MASARYKOVA UNIVERZITA
European Governance
Fakulta sociálních studií

UTRECHT UNIVERSITEIT
European Governance
Faculteit voor Recht, Economie,
Bestuur en Organisatie

MASTER THESIS

Just transition towards a climate neutral society: An analysis of trade union strategies in four European countries

First Supervisor: Prof. dr. Joop Schippers
Second Supervisor: doc. Mgr. et Mgr. Oldřich Krpec, Ph.D.

Luisa Maschlanka
6540155

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KEY WORDS: Just transition, trade unions, climate policies, transformation, decarbonisation, social justice, green jobs, social dialogue, qualitative analysis

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ABBREVIATIONS

BEV	Battery-electric vehicles
BMU	Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (DE)
BMWi	Federal Ministry for Economic Affairs and Energy (DE)
CCOO Industria	Industrial federation of the Confederation of Workers' Commissions, CCOO (ES)
CEEC	Central and Eastern European Countries
COP	Conference of the Parties
CZSO	Czech Statistical Office
ČMKOS	Czech-Moravian Confederation of Trade Unions
DGB	German Trade Union Confederation
EEA	European Environment Agency
EPSU	European Federation of Public Service Unions
ETUC	European Trade Union Confederation
ETUI	European Trade Union Institute
EU	European Union
EU ETS	Emission Trading System of the European Union
FDI	Foreign Direct Investment
FICA-UGT	Federation of Industry, Construction and Agriculture of the General Workers' Federation, UGT (ES)
FI-USO	Industrial Federation of the Workers' Trade Unionist Confederation, USO (ES)
IF Metall	Industrial Union of Metalworkers (SE)
IG Metall	Industrial Union of Metalworkers (DE)
INE	National Statistics Institute (ES)
IndustriALL	IndustriALL European Trade Union
IPCC	Intergovernmental Panel on Climate Change
ILO	International Labour Organisation
ITUC	International Trade Union Confederation
LO	Swedish Trade Union Confederation
MCC	Mercator Research Institute on Global Commons and Climate Change
MITECO	Ministry of the Ecological Transition and Demographic Challenge (ES)
MPO	Ministry of Industry and Trade of the Czech Republic
MSVP	Ministry of Labour and Social Affairs of the Czech Republic
MZP	Ministry of the Environment of the Czech Republic
NDC	Nationally Determined Contributions
NECPs	National Energy and Climate Plans
NFS	Council of Nordic Trade Unions
NIER	The National Institute of Economic Research (SE)
NOAA	US National Oceanic and Atmospheric Administration
OCAW	Oil, Chemical and Atomic Workers' Union (US)
OECD	Organisation for Economic Cooperation and Development
OS ECHO	Trade Union Federation of Workers in the Energy and Chemical Industry (CZ)

OS KOVO	Trade Union Federation of Metalworkers (CZ)
OS PHGN	Trade Union Federation of Workers in Mining, Geology and the Oil Industry (CZ)
OSH	Occupational Safety and Health
PES	Public Employment Services
PHEV	Plug-in hybrid electric vehicles
PLCCTE	Climate Change and Energy Transition Bill (ES)
PNIEC	Integrated Energy and Climate Plan (ES)
PRA	Power Resources Approach
PSOE	Spanish Socialist Workers' Party
SDGs	Sustainable Development Goals
TUAC	Trade Union Advisory Committee to the OECD
UBA	Federal Environment Agency (UBA)
UN	United Nations
UNEP	United Nations Environmental Programme
UNFCCC	UN Framework Convention on Climate Change
Ver.di	German United Services Trade Union (DE)

SUMMARY

The transition towards a climate neutral society will be the major societal task in the coming decades. To keep global warming below 2 °C and thus within manageable limits, it will be necessary for us to radically change our current consumption and production patterns. This will entail large restructuring of many economic sectors extending beyond the coal industry. Such changes will impact on employment and raise the question as to how the costs of this transition should be distributed among the members of society. Managing the transition in a socially acceptable way is therefore crucial to win public support, protect workers and communities and prevent that the transformation will lead to rising levels of inequality. To this end, trade unions around the world are calling for a 'just transition'. Originating in the trade union movement, the term is becoming widely used by politicians, climate activists and academia alike. In many cases, however, uncertainty prevails about the goals and the measures that should be pursued to achieve such a transition.

In this thesis, it is examined how trade unions in different parts of Europe are understanding the concept of a just transition and which strategies they are using to give effect to it. Focusing on four countries, namely Czech Republic, Germany, Spain and Sweden, twelve interviews with policy officers working at unions at sectoral, national- and supranational-level were conducted and various materials such as action programmes and policy papers by those unions were analysed to give an answer to these questions. The analysis reveals that although unions are facing different underlying economic conditions, a different trajectory of greenhouse gas emissions reduction as well as different powers within industrial relations, there is a great overlap in the unions' just transition strategies, both with regard to the goals pursued as well as with regard to the strategies and instruments used to make the just transition a reality. Most union approaches were in line with what one policy officer named as establishing the 'green social state'. In line with this approach, unions are demanding that the transition needs to proceed in an integrated way combining environmental policies with education and social policies and economic planning in the regions and sectors affected by climate policies. Moreover, all relevant political, economic and social actors need to be involved in those processes. Despite this overlap there are also differences in how active unions are involved in those processes. Whereas the concept can thus be understood in a broad sense – encompassing changes in all relevant policy areas and economic sectors – its implementation on the ground can so far only be observed in the energy sector, and particular in the phase out of coal. Unions are thus only starting to position themselves and many strategies still need to prove that they are effective which leaves room for future studies on the role of unions within environmental politics and the transition towards a climate neutral society.

1. INTRODUCTORY THOUGHTS AND RESEARCH TOPIC OF THE MASTER THESIS

The aim of this first chapter is to introduce the reader into the topic and to provide an overview over the main thoughts that represent the starting point for this thesis. It will be explained why the topic could be relevant both from a societal as well as an academic perspective. The main research question and sub-questions that guide this research will similarly be given. Finally, the outline and the limits of this thesis will be laid out.

1.1. Introduction

The idea for this thesis was mainly sparked by the growing importance that policy makers, economic actors, the civil society and citizens are attributing to climate policies. Not least because of the success of the Fridays for Future movement, there seems to be an increasing recognition that we now need to drastically reduce our greenhouse gas (GHG) emissions, if we want to keep global warming below the 2 °C that have been agreed at the COP21 in Paris. To reach this goal, it is not enough to only change our consumption behaviour. Production processes similarly need to become more resource-efficient and low carbon. Such changes undoubtedly require huge adaptation efforts that raise the question as to how such a transformation can be achieved and how disruptions and social conflict on this way can be minimised. There is therefore widespread agreement that only a *just* transition can be successful. The term 'just transition' was coined by trade unions and has subsequently been taken over by other societal actors. Despite increasing popularity, there is still little knowledge about what this term means in practice. To shed some light on examples of just transitions is thus one of the aims of this Master thesis. In the following, a brief overview over the efforts taken at international level to mitigate climate change will be provided.

1.1.1. Context: Growing awareness of climate change and reaction of the international community

The road to the landmark agreement reached in Paris and to the climate policies adopted since its ratification was notedly a long one. Within the scientific community, the existence of human-induced climate change caused by our GHG emissions of which CO2 is by far the largest contributor (NOAA, 2020), was already long known before the Fridays for Future movement organised its first school strikes for climate in 2018. Already with the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988, scientists started to systemically analyse the consequences of global warming and provide advice to the United Nations (UN) on how to mitigate its effects (IPCC 2020). And even before that date, in 1972, the Club of Rome published its famous report "The Limits to Growth" in which it was demonstrated that should the present trend of growing resource depletion remain unchanged, the earth will have reached its natural limits in the first half of the 21st century leading to a rapid and catastrophic decline of economic activity and human population (Meadows et al. 1972).

Although scientific consensus on the limits of our current economic model had thus already manifested itself half a century ago, the international community was slow to react. In 1992, the UN Framework Convention on Climate Change (UNFCCC) was adopted committing its parties to the stabilisation of GHG emissions at levels that would make it possible for natural ecosystems to adapt to it thereby ensuring that food and economic production can be guaranteed (UNFCCC 2020). The subsequent conferences of the parties (COPs) are tasked with monitoring progress towards this goal. With the 2005 Kyoto Protocol, the principle of 'common but differentiated responsibility and respective capabilities' was introduced. It recognises that the industrialised countries are mainly responsible for the current GHG concentration in the atmosphere and are also more capable of mobilising the necessary resources to mitigate its effects (UNFCCC 2020). The Kyoto Protocol therefore includes binding emission reductions targets for those countries. Significant progress could be achieved with the adoption of the Paris agreement in 2015. All states that have become parties to the agreement commit to keep global warming well below 2 °C and to pursue efforts to keep it at 1.5 °C. Moreover, all parties are required to set themselves individual emission reduction targets (nationally determined contributions, NDCs) and need to report regularly on the efforts taken to implement them (UNFCCC 2020).

Since Paris, the urgency of climate change mitigation and adaptation has increased in visibility as extreme weather events related to climate change have become more frequent. According to the Global Climate Risk Index, damage caused by extreme weather events has reached a record high in 2017 (Shield 2018). Moreover, in January 2020, the UK Met Office, the US National Oceanic and Atmospheric Administration (NOAA) and Nasa confirmed that the last decade till the end of 2019 has been the warmest in recorded history causing severe heat waves and droughts (McGrath 2020). In addition, in August 2018, a much talked about article published by the National Academy of the Sciences of the United States, drew attention to the fact that once so-called tipping elements such as the melting of the Greenland Ice Sheet are crossed, global warming could inevitably follow a heating pathway leading to the destabilisation of global climate and producing ecological, social and economic disruptions on a large scale (Steffen et al. 2018). In order to prevent this scenario, the authors argue that it will be necessary to take deliberate action including the decarbonisation of the global economy, protecting and enhancing biosphere carbon sinks, technological innovations, new governance arrangements and behavioural changes among others (Steffen et al. 2018).

