2017. The increase was 17.9 percent, or 51.7 million tons. The government's goal of a 23 percent reduction until 2030 is far below the EU target of 55 percent, which is itself insufficient. Since a succession of governments has failed to meet its international obligations for fighting climate change, the complaint asserts that the Supreme Court should obligate it to enact a new integrated national energy and climate plan containing a reduction in greenhouse gas emissions by 2030 of at least 55 percent, compared to 1990 levels (Público & efe 2020). A second joint complaint was submitted to the Supreme Court in 2021 against the PNIEC for not being sufficient to achieve the 55 percent emission reduction by 2030. Both were admitted and the Supreme Court was supposed to rule in July 2022, however it avoided an immediate decision putting together both cases.

The main actor among environmental organizations is *Ecologistas en Acción*, an alliance of over 300 more radical and democratic environmental groups. The alliance criticises that the PNIEC establishes only one sector (fossil fuels and nuclear energy) where an ecologically sustainable transition would result in job losses. The environmental alliance considers this is entirely impossible, if emissions are to actually be reduced. This is the result of a study conducted by the alliance that presents three different scenarios for measures, impacts, and climate consequences for Spain: (a) Green New Deal (GND); (b) Degrowth strategy and; (c) Business as usual.

Sustainable work, defined as ecological and social transformation of the work-oriented society, plays a central role in the report. A foundational chapter following the introduction is dedicated to this issue, and the overview focuses on the necessity for an expanded definition of work. Two fundamental problems are outlined: Invisible, unpaid reproductive labour must be included in the assessment. In order to reflect on a just division of societal activity in a scenario of ecological and social transformation, it is important to think about work based on the hours dedicated to productive and reproductive work, and establish all work required to maintain society on equal footing. On the other hand, employment plays a key role in the social and economic organisation of the capitalist system, which inevitably causes ecosystem

destruction. Therefore, an eco-social transformation must inevitably establish a horizon for overcoming capitalism. (Ecologistas en acción 2019a).

In summary, the investigation states that the GND scenario does go in the right direction, but not far enough, and it is not very compatible with a vision of global climate justice. The degrowth scenario, in contrast, would both achieve the necessary reduction in emissions and represent a just transition in a global context. However, it would require a very disruptive revolution in the structure of production, linked to a major re-orientation in the primary sector and ruralisation, although secondary and tertiary sectors would continue to make up the majority. The GND production strategy tends to be compatible with the current Sánchez government policy, although with a greater emphasis on the areas of energy, the welfare state, and new technologies. However, it indicates that presenting a GND founded primarily on solar energy, electric vehicles, and sustainable consumption would simply not be feasible. If a GND is to be sustainable, it would have to also question motor vehicles, air travel, and meat consumption. With respect to employment, the study states that the GND does have considerable potential to expand employment, while a degrowth strategy would result in a significant loss of jobs, unless the labour market underwent a wholesale transformation. Ultimately, both strategies would be confronted by restrictions and resistance, these would be greater in the case of the degrowth strategy. At the same time, the latter would open up the opportunity to develop non-capitalist societies (Ecologistas en acción 2019a, 51).

Greenpeace Spain also regularly issues analyses, declarations, and engages in actions to a lesser extent. The organisation generates a high level of media attention, and takes moderate positions. Greenpeace Spain praises the GND as a solution for the climate catastrophe – although it does call for a GND that's more consistent in some areas. Further demands, even within the framework of a GND, are called “difficult to implement” or infeasible. For example, Greenpeace Spain states that the electoral proposal of Unidas Podemos, to promote sustainable passenger transport by allowing under-26-year-olds to use public transportation free of charge (funded by the public) is not feasible (Greenpeace España and Cantero 2019). According to Greenpeace Spain an ecological transformation represents an opportunity to create dignified and sustainable employment. Spain could create 550,000 jobs annually in the coming decade through such a transformation. Greenpeace itself refers to the suggestion as a GND, “with the goal of resolving any conflicts between employment and carbon dioxide emissions, suggesting that we should have reasonable growth cycles, with new green and sustainable models to generate employment that are emission-neutral”. To achieve this, Greenpeace suggests creating up to three million jobs through the transition to 100 percent renewable energy in the next 15 years (Greenpeace España 2020a, 16).

Building a Just Transition: Alliances between trade unions and environmental movements

There is no official Just Transition Alliance in Spain. Nevertheless, there is a cooperation between unions and leftist ecologist organization. Based on a historical and strategic analysis, Ecologistas en Acción has the widest-ranging discourse and set of practices related to an alliance between unions and environmental movements among any of the large environmental organizations. In an investigation on the climate emergency and labour with respect to a just transition, which was conducted with the involvement of union representatives, it emphasises that building unions and the establishment of a worker-focused perspective have made it possible to organise a struggle that links urban sectors and workplaces, and that still functions as the foundation of many current movements. The trade unions, it states, are now at the heart of the storm of ecological transformation, yet their dual role as parties affected by and at the same time as the solution to this conflagration of issues indicates the complexity of the challenge (Ecologistas en acción 2019b, 4).

Conclusions

The wide-ranging measures adopted by the Sanchez government will not be sufficient to decisively reduce the impacts of climate change. Despite that, we can no longer speak of continuous national policies. Public investments have reached record levels, and social expenditures have also been increased sharply to 59.9 percent of the total budget. €11.787 billion of the €27 billion from the EU coronavirus aid package are earmarked for a “green reconstruction”, mainly including comprehensive investment in renewable energy, energy efficiency, sustainable mobility, and just transition (Greenpeace España 2020b). The coalition’s programmes, plans, and initiatives on ecological and social transition are some of the most comprehensive in Europe. Some initiatives are interesting and innovative, as are the just transition conventions. Which plans will actually be implemented in Spain is yet to be seen since, as Alvarez Barba has noted: “Calculating and suggesting options for transforming work and society and drafting scenarios is simple. Setting them in motion is something very different. All scenarios for true transformation require a frontal assault on large, established economic powers and dominant industries like oil and energy, and it does not seem like they are going to give up without a fight” (2020). And so, public funds continue to be spent on contaminating industries and forms of energy, without being linked to any environmental requirements (Greenpeace España 2020b).

The PNIEC 2021-2030 establishes, that new just transition strategies must be resolved and approved every five years. However, how to ensure that this will not result in worse framework policies and statutory regulations, should political majorities or interests change, is not addressed.

All programmes and governmental declarations do repeatedly emphasise that the new jobs need to be ecologically, economically, and socially sustainable, and that the focus should be on high-quality, long-term work. But there are few concrete details on how to ensure good-

quality work, and how to avoid new employment in green jobs from primarily being lower qualified and worse quality, non-socially sustainable, and more often precarious. This applies to all sectors, and above all to the service sector and construction industry, as well as agriculture. In order to avoid the current trends towards precarious work and exploitation in the construction industry, it is important to take a wide range of measures at the same time, including implementing new legal regulations and controls, implementing fixed employment contracts in the construction industry, placing higher demands on the quality and solvency of construction companies, in order to avoid illegal employment, feigned self-employment, and sudden bankruptcies and insolvencies in the building sector. Likewise, new and higher requirements are needed for employee qualification and competency, as well as for the sustainability of the materials used (Escanciano 2020, 52).

The situation is similar in agriculture, albeit on a smaller scale. New jobs and the conversion to ecological agriculture will require a large number of qualified professions and training on water and soil management, using (adapted) technologies to increase yield while eliminating pesticides and insecticides as well as chemical fertilisers, etc. At the same time, exploitation and illegal and precarious employment, mainly impacting migrant workers, must be prevented here as well in a proactive manner. Likewise, there must be a focus on creating high-quality work in agriculture, while at the same time guaranteeing access to healthy and eco-friendly food for the entire population. EU-wide regulations will be needed to achieve these goals (Martínez García 2020). Last but not least, the measures must be accompanied, especially in the construction industry and agricultural sector (as well as in hotel and guest services) by measures that protect illegally employed migrants against deportation, in order to make exploitation more difficult and make such illegal employment easier to discover.

There is a social debate on sustainable work in Spain, as well as on the transformation of work, and there are social actors that advance the issue. Quality, social security, and the sustainability of work play a key role in governmental programmes and comprehensive critiques of those programmes.

5. Norway

As part of Scandinavia, Norway is heavily impacted by climate change. This is particularly evident in the country's increasing average temperatures, and the shrinkage of glaciers which had been growing up until 1990 (Climate Change Post 2021a). The Norwegian government declares that it is undertaking a comprehensive transition to an ecologically sustainable society – and this is the way the country is presented internationally. In reality, the country's environmental balance sheet and ecological transition are highly ambivalent, and even well behind the already deficient European average in many aspects. Norway does cover almost 100 percent of its electricity needs with renewable energy (Irandoust 2018, 88), and with over 50 percent of new passenger cars registered being electric, Norway is a leader in this area – although their benefit for the environment is questionable. However, with a crude oil production of around 1.73 million barrels per day (2019), Norway is among the 10 largest crude oil exporters in the world. The country's prosperity is founded on fossil fuels, as is its own transition to renewable energy. Profits are invested in a national fund worth over 1.3 trillion US dollars. Crude oil and natural gas production, and investments in the national fund, are subject to ever-louder critiques. In 2015, the fund divested from coal for the first time, and in 2019 the parliament resolved to divest fully from coal. Almost at the same time the world climate accords were concluded, however, Norway permitted new oil drilling in the Arctic Barents Sea in 2016 for the first time in two decades. In 2019, the government announced that it would be selling oil shares valued at 7.5 billion, but retained its investments in multinational oil corporations (Der Spiegel 2020; Heymanns 2019; Theurer 2019).

In 2021, Norway had 5.408 million inhabitants. With 18.1 percent of its population over 65, the percentage of older inhabitants is relatively low compared to other European countries, and the share of children and young people relatively higher. GDP per capita was US\$ 79,136 in 2021, by far the highest of all countries studied. The GDP is heavily linked to the fluctuations in the price of oil and gas. This does have a direct impact on available household income, but less of an effect on economic growth, which was low to moderate, from 0.7 to 2.3 percent between 2014 and 2019, decreased 0.7 percent in 2020 and grew again 3.9 percent in 2021. By far the largest share of real value added is generated by industry, including energy, which in 2020 made up 33.6 percent, and likewise fluctuated between 22.6 and 32.1 percent from 2014 to 2020. Public administration, defence, education, health and social work followed at 22.1 percent, then trade, repair, transport and hotel and hospitality at 12.2 percent (OECD 2022e).

The public has become more aware of the issue of sustainable employment only in the last few years. Sustainable employment is not discussed in governmental documents. The public debate speaks of “climate jobs”, if it focuses at all on this issue. The discussion surrounding sustainable employment is found primarily in environmental movements, trade unions, and in the church, which have joined forces in a campaign calling for “100,000 climate jobs”.

Labour market and employment

The unemployment rate in Norway is at 4.5 percent (2020) and fluctuates only slightly (2011–2019 between 3.2 and 4.8 percent). In comparison, youth unemployment is relatively high at 11.3 percent in 2020, and has remained consistently between 8.5 and 11.3 for more than a decade. The total employed labour force grew from 2.535 million in 2011 to 2.702 million in 2020. An increase of employment took place in the industrial sector (from 513,000 to 524,900) and in the service sector (from 1.963 million to 2.12 million). Employment development in the industrial sector did have some specific peculiarities. In the construction industry it increased by almost 20 percent, from 189,900 in 2011 to 225,500 in 2020, while employment in the manufacturing industry dropped from 238,400 to 207,500. Between 2011 and 2020 employment grew in almost all service sub-sectors, except for transportation and storage, which saw a significant drop (from 144,200 to 127,600). Two of the biggest subsectors showed little variation: Human health and social work, which has many more employees compared to the total population than in other countries (from 547,900 to 565,600) and wholesale, retail trade, vehicle and motorcycle repairs (from 349,200 to 349,400). A significant increase of the employment happened in administration and support services (from 91,900 to 121,300); in accommodation and food service activities (from 66,900 to 85,200); in professional, scientific, and technical activities (from 134,200 to 162,500); in public administration, defence, and social security (from 145,200 to 164,400); and in education (from 211,500 to 229,600). This was followed by arts, entertainment, and recreation (from 50,900 to 66,100) and the information and communication sector (from 95,900 to 110,100). All in all, there was very little shift between employment in industry and in services. (OECD 2022).

Public policies and measures

The basic framework for Norway's climate policy was set forth between 2008 and 2012 by a variety of resolutions from coalition governments, led by social democrat Jens Stoltenberg (with the socialist left party and ecologically-focused rural Senterpartiet, 2005-2009 and 2009-2013). All parties represented in the parliament, the Storting, at the time voted in favour apart from the populist right wing Progress Party. Norway committed to reducing greenhouse gas emissions by 30 percent by 2020, compared to 1990 levels, and to be CO₂ neutral by 2050 (Ministry of Climate and Environment 2014).

In 2017, parliament passed the *Climate Change Act* (CCA). At that time, the government was led by a coalition of three conservative and economically liberal parties that had been in power since 2013. Once again, all parties except for the Progress Party agreed to the CCA. The CCA was designed to implement previously defined climate targets, and promote transparency and a public debate regarding the status, focus, and progress of implementation (Ministry of Climate and Environment 2018). The resolution from 2015 to compensate for Norwegian greenhouse gas emissions through climate protection measures in other countries, via the EU quota market, international collaboration on emissions reductions, quota trading, and project-based collaboration by 2030 was included. The actual emissions level was to be reduced by 80 to 95 percent by 2050 compared to 1990 levels,

then net zero emissions were to be achieved through other mechanisms. Five primary areas were outlined for reducing emissions: Transportation, strengthening Norway's position as a supplier of renewable energy, developing low-emissions technology industries and clean production technology, environmentally-friendly shipping, and environmentally-friendly CO2 management. Norway gives greater meaning to the public sector than other countries and favours investments in innovations in public-private partnerships (Stortinget 2018). Norway also has the highest rate of public ownership of all OECD states. The Norwegian state and local administrations are heavily involved in transportation, postal services, energy, telecommunication, and industry. In addition, decarbonisation of the transport system was defined as a goal in the *National Transportation Plan 2018-2029*, through extensive investment in and expansion of public passenger transit (CAT 2020). The government's climate policies do not include any employment policies or targeted measures to create "climate jobs", nor any specific discourse on ensuring the quality of employment or sustainable work.

With 44.3 tons of material consumed per person per year, Norway has one of the world's highest rates of consumption. The circularity rate is just 2.4 percent. More than 97 percent of materials that are used are not recycled or otherwise returned to the economic cycle (Circle Economy und Circular Norway 2020a, 6). The figures show that, apart from a more pronounced circular economy, a drastic reduction in material consumption is also essential. No data is available on employment in the circular economy.

Climate Jobs

There is no specific information available on employment in "climate jobs," the most common term in official documents. Data is only available on certain sectors, such as renewable energy, along with occasional surveys in affected sectors. The last available survey (2013) counts a little over 37,000 employees in industries involving renewable energy and environmental technologies, of these about 10,000 in generating renewable energy (hydropower, bio-energy, wind power, solar energy, and others) (Gran et al. 2017, 26). Although everyone agrees that Norway has a high potential to create "climate jobs" due to its rich renewable resources, high level of technological expertise, and extensive financial means, there are neither reliable estimates nor targets set (except for the "100,000 climate jobs" campaign).

Norway covered 98 percent of its electricity needs using renewable energy sources in 2016 - 95 percent of this from hydropower, an increasing amount from wind power and a small percentage from thermal energy (Ministry of Petroleum and Energy 2016). Direct employment in the renewable energy sector is around 17,400 workers (2020). A comparison to the 51,900 employees in the gas and oil industry (2018, although steadily dropping since 2014), shows how many new jobs will be needed in order to move away from fossil fuels altogether. Many of these employees will need extensive re-training. Others, such as engineering firms in the oil industry, have already started to convert to renewable energy sector services (Circle Economy and Circular Norway 2020, 67).

Parties, trade unions and environmental associations

In Norway there is a controversial debate on employment and just transition. The environmental movement, trade unions, left-leaning organisations, and even the church take a clear stand. There are broad-based social alliances in support of a just transition.

PARTIES

Only the populist right-wing Fremskrittspartiet (Progress Party), which came fourth in the parliamentary elections in 2021 with 11.6 percent of the vote, rejects climate policies. The two largest parties, the social democratic Arbeiderpartiet (26.3 percent) and conservative Høyre (20.4 percent) agree on all climate decisions. Resolutions are also supported by the remaining smaller parties. The socialist Left party (7.6 percent) and the Greens (3.9 percent) support the resolutions, but critique them as not going far enough. The Marxist-socialist party Rødt (4.7 percent), which is seeing significant growth, demands a fundamental change in the policy, alongside with collectivisation and redistribution. The socialist Left party demands further emissions reductions, by 60 percent by 2030, and proposes a Green New Deal, calling for the Norwegian social state model to be reinforced and occupational safety instead of ongoing erosion.

TRADE UNIONS

The largest Norwegian trade union, the Norwegian Union of Municipal and General Employees (Fagforbundet), the Norwegian Civil Service Union (NTL) and the Electrician and IT Workers' Union (ELogIT) issued a declaration on climate policy in 2012 alongside the Oslo headquarters of the Norwegian Confederation of Trade Unions (Landsorganisasjonen i Norge - LO). It critiqued the existing system and demanded a much more radical climate policy and a just transition. Trade unions were then mobilised on the topic and became involved in broader coalitions, ultimately participating in the “Bridge to the future network” (Wahl 2016). In the 2017-2021 action plan, the Confederation of Trade Unions declared that greenhouse gas emissions must be radically reduced, in compliance with the Paris Climate Agreement (LO Norge 2017, 4). The action plan stated that human-caused climate change is the greatest challenge of our time, and that we are responsible for handing over the planet to the next generation in better condition. It asserted that Norway has the competence, capital, and expertise needed for a successful green transformation, and that the state is responsible for actively promoting it. LO argues that the state should take a broader role in funding new, more climate-friendly production (LO Norge 2017, 11–12). Compared to statements from many individual trade unions and the trade union participation in the coalition for 100,000 climate jobs, the action plan is more of a generalised compromise. This is due to diverging interests within the trade union movement regarding fossil fuel extraction.

ENVIRONMENTAL MOVEMENTS

Norway's highest court rejected a suit by Greenpeace Norway and the Norwegian NGO Natur og Ungdom (Nature and Youth) against crude oil drilling in the Barents Sea in December of

2020. The environmental organisations had argued that granting licenses to drill for crude oil would endanger future generations' prospects for living in an intact environment. The highest court was of the opinion that there had been no gross negligence of the state's responsibilities, and that the state was likewise not responsible for crude oil produced in Norway that was consumed elsewhere. This decision was critiqued as absurd by environmental associations and major legal experts (Hermann 2020).

Building a Just Transition: Alliances of trade unions, environmental movement, and church

Before the parliamentary elections in 2013, over 100 different organisations issued a joint declaration on climate change and asserted six central demands, with the goal of making them a focus of the upcoming campaigns. The organisations involved in the CE2013 coalition include a variety of trade unions from the three umbrella organisations. Most trade unions are from the public sector. The two largest farmer's associations were also part of the alliance. Most of the signing organisations, however, did not actively take part in mobilisations, and their reasons for signing were extremely divergent. Public sector trade unions were primarily moved by new job creation, while farmers argued that there must be more local food production (Nilsen, Strømsnes, and Schmidt 2018, 20, 32–33).

In 2015, the unions, environmental associations and the Norwegian church joined to form a campaign calling for 100,000 climate jobs under the name Bridge to the Future. The initiative was started by scientists concerned that the transition to a CO₂-free economy and society was proceeding too slowly. The coalition organised several large conferences, protests, a petition to parliament and a series of publications where scientists presented why a massive state programme to create 100,000 climate jobs was necessary, and how it could be implemented. The campaign argued that neither the market nor individual behavioural change could bring about the needed transition quickly enough. Only a planned and democratic just transition that created 100,000 climate jobs could accelerate the phase-out of crude oil and natural gas production (Bridge to the Future 2015a; 2015b).

Conclusions

Climate Change Tracker¹⁵ evaluates Norway's climate policies as insufficient to achieve the goals of the Paris Climate Agreements to keep warming below 1.5°C, unless other countries

¹⁵ Climate Change Tracker is a scientific consortium to analyse and evaluate the climate policies of EU states along with another 36 countries, and consists of the Potsdam Institute for Climate Impact Research, Climate Analytics and the New Climate Institute.

reduce their emissions much more significantly. If all countries took a comparable path, this would result in average global warming between 2 and 3°C (CAT 2020).

The primary tools of the Norwegian climate policy are the EU trade in CO₂ emissions certificates, investing in carbon capture and storage, and taxes and fees. However, only the taxes and fees aspect has led to a reduction in emissions, although this has not been sufficient. The results of high investments in capturing and storing CO₂ have been meagre.

The economic structure of the country and its high dependency on oil and natural gas exports, are certainly some of the key reasons for why Norway's energy transition is in no way exemplary. Norway has a high level of consumption and a poor environmental balance. Investments in high-tech innovation with the possibility to generate high levels of value are prioritized. Sustainable work in the sense of the SDGs plays only a minor role, and the global dimension of the just transition plays no role at all. The question of employment in the social and ecological transition does not play an important role in climate policies, apart from general commitments to highly qualified jobs. The majority of political and economic actors believe strongly in a technological fix and that technological innovation and high levels of qualification will ultimately create high-quality jobs.

The Norwegian climate policy is not able to guarantee new jobs to compensate for employment losses during the transition, let alone create added "climate jobs". Socioeconomic analyses, however, have found that this would be possible with a different public policy to eliminate oil production and sustain the welfare state. A study by the campaign 100,000 climate jobs criticises deficient public framework conditions as an obstacle to creating climate jobs. The transformation, it states, will also need long-term planning and relevant infrastructure. The study emphasises that it will be necessary to prioritise climate jobs in corporate funding as well (Gran et al. 2017, 38–39).

6. Poland

Climate change has caused extremely hot summers, a reduction in precipitation, and more droughts in Poland (Climate Change Post 2021b). This intensifies Poland's problem of water scarcity. Poland's water reserves are around half of the EU average; the groundwater level is deep, and most of the water is contaminated with pollutants (Kortas 2019). The populist right government does not take climate change seriously. Due to the very small ecologist movement and the weakness of leftist parties, there is no public debate regarding ecologically and socially sustainable employment, although climate laws and programmes to promote renewable energy have been passed in recent years. Not even the Polish Green party, which joined a conservative and neoliberal coalition in 2019, talks about sustainable work.

In 2021 Poland had 38.162 million inhabitants. Like in many Eastern European countries the population has been stagnant or shrinking over the past decades. The percentage of over 65-year-olds is still relatively low, but growing rapidly (from 15 percent in 2014 to 18.8 percent in 2021). The negative population growth and the low percentage of 0-14-year-olds (15.3 percent), point at a progressive reduction in the working-age population. Emigration by young people and the government's strict anti-immigration policies are further reinforcing this trend. (OECD 2022f).

The GDP per capita in 2021 was US\$ 37,425. From 2011 to 2019 annual growth of real GDP was between 3.1 and 5.4 percent. In the first year of the pandemic, it dropped 2.2 percent, and in 2021 it rose again 5.9 percent. Industry, including energy, generates the largest share of value added at 25.1 percent (2021). It is followed by trade, repairs, transport, accommodation, food services at 23.9 percent; public administration, defence, education, health, social work at 15.6 percent; and –significantly lower than other sectors– professional, scientific, support services at 9.1 percent. Agriculture, forestry, and fishing generates the smallest share at 2.6 percent. The latter figure stands in stark contrast to the huge workforce in agriculture. Poland has still a much more traditional economy compared to most other European countries. (OECD 2022f).

75-85 percent of Poland's electricity is generated from coal, which is also central for heating. The Polish government has always defended the use of coal, and has called EU target of zero CO₂ emissions by 2050 unrealistic (Harper 2020). The high level of trade union organisation in coal mining, its central importance in structurally weak coal-mining regions, and the fact that coal mining is controlled almost completely by state-run companies, makes the topic highly complicated for the government (Zinecker et al. 2018, 17). In September of 2020, mining companies and the government signed an agreement to end coal mining by 2049 (Harper 2020). Poland focuses heavily on nuclear power for its energy transition. It does not yet have any nuclear power plants, but is building a reactor with US support that is slated to go into operation in 2033. Others are scheduled to follow by 2043 (Asadnabizadeh 2019, 277).

Labour market data and employment

Unemployment in Poland in 2020 was at 3.2 percent (down from 9.2 in 2014) and is slightly higher among women than men. Youth unemployment is rather high at 10.8 percent (although much lower than 2011-2015, when it fluctuated between 20.8 and 27.3 percent) (OECD 2022n).

The total employed labour force grew from 15,562,200 in 2011 to 16,441,900 in 2020. In agriculture, hunting, and forestry employment dropped during the same period from 2,008,100 to 1,568,000, but with 9.6 percent of the total employment, it is the highest of all European countries investigated, while the added value the sector produces is very low. In industry employment increased 4,771,800 to 5,179,300. The increase was mainly in manufacturing (from 2,919,500 to 3,271,600). This is the highest share and the fastest increase of industrial employment of all countries in the study. Industrial employment grew even more than employment in the service sector (increase was from 8,782,200 to 9,694,100). This contrasts with the trend in all other European countries analysed. What is notable about the industrial sector is that employment in mining is still comparatively high with 214,600 workers in 2020, and it is not really diminishing despite strong fluctuations up and down. Employment is stagnant in electricity, gas, steam, and air condition supply (from 173,600 to 173,000). In the water supply, sewerage, waste management and remediation sector, in contrast, which is considered important for a sustainable transition, employment increased from 152,800 to 190,400. However, this must be examined in more detail, in light of Poland's growing role as a destination for household and industrial waste from other EU countries (such as Germany). In the service sector, information and communication registered the biggest relative increase (from 300,000 to 445,600), followed by professional, academic, and technical activities (from 489,800 to 656,500), transportation and storage (from 874,000 to 1,088,800), human health and social work (from 888,600 to 1,011,300), and education (from 1,179,600 to 1,304,000). How many of those are "green jobs", cannot be determined. Beyond an increase of 10 percent in some smaller sectors, which is numerically irrelevant, employment in the other service sectors is either stagnant or diminishing. Above all, and indicating a developmental trend, employment growth in public and social areas was low. Poland already has a low level of employment in these areas compared to other European countries. (OECD 2022n).

Public policies and measures

In February of 2017, the government under the populist right party PiS (Prawo i Sprawiedliwość, Law and Justice) passed the Strategy for Responsible Development (SRD), with the primary objective of "protecting Poland from the trap of medium incomes, the averageness of products, a lack of balance, the demographic trap and the trap of weak institutions". The document, which was ostensibly preceded by extensive consultation with business leaders, administrative levels, and NGOs, is considered a key document. The projects and guidelines outlined in the plan aim at implementing extensive restructuring to a wide range of different sectors of the Polish economy. It lays out twelve central projects and 173 strategic projects. An "eco-friendly" construction industry is among the new sectors to be

promoted. The plan was known as the Morawiecki plan, named after the author Mateusz Morawiecki, a bank manager, millionaire and at the time the deputy Prime Minister as well as the Economic and Financial Minister. He has been the Prime Minister since 2017. (Council of Ministers 2017).

The SRD intends to be a model for “responsible as well as socially and territorially sustainable development” (Council of Ministers 2017, 3). The SRD assigns great importance to state support of innovative companies. Sustainable in this case means that public finances are “sustainable.” Territorial sustainability means more rural development and enhancements to small and mid-sized urban areas. Social sustainability generally means the promise of achieving higher incomes and a better standard of living through better qualification, while ecological sustainability refers to an expansion of Industry 4.0 (Council of Ministers 2017).

The plan was criticised from many angles right from the start. Even the national developmental council of the President's Office criticised it, stating that the legal standard would be insufficient; that it does not include a road map with clear intermediate targets (which must be included according to a parliamentary resolution of 2006); that the descriptions of the central and supplementary projects are not well-developed enough, which could cause problems with implementation; and ultimately that the immense amount of resources needed and how they would be covered is not described in sufficient detail (for instance, how local administrations should come up with the third of public investment they are responsible for). Experts from the Polish Society for the Economy expressed that the SRD does not conform with EU directives on decarbonising the economy, reducing greenhouse gas emissions, and natural conservation, and above all that the SRD does not even include a cost-benefit analysis, a fundamental element of any developmental strategy (Brusilo 2020, 8–9). Ecological sustainability does not play a particularly important role in the SRD. Strategies to reduced CO₂ emissions are mentioned only in conjunction with urbanisation plans, and renewable energy is mentioned in conjunction with innovative industries. One and a half years after it was passed no clear qualitative change could be noticed (Riedel 2018). One of the plan's fundamental problems is that it is based on continuously increasing growth, although the causes for this growth are not under Poland's control, but rather dependent on external factors. Continuously increasing growth is also incompatible with the necessary socio-economic transformation.

The *National Plan for Energy and the Climate for 2021-2030* was presented in January of 2019 (Ministry of Energy 2019). After objections by the EU Commission a revised version was presented in December of 2019 (Ministerstwo Aktywów Państwowych 2019). The plan makes clear that “coal is the foundation for electricity generation which offers Poland an appropriate level of energy security and stability” (Ministerstwo Aktywów Państwowych 2019, 8). Graphics and statistics show how Poland has one of the lowest ratios of dependency on energy imports in the EU, and that there is also no relationship between increasing GDP and an increase in emissions (Ministry of Energy 2019, 2–8). Lignite and black coal mining also plays an important role socially, with around 113,500 direct jobs in 2016 (Ministry of Energy 2019, 5) and 135,000 direct jobs in 2018 (175,000 in 2010) (Ministerstwo Aktywów Państwowych 2019, 8). The first draft does not mention the energy transition, just transition, jobs, or employment at all. It addresses only technical measures. The European Commission requested an improvement to aspects of the just transition, “in particular by providing more

detailed information on the social, employment, and qualification-specific impacts of the planned targets, as well as on policies and measures”. The revised version includes a part on energy transformation and mining regions titled “just transition”. The energy transition is explained with its important “role in achieving ever more restrictive climate targets”. The plan emphasises the importance of minimising social costs by promoting a transformation to a low-carbon economy, but also clarifies: “The speed of the energy transformation must be adapted to the economic conditions and financial capacities of mining regions”. (Ministerstwo Aktywów Państwowych 2019, 84). The formulations contained in the plan, which are often fairly vague or even doubtful, missing information on the interim targets and the lack of an analysis of impacts indicate that there is actually no just transition strategy. Overall, the Polish government relies primarily on private industries to develop and implement innovative technologies.

Since 2009 the Climate and Environmental Ministry funds through its programme GreenEVO private companies to develop and produce “green technologies”. In 2019, 33 companies were receiving funds. The programme primarily emphasises the aspect of exporting technologies, and measures to fight climate change without reducing economic growth. Employment is not addressed at all in the programme (Ministry of Climate 2019).