The paper shows that climate change does not proceed in a linear way. It is therefore necessary that we start to reduce our GHG emissions now if we want to keep global warming within manageable limits. This is important as climate change as well as policies intended to mitigate its effects do not only have environmental impacts but also distributional effects that could enhance inequalities and spark social unrest. According to the International Labour Organisation (ILO), extreme weather events disproportionally affect the poorest parts of the population, e.g. migrant workers, women and workers in the informal economy (ILO 2016). In 2014, around 19.4 million people were forced to flee their homes due to natural disasters related to climate change, most of them were located in the Global South (ILO 2016). In contrast, also climate change mitigation policies such as carbon taxes tend to place a higher burden on low-income groups, e.g. through higher electricity prices (García 2017). Despite the success of the Fridays for Future movement, there is therefore a risk of a backlash that could enhance resistance against climate policies and threaten not only climate action but also social cohesion and inclusion (Cludius 2015). Already in the UNFCCC and also in the Sustainable Development Goals (SDGs) there is therefore reference to equity, the respective capabilities of states and its peoples as well as the commitment to link climate action (SDG 13) with other SDGs such as the eradication of poverty (SDG 1), the reduction of inequalities (SDG 7), decent work and economic growth (SDG 8) as well as with inclusive and sustainable industrialization and the promotion of innovation (SDG 9) among others (Liersch 2020; García 2017).

To this end, also the Paris agreement recognises that the road towards carbon neutrality needs to take into account "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities" (UN 2015, 1). This phrase was inserted mainly following pressures by the International Trade Union Confederation (ITUC) and its member unions (Sweeney and Treat 2018). Although there is thus widespread agreement, at least on paper, that the transition needs to be just, there is still little knowledge about the meaning of this term and less so about the type of policies that could give effect to it.

1.1.2. Aim of the Master thesis

Within the framework of a Master thesis, this paper therefore seeks to close this gap by analysing how trade unions in different countries and contexts are conceptualising a just transition, e.g. the goals that are to be achieved by it, and by mapping the different strategies employed by trade unions to foster a just transition. As originators of the just transition concept and as representatives of the working population, trade unions

can rely on the expertise of their members and also have a strong interest themselves in shaping the transition towards a climate neutral society in order to both protect their members as well as to stay relevant societal actors. This is especially the case for trade unions who are organising workers in energy intensive sectors that are likely to change because of climate policies. It will therefore be in their interest to come forward with ideas on how the climate goals can be reached while unemployment and rising inequality can be prevented. This is not an easy task and oftentimes trade unions have been accused of favouring a narrow view on job safety and neglecting the need for environmental protection. Nevertheless, due to the urgency of the matter and the importance of having workers on board, it will be valuable to analyse trade unions' perspectives on a just transition. The aim of the thesis is therefore twofold: On the one hand, the concept of a just transition should be clarified and examples of how it can be implemented in practice should be given. On the other hand, the thesis also aims to shed light on the priorities, challenges and chances of one central actor involved in the greening of the economy: trade unions.

In the next part, the research question and the sub-questions that guide the thesis will be laid out.

1.2. Main research question and sub-questions

In the introduction, the state of scientific knowledge on climate change as well as on overview over the efforts of the international community to mitigate its effects have been described. It has been demonstrated that in order to stay below 2 °C global warming it will be necessary to decarbonise production processes and to pave the way towards a more resource-efficient economic model. Such far-reaching changes can only be successful if the transition towards climate neutral society does not lead to rising levels of inequality. Since trade unions have a strong interest in shaping the transition in order to protect the interests of their members and those of the working population, shedding light on their priorities and strategies will also give an idea of how a just transition can eventually look like. Therefore, the central research question is:

How are trade unions in Europe fostering a just transition?

The role of labour in achieving sustainable development has so far been underrepresented in both labour and environmental studies. Only since the millennium has attention on labour as an environmental actor increased, which was largely due to efforts of unions at the global level such as those of the ITUC to also pay attention to workers' interests within international climate agreements (Räthzel and Uzzell 2012). The focus has however been mostly on the strategies of national and regional governments and environmental movements to foster sustainable development rather than on trade unions' strategies. Within this thesis, particular attention will therefore be drawn to the strategies of trade unions at national and at sectoral level on fostering a just transition.

In order to reduce complexity, to limit the scope of the analysis to make it 'doable' within the framework of a Master thesis and due to a lack of knowledge and familiarity with the very heterogeneous struggles of the working population outside Europe, the analysis will be focusing on the European political, economic and social context and on the strategies of trade unions in selected European countries. Due to their proximity as well as due to enhanced economic and political integration within the European Union (EU) and especially due to recent efforts of the EU to accelerate climate protection within the framework of the European Green Deal, it is expected that trade unions are facing similar or at least interrelated challenges when it comes to the greening of the economy. Due to diverse political, economic, social and cultural traditions, the respective trade union strategies are still expected to differ considerably across countries, so

that it will nevertheless be possible to pay due respect to the various contexts and capabilities that trade unions are facing with regard to a just transition.

To further refine the research question, this thesis specifically aims to give answers to the following sub-questions:

1) *What are trade unions understanding under a just transition, e.g. regarding the goals that are pursued?*
2) *Which strategies do they use to achieve a just transition?*
3) *Which factors are influencing trade unions' understanding of a just transition and their respective strategies?*
4) *What are examples of successful just transitions from the perspective of trade unions?*

As has been mentioned before, despite the growing popularity of the just transition concept, there is little knowledge about what it means and how it can be achieved. According to Galgózci (2019), in its broadest sense, a just transition can be understood both as describing the outcome of decarbonisation – how a low-carbon society should look like, as well as the process – how such a society can be reached. But what kind of society is envisaged? Does it "simply" mean to compensate workers and communities for the changes that they are likely to experience at their workplaces or in their regions? Or does it entail a broader and encompassing transformation of social and economic relations? It will therefore be valuable to explore what trade unions in different countries and contexts are understanding under a just transition and which strategies they are using to make it a reality. Because trade unions' capabilities vary across countries and sectors and because the impact of climate policies similarly affects economic sectors in different ways, also the strategies pursued by trade unions are expected to differ across sectors and countries. In addition, it will be interesting to explore how the specific social, economic, political and cultural context influences what trade unions seek to achieve with a just transition and how they seek to achieve it. Finally, by presenting examples of just transitions it will be possible to further clarify how the concept can be implemented into concrete policies, which strategies have been proven successful and to evaluate how much progress has been made in this direction and what is still left unaddressed.

1.2.1. Outline of the thesis

After this introductory chapter, the thesis will start by giving an overview over the potential consequences of climate policies on the various economic sectors as well as on employment in Europe (chapter 2). Climate policies and in particular policies aimed at switching to low carbon or even zero carbon production processes are likely to affect the various economic sectors differently depending for example, on the stage of development of low carbon alternatives, on the strength of the industrial sector as well as on the availability of energy from renewable resources. Consequently, also the impact of climate policies on employment and on employees is expected to differ across sectors. In chapter 3, the most important insights from the theoretical literature and from studies conducted on trade unions as environmental actors will be discussed. Attention will be drawn to relevant concepts and conflicts that characterise this relationship. The just transition concept will similarly be introduced. Relevant literature on the various power resources of trade unions and on the specific industrial relations regimes in Europe will also be presented in order to give an idea as to the possible strategies that trade unions could use to become important environmental actors and the factors that could impact on the choice of their respective just transition strategies. After the theory chapter, in chapter 4, the methods and the research design used to answer the research questions will be laid

out. In this part it will also be explained which countries have been chosen for the case studies and for which reasons. The central part of the thesis will then consist of an analysis of examples of trade union strategies within the context of a just transition in chapter 5. The thesis will end with a short resume about the state of just transition policies pursued by trade unions in different countries, about the factors that are crucial for their success and by sketching the road ahead.

Finally, it is important to note that the aim of the thesis is not to provide an exhaustive account of all the strategies that have been pursued by trade unions within the context of a just transition. Instead, the analysis will focus on a few, well researched and representative examples that have been deemed as successful strategies by the respective unions in the selected countries. Therefore, the aim of the thesis is not to single out one best practice, but to provide a range of different examples that could also inspire new research. Due to the Eurocentric focus of the research, the challenges and strategies of trade unions in other parts of the world related to the just transition are unfortunately not considered, although they similarly provide important insights into how such a transition could look like in practice.

After these introductory notes, the thesis will continue with an economic analysis on the potential effects of climate policies, and specifically of decarbonisation, on the economy and on employment in Europe.

2. BACKGROUND: POTENTIAL EFFECTS OF DECARBONISATION ON THE ECONOMY AND ON EMPLOYMENT IN EUROPE

In the second chapter of this thesis, attention will be drawn to the potential socio-economic effects of the transformation towards a low carbon economy. The focus will be on the consequences of reaching climate neutrality by 2050 as laid down by the European Green Deal and as enshrined in the proposal for a European Climate Law. Such an analysis will be crucial for identifying the sectors most affected by decarbonisation as well as how workers and society might be impacted by those changes. The findings will thus provide the background knowledge which will be useful when exploring the different just transition strategies of European trade unions in chapter 5.

2.1. Minimising the negative effects of economic activity on the environment

At the beginning of this thesis it has already been described that our current capitalist model of economic production with its heavy dependence on fossil fuels and the exploitation of natural resources that are essentially free to use for economic production is not sustainable. Loss of biodiversity, violent conflicts over scare resources as well as the growing concentration of GHG emissions in the atmosphere and the consequences for global climate have been documented in numerous studies. Accordingly, also numerous initiatives both at national, international and sub-national level have been launched to mitigate the effect of economic activity on the environment and to search for less polluting and resource-efficient ways of production and consumption. At various levels countries have therefore committed themselves to the protection of the environment. One of the most successful examples of global environmental action is for example, the Montreal Protocol adopted in 1989 that banned the use of substances that could deplete the ozone layer and therefore required industries to shift to alternative, less damaging materials (UNEP Ozone Secretariat 2011). In contrast, another well documented example at regional level is the structural change that the Ruhr Area in North Western Germany underwent ("Strukturwandel"). Starting in 1961 when the future German chancellor Willy Brandt demanded that the "sky above the Ruhr must turn blue again", an

immense restructuring of a region formerly dominated by coal mining and steel production to a primarily service and knowledge-oriented economy began (Urban Transitions Alliance 2020).