Poland is an EU country that produces comparatively little waste per inhabitant; however, it also has a low recycling rate and a high rate of landfill usage (EP-VÖ 2020). In addition, waste management is plagued by scandals on illegal disposal, illegal dumping, and fires at landfills. Available figures are from 2017, the above-average industrial growth in subsequent years in Poland likely resulted in larger amounts of waste. Despite EU support, investments in recycling and reuse have dropped again since 2018. Poland will not be able to fulfil the EU directives on the circular economy from 2020. After an admonishment by the EU, Poland enacted a series of stricter laws in 2019 and 2020 on separating waste and recycling, as well as a *Road map for the transition to a circular economy*. It addresses mainly collaboration between research and industry for a technological fix. (Ministerstwo Rozwoju, Pracy i Technologii 2019).

In September of 2020, the government, trade unions and the state mining company PGG agreed to phase out of coal mining by 2049. The percentage of coal used to cover the national energy needs would be reduced to 37-56 percent by 2030 and 11 to 28 percent by 2040. The convention was enacted only after days of negotiations. Hundreds of miners stayed in the mines after the ends of their shifts in protest against the end of coal mining. The convention granted all coal miners guaranteed jobs until they reached pension age, as well as extensive severance payments should they be let go sooner. The Polish government also announced that it would be investing 60 billion Zloty (around 13.3 million euros) from the EU just transition fund in Polish coal-mining areas (Farand 2020). In reality, coal production has been dropping for quite some time. Coal mining became increasingly unprofitable after the 1980s, and the government funded the sector with very high subsidies. Nevertheless, the number of active coal mines dropped from 70 in 1990 to 30 in 2014 and production dropped from 147.7 million tonnes to 73.3 million tonnes (Baran, Szpor, and Witajewski-Baltvilks 2018, 9–10). When Poland became an EU member in 2004, the country had to restrict subsidies and implement a low-carbon path. In this respect, the EU policies of the last 17 years have actually shaped Polish climate policy.

Green Jobs

The circularity rate in 2021 was 9.1 percent compared to 10.8 percent in 2010 (eurostat 2022). Employment in eco-industries and the circular economy is at only 1.02 percent of total employment in 2017. However, income in the sector - 2.02 percent of income for all companies - is higher than the EU average of 1.74 percent (Mitsios 2019, 10). 15 percent of young adults (16-24-year-olds) have a green job as their first job, and fluctuation in this area is high (Sulich, Rutkowska, and Popławski 2020, 1). The investigation does not explain which sectors young adults are employed in. In light of the UNEP definition it uses, and the high percentage of employment in agriculture and natural conservation areas, they could be employed in these sectors. This would also explain the fluctuation. Among the different professional training, continued education, and retraining programmes to improve employability and transversal skills that have been established by the Polish government between 2018-2020 for the next ten years, there are none with the direct goal of promoting ecologically sustainable employment, or justified as part of the transition to a CO₂-free society and economy (EURYDICE 2020). There are references to green jobs in governmental programmes and papers on energy, the labour market, employment, and regional development, although the term is not used. These mainly refer to employment in renewable energy. Generally, an increase in employment is expected as a consequence of funding certain companies and sectors, without any specific employment programmes as such (Bartniczak and Ptak 2015).

Most of the 83,800 jobs in the renewable energy sector in Poland in 2020 are in bio-energy, with liquid biofuels at the top (41,200), followed by bio-energy from solid biomass (29,600) (IRENA 2020b). All other renewable energy sources are marginal. The declaratory memorandum on the law on renewable energy sources from 2015 states that one of its goals is to create new jobs by expanding renewable energy, expecting a growth of over 56,000 new jobs between 2015 and 2020. Over half of them would be created through solar energy, and almost a quarter through wind energy (Bartniczak and Ptak 2015, 10). This was an erroneous assessment. The total increase in jobs was just 45,800 from 2013 to 2020 and employment in solar and wind energy practically did not grow at all; only the biomass sector grew. Most of the jobs were likely less qualified jobs in the agricultural sector. (IRENA and ILO 2022).

Trade unions, parties, and environmental movement

PARTIES

There are no or only very small differences between the climate policies of most Polish parties. The climate policy of the government is that of the PiS, which has been in power alone since 2015. In 2019 it won the absolute majority of seats in the Sejm, Poland's parliament, with 43.59 percent of the votes. In its platform the PiS takes a very

environmentally-friendly tone praising its supposed climate policy, while it avoids making any concrete or binding statements. It just states that it is “in favour of the ‘green economy’ and ‘green energy’, which promote economic development and improve the standard of living and quality of life for Polish men and women”. The PiS states the government is working “actively to prevent and limit climate change”, that it took the initiative at the COP24 in Katowice and “successfully [led] the process to streamline the global climate policy”. The party promises development of offshore wind energy, and above all of nuclear power “at a large scale”, which it states will be important for climate protection. In addition, it plans to promote electric mobility (PiS 2019, 147; 163; 169).

The party with the second highest number of votes is the electoral alliance Koalicja Obywatelska (KO) with 27.4 percent. It is headed by the conservative Platforma Obywatelska (PO, Civic Platform), which led a variety of coalition governments between 2007 and 2014. The Polish Green Party, also part of the conservative alliance, won its first three seats in the Sejm in 2019. The left-leaning coalition Lewica (The Left), consisting of three social democratic parties, came in third with 12.56 percent. They were followed by several smaller conservative, neoliberal and far right parties.

TRADE UNIONS

Poland’s main trade unions are decisively against any measures to fight climate change. They even deny that there is any scientific consensus regarding whether climate change is caused by humans. Poland is the only country in this investigation in which trade unions oppose climate policies. Employment in coal mining strongly influences the trade union movement. Around 90 percent of workers in that sector are organised, compared with 13 percent of all workers. Wages in coal mining are also much higher than in other jobs. Before the climate conference in Katowice in 2018, Poland’s three largest trade union associations, the populist right to radical right NSZZ Solidarność (which has close ties to the PiS), the All-Poland Alliance of Trade Unions OPZZ, and the FZZ (Trade Unions Forum) organised a conference in order to call for analysing climate policies in terms of their costs and consequences for employment, stating that each country should be able to produce energy from its available resources. The NSZZ Solidarność denies that climate change is caused by humans, and the coal mining trade union faction and Silesian regional association issued a joint declaration on the occasion of the 2018 COP24 with a right-leaning US think tank in which reports on climate change were dismissed as false and simple alarmism (Thomas and Doerflinger 2020, 389–90). The more moderate umbrella organisation OPZZ for 2018-2022 states that, in light of Poland’s heavy dependency on coal, Polish workers need assurances that any change in the sector will not negatively impact their employment or their standard of living. The costs for the transition will be borne primarily by countries like Poland; therefore, they say it would be unacceptable for Poland to have to bear the financial and social costs alone. (OPZZ 2018).

ENVIRONMENTAL MOVEMENTS

Besides *Greenpeace Polska*, which primarily works to distribute information on renewable energy (Greenpeace Polska 2019a) and advocate against coal (Greenpeace Polska 2019b), there are currently a large number of small environmental groups which together form a

movement. In 2019, secondary school students took part in a youth climate strike, submitting a series of demands to the parties in advance of the upcoming election (Greenpeace Polska 2019b). This is a relatively new development. For many years, Poland at most had some small local groups focused on specific environmental issues, and no larger overarching movement. There was a critical mobilisation in Poland for the COP24 in Katowice in 2018. Over 400 people took part in Poland's first climate camp in July of 2019. In addition to many members of different local environmental groups, most of those involved were from Catholic environmental groups. However, the environmental movement continued to have only a very limited impact on politics. The Polish political culture is characterised by institutional rejection of civil society participation. (Szulecka and Szulecki 2017, 27). Good, decent and sustainable work, green jobs and employment are not a topic in Poland's environmental movement.

Conclusions

The contradictions between different plans for the energy transition, the confusion due to use of different reference years (such as lowering CO₂ emissions compared to 2005 levels instead of the customary 1990), and imprecise statements all indicate that Poland does not have any transition plan to an emissions-free (or even net emissions-free) economy and society by 2050. The different governmental programmes raise the suspicion that they only aim at meet EU regulations in their wording, without actually providing details on real measures. The transition goal is only a "low-emission" economy and society, and it is justified by strict EU regulations and not by any environmental or climate-related necessity. EU regulations have also been decisive for exercising pressure towards more support for renewable energy. At the same time, internal political legislation on renewable energy is described as a "soap opera": "Drafts, new plans, supplements, and legal instability" (Szulecki 2017, 23). Funding mechanisms for renewable energy are designed such that they prevent it from competing with the state-owned energy companies and coal as a strategic priority. This also has negative consequences for any possibility of democratising the energy sector (Szulecki 2017, 23).

The above-average increase in industrial employment in Poland, even greater than in the service sector, points at Poland's increasing importance as a low-wage country for the EU manufacturing industry and logistics. "There is literally an amazon distribution hub built on every coal mine shut down," as Marta, Rozmysłowicz from the small Polish rank and file union OZZ Inicjatywa Pracownicza Amazon Poland explains.¹⁶ The burden of an energy transition is put entirely on workers. The new jobs in logistics are paid much less and are more deregulated than the former mining jobs, and they are largely non-unionized. Due to the high unionization rate and the strategic position, miners' unions have been traditionally the unions with the strongest leverage on the government. The country's success in industry, energy, trade, and transportation, from a traditionally growth and value creation-oriented economic standpoint, is primarily based on low wages and essentially non-existent climate

¹⁶ Personal communication June 17, 2023.

protection policies, as well as the country's expansion of its position as a logistics hub and inexpensive site for industrial production in the supply chains of Western European companies, in addition to serving as a bridge to Eastern Europe. This is likely also one of the most important causes for the Polish government's and major trade unions' dismissive attitude towards sustainability.

Due to its economic development will face increasing environmental problems, growing emissions, higher resource consumption and energy needs, increasing traffic, and a larger volume of waste in the near future. In light of the country's poor performance on environmental protection measures in all areas, it is likely that it will not meet any emission targets.

The country focuses mainly on the private sector with respect to both the transition and employment, assuming that Poland's economic growth will continue on as it was before the pandemic. Accordingly, programmes and declarations on employment remain vague, and always aim to improve prosperity. A public debate on these matters is growing, although very slowly. Likewise, a movement for an ecologically and socially just transition began forming only recently. It cannot count on participation by the trade unions.

7. Mexico

The average temperatures in Mexico have increased by 0.85°C and winter temperatures by 1.3°C. In Mexico City the average temperature increased even by 4°C. Warm and hot seasons start earlier and end later. According to the National Institute of Climate Change (INECC) 20 percent of Mexico's municipalities has a very high or high level of vulnerability to climate change. Following estimates of the World Bank and the OECD approximately 68 percent of the population are exposed to the negative consequences of climate change. The southeast of Mexico, the most humid region of the country where a huge part of Mexico's tropical forests is located, has experienced constantly diminishing rainfall over the past 50 years. Extreme weather phenomena as hurricanes, torrential rains, floods, landslides, extremely hot days, droughts, and fires have become more frequent. The dry North of Mexico is hit hard by desertification. Climate change in combination with excessive water consumption by industries and industrial agriculture has led to decreasing groundwater levels and drastic rationing of water in many cities of the centre and North. 72 percent of the Mexican territory experience strong or very strong water scarcity and 20 percent of the aquifers are overexploited. Deforestation is also ongoing. Particularly concerning is the deforestation of mangroves, covering 742,000 hectares in Mexico's coastal areas, especially in Yucatan. Mangroves store much higher volumes of CO₂ than forests. The worldwide mangrove deforestation in 2016 caused some 10 percent of annual global carbon emissions. The deforestation of forests, especially tropical forests (67 percent of Mexico's forests are fragmented), and the transformation and degradation of ecosystems caused the fragmentation and reduction of wild habitats accelerating mass extinction: 2,583 species are in danger or at risk of extinction. (CEDRSSA 2020).

In 2021 Mexico had 129 million inhabitants, 21.5 percent self-identifying as indigenous. The estimated GDP per capita was US\$ 20,383. From 2014 to 2018 annual growth of real GDP was between 2.1 and 3.3 percent. In 2019 it fell 0.2 percent, during the first year of the pandemic, it dropped 8.1 percent, and in 2021 it rose again 4.8 percent. In 2020 (estimated, most recent data available) trade, repairs, transport, accommodation, food services had the biggest share of value added in 2020 at 27.6 percent, followed by industry including energy at 24.9 percent. Third was public administration, defence, education, health, and social work at 11.1 percent and then real estate at 10.8 percent. (OECD 2022d).

The election of leftist Andrés Manuel López Obrador (AMLO) as president of Mexico in 2018 brought important changes, but also the continuity of extractivism and fossil fuel dependency. National energy sovereignty is at the centre of AMLO's energy and mining policy. Among his first steps in government was to revoke most of the laws liberalizing the electric energy sector. Auctions of concessions for solar and wind energy parks were cancelled. All electric energy projects have to be administered by the state-owned company Federal Commission of Electricity (CFE). In 2022 the government decided the nationalization of lithium, of which Mexico has an estimated 2 percent of the total world reserves. A new state enterprise will be in charge of exploiting the lithium reserves. The state oil company Pemex (Petróleos Mexicanos) has increased the capacity of existing refineries in Mexico, plans to build a new refinery and acquired an additional one in the US.

Climate change, its impacts and measures to mitigate the effects are rarely present in government discourses. Although Mexico has passed several laws on climate change and related topics under the prior government, and even more under the AMLO administration, there is no broad debate on climate change and its impacts beyond academia. Concrete impacts of climate change are mainly put on the agenda by affected populations. A discourse on sustainable work does not exist, the term and concept are not used by actors in the Mexican context. The topics green jobs and just transition are also missing from government discourse, although they are increasingly common in policy debates and the government of Mexico City added in 2022 a definition of green jobs to its climate policy program. Social and popular movements do not use the term just transition. It appears only in a few publications of trade unions and some environmental NGOs. The ILO is strongly promoting its understanding of green jobs and just transition. In recent years just energy transition has been increasingly a topic in public debates, and the concept is used by some of the affected communities, NGOs and in academia.

Labour market and employment

The total employed labour force in Mexico increased from 47.139 million in 2011 to 54.994 million in 2019 (and fell to an estimated 50.979 million in 2020). The newest data available for single sector employment is from 2019. Employment increased in agriculture, hunting, and forestry during the same period from 6.395 million to 6.810 million. The labour force in the industrial sector grew from 11.354 million to 13.948 million, due to an increase of 1.9 million in manufacturing and 630,000 in construction. The service sector employment experienced the biggest increase in numbers, from 29.079 million to 33.925 million. The increase was registered mainly in wholesale, retail trade, vehicle and motorcycle repairs (from 9.293 million to 10.676 million); transportation and storage (from 1.892 million to 2.435 million); and accommodation and food service activities (from 3.202 million to 4.386 million) (OECD 2022k).

The unemployment rate in Mexico is at 4.5 percent (2020) and youth unemployment (15 to 24 year old) at 8 percent (OECD 2022k). Work and employment, nevertheless, do not guarantee a living wage. In 2019 43.6 percent of the Mexican population lived below the poverty line and 7.6 percent lived in extreme poverty. More than half of the existing jobs are far from being decent or good work. 53.6 percent of all workers have informal work conditions. Among workers younger than 16 years the informality rate is even 62.2 percent. At the end of 2018 almost 38 percent of all employed workers did not receive the correspondent health insurance and social protection. The share is especially high in agriculture (83 percent), among domestic workers (76 percent) and among construction workers (70 percent). (OIT 2020).

Public policies and measures

Mexico is in the global top 15 of countries with the highest GHG emission, causing directly 1.4 percent of global GHG emissions. Looking at the emissions per capita the picture changes significantly and Mexico ranks 65th globally emitting some 25 percent less GHG than the world medium. From 1990 to 2015 GHG emission in Mexico were caused mainly by transport (25 percent), energy industry (24 percent), livestock (10 percent), and industry and construction (9 percent) (OIT 2020, 15). Considering the energy sources, 64 percent of total GHG emissions are caused by the consumption of fossil fuels (CEDRSSA 2020).

Over the past decade Mexico passed many laws and regulation regarding climate policies. The first was the *General Law on Climate Change* enacted in 2012. In May 2013 the Ministry of Environment published a 50-pages long *National Strategy of Climate Change*. In 2015 a law on energy transition was passed. Several additional laws establishing emission limits and targets in different areas followed. The climate policies of the right-wing governments until 2018 did not lead to relevant improvements. An energy transition was not initiated. The electric energy sector was liberalized and opened to foreign investments. The government promoted solar and wind energy as investment opportunity for national and especially international capital, while nationally it continued to rely mainly on fossil fuels. Although the AMLO government passed a framework of laws, regulations and goals regarding climate policies, emissions and renewable energy, climate change is not among the priorities of the AMLO administration. There are no concrete policies and targets to phase out of fossil fuels. Mexico does also not have a net zero emission target.

The general policy orientation of the AMLO government is outlined in the *National Development Plan 2019-2024* (PND 2019). It contains a commitment of the government to sustainability, which is not reflected in the strategy, perspectives and most of the programs outlined in the PND. The priorities of the PND are linked to some of the most pressuring problems in the country as corruption and institutional inefficiency, the high level of violence, migration and social rights. A main focus is on ethics, institutions, anti-corruption, eliminating the influence of private capital in government decisions, and claiming a stronger role of the state; a new security doctrine; employment policies; and strong social policies based on social rights. In the 60-page document there is no mention of climate change or global warming. Energy transition is mentioned only briefly. According to the PND the new energy policy of Mexico will promote sustainable development through a program to provide small remote communities with electricity through renewable energies. The program aims at covering communities with a total population of 2 million and at strengthening the national industry by producing as many parts and components as possible in Mexico.

Following the PND, the AMLO government passed a series of laws and regulations. Among them was a program to promote the sustainable and diversified use of forest resources under community forest management. The National Strategy to Reduce Short-Lived Climate Pollutants was enacted providing a roadmap for the reduction of short-lived climate pollutants (black carbon, methane, tropospheric ozone and HFCs). Black carbon emissions are to be reduced by 51 percent in 2030 compared to the Business as Usual (BAU) scenario. This would also reduce total GHG emissions by 9 percent. However, the reduction targets will be missed. Many of the measures proposed to achieve the reduction have not been

implemented or are not reinforced. Sectorial short-term mitigation and adaptation goals, measures, programs, budget and institutional responsibilities were established by the *3rd Special Programme on Climate Change 2020-2024*. An *Intergovernmental Climate Commission* was founded to coordinate the climate policies and develop interinstitutional programs and responsibilities.

Mexico established Nationally Determined Contribution (NDC) goals, committing to reduce national GHG emissions from the projected 2030 BAU baseline. The reduction is projected to amount unconditionally to 22 percent of GHG emissions and up to 36 percent reduction as a conditional contribution. The measures to achieve the reduction are envisioned throughout different sectors, and reach from stricter emission regulations for combustion engine vehicles, clean public transport and the implementation of the *National Electric Mobility Strategy*, to expanding the circular economy, increase energy efficiency and introduce an Emission Trade System. NDC goals on projected BAU emissions are highly controversial. The projected BAU is an estimate and a reduction compared to the projections does not have to be necessarily a real reduction. This is also what happens in the Mexican case. The percentages of conditional and unconditional reduction of BAU projected for 2030 remained the same as in the NDC goals formulated in 2016 by the right-wing government. But in the new NDC goals the GHG emissions projected for 2030 have been corrected to a much higher quantity. Therefore, the effective reduction of GHG emissions, if the goal is even achieved, will be smaller than the GHG emission reduction envisioned in 2016. The NDC goal increases emissions 65 percent above 1990 levels.

Green jobs

In 2018 extractive industries and the electric energy sector employed 398,788 workers (87.2 percent male and 12.7 percent female), 0.7 percent of the total employed workforce, contributing 6.1 percent of the GDP. In an ecological and energy transition most of this workforce would have to transition to different jobs. The renewable energy sector, as we will see in more detail, does neither grow at the pace needed for an energy transition, nor does it provide the same number of jobs. Even more jobs could be lost in the transport sector, while many jobs in services, construction and industry would need to transform and a certain number would still get lost. As a consequence of the missing public debate on climate change and a transition to a sustainable society and economy, there is also no public debate on work and employment in the transition. Employment is a central topic in the government's discourse and policies, but it is not framed in a context of a transition or linked to climate change.

Reliable data on the number of green jobs in Mexico, or jobs for a sustainable ecological transition, does not exist. Government sources present data on "environmental jobs," defined as jobs that are taking place in or affect nature. The term does not specify if they are already ecologically and socially sustainable or not. An ILO study of 2013 identified a total of 1.8 million jobs (4.5 percent of the total labour force in 2011) directly related to the environmental sector that could be transformed into green jobs. 80 percent of them were in the sectors transport, clean industries and sustainable construction. Another sector expected to grow in

the transition is waste management. In 2018 2.9 percent of the totally employed worked in “management and remediation services of waste and residues” contributing 3.8 percent of the national GDP (OIT 2020). Despite the confusion in classifying and counting green jobs in Mexico, it can be affirmed that the government target of 2013 to create one million green jobs until 2018 was missed by far. The growth of green jobs from 2013 to 2017 was lower than the total growth of employment. Many sustainable jobs could and are supposed to be created in organic agriculture. However, the work conditions in the sector are so deficient (28 out of 100 points in the ILO decent work scale), that they are very distant from the ILO criteria for green jobs.

In the PND 2019-2024 there is no explicit mention of green jobs or any other term for jobs in the social and ecological transition. Programs for a diversification of the economy are insignificant. The PND proposes a few programs and measures in the agricultural sector to promote work with partial criteria of ecological sustainability or transitioning to ecological sustainability. The main focus is on strengthening small agricultural producers in connection with achieving food sovereignty and level out the negative trade balance in the sector. In Mexico 85 percent of the agricultural production units are smaller than 20 ha. Almost 25 percent of the agricultural land is in indigenous territories. The traditional indigenous agriculture is organic agriculture. Mexico ranks fourth globally in organic food production. More than 1 million ha agricultural land are used for organic food production. Organic coffee is grown on almost one third of the land, followed by corn on 11.7 percent of the land. Big companies are increasingly investing into organic food production. (OIT 2020, 20). The programs are directed at small and medium agricultural producers producing collectively on common land or individually on common land (ejido), and small peasants producing on their own land.

Sembrando vida (sowing life) promotes among peasants to set up agroforestry production systems, that combine agricultural produce with fruit and timber trees. The program aims at contributing to food sovereignty and at the reforestation of one million hectare. The participants with an income below the rural poverty line that dispose of 2.5 ha land apt for reforestation, receive monthly financial assistance, plants, supplies, tools, and technical support. The program *Production for welfare* is directed at potentially 2.8 million small and medium sized producers (less than 20 ha), prioritizing the 657,000 indigenous small producers. It hands out supplies per hectare before sowing and promotes among the participants agroecological and sustainable practices, the conservation of soil, water and agricultural diversity, the self-sufficiency regarding seeds production, as well as machines and equipment appropriated for small scale agriculture, and the implementation of renewable energies. Two other programs provide financial support to small coffee producers (less than 1ha) and small sugarcane producers (less than 4ha). The beneficiaries are 250,000 small coffee producers and 170.000 small sugarcane producers. The support is to improve the quality, implement sustainable agricultural practices, improve the use of soil and water, and preserve the biodiversity. (PND 2019)

An evaluation of the first two years of the program *Sembrando vida* accomplished by a group of researchers for the *National Council of Evaluation of Social Development Policies* criticizes important deficiencies of the program. First of all, the program has not defined any indicators how to measure progress and accomplishment of the program goals, especially regarding

the central goal to strengthen local social structures; there has been no prior study about the trees to plant and the territories to choose; problems with the timely distribution of supplies and regarding the access to finances (mainly because there are no banks where many of the program participants live); the increased production of certain fruits and vegetables has saturated local and regional markets, while building commercialization structures for the additional production was not contemplated in the program; the strongly green house oriented program did not contemplate the increased need of water; the number of trees planted remained far behind the goals (according to different sources it was 60-70 percent of the original goal), and several others. The program has one of the biggest budgets of all programs of the AMLO government while the mid- and long-term efficiency remains unclear. (Coneval 2022).

Energy transition

The AMLO administration has not presented a just energy transition strategy or policy. There is not even a coherent strategy for an energy transition. The *Energy Transition Law* (2015) and the *Programme for the Development of the National Electric System 2022–2036* (PRODESEN) both establish the target of 35 percent of the country's electricity coming from clean sources by 2024. The Special Program served mainly to place Pemex and CFE as strategic operators in the energy transition. The priority of the national energy policy continues to be fossil fuel extraction and thermal plants. In 2021 fossil fuels had a share of 86 percent of the total primary energy supply. Oil had a share of 44 percent, natural gas 38 percent and coal 3 percent. An additional 2 percent came from nuclear power. The share of renewable energy was only 8 percent (Climate Transparency 2022b). In the PRODESEN there are no concrete plans to phase out fossil fuels, while the plans to increase national energy capacity do not show a fundamental turn towards renewable energy sources. Pemex is even expanding its oil refining capacities.

The transport sector was directly responsible for 33.8 percent of energy-related CO₂ emissions in 2021 and the emissions keep growing. 93 percent of the passenger transport and 76 percent of goods transport went by road in 2021. 99.7 percent of the energy used in transport comes from oil and only 0.2 percent from biofuels and electricity (Climate Transparency 2022b). The plans for the transport sector rely almost entirely on promoting the use of electric vehicles. The *National Strategy for Electric Mobility* presented in 2023 set the target that by 2030 50 percent of all light and heavy vehicle sales are electric and plug-in hybrid electric vehicles, 75 percent by 2040 and 100 percent by 2050, with charging stations every 5 km and an electrified system of transport of goods. The main focus of the strategy is to offer a variety of tax reliefs for the private sector, while the change to electric mobility of public transport is supposed to be organized with specific plans and government support (Flores 2023). The strategy does not establish any end to sales or use of vehicles powered by fossil fuels. The targets lack a corresponding policy. The loading station infrastructure does not exist and gasoline is highly subsidized. In 2021 electric and hybrid electric vehicles made up only 0.5 percent of all car sales. Sales of electric heavy-duty vehicles were not reported at all, only hybrids for goods transport.

RENEWABLE ENERGIES

The renewable energy share of electricity generation in 2021 was 19.7 percent (up from 14 percent in 2012). 77 percent of Mexico's electric power generation is based on fossil fuels (gas, oil, and coal). The AMLO government has set the target to increase the renewable energy share of electricity production to 35 percent by 2024, 40 percent by 2033 and 50 percent by 2050. It is obvious that the targets are insufficient for the urgently needed energy transition. Even so, the targets are totally unrealistic. The 2024 target will be missed by far. The prior and the actual government have already missed by far all targets regarding renewable energy capacity share established in the *Energy Transition Law* of 2015: 25 percent in 2018 and 30 percent in 2021.

From 2012 to 2021 the installed total capacity of renewable energy more than doubled from 14,823 MW to 30,036 MW, showing the strongest growth since 2019 (25 819 MW). Hydropower had a share of 13,301 MW (with shrinking production volumes in GWh over the past few years); wind energy 7,692 MW. Solar energy, the fastest growing renewable energy, had an installed capacity of 7,043 MW; geothermal energy 1,034 MW; bioenergy 966 MW; Solid biofuels and renewable waste 914 MW; Bagasse 813 MW; and a few hundred MW more from minor sources. (IRENA 2022)

The liberalization of the electric power sector and the renewable energy policies of the former governments, designed to favour capital and extractive strategies, turned Mexico into one of the world's ten most attractive countries for investments into renewable energies. 36 percent of all investments into renewable energies in Latin America in 2017 were in Mexico (Zamora 2022). The AMLO government stopped granting and renewing private and foreign firms, concessions for electric energy generation. The future exploitation of renewable energy projects is a matter of the state-owned CFE. A few companies had to give up projects and investments. The extractive logic at the base of the renewable energy production in Mexico did not change. The biggest planned solar energy projects are part of the Plan Sonora which started with investments of US\$ 1.685 billion for the construction of five solar energy parks with a total capacity of 1,000 MW. The AMLO government has also plans to export "clean energy" to the USA and build huge solar parks South of the US border.

In 2021, the Mexican renewable energy sector employed approximately 82,000 workers. The largest share of the workforce was solar photovoltaic, with around 24,000 workers, followed by hydropower with 17,900 workers employed either directly or indirectly, and geothermal power with 17,500 workers. 11,300 workers are employed in the solid biomass sector, 6,900 in wind energy and 4,300 in solar heating and cooling (Statista 2023). Employment in wind energy declined from 11,590 in 2020 following a prior expansion of capacity. Most wind energy jobs lost were construction jobs, which fell from 5,100 to 1,183. Wind energy manufacturing jobs fell only from 5,140 to 4,319, due to that Mexico became the leading supplier of blades in the Western hemisphere. (Zarco, 2022). The renewable energy sector has the best work conditions among the potential green jobs, obtaining 79 out of 100 points in the ILO decent work rating.

Parties, trade unions and environmental associations

Mexico's main parties have participated in governments over the past two decades. The conservative and neoliberal party PAN put the presidents from 2000 to 2012 and supported most of the policies of the following president of the authoritarian, corrupt, and neoliberal party PRI. The actual president AMLO won the election supported by an alliance of centre-left parties led by his leftist party MORENA. Their climate policies are reflected in the national policies.

The trade union panorama is very complex. Trade unions exist from the company to the sector level, and also several national union confederations. Many of them, including the major trade union confederations, are responding to or are part of political factions in the still strongly clientelist Mexican political system built over several decades by the PRI. The main trade union confederations do not have stricter climate policies, just transition or sustainability on their agenda. In certain sectors there are strong independent leftist unions with detailed positions on energy democracy and a just transition. Some of them are in crucial sectors for the transition. This is the case of the union of the electricity workers Sindicato Mexicano de Electricistas (SME), which is affiliated to industryAll Global Union and to Trade Unions for Energy Democracy (TUED). There is also the union of engineers and technicians Petroleum sector UNTPyP (Unión Nacional de Técnicos y Profesionistas Petroleros) with several ten thousand affiliates, which is banned by the state oil company PEMEX that only recognizes the more company friendly Sindicato de Trabajadores Petroleros de la República Mexicana (SPTRM).

ENVIRONMENTAL AND OTHER MOVEMENTS

The social movements in Mexico that can be placed in the frame of struggles for a just transition are mainly popular and indigenous struggles against extractive projects and megaprojects, defending water, against mining and fracking, and against the expropriation of indigenous and small peasants' land for wind energy and solar energy parks.¹⁷ These are the most important and most direct movements in Mexico for a just transition. They do not use the terminology of just transition or sustainable work. Nevertheless, they usually defend sustainable ways of living and interacting with nature and its resources.