Those two examples show that at various points in time, economic activity has been subject to environmental regulation in order to reduce the damage that it can cause to human health and to the environment. Arguably, the fight against climate change represents a much greater challenge as wide-ranging changes in production and consumption habits need to be made globally and within a short period of time. According to the IPCC Special Report on Global Warming of 1.5 °C, from end-2017 onwards, the atmosphere can only absorb no more than 420 gigatons (Gt) of CO2 to stay below 1.5 °C which will be reached in about 7 and a half years (Mercator Research Institute on Global Commons and Climate Change (MCC) 2020). Conversely, the global carbon budget for the 2 °C scenario will be reached in a little over 25 years (MCC 2020). At that point in time, global emissions need to be net-zero, meaning that if new GHG emissions are created, they need to be absorbed completely, e.g. by carbon sinks such as forests (MCC 2020). With the Paris landmark agreement reached in 2015 all countries have therefore committed to set themselves nationally determined emission reduction targets (NDCs) to keep global warming well below 2 °C. Regular reports on the progress made to reach those targets need to be communicated to the UNFCCC and every five years – the first time being this year – countries need to update their NDCs (Watkiss 2020).

So far, 186 countries have submitted their first and four already their second NDCs (UNFCCC 2020). However, although their adoption represents a major step forward, the IPCC warns that those targets are still not ambitious enough as they will lead to a 3 °C global warming by 2100 (European Commission 2018b). All countries are therefore called upon to update their NDCs and to significantly strengthen their efforts to reach carbon neutrality.

2.2. Climate action at the level of the European Union

At the European level, the European Commission recently announced that it seeks to update its current NDC of reaching a reduction of 40% of GHG emissions by 2030 compared to 1990 levels (Climate Action Tracker 2020). Instead, the proposed European Climate Law presented in March 2020 seeks to achieve climate neutrality by 2050 (European Commission n.d. c). Moreover, an enhanced target for 2030 at about 55% reduction of GHG emissions is under consideration (European Commission 2020a). In addition, several EU Member States, namely Finland, Austria and Sweden have set themselves more ambitious national climate targets aimed at reaching climate neutrality even before 2050 (Levin and Davis 2020).

The proposal for a European Climate Law will enshrine the commitment to reach carbon neutrality by 2050 into law. All Member States are therefore bound to also adopt national measures that significantly reduce the amount of GHG emissions. The initiative is part of a basket of measures that fall under the European Green Deal, the Commission's most important strategy paper in terms of climate change mitigation and sustainable development (Thema et al. 2020). The Green Deal is the latest effort to bring the EU on track to reach its commitments under the Paris Agreement. Within the framework of this long-term strategy, already existing measures such as the EU Emission Trading System (EU ETS) for regulating emissions from power stations, energy-intensive industries and aviation should be updated and new initiatives, e.g. the Strategy on offshore wind, the Strategy for sustainable and smart mobility and a new EU forest strategy should be launched (European Commission 2019a). In addition, the Green Deal also includes a proposal for a Just Transition Mechanism including a Just Transition Fund as well as a Sustainable Europe Investment Plan (European Commission n.d. d). Such a mechanism should help regions that are especially vulnerable to climate policies in addressing the socio-economic impact of the transition. According to the latest proposal,

the Just Transition Fund will have a capacity of €17.5 billion (Morgan 2020) which will be complemented by additional investment programmes such as InvestEU and by the establishment of a public sector loan facility (European Commission n.d. d).

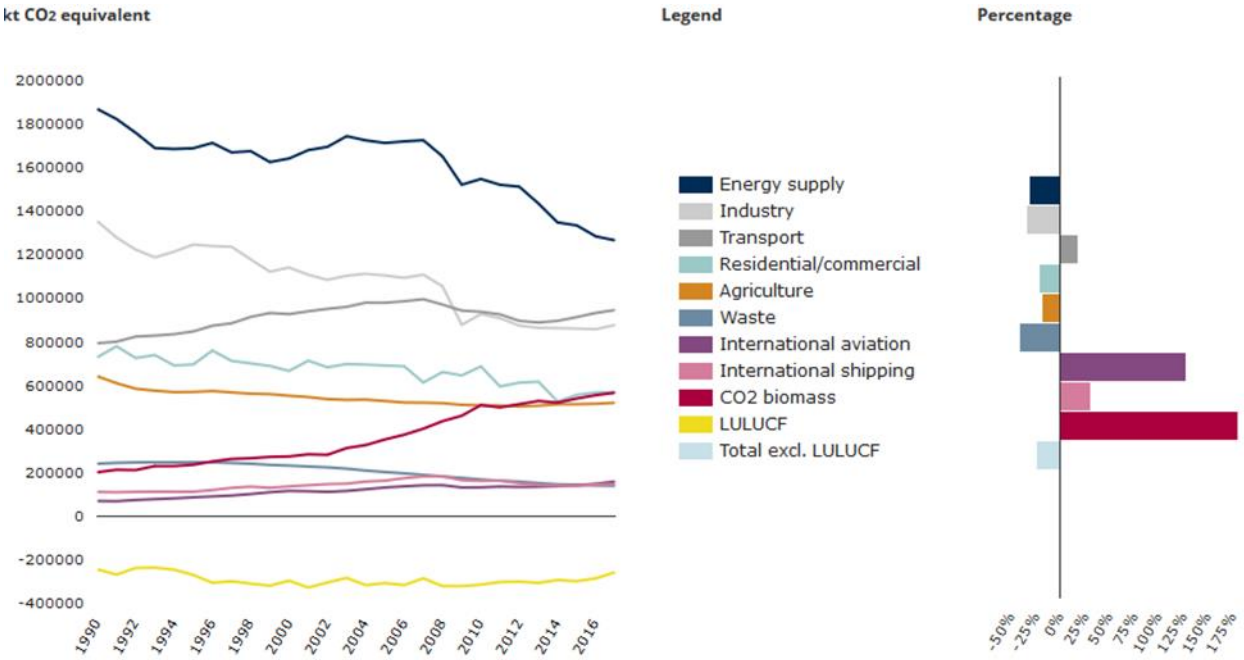
In the next part, an overview over the development of GHG emissions in Europe in general as well as in specific economic sectors will be given.

2.2.1. Development of GHG emissions in Europe and by sector of EU economy

In 2017, GHG emissions in Europe amounted to 4.483 megatons (Mt) of carbon dioxide equivalent which represents a 22% reduction of emissions compared to 1990 levels (European Environmental Agency (EEA) 2019b). As shown in Figure 1, all major emitting sectors, e.g. the power sector, industry and emissions related to the heating and cooling of buildings managed to reduce their emissions with the exception of the transportation sector. The biggest decreases in GHG emissions can be observed in the power sector and in industry. In the power sector, emissions could be reduced by -32% compared to 1990 due to an increase of energy generated from renewable sources as well as the closure of thermal generation (European Commission 2018b). The share of renewables in the heating and cooling sector almost doubled from 10 to 19% (2016) which also contributed in bringing down emissions in the residential and commercial sectors (European Commission 2018b). In the industrial sector, emissions have decreased by -35% in the period 1990-2017, largely due to a decrease in energy consumption and an increase in recycling rates (European Commission 2018b). Part of this decrease was however also due to a decline of industrial activity in general and a rise of service sectors (European Commission 2018b). In contrast, greening the transportation sector will remain a challenging task in the coming years. Due to increased passenger activity and the dominance of liquid fossil fuels, e.g. 95% of the energy consumed in this sector in 2017 was based on oil, emissions in this sector have increased by 19% (2017) compared to 1990 (EEA 2019b; European Commission 2018b).

The share of renewable energy in the transportation sector is still relatively low and only around 1.5% of newly registered vehicles in 2017 were battery-electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV) (European Commission 2018b). However, according to the Electric Vehicle Index developed by the consulting company McKinsey, Europe could become a hotspot for electric cars in the coming years as their sale has increased by more than 40% in 2019 to 600,000 (Nefzger 2020). This development is supported by state subsidies as well as a tightening of the EU regulation on CO2 emission performance standards for passenger cars. By 2021, the average fleet-wide emissions for new cars must not be above 95 g CO2/km (European Commission n.d. f). Although the road transport in 2016 accounted for 95% of the emissions in the transportation sector, this number is excluding the aviation sector which has seen a rise of emissions by 129% in 2017 compared to 1990. This increase in emissions was mainly caused by increased passenger activity (EEA 2019b; European Commission 2018b). Finally, (non-CO2) emissions from the agricultural sector have decreased by 19% (2017) (EEA 2019b).