Wind energy generated in Mexico is avoiding annual emission of 12.2 million tons of CO₂, but is not sustainable the way it is exploited. The broad number and variety of conflicts around wind energy parks illustrate why renewable energy does not mean that it is sustainable. In 2021 Mexico had 70 wind energy parks in 15 states, concentrated mainly in Oaxaca, Tamaulipas and Nuevo León. Most of them are owned by or have a strong participation of transnational energy companies from the global North. In some cases, the wind energy park companies paid affected communities up to 40 percent less per square meter than initially

¹⁷ For a detailed analysis of the negative impacts of big scale solar and wind energy parks in the Southern state of Yucatan see Reyes Marturano 2021.

promised. Other communities, that had agreed to annual compensation payments for the use of their land over the coming 30 years, denounced that they were not paid at all. Affected communities point at the negative environmental and social consequences. Some of the environmental consequences are due to company failures to accomplish with all environmental laws, and to the state institutions for not enforcing them. Others, like negative effects on the fauna can hardly be avoided. Most of the damage occurs during the construction phase. Once the fauna was displaced, it is hardly coming back. Communities also lament the frequent spilling of synthetic oil and paint related to maintenance. Among the social consequences we can find divisions in communities (often fomented by the energy companies), and conflicts and increasing corruption among community leaders. In the case of one wind energy park the affected community denounced that the information on the environmental impact published by the Ministry of Environment and Natural Resources was wrong: The Ministry falsely stated that the territory had no water bodies, and that there was no evidence that migratory routes of birds were going through the territory. The presence of endangered species was not mentioned at all. The community declared that the obligatory monitoring of the flying fauna by day and by night was not accomplished. In a different case, a nearby indigenous community was not consulted. In the Tehuacán valley in the state of Puebla, the population had rejected the construction of a wind energy park by the Spanish company Iberdrola. It was built anyway and started operations in 2020.

One of the most famous examples in Mexico is the struggle of the indigenous Zapotec communities of Unión Hidalgo, Isthmus of Tehuantepec, Oaxaca, against the wind energy park “Gunna Sicarú” planned by Électricité de France (EDF). It was the first indigenous community in Latin America that achieved to stop such a huge project. The wind energy park was planned to have 115 turbines on a territory of 4,700 ha. In June 2022, after five years of struggle inside and outside the courts, the community announced that the construction of the wind energy park had been definitely cancelled.

Conclusions

The AMLO government prioritizes the social aspects of the agenda 2030: access to healthcare, social security, education etc., grounded in a fossil and extractivism based national development led by the state. Topics as climate change or ecological transition are secondary. There is no plan to phase out of fossil fuels. Mexico continues to rely mainly on the extraction and exploration of fossil fuels. Hundreds of new concessions in the fossil fuel sector have been granted since the end of 2018. The PND states that conflicts with communities caused by Pemex or CFE facilities will be solved through dialogue. The same will be applied to social discontent regarding high energy prices. However, conflicts around extractive projects have not diminished and a practice of social dialogue that leads to solutions based on agreements with affected populations and communities is not in sight. The planned expansion of renewable energies is not fast enough to keep up with the increasing national electricity demand. While the real growth of renewable energies does not even meet the announced insufficient targets. Several, mainly territorial movements, struggle against extractive projects, but there is nothing like a just transition alliance.

Climate Action Tracker rates Mexico's climate policies and commitments as overall "highly insufficient". They are inconsistent and will lead to rising emissions. Mexico's unconditional NDC goal of 22 percent reduction of GHG emissions by 2030 is considered "critically insufficient" and the even the conditional NDC goal of up to 36 percent reduction by 2030 is rated as insufficient and inconsistent with Mexico's commitment to the global 1.5°C target (CAT 2022a, 15).

The almost total absence of programs for an ecological transition of industry and businesses leads to an absence of a broader debate on work in the social and ecological transition. The agricultural programs supposedly linked to sustainability aim mainly at achieving food sovereignty, create employment and reduce migration. Sustainability and quality of work are, in the best case, secondary. The government discourse on work and the quality of work is almost exclusively directed at the most disadvantaged sectors of society, aiming at their inclusion in social security and healthcare, as well as raising the minimum wage.

8. Colombia

Colombia is highly vulnerable to the effects of climate change because of its geographic and socioeconomic characteristics. It has very diverse natural habitats and ranks globally second in biodiversity. These delicate eco-systems are highly threatened by the impacts of climate change, which also affect the most vulnerable groups living in these areas, mostly indigenous people, Afro-Colombians and small farming and fishing communities. Extreme weathers and natural disasters have become more frequent. In some regions rain has increased in volume and intensity causing floods and landslides, while the Andes have suffered droughts that impact water reserves in the whole country. This affects also agriculture and the hydropower plants producing 70 percent of the country's electricity. Temperatures are on a constant rise. The glaciers of the Andes are irreversibly melting. If the rise of the temperature is not stopped, or better reverted, it would make most of the country too hot to live by 2070.

In 2021 Colombia had 51.208 million inhabitants. The estimated GDP per capita was US\$ 17,350. From 2014 to 2019 real GDP annual growth was between 1.4 and 4.5 percent. During the first year of the pandemic, it dropped 7 percent, and in 2021 it rose again 10.7 percent. In 2020 (newest available data and an estimate) Industry including energy built the largest share of value at 20.7 percent, followed by trade, repairs, transport, accommodation, food services at 18.4 percent; public administration, defence, education, health, and social work at 18 percent; and real estate at 10.5 percent. (OECD 2022b). Colombia's unemployment rate was at 16.1 percent in 2020 and youth unemployment at 27.1 percent. Unemployment was also high before the pandemic. Since more than a decade the unemployment rate had been around 10 percent and youth unemployment around 20 percent (OECD 2022a).

The situation in Colombia is particularly interesting because in August 2022 Gustavo Petro took office as the country's first leftist president ever. His vice-president is Francia Márquez, Afro-Colombian human rights and environmental activist and lawyer. They ran together for elections leading a leftist coalition mobilizing with a government program built in popular assemblies of social movements, trade unions, communities, academics, indigenous organizations and other groups. Up to the elections, governments, the army and paramilitaries waged a war of terror against the population for almost 100 years. Trade unionists, peasants, indigenous people, environmental activists etc. were among their victims in order to guarantee the best conditions for extractivist export industries. The new leftist government has without any doubt unleashed a positive political dynamic, although it is too early to tell what of its program and plans will become reality.

Colombia is the country with the most advanced activism, interest, and debate on just transition. Although there is no information available regarding sustainable work in the context of a transition, trade unions and some popular organizations over the past years have put on the agenda the quality of work and the social aspects of work of the jobs replaced and newly created in the transition to a post-fossil and post-extractivist society. The new leftist government declared energy transition and just transition key issues in its "global government program" before the elections. Colombia is supposed to become a leading nation in the fight against climate change. The government puts a special focus on energy transition promoting renewable energies. The Minister for Energy and Mining Irene Vélez is pushing a very clear discourse on energy transition. The *Just Energy Transition* is so far the most concrete

government project regarding social and ecological transition. Not an easy task, considering that extractive fossil fuel industries in Colombia make up for some 60 percent of the country's exports. The oil sector alone contributes with 10 percent to the state revenues. Colombia is also the fourth biggest coal exporter globally. It exports 90 percent of the coal extracted in open pits by transnational companies. Decarbonization means to replace more than half of the exports and almost half of foreign direct investments (Pardo Becerra et al. 2021, 81).

Among social movements and popular organizations just energy transition has been an important subject for many years now. Trade unions have engaged in sectorial and broader social movement encounters and elaborated proposals for a just energy transition. They welcomed the government proposal and fully engaged in the just energy transition. The term sustainable work is not used, although the quality of work in the transition is an important topic for trade unions and in government declarations. The most common term used to refer to jobs for the transition is “empleos verdes” (green jobs) while the quality and circumstances of work are discussed under the label of “good work.”

Labour market and employment

The total employed labour force in Colombia increased from 19.719 million in 2011 to 22.157 million in 2019, and dropped to 19.737 million in 2020. From 2011 to 2019 (latest data available¹⁸) employment fell slightly in agriculture, hunting and forestry (from 3.634 million to 3.559 million), increased from 4.102 million to 4.475 million in the industrial sector and showed the biggest increase in services from 12.28 million to 14.252 million. In the industrial sector the increase was due to construction which grew from 1.145 million to 1.519 million, while manufacturing registered almost no change (from 2.604 million to 2.628 million). Employment in all service sectors increased. According to the limited data available¹⁹ the service sectors experiencing the biggest numerical increase are wholesale, retail trade, vehicle repair household goods (from 5.286 million to 6.063); public administration, defence, social security, excluding armed forces (from 3.794 to 4.444 million) and real estate, renting and business activities (from 1.303 million to 1.673 million). An increase took also place in the sector “financial intermediation” (from 238.000 to 319.000), which seems anyway big. (OECD 2022k).

Public policies and measures

Declared policies and programs for “green jobs” began under the two prior right-wing presidents Juan Manuel Santos (2014-2018) and Iván Duque (2018-2022). The Duque

¹⁸ The data on Colombia is less complete, uses in part different subcategories and lacks some single sector data.

¹⁹ The sectors are organized differently and there is no separate data available for the sectors hotels and restaurants, education, and health and social work.

government formulated a Climate strategy and very ambitious GHG reduction targets of 51 percent until 2030 and net-Zero CO₂ emissions by 2050. It also passed a law in support of research and development of low-emission and negative emission technologies. Almost all laws and programs regarding climate change and energy transition are from 2020 and 2021. They focused on business opportunities in the bio-economy. The results regarding reconversion or creation of green jobs were marginal. Under the Duque government the transnational energy companies Powertis, Solarpack, Ecoener, Cox Energy and Grenergy signed in 2022 investment agreements amounting to US\$1.6 billion to build huge solar energy fields (Asoenergía 2022, 5). The right-wing governments were also strong supporters of the extractive industries and neglected human rights, workers' rights and environmental issues despite the official declarations.

The new left-wing government has to reformulate all climate change and energy transition goals and policies. The government program, elaborated with the contributions of popular assemblies, that led to the victory of the leftist coalition Historical Pact led by Petro and Márquez, states early on the aim to turn Colombia into a leading country in the fight against climate change. Issues linked to that aim are present throughout the whole program. To turn Colombia in a world leader in the struggle against climate change means “the total transformation of the economy, from an extractive and destructive model to a productive economy that respects nature” (Pacto Histórico 2022, 6–7). As the Minister for Energy and Mining Vélez and the government have declared on several occasions, the national conflict in Colombia is strongly influenced by environmental and social conflicts linked to the extractive mining and energy model intensified over the past 30 years. Other aspects of the socio-ecological transition present in the government program are: The democratization of the use of clean energy, territorial planning regarding water, the energy transition, mining, transport, circular economy, affordable public transport based on renewable energies, zero waste, and investments in research, science and technology.

Once in government the program built the base for the *National Development Program* (PND), which was also consulted in dozens of regional and sectorial assemblies and received thousands of comments online. Although social movements and communities welcomed generally the PND and the consultations, the whole process has also been criticized as not providing enough space and time for a detailed discussion and the participation of many affected groups and communities.

The public job training institution *Servicio Nacional de Aprendizaje* (SENA) is meant to offer job trainings for a green economy. The main problem is said to be the difficulty in identifying the trainings and re-trainings needed. Over the past few years, the Ministry of work focused therefore on identifying the potentially missing trained workforce in renewable energies and forestry. (OIT 2022, 52–53).

A new labour law elaborated with the support of the ILO and UN is planned to be presented in the 2023. It is supposed to be based on the concept of decent work. The Mining law from 2001 has also to be replaced, it is written to serve the interests of big mining companies and favours large scale mining. It does also not mention how exploitation concessions can be terminated and does not regulate the responsibilities for short and long-term consequences of mining and energy production for the environment and the communities affected.

Just energy transition

The centerpiece of the government's climate change and just transition policies is the just energy transition. It aims at phasing out of production and consumption of fossil fuels. The declared goal is not only to reduce CO2 emissions, but also to close the social and environmental gaps in the country. The alternative focus is on solar and wind energy and small hydropower plants. All sectors, from communities and trade unions to private companies operating in energy sector and fossil fuel sector are supposed to participate in developing the just energy transition. Alternative projects are to be developed preferably with and for communities also decentralizing and democratizing energy production and access. Fracking has been banned completely. At the same time Minister Vélez has assured private investors repeatedly that the government respects all contracts signed in the past. Only seven concessions for fracking ("not conventional contracts") have been cancelled, honouring the campaign promise not to allow fracking anymore. 34 contracts have been suspended in order to evaluate if cultural and ancestral rights of populations have been neglected, and the consultation process demanded by law has to be repeated (Minenergia 2022). The remaining 166 concessions for oil and gas drilling or exploration remain untouched.

A road map for the just energy transition was issued early on and the minister began in September 2022 with sectorial meetings with private companies, indigenous organizations, trade unions from the energy and mining sector and others to discuss the just energy transition. The participating trade unions Central Unitaria de Trabajadores (CUT), Unión Sindical Obrera (USO), Sindicato de Trabajadores de la Energía de Colombia (Sintraelec) and the Sindicato Nacional de Trabajadores de la Industria del Carbón (Sintracarbon) manifested their support for the just energy transition. The USO, the biggest oil workers union, had already declared its rejection of fracking a few years ago.

The aspect of decentralization and community control of energy production is especially important. Communities and trade unions denounce that the renewable energy projects brought on the way by former governments were reproducing the structures of the fossil fuel sector in the renewable energy sector. Displacement and dispossession of indigenous and peasant communities in favour of solar energy or wind energy parks takes place in Colombia and in Mexico.

Empleos verdes - Green jobs

In 2022 the fossil fuel and mining sector in Colombia employed approximately 196,000 workers directly and one million workers indirectly. 1.2 million jobs will be lost or have to transform into ecologically sustainable workplaces over the coming years. The prior right-wing governments elaborated a framework and policy for green jobs. The new government has, so far, not presented an alternative definition or policy in this regard.

Green jobs are "jobs aimed at reducing pressures on natural capital through its protection, conservation and sustainable use in any process of production of a good or service, with fair

remuneration, workers' rights and social protection" (OIT 2021b, 26). In 2021 there were 81,386 green jobs in Colombia, 3.4 percent more than in 2020. 51.3 percent of the green jobs are in the areas of climate and air protection, sewerage, and waste management. 40.7 percent of the jobs are in environmental education, administration and management, and natural resource management. (Mintrabajo 2022). Green jobs are jobs in the bio-economy: "Bio-economy is the economic practice that manages in efficient and sustainable manner biodiversity and biomass to generate new value-added products, processes and services based on in knowledge and innovation that allow the creation of new levers of growth, development and progress in the regions of Colombia" (OIT 2021c, 14). Despite the complex definition, a small local cooperative producing organic juices using alternative energy sources can also be part of the bio-economy.

Greenhouse gas emissions in Colombia are caused mainly by land-use change (37 percent), livestock and agriculture (18 percent) , transport (12 percent) and industry and energy (10 percent) (Comisión Primera Senado de la República de Colombia 2022, min. 27:30). The electricity production in Colombia is labelled as the "sixth cleanest globally," more than 77 percent are generated through hydropower. CO2 emissions of electricity production make up only four percent of the total CO2 emissions (Escallón, Rodríguez, and Quintero 2021, 113). Nevertheless, the electricity generated with huge dams is not sustainable at all. It goes along with displacement, destruction of natural habitats, agricultural land and communities, and has negative consequences on water resources and climate. Without the huge hydropower plants renewable energies make up only 6.53 percent of the national energy consumption including small hydropower plants and biomass power plants. Solar and wind energy alone produce only 1.58 percent of the energy consumed (Cota 2023).