Figure 1 Greenhouse gas emissions by aggregated sector in Europe



Source: EEA (2019b)

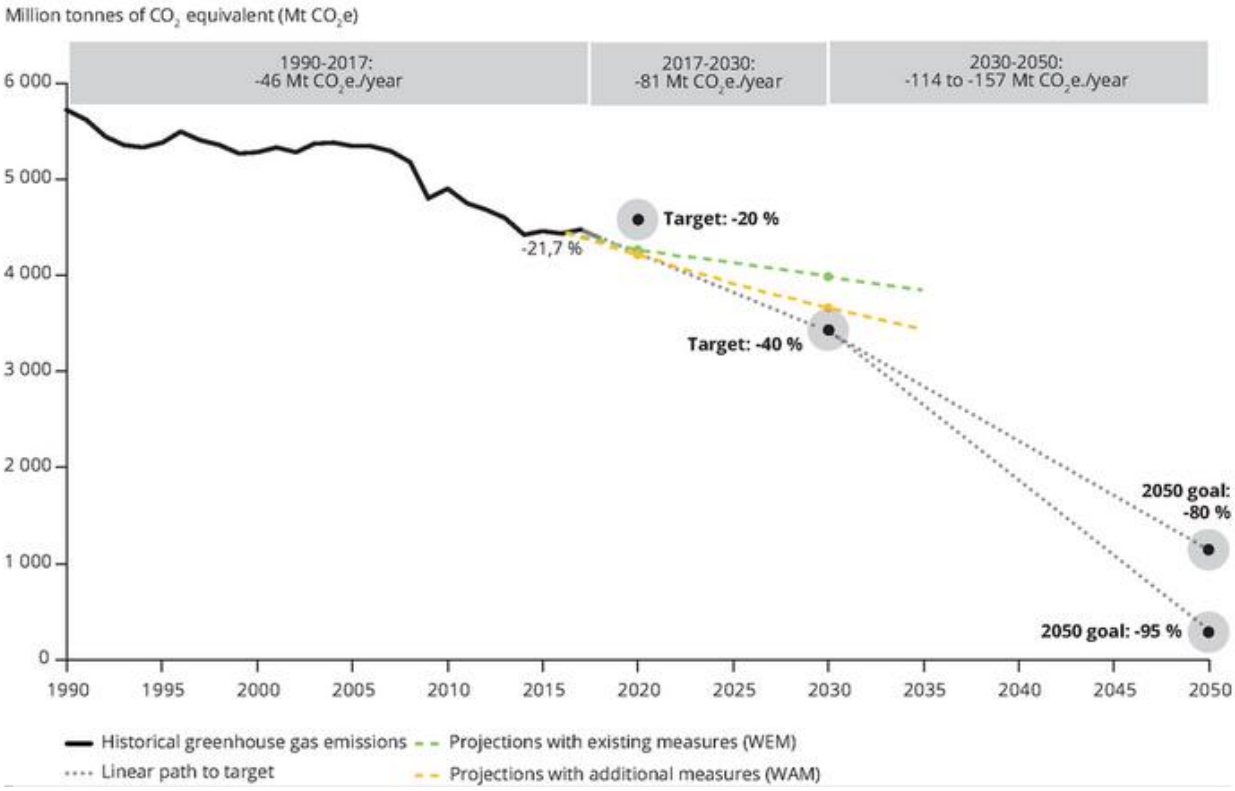
Even though the EU has thus outperformed its target of achieving a -20% reduction in GHG emissions by 2020 (see Figure 2), especially in the last couple years, emission reduction has slowed down raising questions as to whether previous reductions were largely the result of economic downturns such as the restructuring caused by the transformation of Central and Eastern European countries in the mid-90s as well as the economic and financial crisis in 2008/09 (Galgózci 2012).

Since the Millennium, the EU has stepped up its efforts and has sought to complement Member State action to reduce GHG emissions through several initiatives such as roadmaps, regulations and directives as well as through funds and investment incentives. One of the most important instruments of climate change mitigation at EU level is the EU-ETS that was set up in 2005 and that aims at reducing GHG emissions from power stations, industrial plants and aviation (European Commission n.d. b). The EU-ETS sets a cap on the maximum amount of emissions that industrial plants can emit. All companies covered by the EU-ETS then either receive or buy emission allowances to cover their emissions. If a company emits more, fines are imposed. The cap is reduced over time so that overall emissions decrease (European Commission n.d. b). The EU-ETS is said to have contributed significantly to the reduction of GHG emissions in the industrial sector (European Commission 2018b). For those sectors not covered by the EU-ETS, individual emission reduction targets are set via the Effort Sharing Regulation that also pays attention to the different capabilities of Member States to address climate issues (European Commission n.d. a). According to this Regulation, Member States need to achieve a 10% reduction in GHG emissions by 2020 and a 30% GHG emission by 2030 in the sectors covered by this legislative piece (Appunn, Eriksen and Wettengel 2020). In 2018, the LULUCF-Regulation on the inclusion of greenhouse gas emissions and removals from land use was adopted that commits the Member States to compensate emissions produced by land use with actions aimed at reducing emissions (European Commission n.d. e). Moreover, the Renewable Energy Directive and the Energy Efficiency Directive similarly set binding targets for Member States to increase the share of energy

generated from renewable sources and to improve energy efficiency. Those directives are part of the Energy Union Strategy that was adopted under the Juncker Commission and that aims to establish an internal energy market while contributing to energy security as well as energy efficiency and decarbonisation of the energy supply (European Commission 2020b). Since 2019 all Member States need to submit ten-year National Energy and Climate Plans (NECPs) that cover all dimensions of the Energy Union Strategy and in which the Member States are reporting on their national climate and energy targets and on the measures on how to reach them (European Commission 2020c). The Commission is monitoring progress towards these targets and can recommend additional measures (European Commission 2020c).

Moreover, also the Cohesion Funds are an important instrument at EU level to channel funds to projects aimed at climate change mitigation and adaptation. For example, in the current budget period 2014-2020, €69 billion are allocated to projects that fall under the objectives of the Energy Union (European Commission 2018b). Finally, with the establishment of the Platform for Coal Regions in Transition in 2017 and with the proposed Just Transition Fund, the EU aims to support regions that are especially vulnerable to climate policies (European Commission 2019b). The new Commission also announced that it seeks to present an action plan for the implementation of the European Pillar of Social Rights by the end of 2020 which is also aimed at strengthening Member States' social states to make societies 'fit for the transformations laying ahead' (European Commission 2019b).

Figure 2 Greenhouse gas emission trend projections and target in Europe



Source: EEA (2019b)

According to the EEA, projections show that the policies currently in place could further reduce emissions by 7% by 2030 (EEA 2019b). This is however not enough to neither reach the current NDC of a 40% reduction by 2030 nor the proposed new NDC aiming at a 55% reduction by 2030 (Figure 2). Should it therefore not be possible to adjust current climate policies as well as create new instruments, in order to reach net-zero emissions by 2050, the Member States would need to achieve negative emissions by relying on – to this date mostly theoretical – technologies such as direct air capture of emissions (DAC), CCS in combination with the use of bio-energy (BECCS) and afforestation (Thema et al. 2020). Reaching carbon neutrality by 2050 will therefore crucially depend on the progress that can be made towards implementing the policies that have been proposed within the context of the European Green Deal as well as the level of ambition of climate policies adopted at national and sub-national levels.

The Figures on GHG emissions and emission reduction in Europe that have been described above demonstrate which sectors are probably most affected by climate policies, however, they say little over the changes and over the measures that would need to be taken in each sector to reach the goal of net-zero emissions by 2050. In the following part, it will therefore be examined what needs to be done in the sectors that are currently the major emitters to decarbonise and which effects this process could have on employment. Most data comes from a study conducted by the European Commission in 2018 in which a long-term strategic vision for a reduction of EU GHG emissions in accordance with the Paris agreement is presented (European Commission 2018b). Since the study describes three different scenarios resulting in a 80%, 90% and 100% reduction of GHG emissions by 2050, only the effects of the last scenario will be described as they are in line with the EU's latest commitment of reaching carbon neutrality by 2050.

2.2.2. Challenges and chances of decarbonisation by sector of EU economy

Currently, energy production and use by households, industry and transportation are responsible for close to 80% of total GHG emissions within the EU (European Commission 2018b). Decarbonising the **power sector** is therefore crucial for not only reducing emissions caused directly by energy generation, but also for reducing emissions in sectors with a high energy demand. For example, the switch to synthetic fuels (e-fuels) in the transportation sector or the reduction of the use of fossil fuels used for heating in buildings will lead to an increasing demand for electricity from renewable sources (European Commission 2018b). Depending on the specific decarbonisation path, electricity generation would need to increase by 35% to 150% compared to current levels (European Commission 2018b). According to data from 2015, the share of renewables, defined as power from wind, solar, geothermal energy, ocean energy, hydropower, biomass and other biogases (European Commission 2018b, 57), is currently 30% (European Commission 2018a), whereas the share of power generated by fossil fuels of gross electricity generation is 43% (2016) (EEA 2019a). Energy import dependency plays a huge role in the EU. About 60% of energy demand in the EU is covered by imports (Wettengel 2020). Two thirds of those imports are petroleum products, 24% are gas and 8% are solid fossil fuels such as coal. Although the exact level differs considerably across countries, the decarbonisation of the energy sector and in particular the expansion of renewable energies could decrease import dependency, however, during the transition it could also have the opposite effect, e.g. when not enough energy from renewable sources is available (Wettengel 2020).

What is important is that in the power sector, low-carbon alternatives to energy production from fossil fuels are already on the market and they are increasingly becoming more cost-effective (European Commission 2018b). In addition to the energy sources described above, also hydrogen is increasingly seen as an

alternative that could replace for example, natural gas used for heating or be deployed in the transportation sector. Because the production of hydrogen itself requires electricity, it does not yet play a huge role in the 2050 scenario of reaching net-zero emissions in the power sector (European Commission 2018b). In order to reach the climate goals, by 2050, fossil fuels need to play no longer a role in energy production. Instead, renewables are the dominant form of power generation, while nuclear power may also be expanded (European Commission 2018b). Finally, also energy consumption needs to be reduced by 47% compared to 2005 levels. A difficult task as overall energy consumption levels have largely remained stable and latest data even shows an increase in consumption in 2017 (Eurostat 2019). Another challenge to decarbonisation is that storage technologies for energy generated by renewables such as batteries and power-to-gas technology are not fully developed yet. Moreover, also investments in infrastructure, e.g. in the electricity grid are needed (European Commission 2018b).

Residential and commercial buildings account for 40% (2015) of final energy consumption in the EU and its share is expected to increase even further as the number and size of buildings goes up (European Commission 2018b). As shown in Figure 1, emissions from this sector are only slowly decreasing as most of the energy demand in this sector is covered by fossil fuels, in particular natural gas (European Commission 2018b). In order to achieve net-zero emissions by 2050, most energy used in buildings, e.g. for heat generation has to come from renewable sources, while energy consumption needs to be reduced by 57%, e.g. by improving thermal insulation (European Commission 2018b). Currently, on average around 19% of the energy demand from heating is covered by renewable sources. To achieve net-zero emissions in the buildings sector, this share has to reach 45% by 2050. Moreover, the Commission estimates that around 97% of all buildings will need partial or full renovation to reach the 2050 goal (European Commission 2018b). This would mean a doubling of the renovation rate which is problematic as the building value chain is considered to be fragmented, renovation processes are often complex and there is a lack of knowledge about the best thermal insulation options. In addition, the number of workers employed in the construction sector has steadily decreased over the past decades making it difficult to reach a doubling of renovations (European Commission 2018b). Similar to the energy sector, alternative, low carbon options on reducing emissions in the building sector are however known and are already in use such as district heating or using solar thermal and geothermal energy.

The **transport sector** is one of the sectors where emissions increased, mostly due to an increase in passenger activity. Transportation accounts for around one third of final energy consumption in the EU (European Commission 2018b). In order to reach net-zero emissions in this sector, different alternatives to fossil fuels such as e-fuels, biofuels, hydrogen and electricity need to be strengthened in an integrated approach (European Commission 2018b). Since the road sector is currently responsible for most GHG emissions, especially freight transport should switch to rail and waterborne transportation. In the net-zero scenario, by 2050, 96% of all vehicles in Europe need to be fuel cell or battery electric vehicles, while CO2 emissions for new cars need to be zero already by 2040. To achieve this, the necessary infrastructure such as recharging or hydrogen refueling stations needs to be put in place (European Commission 2018b). While in road and rail transport, alternative, low carbon or even zero carbon technologies are already realized, decarbonisation of the aviation sector will be particularly difficult as it currently relies entirely on petroleum products (European Commission 2018b). Although e-fuels are tested, there are far from representing an alternative and also a full-scale electric aircraft has not been realized yet. As both freight and passenger transport are expected to increase, multimodal transport solutions where individuals are switching between different means of transport as well as sharing them with others is seen as an additional measure to reduce overall traffic volume and bring down emissions (European Commission 2018b).

As shown in Figure 1, the **industrial sector** has seen the biggest reduction in GHG emissions in the period 1990-2017. The sector is expected to further decrease its emissions in the coming decades, however, several industries are reaching their limits when it comes to further reductions of emissions through energy efficiency measures. For example, in the steel industry, emissions have remained stable since the 1990s as the conventional Blast Furnace-Basic Oxygen Furnace (BF-BOF) steel-making technology has reached its optimum (Weigel 2014). Further decreasing emissions will thus require the shift to new, low carbon steel-making technologies that are costly in their introduction because in many cases, industrial plants cannot be retrofitted easily and that are currently also not profitable enough as the European steel industry faces strong international competition (Weigel 2014). Conditions may, however, differ considerably depending on the respective industries. Around 21% of emissions in the industrial sector are process-related, e.g. caused by chemical reactions, whereas two thirds are related to process heat due to steam and hot water and space heating or from furnaces (European Commission 2018b). In order to reach net-zero emissions by 2050 the Commission therefore proposes to use a toolbox of measures ranging from improved energy efficiency and the electrification of heat, to recycling and the replacement of fossil fuels with hydrogen or biomass to the introduction of Carbon Capture and Storage (CCS) and investments in research on innovative processes (European Commission 2018b). Switching to low carbon industrial production processes will require a high level of energy generated by renewable energy sources as well as investments in infrastructure which will make transitional solutions likely (Agora Energiewende and Wuppertal Institut 2019). Despite those challenges, there are however also a lot of chances for the European industry. Because Europe always had and still has a strong industrial base, the (research) infrastructure is well-developed. Moreover, products from energy-intensive industries are crucial for many low carbon technologies, e.g. in the construction sector, for the deployment of renewable energy as well as for battery storage (European Commission 2018b).

Apart from the CO2-emitting sectors, there are also sectors such as **agriculture** where the biggest part of GHG emissions is not accounted for by CO2, but by methane and nitrous oxide (European Commission 2018b). Those emissions are difficult to reduce as they are often the result of biological processes that cannot be altered easily. Due to increasing demand for food and textiles, emission reduction is said to be possible only through further productivity increases (European Commission 2018b). In addition, behavioural changes such as a different food diet as well as the expansion of carbon sinks are considered promising solutions to bring about a significant reduction of emissions in the agricultural sector (European Commission 2018b).

Finally, the shift towards carbon neutrality requires significant **investments** that are in some cases twice as high as the usual investment rates (Energy Transitions Commissions 2019). According to the Commission, annual investment in power generation and energy infrastructure, excluding the transportation sector, will require annual investment rates that correspond to around 2% of EU GDP (European Commission 2018b). In addition, also energy system costs as well as electricity prices are expected to increase up until 2030/2040 after which they are expected to decline or stagnate respectively (European Commission 2018b).

The results of the study reveal that economic sectors and industries are affected in different ways. While energy generation from fossil fuels such as coal will need to be scaled back completely by the mid-21st century, in other areas such as the production of steel or cars, fundamental changes in production processes as well as the kinds of products that are produced need to be introduced. Whereas in some areas low carbon alternatives are already developed and are increasingly becoming less costly such as in the case of renewable energies, in others, alternative technologies still need to be developed, are costly or lack the infrastructure to be deployed on a large scale. Apart from changes in production, the authors of the study stress that

behavioural and consumption patterns similarly need to change, e.g. reducing energy consumption or switching to low carbon transportation (European Commission 2018b). Another question that is only insufficiently addressed by the study is how emissions can be effectively reduced when energy needs, transportation activity as well as the need for housing and food is expected to increase. In their study, the Commission draws attention to the fact that the EU's gross domestic product (GDP) in the period 1990-2017 grew by 58%, whereas emissions decreased by 22% (European Commission 2018b). Moreover, also overall domestic material consumption per capita in Europe has been stable in the period 1990-2015 (Vienna University of Economics 2020). Recent data from the UN Global Material Flows and Resource Productivity database however shows that while domestic material consumption has indeed stabilized, raw material consumption per capita has increased by around 33% (1990-2013) which is in line with a GDP per capita increase of 34% in the same period (Vienna University of Economics 2020). These data draw attention to the fact that most statistics on GHG emissions only take into account the emissions produced within a country, but they do not track the life cycle emissions of a specific product. Emissions from imported products are therefore not considered. According to the OECD, demand for certain raw materials such as aluminum, lithium and cobalt will increase dramatically, so that global material use could thus more than double from 79 Gt in 2011 to 167 Gt in 2060 (OECD 2018). When looking for low carbon alternatives particular attention therefore needs to be drawn to the resource needs and GHG emissions of those alternatives, also in other countries, so that adverse environmental effects related to resource depletion and GHG emissions are not outsourced to other regions.

The changes that the sectors which currently emit the most need to undergo on the way towards carbon neutrality will also have an impact on employment levels as well as on the qualifications requirements for employees and on working processes. They also affect households and raise questions as to the use of land as renewable energies, biomass or battery materials need to be deployed, produced or extracted somewhere. Those effects will be discussed in detail in the next parts. Before continuing, it must however be stressed that although the task of reaching net-zero emissions by the mid of the 21st century seems to be costly and requires not only changes in the way we produce goods, but also behavioural ones, inaction can cause far higher costs and societal disruptions. As already shown in the introduction, damage caused by climate change related natural disasters has increased drastically causing widespread economic and welfare losses. Globally, one billion people live and work in areas particularly vulnerable to floods. According to the World Bank global flood losses are estimated to increase by a tenfold from 6 billion USD in 2005 to 52 billion USD in 2050 which will adversely affect people working in agriculture and with negative effects on global food security (ILO 2016). Moreover, excessive workplace heat negatively impacts human health and slows down labour productivity (ILO 2016). Due to natural disasters, the number of people forced to flee their homes is expected to increase and, especially in the absence of regular migration pathways, those people risk ending up in informal work that is particularly prone to exploitation (ILO 2016). According to the PESETA research project that assesses the impact of climate change in Europe, crop yields could go down by 25% especially in Southern Europe (Ciscar 2009). In addition, the number of people affected by floods will increase from 775,000 to 5.5 million people annually. Overall, annual welfare loss in Europe due to climate change amounts to 2% and will affect particularly low-income households (Zachmann, Fredriksson and Claeys 2018; Ciscar 2009). Nevertheless, the decision to decarbonise the economy is of course a political one as is the choice of policies and instruments to realise it. The potential effects described below can thus only give a general overview over employment trends as well as potential conflicts that may need to be addressed during the transition.

2.2.2.1. Employment effects

From a theoretical perspective, the shift towards a low carbon economy can affect employment in four different ways. First, new jobs can be created through an increased demand for labour in energy generation from renewable sources, in construction and transportation as well as in the renaturing of former industrial sites (UNFCCC 2016). Second, several jobs may be substituted by different ones, e.g. in the automotive sector, the shift from internal combustion engines to BEV will also entail a shift in employment as well as in occupational and skills needs (UNFCCC 2016). Third, certain jobs, especially in mining and extraction will be lost completely without any substitution and, finally, fourth, many jobs will face re-definition or transformation which refers to changes in working methods and practices (UNFCCC 2016). In Table 1, the potential effects of decarbonisation on employment in the most affected sectors are depicted. When looking at those numbers it has to be taken into account that they assume that the European economy will hold its competitive position and that major industries will not be relocated to other parts of the world.