The total workforce employed in the renewable energies sector in 2019 was 272,100, of which 211,900 worked in the production of liquid biofuels, namely ethanol from sugar can and biodiesel from palm oil. Both is not sustainable and work conditions are usually bad. These jobs are apparently also not counted among the green jobs or environmental jobs. The renewable energies following had significantly less workers: hydropower with 36,600 and solid biomass with 18,600 workers. Last came wind energy with only 4,000 workers and solar energy with 1,000 workers. (OIT 2021a, 188). Other sources provide different numbers. According to IRENA and the ILO jobs in the solar energy sectors went up to 2.381 in 2021 from just 360 one year earlier. At the same time, the Ethanol production fell in 2021 for the third year in a row. IRENA counts 187.500 jobs in the liquid biofuels industry. (IRENA and ILO 2022)

The natural conditions for developing renewable energies are good. Colombia has the sixth largest renewable water resource of the planet and the Northern regions have a level of solar radiation that is 60 percent higher than the world average (Ruiz Mendoza 2022). The state-owned oil company Ecopetrol is evaluating projects regarding wind energy, biomass, small hydropower plants, geothermal energy, and high efficiency storage batteries (Minenergía 2022). According to the priorities of the prior government, several national and transnational companies engage in research, development and application of renewable energies. Beyond the investments in large solar and wind energy facilities, they invest especially into hydrogen production. The former government aimed at turning Colombia into a world leading hydrogen producer. Until 2025 the hydrogen will still be in part blue hydrogen (produced with gas) and

only from 2030 green hydrogen (produced with renewable energies) (Cervantes 2022). The new government has so far not set out clearly its hydrogen policies. Hydrogen production is often criticized for being too energy intensive. Blue hydrogen is especially criticized because it is produced with gas and with a very energy-intensive process.

Trade unions and popular movements

In Colombia left-wing parties, and especially social movements, organized communities, trade unions, indigenous and Afro-Colombian communities, small peasants etc., practically everyone that was seen as a threat to the interests of elites and capital, suffered severe repression during several decades. The unionization rate in Colombia is less than 5 percent. This is a result of several decades of bloody war waged by paramilitaries and the army, financed by private companies and drug trafficking, and backed by the state. From 1973 to 2018 487 Colombian trade unions suffered 14,842 violent attacks in which 3,186 unionists were killed (ENS 2020, 10). The USO was among the unions that suffered the heaviest attacks. Over the past years, the killings of unionists diminished drastically. Of 124 social leaders murdered in 2019, only one was a unionist. Environmental activists, indigenous activists and others defending territorial rights and the environment, and therefore opposing the extractivist model, became the primary target.

TRADE UNIONS

A broader discussion on just transition and especially on just energy transition among unions in Latin America began more than a decade ago. Several Latin American trade unions, among them the CUT and Sintraelecol, joined the global network Trade Unions for Energy Democracy (TUED). Although the subject of just energy transition has not been very visible in trade union struggles, it has always been present in union debates, programs and initiatives.

In 2021 the three unions of the mining and energy sector, USO, Sintracarbón and Sintraelecol held two “Political meetings of mining and energy unity for the just transition in Colombia.” In a joint declaration they confirmed their “commitment to promote the current change in the mining and energy policies of Colombia and the change of course of the exclusive, unfair and unsustainable development model from the environmental, economic and the social, which are imposed by governments at the service of financial capital” (Cipame 2021). They also stated their commitment to develop public alternative proposals and founded for that purpose the “Innovation and research centre for the just development of the Colombian mining-energy sector” CIPAME, which was officially launched on May 19, 2022 (Cipame 2022). Moreover, the three unions proposed to organize unitarian initiatives in favour of the just transition autonomously and with the support of other unions, IndustriAll Global Union and other organizations. The CUT and the major energy and mining unions have also participated in meetings on just energy transition with other social forces.

The CUT Secretary General Edgar Mojica describes the concrete expression in Colombia of the global energy model as “accumulation by dispossession”. The dispossession of the

people and the displacement from their territories. For Mojica just transition cannot be only about the destiny of the workers. The transition cannot be left to the transnational companies. The transition has to have a social and communitarian perspective not a focus on business and markets. He points out that the reconversion of CO₂-emission intensive workplaces faces several difficulties, but the trade unions, including the oil and mining sector, are politically convinced of the necessity of a transition and to build their alternative proposal. (Nuñez 2020).

SOCIAL AND POPULAR MOVEMENTS

The topic of just energy transition brings together indigenous organizations, peasant organizations, trade unions, environmental organizations, communities affected by dams, mining, oil spilling, fracking, solar and wind energy mega projects, and others. In 2011, the Ríos Vivos anti-dam movement initiated a campaign to advocate for a national dialogue on energy and mining. It promoted a public hearing in the Senate of the Republic and launched the initiative. The Ríos Vivos movement is part of the Latin American and Caribbean Movement of Those Affected by Dams (MAR), and develops community energy alternatives. In 2014 the topic just energy transition was discussed at the Peasants', Ethnic and Popular Agrarian Summit (Cacep) which formulated a list of demands, including a democratic discussion on the transition, a mining moratorium, revision and cancellation of several mining titles and oil concessions, and the creation of a National Commission of Dams.

Energy transition was also the central topic at the Round Table *Mining, Energy, and Environment for Peace* (MSMEYA) of social organizations, founded in 2016 around the peace negotiations between the government and the FARC guerrilla. The round table discussed strategies, and elaborated a proposal for a just energy and mining transition vs. the dominant "corporate transition." The MSMEYA was founded following the Second Assembly for Peace convened by the USO, Ecopetrol and the Ministry of work which gathered trade unions and territorial ethnical and environmental organizations.

Indigenous communities organized in defense of their territories have fallen victims to dozens of killings over the past years because they are in the way of the extractive industries. Out of their own experiences, many movements and communities are skeptical regarding corporative discourses and renewable energy megaprojects. In the Northern region La Guajira, for example, where open-pit coal mining is devastating the territories of the indigenous Wayúu people, there are also megaprojects for wind energy and solar energy. These renewable energy megaprojects reproduce the extractive model of the fossil fuel industry in disregard of social and ethnic rights of indigenous and peasant communities, reproducing and exacerbating inequalities. The Wayúu communities have therefore generated resistance against the renewable energy megaprojects demanding the recognition of their rights. Communities affected by coal mining generally demand the closure of the mines and reparation for the damage caused by the mining activities. Indigenous organizations have participated in the broader encounters on energy, mining and just transition, and have also held own encounters and debates among indigenous organizations and with peasant and rural communities formulating their vision of just energy transition, which is reflected in the common proposals brought forward by broader alliances. Indigenous organizations met also with Minister Vélez to discuss their specific concerns and demands.

The indigenous organizations asked for a revision of all mining concessions to establish which ones had not complied with the obligatory prior consultations of affected communities. Another concern of indigenous communities is to regulate small and traditional mining, which is criminalized and prosecuted (Irene Vélez-Torres 2022).

ENVIRONMENTAL ORGANIZATIONS

Environmentalism is a concern of all social forces and communities engaged in the just energy transition. Many Colombian environmental organizations are working with communities and are part of movements. One of the most committed environmental organisations is Censat - Agua Viva, part of the international network Friends of the Earth. It promotes environmental justice and works with communities and organizations in defence of affected territories. In September 2022 it handed over to the ministry of work a document analysing a planned reduction of fossil dependency in Colombia and formulating several proposals. During a transition phase the exploitation of fossil fuels for national consumption and export would still continue, but agreements have to be negotiated with the affected communities regarding modalities and reparations for damages. Concessions have to be revised, taxes raised and additional taxes introduced (for example for the exploitation of non-renewable resources and a windfall tax). All the revenues of the state from fossil fuel industries should be used for the transition, prioritizing job reconversion programs and trainings for the workers gradually losing their jobs in fossil fuel industries, and stimuli for jobs in the climate struggle for young people entering the labour market in order to restore and conserve ecosystems, protect the biodiversity, strengthen resilience, and capture CO₂ through the agroecological transformation. (Censat Agua Viva - Amigo de la Tierra de Colombia 2022, 7). Internationally Colombia, together with other countries from the global South, should demand direct compensations for environmental damages and the consequences of climate change, coordinate the gradual downscaling of free trade agreements and strengthen local and regional markets. The whole transition process has to be highly participatory and decentralized, following criteria of environmental justice and aiming at reducing local and regional inequalities. The peasant, indigenous and Afro-Colombian communities have to be the backbone of the socioecological energy transition. (Censat Agua Viva - Amigos de la Tierra Colombia 2022).

Coalitions for a just transition

While there is no alliance for a just transition labelled as such, the common initiatives and proposals from popular sectors and trade unions are in fact just transition coalitions. Especially regarding proposals for a just energy transition they are much more advanced than just transition alliances existing in other countries. Beyond the already mentioned round table and encounters, trade unions and popular and environmental movements came together for a National Dialogue on Mining, Energy and Environment (DINAME) in 2018. Among the participants were the Cacep, the CUT, USO, Sintracarbón and Sintraelecol, some minor unions active in electric energy distribution services and extractive industries, trade unions from the public services sector, Ríos Vivos, the round table MSMEYA) and others. The dialogue came up with 21 proposals regarding the mining and energy sector to promote

peace and the transition to a commonly shared project for the country. The proposals are linked to 8 different areas: 1) protection of water, biodiversity and nature; 2) the participation of society in decisions regarding the vocation of its territories and soils; 3) structure and ownership of mining and energy companies; 4) the technological and environmental limits of mining and energy exploitation; 5) renewable energy in support of a clean and renewable energy model; 6) recognition of human rights of workers and communities affected by mining and energy production; 8) distribution, taxation and destination of revenues from the mining and energy sector. (Segunda Asamblea Nacional por la paz and MSMEYA 2018).

Conclusions

The government and the Ministry of Mines and Energy have adopted the discourse on the just energy transition from the popular movements, grassroots, indigenous and environmental organizations, and trade unions. These should therefore also be the main actors defining the just energy transition. They do not only represent the vast majority of the population, but are also the ones that have sustainable proposals for the transition and do not subordinate nature and people to the interests of capital as the companies in the sector have been doing for decades. If that happens remains to be seen. The pressure to advance quickly with the road map for the just energy transition is huge and the public regional assemblies with communities and movements on the just energy transition have been criticized as too hasty. The urgency is also expressed in the communication strategy. Minister Vélez makes her announcements mainly through twitter while many of the documents on the ministry's website are still from the prior right-wing government. The results of the regional dialogues for the construction of the National Development Plan are supposed to be of binding nature for the government. It is nevertheless unclear who and how will evaluate if the proposals have been picked up correctly, and if and how the binding character will be enforced (especially in the case of communities affected by existing mining and energy projects). Prior governments had not complied with the binding character of policy proposals formulated by popular organizations in government consultations.

How much of the ambitious government program will materialize is unclear, not only because of the usual global market pressures. Capital and elites imposed the actual extractivist model in Colombia with a war against the people in which paramilitaries linked to the government, army and private capital killed more than 250,000 people in four decades. They will not give up easily.

9. Philippines

The Philippines is responsible for only 0.3 of the world's GHG emissions (2015), but is listed second in the Global Climate Risk report 2020. The reason lies in its archipelagic structure with half the population living in cities and densely populated coastal areas. Sea level rise represents a major threat. About half the coastal wetland is exposed to erosion and could be lost by 2100. The sea around the Philippines has many coral reefs, which are vulnerable to bleaching because of rising sea temperatures. This affects directly about one million Filipinos working as reef fishers. Temperatures in the Philippines are on a rise. Days with extremely high temperatures have become more frequent, causing fatalities, droughts and wildfires as well as affecting negatively the agricultural production. Extreme weather, as floodings and storms, has become more frequent. The effects of El Niño have also exacerbated. Strong and very destructive typhoons have hit the country almost every year during the past decade causing an estimated loss of 1.2 percent of GDP annually. On November 8, 2013, Super Typhoon Haiyan (known as Yolanda in the Philippines) hit the central part of the country. It was one of the most powerful tropical cyclones ever recorded. Haiyan affected 11 million people, and caused more than 6,000 deaths and damages estimated US\$5.8 billion. Over the past two decades some 20 percent of the country's GDP fell victim to climate change impacts (Velasco 2022).

In 2021 the Philippines had 113.88 million inhabitants. The GDP per capita was US\$ 3,460.50. From 2014 to 2019 annual growth of real GDP was between 6 and 7 percent. During the first year of the pandemic, it dropped 9.5 percent, and in 2021 it rose again 5.7 percent. Industry including construction had a share of 28.9 percent, in constant decline since the early 1980s when it was around 42 percent. The service sector had a share of 61 percent, while agriculture was at 10.1 percent. The unemployment rate in the Philippines in 2021 was at 2.4 percent and the share of youth not in education, employment or training was at 17.5 percent. In the Philippines youth unemployment has been very high for a long time. In 2012 it was at 24.8 percent and decreased to 18.8 percent in 2019. In the first year of the pandemic, 2020, it increased again to 24.1 percent. (The World Bank 2022).²⁰

President Rodrigo Duterte (2016-2022), leading an authoritarian right-wing government, declared at the beginning of his six-year presidency that the Philippines will not comply with the Paris Climate Agreement. In 2020 he suddenly made ambitious announcements regarding climate policies and called all countries to honour the Paris Climate Agreement. In 2021 the Philippines became one out of only eight countries globally to define Nationally Determined Contribution (NDC) goals in line with keeping the rise of global temperatures below 2°C. GHG emissions were supposed to be reduced drastically in all sectors and areas. Laws and programs were enacted. Finally, the NDC goals for 2022 were not met at all (Velasco 2022). There are no indications so far that the right-wing government elected in 2022 will adopt fundamentally different climate change policies. Fossil fuels are the primary energy source of the Philippines. In 2018 oil and coal alone (without gas), made up 61 percent of energy sources. The power sector is also the largest source of GHG emissions

²⁰ All labour market data for the Philippines are estimates, partially based on small surveys.

causing 52 percent of total GHG emissions. Second comes the transport sector accounting for 35 percent of the total GHG emissions. (IBON 2020)

The term sustainable work is not used in policy papers or government programs. In the Philippines the quality of work is a huge problem beyond the ecological transition. Past governments have shown little interest in improving the situation. Vulnerable employment, low pay, long work days and missing or not applied labour laws are an advantage when competing for foreign investments. On the side of trade unions there is no specific discourse regarding just transition or sustainable work. The quality of work is discussed under the ILO label of “good work.” While just transition is not addressed specifically under this term, topics like the environment, destructive mining or extractivist industries, and their link to poverty are present in trade union debates and declarations. Among popular movements and leftist NGOs just transition is a more common concept. Over the last decade it has been mainstreamed in movements advocacy.

Labour market and employment

The total labour force in the Philippines in 2021 was 47.7 million people (the labour force participation rate is at 63.3 percent). The total employed labour force was 43.99 million. It increased from 39.5 million in 2011 to 45.1 million in 2019, before it dropped to 42.4 million in 2020 during the pandemic. Around 38 percent of all employed workers are in vulnerable forms of employment, with less access to formal work contracts and arrangements, to labour rights, and to social protection.

A look at the sectorial changes from 2011 to 2019 shows important shifts. Employment in agriculture fell from 32.7 percent of total employment to 22.8 percent and is likely to continue diminishing. Employment in the industrial sector increased from 15.3 percent of total employment in 2011 to 16.2 percent in 2015 and then jumped to 19 percent in 2018, maintaining the quota in 2019. The share of services in contrast is showing a constant strong growth. It increased from 52 percent in 2011 to 58 percent in 2019.²¹ The Philippines responds to the demand of global capital for cheap service labour. On the one hand the country exports service workers (especially in the care industry), on the other it is home to 851 registered business process outsourcing (BPO) companies, two thirds of them from the USA. 675,600 workers work in these outsourced services. The BPO sector is one of the largest contributors to the country's GDP. 429 BPO are call centres and 400 BPO are firms providing other IT-related services. With a global market share of 16 to 18 percent, the Philippines is the world's call centre capital. (Raymundo 2021).

²¹ Data source: <https://data.worldbank.org/>.

Public policies and measures

Since 1999 the Philippines has adopted various laws and rules linked to climate change. A climate strategy and GHG reduction targets were formulated. In 2009 the Philippines passed the Climate Change Act (Republic Act 9729) which included the establishment of a Climate Change Commission (CCC). The CCC is supposed to be an independent body with a government agency status, but it is presided by the President. Its tasks are to “coordinate, monitor and evaluate the programs and action plans of the government relating to climate change pursuant to the provisions of this Act.” Most laws and programs were enacted from 2019 to 2021.²²

The *Energy Efficiency and Conservation Act* (Republic Act 11285) in 2019 established the creation of the *Inter-Agency Energy Efficiency and Conservation Committee* (IAEECC). It has the task to evaluate and elaborate measures to increase energy efficiency in buildings used by the state. The same year a program was enacted for the preservation of forests and to restore 1.2 million hectares of degraded and cut down forests until 2028. The plan is an update to a forest preservation and rehabilitation plan enacted in 2011. The plan failed the target to increase forest cover by 1.5 million hectares. According to the *Commission on Audit*, from 2010 to 2015 the forest cover increased by only 177,441 hectares, 11.82 percent of the initial target (2019). There are no indications that the new program will deliver better results. In 2020 the Department of Energy of the Philippines announced to stop the endorsements of coal power plants.

In 2021 the Philippines passed a new version of the *Energy Efficiency and Conservation Act* (EECA) (Republic Act No. 11285) including the energy efficiency of the industry and of electricity and heat, instead of only buildings. The EECA is implemented by the Department of Energy, which has the task to present plans to increase energy efficiency and reduce consumption within the Philippines. The institutionalization of energy efficiency aims at providing the country a sufficient and stable energy supply and protect the environment and promoting renewable energies. The EECA has also to ensure “a market-driven approach to energy efficiency, conservation, sufficiency, and sustainability.” However, as experience has proved, the market fails in stopping or reverting climate change. Also in 2021, the Philippines approved Nationally Determined Contribution targets aiming at a reduction of the projected cumulative GHG emissions of a business-as-usual scenario for the period 2020-2030 by 2.71 percent, and another 72.29 percent conditionally to foreign investments.

Economy-wide energy efficiency targets and support for low-emission and negative emissions research, development and demonstration do not exist. The EECA in 2021 lifted a ban on new mining concessions in place since 2017. The quality of work, jobs in the transition etc. are not addressed in the laws, programs and regulations, beyond the Green Jobs Act. Sustainable work is not a term used in government documents. Sustainability is

²² For more details on the following laws see <https://climatepolicydatabase.org/countries/philippines> and <https://climate-laws.org/geographies/philippines/>.

mentioned more often, however, also mainly in the Green Jobs Act. The term just transition appears in externally funded pilot projects, but not in the government's main climate change policy documents. They lack a holistic framework as the just transition approach has.

Electric power generation in the Philippines depends mainly of fossil fuels, mostly on coal, followed by gas power plants and power plants using imported bunker and diesel fuel. The dependency on coal for power generation and on coal imports has increased under the Duterte administration. Coal-powered energy production increased from 43,303 Gigawatt hours (GWh) in 2016 to 57,890 GWh in 2019 (in 43 coal power plants), more than 54 percent of all electric energy generated the same year (106,041 GWh). The central role of coal in generating electric power is a result of the privatization and deregulation of the power industry from the end of the 1980s to the early 1990s. There is no improvement in sight. Coal-fired power plants account also for 78 percent of the capacity of all power projects committed until 2019. (IBON 2020).

Fortaleza points out that in the Philippines 12 million households in different regions are served by 121 electric cooperatives whose members are also the owners. The cooperatives do not reject to move towards renewable energies, but it is financially a more difficult operation for them than for the big energy companies. They fear “the looming corporate takeover or privatization of electric cooperatives whose franchise areas are set to expire over the next ten years. In fact, some cooperatives already have their franchises being contested in Congress by companies identified with entities that are also into coal.” (Fortaleza 2019, 24–25).

The transport sector, based mainly on oil as fuel, reveals also important difficulties for the just energy transition. Transport is the second biggest employer in the service industry. It employed 3.2 million workers in 2018 (7.8 percent of the total workforce). The data on transport workers in companies with more than 20 employees from 2015 counts only 192,000 employees in the transport sector. This means that most of the remaining 3 million transport workers probably have informal work arrangements or are self-employed, driving vehicles for informal and unregistered lines, most often jeepneys. These workers are in jobs that do not correspond at all to decent work, and there is no government plan to turn these jobs into decent or good work. The government program for them is the Public Utility Jeepney (PUJ) Modernisation program aiming at replacing jeepneys after 15 years of lifetime with cleaner vehicles. But the program fundings available from early 2017 until 2019 covered only two percent of the vehicle modernizations, while in the 2020 budget there were no funds at all assigned to the program. Drivers would have to take bank loans for a new vehicle that are difficult to pay back for them if they even get them. Moreover, as the energy cooperatives, the drivers' associations are threatened by corporate takeovers of franchises. The drivers are asking the government for financial support and for protection from corporate takeovers. (Fortaleza 2019, 26–28).

Green jobs

In April 2016, the Philippines passed the Green Jobs Act (GJA). The GJA has the goal to promote sustainable development, the creation of decent jobs and climate resilience. 21 government agencies are involved with specific tasks. Curricula in support of the knowledge and skills requirement of a green economy are to be developed from primary school to the university. Various government agencies have to identify skills needed for the green economy and develop job trainings and support. The main focus of the GJA is nevertheless on financial incentives for private business for green job creation. These include tax deductions up to half of the cost for green skills job training and research and development expenses for green jobs. Moreover, importation of capital equipment directly and exclusively used in the promotion of green jobs of the company are exempted from taxes and duties. It was the first law in the Philippines with a clear framework engaging with the problem of climate change and poverty at the same time. It was also the first and only law and program referring extensively to just transition, sustainability in general, as well as putting decent work and human capital development at the heart of climate change policies. This allowed the ILO in 2017 to fund a pilot program for the application of just transition “aimed primarily at building the capacity of its tripartite partners (government, employers, and workers' organizations) in meeting the country's obligations to the Paris Agreement and the 2030 Sustainable Development Agenda. The capacity-building initiative includes advancing decent work and fair transitions for enterprises and communities as guideposts.” (Fortaleza 2019, 8).

The GJA defines green jobs as “employment that contributes to preserving or restoring the quality of the environment, be it in the agriculture, industry or services sector. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity, reduce energy, materials and water consumption through high efficiency strategies, decarbonize the economy, and minimize or altogether avoid generation of all forms of waste and pollution. Green jobs are decent jobs that are productive, respect the rights of workers, deliver a fair income, provide security in the workplace and social protection for families, and promote social dialogue.” (Government of the Philippines 2016). The social dialogue conducted on the GJA saw the participation of representatives from the government, employers and trade unions, and elaborated the *Green Jobs Act Implementing Rules and Regulations* enacted in September 2017. It defines in more detail the measures listed in the GJA, including monitoring and evaluation, and formulates the need to “pursue a just transition for all” (DOLE 2017).

There is no data available on how many green jobs exist in the Philippines (only projections by different international agencies how many green jobs could be created). Data exists only for the renewable energy sector. In 2021 Philippine authorities counted approximately 189,000 jobs in the renewable energy sector (up from 178,000 in 2020): 69,423 in hydropower (some 60 percent in large facilities) (up from 53,600 in 2020); 61,926 jobs in solar power (41,035 in 2020), 26 718 in wind power (23,800 in 2020), about 14,047 in biomass, of which 3,324 were direct jobs in biofuels processing (11,200 in solid biomass and 2,900 in biofuel processing in 2020) and 11 628 in geothermal power (11,200 in 2020). IRENA estimated additional 34,300 jobs in the agricultural supply chain for liquid biofuels (IRENA and ILO 2022, 48). The growth rate of renewable energy jobs, many of which are

not sustainable, is too low to accomplish the energy transition. The growth rate of fossil fuels used to generate energy is also higher than the growth rate of renewable energies. Moreover, as already mentioned, renewable energy is not automatically sustainable.

The *National Renewable Energy Plan* enacted in 2011 in addition to the Renewal Energy Act of 2008, set the target for the share of renewable energies at only 30 percent by 2040. While the Department of Energy is still applying “technology neutrality,” which means that in its plans for energy security it prioritizes the energy production with the lowest cost and that can respond best to changing high and low requirements. That brings coal into the top position. And there are no plans for the closure of coal power plants and mines. Just transition plans for mining communities or for workers of the electric industry do not exist. Funding is directed mainly to big companies. The NGO IBON defines the government’s renewable energy policy as “green smokescreen”:

“The renewable energy program often even harms the environment: geothermal plants destroy forest cover and disturb the natural habitat; hydropower dams submerge lands, disrupt ecosystems, and displace communities; and biofuel farms overuse synthetic fertilizers, pesticides, herbicides and fossil fuel” (IBON 2021)

Sustainable renewable energy projects without state support can be found on a local scale. A few local electric cooperatives have built renewable energy projects, small communities on remote islands have transitioned to renewable energy, and civil society initiatives install solar panels on community buildings. The share of the total energy produced that these initiatives have is marginal. But they prove that there is a consciousness about the need and the advantages of a just energy transition that is sustainable and decentralizes and democratizes energy generation and access.

Parties, trade unions, social and environmental movements

PARTIES²³

In the Philippines there is a huge number of national, and especially regional and local parties. Many are part of electoral alliances for national elections. The policies of the major parties and alliances regarding climate change are reflected in Duterte’s government policies. All major parties and candidates are or were in some way linked to the former government. The presidential elections on May 9, 2022, were won by Ferdinand “Bongbong” Marcos with 58.77 percent of the votes running for the alliance UniTeam. He is the son of the former dictator with the same name. Marcos did not receive the direct support of President Duterte, but of several of the parties that supported Duterte, and Duterte’s daughter Sara Duterte run as Marcos’ candidate for Vice president. Marcos –as Duterte– has the support

²³ Many thanks to Sarah Raymundo for a detailed introduction into leftist party politics in the Philippines.

of the USA and China. Leni Robredo, former Vice president of Duterte, run as independent candidate and came second with 27.94 percent. She ran with Francis Pangilinan as candidate for Vice president. They come from the right wing of the Liberal Party, and are supported by right wing social democrats and the traditional landlord-oligarchs. But they were the only major candidates without corruption charges. The leftist party coalition Makabayan called to vote for Robredo and Pangilinan. The strategy as National Democratic Left was to support a broader alliance with the perspective to block Marcos' rehabilitation and defeat the Marcos-Duterte clans. Makabayan's position was also supported by peasants' organizations and trade unions like the radical Kilusang Mayo Uno (KMU, May First Movement). Manny Pacquiao came third with 6.81 percent. Pacquiao was elected in 2020 as leader of one faction of the party PDP-Laban (part of the governing coalition and split into two factions), he aligned himself with the Duterte government until the electoral campaign when he launched his own run for presidency. Climate change or just transition were not topics of any of the major electoral campaigns, and no significant differences compared to the Duterte government can be spotted in their climate policies.

The leftist party coalition Makabayan won 3.51 percent of the votes in the 2022 general elections (down from 11.8 percent in 2016) and has three seats in the House of Representatives. Makabayan is part of the National Democratic Left, promoting a peasant-worker-led alliance with various social movements and minorities. The bad electoral result was due to repression against Makabayan members, including several killings, to electoral fraud and to the difficulties to mobilize during the pandemic. There are also other leftist parties or electoral coalitions that play an important role in activist and mobilizations around workers' rights, just transition and especially against mining and other mega projects affecting the environment. Although electorally their importance is marginal. There is the major electoral left-wing coalition Laban ng Masa (Fight of the Masses). In 2022 the coalition was made up by the parties Partido Lakas ng Masa (PLM) and the Sanlakas party, both alliances of unions and various organizations of groups marginalized in society. They supported Leody de Guzman and internationally known academic and activist Walden Bello as candidates for the presidency and vice presidency. In the 2022 elections Guzman won only 0.17 percent of the votes. Laban ng Masa, PLM and Sanlakas are influenced by Trotskyism and reject the National Democratic strategy. Makabayan and PLM engage in progressive parliamentary politics and build broader tactical alliances against the Duterte and Marcos clans.

The Partido Manggagawa (Labour Party) stands further left than Laban ng Masa. It was delisted from the 2022 general elections because of its low approval in past elections, when it remained under 0.2 percent of the votes. However, prominent figures in debates around just transition as Wilson Fortaleza, are members of the party. Although the party does not have defined official positions around climate change policies and just transition, both play a prominent role in their politics. The mobilization against the national mining and fossil fuels policies has been central to the activism of the Partido Manggagawa over the past decade. Several groups and organizations that form both parties that are part of the leftist are engaged in struggles for a just transition (even if not named like that).

TRADE UNIONS

In the Philippines there is a huge variety of trade unions and other workers' representations, for example, for self-employed workers in certain sectors. They exist from the company level to the national, and even international level. The major national union confederations participated in the ILO just transition capacitation and in the consultations on just transition with government and employer representations. The term just transition is however rare in union debates or discourses. Workers' representations in different sectors are aware of the necessary and coming transformations. The sectorial unions and workers' organizations deal usually with concrete issues of the transition, as shown further down with the example of urban micro-transport workers. More struggle-oriented trade unions handle concrete issues of the transition and support social movements and communities in their struggles against megaprojects. KMU²⁴, for example, is waging a campaign against the transnational companies operating mines under the Mining Act of 1995.

ENVIRONMENTAL AND OTHER ORGANIZATIONS

Several independent leftist NGOs engage in grass roots projects associated with just transition play a prominent role in the public debate. The Center for Power Issues & Initiatives works on energy transition advocating for renewable energy and energy democracy. The IBON Foundation “explores alternatives and promotes a new understanding of socio-economic issues that best serve the interests and aspirations of the people.” It organizes popular education with communities and publishes research reports. The Center for Empowerment, Innovation and Training on Renewable Energy (CentRE) capacitates and supports communities in building their own renewable energy projects. The basic idea is that environment-friendly sourcing of energy is possible through community-based, people-determined solar, air and water energy generators. One project is directed explicitly at women. CentRE is also elaborating reports and analyses on the just energy transition in the Philippines. In different studies it looked at the status of the just transition in the Philippines and at renewable energy in the transport sector. The topic of work in the energy transition and the need for a just transition that includes social concerns of workers and communities is present in publications of all three organizations.

Moreover, there are indigenous people and farming and fishing communities engaged in struggles to defend their traditional territories, land and communities against mining, dams and other megaprojects.

Conclusions

The results of the climate change policies are disappointing but not a surprise. That the Philippines missed its targets is unfortunately not an exception. Almost all countries in the

²⁴ The KMU had 115,000 members in 2018. It operates in various branches and describes itself as militant union.

world miss their targets regarding climate change policies, even if they do not set targets considered sufficient to keep global warming below 2 °C. In the case of the Philippines it seems governments so far had little interest in implementing serious policies for a social and ecological transition, and not even for an energy transition.