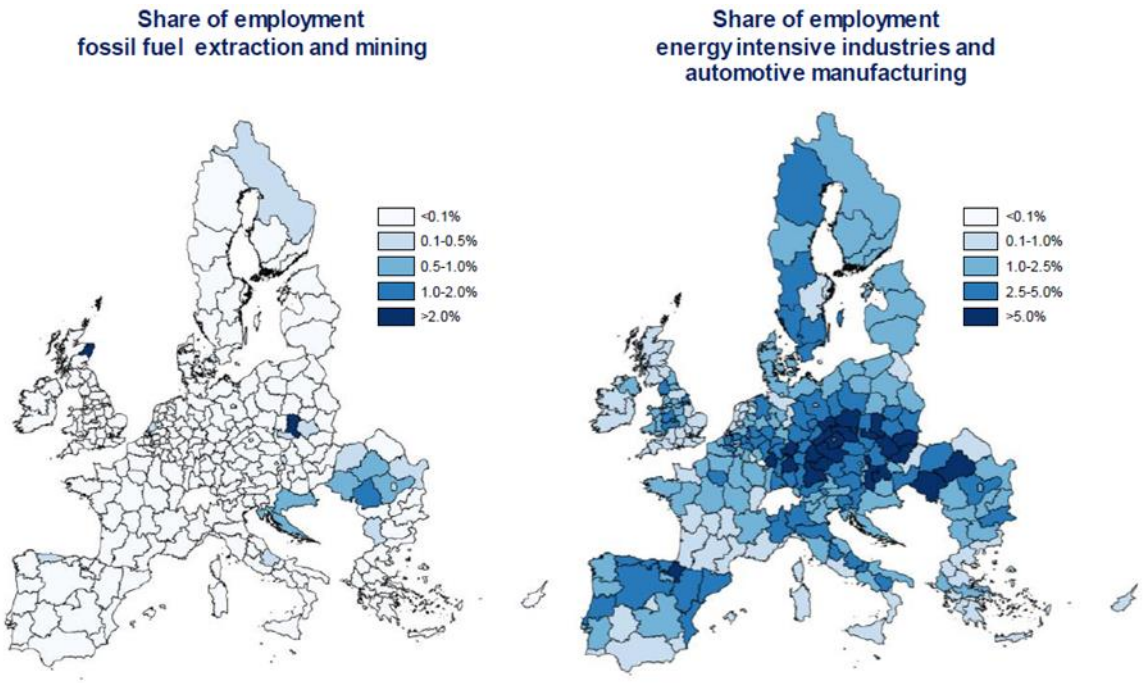
Table 1 Employment impacts of a low-carbon transition on different sectors

Sector	Share of total jobs in 2015	Range of change in jobs by 2050
Construction	6.7%	+0.3% to +2.8%
Services	71.7%	-2.0% to +0.9%
Agriculture	4.5%	-0.7% to +7.9%
Mining & Extraction	0.5%	-62.6% to -2.9%
Power generation	0.7%	+3.6% to +22.3%
Manufacturing (energy-intensive industries)	2.0%	-2.6% to +1.8%
Other manufacturing	13.3%	-1.4% to +1.1%

Source: European Commission (2018b, 228f.), *adaptation* L.M.

There is a high level of uncertainty as to the overall level of employment that may be created or the jobs that may be lost. Most studies come to the conclusion that there will be a slight growth in overall labour demand as the level of employment in sectors that will need to reduce their activity such as the mining in extraction sectors, is small. On average, employment in those sectors accounts for 0,5% of total employment in whole Europe (European Commission 2018b). Nevertheless, it has to be taken into account that those jobs are highly concentrated in specific regions as shown by Figure 3. For example, in North Eastern Scotland, employment in extractive industries amounts to more than 11% of total employment in this region (European Commission 2018b). Due to the rapid phase-out that is expected for mining and extractive industries it is also clear that those jobs cannot be fully compensated by retirement raising the need for measures that are specifically targeted at those workers to prevent them from sliding into unemployment (European Commission 2018b).

Figure 3 Regional exposure to sectors that will decline (left) and transform (right)



Source: European Commission (2018b: 232).

The impact of the transition to low carbon production and consumption may, however, be less evident in the total number of jobs created or lost. For example, workers employed in manufacturing and in particular in energy-intensive industries may face substitution or re-definition of their work. As demonstrated by Figure 3, the number of workers in those sectors is significantly higher and more widespread across Europe (European Commission 2018b). Most Member States have at least one region, where the share of employment in those sectors is above 1% and in 25 regions this share is even above 5% (European Commission 2019b). Especially in the Czech Republic and in Slovakia nearly all regions are expected to undergo significant restructuring (European Commission 2019b). Because the tertiary education level in those regions is below the EU average as is the percentage of adults in training, employees may not be able to find new jobs easily (European Commission 2019b). Above that, it is important to note that the regions that will face restructuring are in many cases regions with a higher than average GDP (European Commission 2019b). This is particular the case for Hungary, Poland and Romania (European Commission 2019b). Especially in those countries the decarbonisation of energy-intensive industries may thus not only affect employment in that particular region but may also have implications for the economic development of the country as a whole (European Commission 2019b).

Within industry, the decarbonisation strategies for the steel sector with over 2.6 million employees (industriALL European Union 2020) as well as for the automotive industry with a total of 12 million employees in Europe will be of special interest (Galgózci 2012). Those industries do not only represent the 'backbone' of European industry (Galgózci 2012) but they have also traditionally been a stronghold of union organization, even though the service sector has now reached similar organization levels in most countries (Visser 2019). Compared to 1990 levels, the steel industry managed to drastically reduce its CO2 emissions however decarbonisation can only be achieved with the introduction of new, low carbon steel-making technology (Galgózci 2012). Although several pilot projects have already been launched, most technologies

are still not ready for commercial production which makes it difficult to estimate their potential impact on employment (Agora Energiewende and Wuppertal Institut 2019). With regard to the automotive industry, several studies have been commissioned that seek to measure the impact of a shift from combustion to electric drives on employment. It is estimated that around 25% of jobs in the automotive industry are linked to the drive, that is the combustion engine (Wilke and Wolff 2012). Because the number of employees needed for the production of electric vehicles compared to the production of combustion engines is significantly lower (1:10), some jobs may be lost, but since both combustion engines and electric vehicles may also be produced in parallel, at least as a transitional measure, some studies also predict a rise in employment (Wilke and Wolff 2012). Another important point is that especially in automotive manufacturing there is a high number of suppliers and sub-contractors. The transition towards the production of electric vehicles is thus likely to change the relations between suppliers which will similarly affect employment in those – mostly small to medium-sized – companies (Wilke and Wolf 2012). Finally, as is the case in other sectors, current workers in the automotive industry will need to acquire new skills as new qualification profiles will be needed (Wilke and Wolff 2012). Because 9-30% of companies in Europe are currently experiencing skills shortages, especially in technical occupations, advanced training and re-training of the workforce that goes beyond the usual training of existing competences and that takes a long-term perspective will therefore be crucial (Wilke and Wolff 2012).

This so called 'skills challenge' will also be relevant beyond the automotive sector as occupations that are now needed may still be relatively new. In contrast, the study by the European Commission (2018b) finds that rather than requiring new occupational profiles, the transition to a low carbon economy will oftentimes require the development of 'green skills' within existing profiles (European Commission 2018b). It is further argued that trends in skills needs such as the shift from low to medium and from medium to high-level qualifications are mostly driven by other 'mega trends' such as demographic changes and digitalization, whereas the transition towards a green economy may nevertheless accelerate those shifts (European Commission 2018b). Instead of focusing on specific 'green skills' it will thus be crucial to develop 'key competences' comprising digital skills, cognitive and social-emotional skills as well as competences in science, technology, engineering and mathematics (European Commission 2018b).

Apart from the effects described above, it is of course also important to look at how working conditions, e.g. related to occupational safety and health (OSH), wages, social protection as well as to workers' participation will change due to the transition towards a low carbon economy (UNFCCC 2016). Such things will be especially important for newly created jobs, e.g. in the renewable energy sector, however, also the introduction of 'green' working methods or the design and implementation of re- and upskilling measures will have an impact on employment conditions and on questions related to the distribution of costs that come with the transition.

After having thus outlined the potential effects of the transition towards a low carbon economy on employment, in the last part of this chapter, possible distributional effects of the transition will be explored. The chapter will end by drawing attention to the central insights gained from the economic analysis and how they could be relevant when looking at the strategies of trade unions to foster a just transition.

2.2.2.2. Distributional effects

So far, it has been demonstrated that the transition towards a low carbon economy affects economic sectors and employment in different ways. Also, the impact on regions may differ considerably which will not only

affect employment but also has implications for the development of whole communities. Since energy-intensive industrial plants are often concentrated in one particular area, policymakers will need to ensure that, if plants need to close, new employment opportunities are created. The deployment of renewable energies could offer a good solution, since those are not prone to relocation (European Commission 2019b). Apart from the regional distributional effects, popular climate policies such as carbon taxes, cap-and-trade-systems as well as fossil-fuel subsidy reforms (Ohlendorf et al. 2018) tend to be regressive as low-income households and low-skilled workers are disproportionally bearing the cost of those reforms, even though they contribute less to global warming than higher-income households (European Commission 2019b; Zachmann, Fredriksson and Claeys 2018; ILO 2016). This is the case because fossil fuel products usually make up a higher share of total expenditure of low-income households than of higher income households (García 2017). Moreover, low carbon alternatives are more capital intensive than fossil fuel options which is why companies may decide to lower wages or reduce the number of employees disproportionally affecting lower income groups (García 2017)

In almost all studies that seek to measure the effect of decarbonisation on the economy it is expected that energy prices will increase due to the transition (European Commission 2019b; Zachmann, Fredriksson and Claeys 2018; European Commission 2018b). This will affect in particular low-income households and could lead to higher levels of energy poverty as those households spend less on energy in absolute terms compared to higher income households, but the share of energy costs of total consumption expenditure is far higher, in some countries, e.g. in Slovakia this share amounts to 23% (European Commission 2019b). In addition, also taxes on transport fuels such as diesel or gasoline have a regressive effect in regions where public transport is too expensive or not well developed (García 2017; Zachmann, Fredriksson and Claeys 2018). Similarly, when it comes to improving the energy efficiency of buildings, renovation costs are often passed on to the tenants leading to higher rents, even though energy bills may turn out to be slightly lower due to those measures (European Commission 2019b). However, climate policies are not per se regressive, their effect depends on the specific policy design as well as on other measures such as energy efficiency measures, transfers to low-income groups or the expansion of public transport (García 2017). For example, fuel taxes on aviation have a strong redistribute effect as higher income households tend to fly more (Zachmann, Fredriksson and Claeys 2018).

The aim of this second chapter was to provide an overview over the development of GHG emissions in Europe and by economic sector and to outline the measures that would need to be taken to transition towards a low carbon economy as well as how those measures will affect employment and society as a whole. The situation differs considerably across sectors, e.g. whereas the mining and extractive industries will need to be scaled back raising questions as to how the remaining workers and communities can be compensated *and* economic activity can be upheld, in many more sectors, the transition will lead to changes in working routines and different qualification needs which will impact on working conditions and the quality of work in general. It was also demonstrated that while certain regions are more affected than others, no country is exempted from not having to deal with those changes. Moreover, decarbonisation is influenced by and in turn influences other trends such as globalisation, automatisation and digitalisation. Finally, climate policies also have distributional effects. It will therefore be important to not only ask about how we can reduce our GHG emissions but also how the costs of this process can be distributed in a fair and socially just way. Addressing such questions has always been at the heart of the various trade union movements. It is therefore not surprising that trade unions are now demanding that the transition towards a low carbon economy needs to be just.

After this economic analysis, the thesis will thus proceed by looking at the different ways trade unions are conceptualising the relationship between environmental protection and social justice as well as the specific strategies and instruments they may use to foster a just transition. The following chapter will thus provide the theoretical groundwork for the analysis of the just transition strategies of trade unions in chapter 5.

3. OVERVIEW OVER THE THEORETICAL GROUNDWORK

Chapter three of this thesis gives an overview over the findings from previous research conducted on the role of trade unions as environmental actors – both historically as well as in relation to the current debate on a just transition. Furthermore, the chapter will also take a look at the underlying theoretical assumptions on labour power and thus the resources available to trade unions to shape major societal trends – in this case, the transition towards a carbon free society. Since the focus will be on the European context, the characteristics of the various European industrial relations regimes will be briefly described as they similarly affect the resources available to trade unions. At the end of the chapter, the insights and gaps in the literature on the role of trade unions within current efforts to mitigate climate change will be summarised. It will be possible to identify several factors that might influence the way trade unions understand a just transition and their choice of strategies to achieve it.

3.1. Unions as environmental actors

Trade unions have a long history as environmental actors. Right in the early beginnings when the first unions formed themselves, demands for ensuring occupational safety and health (OSH) were placed at the centre of union action (Silverman 2006) Nevertheless, to this day, there is only little research on the role of unions in fostering sustainable development. Within environmental studies, workers and their representatives are often regarded as an obstacle to environmental protection and to effective climate policies, so that their interests and strategies are either dismissed as contrary or as inadequate to achieving environmental sustainability (Räthzel and Uzzell 2012). On the contrary, labour studies have mostly focused on the efforts of trade unions to establish safe and healthy working conditions and to ensure that workers have access to recreational spaces. Nature is thus seen as instrumental to further (higher) social interests, but it is not seen as the source of wealth and justice (Räthzel and Uzzell 2011; Silverman 2006).

This separation between ecological and social concerns has its roots in history: economic development within the industrial countries in the Global North has been based on the exploitation of both natural and human resources. Nature was considered a private asset, standing on the side of capital. Protecting the environment was therefore seen by workers as synonymous with restricting their productive capacity by reducing jobs and endangering economic growth and wealth creation for all (Räthzel and Uzzell 2012). Labour is thus themselves part of the resource-wasting and polluting capitalist model of production by ensuring that workers are receiving a fair share of the wealth that it generates (Galgózci 2014). Räthzel and Uzzell (2012) point out that this is however a contradictory stance as workers by favouring job creation over environmental protection are defending the relations of production under which they are themselves subordinated. In contrast, it is argued that trade unions in the Global South have a much closer relation to environmental movements or are themselves active as environmental activists (Räthzel and Uzzell 2012).

3.1.1. The (conflicting) identities of trade unions

This contradiction between protecting jobs on the one hand and thriving for social justice on the other, relates to the different and similarly contradicting trade union identities that have been developed by Hyman and that have later been taken up by numerous other scholars (cf. Furåker and Larsson 2020; Räthzel and Uzzell 2011; Snell and Fairbrother 2010; Silverman 2006). According to Hyman, trade unions have three identities that are related to the different functions they perform as societal actors. Those identities are not mutually exclusive; however, trade unions may sometimes need to make trade-offs between them and may weigh them differently depending on their respective social, economic, political and cultural traditions (Räthzel and Uzzell 2011). A first identity relates to trade unions as anti-capitalist organisations who seek to advance the interests of the working class through militancy and socio-political mobilisation (Räthzel and Uzzell 2011). A second one relates to the function of trade unions to foster societal integration by practicing and promoting democratic participation and by strengthening social competencies (Furåker and Larsson 2020; Räthzel and Uzzell 2011). Finally, trade unions are also labour market actors by negotiating with employers on working conditions and the price of work, e.g. within collective bargaining (Furåker and Larsson 2020; Räthzel and Uzzell 2011). In other studies, those different identities have been reduced to the dichotomous role of trade unions as *'vested interests'* and trade unions as *'swords of justice'* (cf. Galgózci 2014; Snell and Fairbrother 2010; Silverman 2006). With respect to sustainable development and climate policies, it is therefore argued that trade unions are facing ongoing tensions between the short-term gains of defending current jobs to protect the interests of their members and the long-term gains of advancing social justice through sustainable development (Galgózci 2014; Snell and Fairbrother 2010).

3.1.2. The 'job versus environment-dilemma': Four trade union discourses

According to Räthzel and Uzzell (2011) this *'job versus environment'*-dilemma is representing a major challenge for labour movements. The way they frame it influences their respective strategies on sustainable development and climate policies. In their research they find that trade unionists' perception of the dilemma can be grouped in four different discourses: 'technological fix', 'social transformation', 'mutual interests' and 'social movement discourses'. From the *'technological fix'* perspective, the dilemma between jobs and environment does not exist as green technological innovations will protect both nature and guarantee jobs (Räthzel and Uzzell 2011). Other unionists mention that the innovations in low carbon technology must be accompanied with a *'social transformation'*. Social relations, collective identities as well as convictions on 'masculine' and 'feminine work' must be transformed and decent, empowering jobs in the green economy must be created (Räthzel and Uzzell 2011). A third discourse focuses on *'mutual interests'* and the importance of engaging in a dialogue with workers. Instead of delegitimising the interests of the workers in the industries most affected by climate policies, it is necessary to realise that workers have different, sometimes conflicting interests, e.g. the interest to protect one's job and the interest to see one's family. It is therefore the task of trade unions to inspire workers to rethink their priorities and to convince them that the transformation is beneficial for them (Räthzel and Uzzell 2011). A last discourse argues that unions should not only focus on working conditions and promoting 'green jobs' but take into account the interests of the working class in general and call for alternative forms of production. Trade unions are thus moving beyond their narrow membership-based approach and become *social movements* (Räthzel and Uzzell 2011).

Although the different discourses observed by Räthzel and Uzzel (2011) present useful insights into how trade unions are conceptualising the relationship between jobs and environment, they say little about how

those discourses are translated into actual strategies and policies that are pursued by trade unions in practice. This is why Felli (2014) does not only look at how global unions such as the ITUC or the International Transport Workers' Federation (ITF) are conceptualising the dilemma between jobs and environment, but he also analyses the specific actions, alliances and policies those unions are pursuing with regard to climate change mitigation. Although he observes some commonalities such as the recognition of the science of climate change and the need to reduce GHG emissions as well as the commitment to social justice, redistribution and economic growth, he also finds several differences in the approaches of global unions on climate change mitigation which he groups into three different strategies: the deliberative, the collaborative growth and the socialist strategy (Felli 2014). The findings by Felli are especially valuable for this thesis, because in a later study, Stevis and Felli (2015) adapt this conceptualisation to describe the different strategies that trade unions may pursue within the context of a just transition. Before presenting their 'varieties of a just transition', it will however be shortly be described how the just transition concept became so popular with the various trade union movements.

3.1.3. Trade unions and the demand for a just transition

According to Felli (2014), the just transition concept has become widely used by trade unions because it resonates well with their 'usual vocabulary' but is also elusive enough to subsume all kinds of strategies and policies under it.

> As with other concepts found in (global) environmental politics, 'just transition' owes its success to the fact that it has somehow become an empty signifier through which conflicting visions can be expressed without, however, having to expose their disagreements. As such, this principle often remains underdetermined, and conflicting contents can be put within it by different actors. […]. In its most watered-down version, 'just transition' appears as a concept demanding workers' (and, more often, trade union officials') involvement in discussions over the implementation of environmental or climate-related measures. In its most radical articulations, 'just transition' is equated with Trotsky's transitional programme or even with 'revolution' (Felli 2014, 379).

The term 'just transition' was first used in the mid-1980s by the president of the Oil, Chemical and Atomic Workers Union (OCAW), Anthony Mazzocchi, who argued that workers who are affected by policy changes, e.g. due to environmental policies should be protected from any negative consequences if they are to embrace those changes (Sweeney and Treat 2018). In particular, the OCAW called for a 'Superfund for Workers' to compensate those workers who were at risk of losing their jobs because of the closure of a chemical factory in New Jersey due to environmental concerns (Sweeney and Treat 2018). The just transition concept was then taken up by Canadian unions and from there it spread to more and more countries until it also found its way to the European and to the international level (Sweeney and Treat 2018).