Regarding the advances of the GJA all looks good on paper. Tripartite consultations, inter-agency coordination, and capacity building meetings have been accomplished or are on their way. The ILO facilitated consultations with employers and workers organizations. But there is little advance in the concretization of measures to take. Institutional decision-making processes are slow. In his evaluation of the advances of the implementation of the GJA Fortaleza points out that the “most important pillar of Just Transition [...] is social dialogue or negotiations,” but a “One-shot sectoral consultations and workshops do not make a social dialogue.” The questions to ask should be if negotiations “resulted in the formulation of common plans for action at the workplace level or at the level of affected communities” and if “actual transition plans [were] collectively prepared for power industry and transport unions or for environmental justice communities.” (Fortaleza 2019, 18). And he adds that “for this process to become a meaningful social dialogue, it has to advance to the planning stage and negotiations for the actual transition plans” (Fortaleza 2019, 29).

Several years later the situation is not very different. Plans for action, if they have been elaborated, are not the result of a social dialogue. And if they are passed it does not mean they are implemented, even then they might not have sufficient or any funds. As can be seen in the energy sector the government has not undertaken a strategic reorientation of the energy and industrial policies. Industry restructuring is also not taking place. Just transition could become the banner of a broad alliance. In order to tackle the lack of strong labour rights and social protections the just transition movement has to be led by workers and popular movements.

Conclusions

“The opposition from vested interests can be overcome by a robust climate movement that leverages the power of the workers and the poor, and merges it with advocacy against social inequality. This is a key challenge for climate action in the Philippines and arguably elsewhere.”
(Velasco 2022)

The aim of this study was to investigate and provide an overview of the policies and discourses regarding work in and for a social and ecological transition in six European countries (France, the United Kingdom, Germany, Norway, Spain and Poland), Colombia, Mexico and the Philippines. The perspective taken is that of sustainable work and just transition. Although sustainable work is part of the SDG signed by all countries in the UN in 2015, the concept has not found its way into national policy papers or programs. Almost no indicators and instruments supporting a more comprehensive social and ecological perspective on sustainable work, uniform criteria and parameters or a common terminology have been developed. This raises some methodological problems. However, due to the diverging contexts and circumstances, it was never the intention to produce a comparative study.

There is a scientific consensus on the need to keep the global temperature increase below 1.5 degrees Celsius. There is no room to negotiate with nature. It is obvious that no government is doing enough. The targets set are too low and the measures enacted are still not sufficient to meet them. There is no way around, that most societies have to consume fewer natural resources and energy, and produce less waste. Government documents often underline the need of a change in the prevailing patterns of consumption and production. But they avoid talking about work, the sense of work and about unpaid work. Work in the socio-ecological transition is usually approached as “green jobs” in a “green economy.” Both do not question the capitalist mode of production and are based on the idea of “green growth.” The quality of work does not play a role here, beyond statements of good will. As seen in the Global North and Global South, “green jobs” are largely low skilled, the majority are precarious and poorly paid.

SOCIO-ECOLOGICAL TRANSITION, WORK AND CLASS STRUGGLE

Governments seem generally more concerned about positive data than about a truthful analysis and a coherent response. Most countries in the world do not include emissions from international flights and international ship traffic in their emission data. They argue that these emissions are not national emissions. However, these emissions do not disappear just because no country wants to count them as its own. Something similar happens in the discourses about work in the social and ecological transition, and sustainability: Different terms are used, mostly without a clear definition or with diverging interpretations. One of the fundamental problems in the debate surrounding green jobs is that the quality of the new jobs is not being taken into consideration: In which sectors did jobs actually increase? Is it a long-term increase? How socially sustainable, therefore, are the new jobs? As we could see

most green jobs are neither green nor sustainable. Moreover, at least 70 percent of the newly created green jobs are held by male workers. In France only 16 percent of all jobs in the green economy are held by women. The most feminised and highest qualified types of employment among green jobs are in natural and environmental conservation professions. However, women still hold only 28 percent of the jobs (Topformation.fr 2019). The very low percentage of women in Spain's renewable energy sector is also notable, at just 26 percent in the solar energy industry (it was, on average, 35 percent in 90 companies investigated worldwide, and even lower in Germany at 24 percent) (IRENA 2017, 15). The socio-ecological transformation is pushing women out of paid work. For this reason, too, a social re-evaluation of work and a perspective exit from the working society are indispensable. To this end, the division between supposedly "productive" and "reproductive" work must also be addressed and tendentially overcome.

To focus on the question of work and turn the sustainability of work into a main parameter for the transition to an ecologically and socially sustainable society allows a rigorous evaluation of the measures and policies enacted. Out of its very nature, sustainable work is centred on humans and nature and not on economic criteria stemming from the capitalist societies to overcome. Sustainable work is a holistic approach. It involves looking at economic, social, and environmental issues as an interrelated whole. Moreover, in order for the socio-ecological transition to be a just transition, different levels need to be taken into account. These include social security for those directly affected by job loss, as well as class, North-South relations, and gender.

Most politicians and even many unions (especially the industrial unions) keep clinging to the idea that all vanishing industrial workplaces have to be replaced by "green" industrial jobs. The discourse is also nurtured by the fact that industrial labour is paid much better and has a higher social status than most of the substitute workplaces. Nevertheless, it is impossible to replace all industrial jobs with industrial jobs, and it is not what most societies need. A successful socio-ecological and economic transformation needs therefore a fundamental re-evaluation of work. The Covid-19 pandemic has shown for a good part, who the really systemically relevant workers are. Most of them are not well paid and have bad working conditions

Nowhere is an expanded understanding of work in the sense of sustainable work, understood as overcoming the work-oriented society by eliminating or at least partially overcoming the separation between productive and reproductive activity, part of the public debate. The most advanced discourse of sustainable work in the sense of an ecological and social transformation of the work-oriented society can be found in Spain among *Ecologistas en acción*, an association of over 300 environmental groups. The association formulates the need for an expanded understanding of work that both includes invisible, unpaid reproductive work and stops privileging the dimension of employment (*Ecologistas en acción* 2019a). Broader just transition alliances often get to include demands that touch upon these issues. For example, this is the case of the Jobs-Climate Platform in France, that aims at a "post-productive economy" and demands a 32-hour-week at full wages and without work hours flexibilization (*Jobs-Climate Platform* 2016, 10).

Governmental discourses and documents generally underscore the fact that the ecological transition will require comprehensive qualification measures, and will make it possible to create more profitable employment opportunities. However, as this investigation shows, this understanding bears little resemblance to reality. Satisfactory work, job security, and employee well-being tend to be addressed more in calls or critiques of governmental policies issued by a range of trade unions or broader coalitions advocating for a just transition. Aspects such as dignified work and the reproductive capability of labour and life, which are part of a comprehensive understanding of sustainable work, are likewise at most discussed by environmental organisations, social groups, and trade unions in individual countries.

Contrary to the neoliberal credo of individualizing responsibility (whether for health, retirement, or climate protection) and viewing it in isolation from living conditions, the class question must be posed. Thus, the question of who is responsible for the most emissions and consumption of resources, and who will pay for the socio-ecological transformation. In order to limit global warming to less than 1.5°C, annual per capita emissions should be limited to a maximum of 1.9 tons of CO₂ with immediate effect. The poorest 50 percent of the world's population caused 1.4 tons of annual CO₂ emissions per capita in 1990-2019, a total of 11.5 percent of global greenhouse gas emissions, the top 10 percent were responsible for 48 percent, and the top 1 percent for 16.9 percent of emissions. 77 million people, one hundredth of the world's population, are responsible for 50 percent more greenhouse gas emissions than 3.8 billion people, the poorer half of the world's population, and their emissions are growing faster. So, this is also a North-South issue. But the class gap in per capita emissions in many countries is now greater than the gap between many countries in the Global North and Global South (excluding the historical cumulative emissions burden). The top 10 percent in Russia and Central Asia, the Middle East and North Africa, and East Asia are responsible for 10-30 percent more CO₂ emissions than the top 10 percent in Europe. In turn, they are responsible for six times more greenhouse gas emissions than the bottom 50 percent in Europe. Therefore, the fight against climate change is and must be a class struggle. (Chancel 2022)

COLONIAL RELATIONSHIPS

The question of North-South equity is central here. The calculation of emissions by country favours the Global North. It ignores the historical cumulative emissions that continue to have an impact, the origin of the emissions (fossil fuels, as in the Global North, or deforestation and land use change, as often in the Global South), and the size of the population. For example, the U.S. ranks first in the world with 20.3 percent of historical cumulative CO₂ emissions from 1850 to 2021, followed by China with 11.4 percent. In terms of total population, China is not even in the top 20. (Ghosh, Chakraborty, and Debamanyu 2022).

This gives rise to a special responsibility on the part of the Global North towards the Global South, which is more severely affected by the climate catastrophe. However, it is not fulfilling this responsibility, neither by drastically reducing emissions and transferring important environmental technologies, nor by paying reparations. Even the climate funds for the Global South agreed at climate summits have hardly been disbursed. The Global North wants to retain global control and technological leadership in the transformation process. As in the

previous commodity boom, the Global South is once again being forced into the colonial role of primary resource supplier.

Meanwhile, the “sustainability initiatives” of the Global North are producing displacement, environmental destruction, and land grabs in the Global South: through solar and wind farms, hydrogen production, dams, monocultures for biofuels and the new mining of rare earths. Coal mining is being replaced by lithium mining, which requires 6,000 Liter of water per Kilogram of lithium. The 2019 coup against Evo Morales in Bolivia is said to be linked to the country’s rich lithium deposits. Faced with the accusations, Elon Musk tweeted, “We coup against whomever we want.”²⁵

THE DEAD END OF THE TECH FIX

There is no debate about drastically reducing resource consumption. Recycling and recycling management are supposed to reduce it. All countries in the EU implemented programs that were supposed to increase the circularity rate quickly, the EU also enacted circularity policies, the EU Commission launched the *European Circular Economy Stakeholder Platform*, the World Economic Forum in Davos initiated the *Platform for Accelerating the Circular Economy (PACE)*, and many more initiatives to promote the circular economy. But the “circular economy” is a farce. The consumption of non-renewable resources has increased no less than the recycling rate in recent decades. On average in the EU, it increased from 10.8 percent in 2010 to 11.7 percent in 2021 (slightly less than in 2020). In Germany, it was just above the EU average at 12.7 percent in 2021 (12.9 percent in 2019). The EU target of 100 percent circularity by 2050 is obviously unattainable. Moreover, countries with high resource consumption have the lowest recycling rates: Norway leads the world with 44.3 tons of annual resource consumption per person, while its circularity rate is only 2.4 percent. (eurostat 2022). At this pace the transformation into a circular economy will take at least 9 centuries. It seems that, especially the private industry, is promoting the image of a circular economy to continue business as usual. The flipside of supposed recycling in the global North is the export of waste and especially plastic to less regulated and economically weak countries in the global North or to countries in the global South.

Governments and capital focus on changing consumption and production patterns to keep everything as it is. In production, the focus is on the “technological fix”: Solve all environmental problems with future technological advances. Billions of dollars are being poured into companies around the world that want to suck CO₂ out of the air and store it underground or under the ocean floor. The US government alone recently announced \$3.7 billion in funding (Department of Energy 2022). “Let science, innovation and the marketplace compete to provide the solutions,” industry representatives said about carbon capture and storage (CCS). A UN commission, on the other hand, found that carbon removal activities are “technologically and economically unproven, especially at scale, and pose unknown environmental and social risks” (Civillini 2023).

²⁵ <https://twitter.com/panoparker/status/1318157559266762752?lang=de>

The widespread idea of a technological fix of the climate crisis is an illusion or an intentional diversion. This is already evident today. For almost all countries electric vehicles represent the main pillar of the supposed transformation of the transport sector into a zero-emission sector. However, it is the whole motorized individual mass mobility that is unsustainable, not only the use of fossil fuels. Electric vehicles have to be produced, consume raw materials, need batteries, etc. the number of vehicles keeps growing and more roads are built. Moreover, as long as electric power generation is not done 100 percent with renewable energy, not even the use of electric vehicles can be considered zero CO2.

As analysed in different countries, the transition, and especially the energy transition, as approached by governments is not only failing to lower GHG emissions to an extent that climate change is stopped or reverted, it is also paving the way for corporate takeovers of locally, collectively and self-administered energy generation and distribution, especially in the global South. In several countries the Biomass sector is the biggest employer in renewable energies. This is highly problematic. The use of arable land for the production of fuels increases food prices, extends ecologically harmful monocultures and favours land concentration. Mainly in the global South it also causes deforestation, expropriation of small farmers and displacement of indigenous people. Moreover, the production of biofuels also slows down energy transition because it is mainly directed at producing fuel for combustion motors.

Technology and recycling are important for the socio-ecological transformation. However, they have already failed as a solution to the environmental crisis. Global greenhouse gas emissions in 2019 were 12 percent higher than in 2010 and 54 percent higher than in 1990, with 42 percent of the historical cumulative CO2 emission since 1850 occurring between 1990 and 2019 (IPCC 2022, 6). “System change not climate change” is therefore more than a slogan.

From the present investigation, three issues emerge as crucial for a social and ecological transition: a) State intervention through laws, programs, and funding. This is clearly reflected in the funding for renewable energy in Spain, which created major growth in the sector and generated jobs, training, and continued education, which all collapsed when that funding was removed; b) A national political framework of “governance without government”, with the possibility to successfully develop and enact specific regional policies. Although still insufficient, the advantages become evident in the cases of Scotland, the Basque Country and Catalonia; c) Skills and professional training are a centrepiece of a transition. Workers and unions play a central role here, making sure the transition is taking place and the jobs are socially and ecologically sustainable.

IF NOT US, WHO?

Are the necessary measures possible while maintaining the capitalist mode of production and the resulting social model? It does not seem very likely. Therefore, the struggles around them will not be easy. Discussions that place labour at the centre of sustainable development are taking place in some alliances of trade unions, social and environmental movements, and in academia. Workers and communities (as a collective subject) are potentially the only ones who have a real interest in overcoming the working society as much as they have an

interest in sustainable and non-polluting production and in an effective climate protection beyond profit calculations. And they are also the ones who will have to bear the brunt of the socio-ecological transformation. If they do not take the central role in defining and practicing the transformation, there will be no such transformation. As shown, the climate policies adopted by the different states are definitely insufficient to stop or revert global warming. The market failed. “There is no reason to believe the overdue sustainability revolution will be carried out primarily, or even exclusively, with the tools of the market economy (Dörre 2021, 23). Effective and radical measures against climate change encounter fierce resistance.

Trade unions alone and other movements alone are often not strong enough to force structural and systemic changes. They have to join forces and build alliances. Many unions have adopted far-reaching climate policies in their programs, and some have joined alliances for a just transition with other social forces. Over the past decade, increasingly larger and broader coalitions consisting of trade unions, environmental movements, NGOs, farmers’ organisations, leftist organisations, and social movements mobilising for a just transition have been formed in many countries, among them in the United Kingdom, France, and Norway. In Spain and Colombia there is a strong collaboration between unions and other forms of popular organizations. Colombia is especially interesting. Unions from the energy sector have been elaborating alternative energy policies with peasant and indigenous organizations. However, generally, even in the cases formal alliances exist, very few joint mechanisms and strategies of mobilization have been developed and the formulated broader goals rarely reflect in concrete union struggles.

There is still a long way to go. Trade unions and traditional leftist forces have to fully recognise the existential threat posed by climate change and environmental destruction, and have to realise that they must go beyond a “traditional fixation on class or a perspective reduced to a trade union, social democratic policy of redistribution” (Dörre 2021, 23). Class is much more than just the industrial workforce and class struggle happens not only at the workplace. On the other hand, environmental movements and NGOs must question similar fundamental matters. For a successful alliance to form, the ecological question cannot be separated from the social, and must be linked with the class question. To put labour at the centre of the transition to a socially and ecologically sustainable society is a powerful tool for a real just transition.

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