An important step to also draw attention to the interests of the working population within international discussions on sustainable development and climate policies was then done in 1992, with the adoption of the Agenda 21 on sustainable development during the Earth Summit in Rio de Janeiro (Silverman 2006). The declaration for the first time recognises that environmental protection has to go hand in hand with greater equity and the eradication of poverty. The declaration also recognises that fundamental labour rights such as the right to association and collective bargaining need to be safeguarded on the way towards a sustainable economy and workers and their representatives need to be given a central role in its implementation (Silverman 2006). In 1997, the International Confederation of Free Trade Unions, the

predecessor of the ITUC, first included the term 'just transition' into its statement to the COP3 in Kyoto. At the COP16 in 2010, the ITUC eventually managed to include the term in the final text of the Cancun Agreement (Stevis and Felli 2015). Since then, it became an integral part of all subsequent agreements reached at the UN Climate Change Conferences including the latest one, the Paris Agreement adopted in 2015. In addition, one year later, in 2016, the ITUC established the Just Transition Centre, a small body affiliated to the ITUC that is tasked with collecting and exchanging information on the just transition policies adopted by its member unions at national and regional level (Stevis and Felli 2015).

Moreover, the ITUC and also the ILO regularly publish papers on the progress made in several countries to achieve a just transition thereby providing guidance on its meaning and presenting examples of successful just transition strategies. For example, the ITUC defines "a Just Transition [a]s an economy-wide process that produces the plans, policies and investments that lead to a future where all jobs are green and decent, emissions are at net zero, poverty is eradicated, and communities are thriving and resilient" (ITUC 2017, 6). The notion of 'green and decent jobs' is frequently mentioned, even though its meaning is not less contested than that of a 'just transition'. According to the ITUC, a green job is a job that "reduces the environmental impacts of enterprises and economic sectors to sustainable levels" (ITUC 2012, 3) while "a decent job ensures safe work, fair wages, respect for workers' rights and social protection" (ITUC 2012, 3). It is further stated that a just transition entails that former workers in fossil-fuel industries receive income support, retraining and redeployment opportunities and secure pensions. Social protection should be guaranteed and human and labour rights, notably the right to organise and to bargain collectively, must be respected. Beyond the individual level, a just transition also means investment in regional development to support the communities affected by climate policies. Moreover, social dialogue that includes all relevant actors as well as collective bargaining with workers and their unions is central to achieving a just transition (ITUC 2017). In addition, the state is given a central role in enabling social dialogue between all relevant stakeholders and in adopting the right policy framework that can promote sustainable production and consumption patterns (ILO 2015). To achieve this, the state should use market-based instruments such as taxes and other forms of incentives, e.g. loans or guaranteed energy prices. Long-term financing for sustainable production needs to be secured and the state should use public procurement to also create a market for those products (ILO 2015). Finally, active labour market policies, e.g. skills training and upgrading programmes as well as a strengthening of public employment services (PES) are similarly seen as crucial for ensuring a just transition (ILO 2015). Throughout their publications it is, however, stressed that there is no one-size-fits-all approach and that local conditions determine the process and outcome (ILO 2015).

Especially the ITUC has therefore been very active in providing guidance as to how a just transition can be conceptualised and which policies can give effect to it. Still, significant uncertainty remains as to the goals that should be achieved by a just transition and as to the various strategies trade unions may use in different contexts. Drawing on the findings from their previous research on the climate strategies of global unions, Stevis and Felli (2015) are therefore distinguishing between three different varieties of a just transition based on their transformative potential. Their three approaches will be presented in the next part. They are complemented with their findings from the earlier study. For a summary of the approaches, see Table 2.

3.1.4. Varieties of just transition

The previous definitions given by the ITUC and the ILO are close to what Stevis and Felli (2015) describe as the *'shared solution approach'* to a just transition. According to this first and probably most dominant

approach, workers and trade unions should seek mutual understanding and engage in dialogue with employers, governments and other actors. Through this, the transition towards a low carbon society can be a "triple win": for the economy, the environment and society (Stevis and Felli 2015). In this approach, the current form of economic production and social relations as the root causes of climate change and environmental degradation are ignored, instead, the core rationale is that societies and workers need to adapt and become more resilient to change by increasing public investment in green sectors and in social protection and through economic redistribution ("green Keynesianism") (Felli 2014). This approach is the least transformative one. Even though calls are made for an enhanced social safety net as well as the creation of green and decent jobs, the balance of power between labour and capital is not challenged (Stevis and Felli 2015).

In contrast to the first one, the *'differentiated responsibility and respective capabilities approach'* holds that due to unequal relations between labour and capital, the state and employers have special responsibility to ensure that workers and their communities are sufficiently protected during the transition. Workers should not only be heard but should have decisional power (Stevis and Felli 2015). Moreover, it is not enough to call for green jobs, but those jobs also need to be sustainable by investing in research and development (R&D) and job-generating innovations. The state is given a more pro-active role compared to the first approach especially in order to protect the "losers" of the transition, e.g. through early retirement schemes, wage subsidies, retraining and education measures and state-led industrial policies (Stevis and Felli 2015). Although the second approach is thus more redistributive, its ecological potential is limited. Since it is more prominent with unions organising workers in energy-intensive sectors that are especially vulnerable to climate policies, this also means that trade unions are also dependent on the growth of those sectors. While those unions may thus support the development of green sectors, it is argued that they are in general more in favour of technological fixes such as clean coal or CCS (Felli 2014). The development and deployment of new, zero carbon technology is only supported if this does not endanger the competitiveness of the industry in question. This concern with competitiveness may thus exacerbate cooperation with unions organising workers in other sectors and in other countries (Felli 2014). Finally, although trade unions may sometimes favour or threaten conflictual strategies such as strikes, they are perceiving the cooperation between labour and management as fruitful to improve energy efficiency and to promote low carbon technologies (Felli 2014). This second approach therefore strongly relies on the European corporatist model of industrial relations for its implementation (Stevis and Felli 2015).

Last but not least, the most radical approach to a just transition is the *'social ecological approach'* since it calls for the democratisation of economic and social relations (Stevis and Felli 2015). Because private companies cannot be expected to act in the common good, it is argued that the development of green technologies as well as the remaining fossil fuel supplies need to be brought under democratic control (Stevis and Felli 2015). Economic production should be reduced and re-localised. Similar to the second approach, also the third one realises that power and wealth are unequally distributed in a capitalist society which is why dialogue or enhanced social protection will not be successful in achieving a just transition. Trade unions therefore need to pursue more confrontational strategies and seek alliances with other likeminded societal actors in order to achieve a truly social and ecological transformation (Stevis and Felli 2015). This approach is said to be more prominent with trade unions in the Global South where corporatism is not as well-established as in the Nordic welfare states (Stevis and Felli 2015).

Table 2 Approaches to a just transition

	Shared solution approach	**Differentiated responsibility and respective capabilities approach**	**Social ecological approach**
Ultimate goal	Green economy ("Green Keynesianism")	Return to regulated capitalism with a sustainable face	Democratic ecological socialism
Alliances	States, employers' organisations, international organisations (ILO, UNEP, OECD)	States, employers' organisations, social-democratic parties, Tripartite model of industrial relations	Social movements, environmental Non-governmental organisations (NGOs), radical political parties (Social movement unionism)
Actions/Instruments	Discussions, mutual understanding, dialogues with stakeholders, expertise, non-consequential mobilisations (demonstrations) Lobbying "Workers need to have a seat at the table'"	Social dialogue, collective bargaining, expertise, mobilisation/struggles within the parameters of tripartite agreements "Workers need to have decisional power"	More confrontational perspective, development of political education, building from workers' knowledge and class-based experience "Worker empowerment: bottom-up"
Policies for a just transition	Public Employment Services (PES), e.g. educational, re-skilling and up-skilling programmes (flexicurity) Public investment in green sectors Promotion of 'win-win solutions'	Technological fixes, e.g. clean coal, CCS Greater public control over the investment (R&D, job generating innovations) Package of compensation for workers and their communities, e.g. early retirement schemes, wage subsidies Strong welfare state	Democratic control of the economy Ecological planning Reduction of working hours Reduction in demand Re-localisation of strategic economic activities, Technological improvement

Source: Felli (2014, 382) and Felli and Stevis (2015), *adaptation* LM.

The approaches developed by Stevis and Felli (2015) provide a useful starting point for the analysis as they provide examples as to how a decarbonised society can look like, namely green Keynesianism, return to regulated capitalism with a sustainable face and democratic ecological socialism. They also outline how trade unions can work towards these goals, e.g. by engaging in dialogue, by using corporatist structures and institutional arrangements or by calling for social mobilisation. Last but not least, the approaches already give an idea about the factors that could influence trade unions' strategies. For example, in countries with a strong social partnership, trade unions are probably less likely to seek confrontation with governments and capital in order to achieve a just transition (Stevis and Felli 2015). Moreover, trade unions organising workers in energy-intensive sectors are probably more in favour of the 'differentiated responsibility and respective capabilities approach', whereas workers organising public sector employees may for example, be more in favour of the 'shared solution approach'.

In order to dive a bit deeper and to be able to identify which strategies and instruments trade unions in different parts of Europe could choose from to foster a just transition, it is, however, necessary to also look at the respective power resources available to trade unions in different contexts.

3.2. Impact of trade unions' respective power resources on their role as environmental actors

The power resources approach (PRA) developed within the context of declining trade union membership due to changes in the world of work caused mainly by globalisation and neoliberalism (Schmalz, Ludwig and Webster 2018). Inspired by the strategies used by trade unions in the Global South it was analysed which resources and capabilities trade unions could nevertheless draw upon or develop to protect the interests of the working population (Schmalz, Ludwig and Webster 2018). The power resources approach specifically aims at structuring the resources available to trade unions and how they can be mobilised in different contexts and by which means. To this end, one can distinguish between structural, associational, institutional and social power (Schmalz, Ludwig and Webster 2018; Lévesque and Murray 2010).

Structural power is described as the power of workers to disrupt the valorisation of capital, e.g. through strikes, acts of sabotage or other forms of protest extending for example, to the ability to quit one's job and find another one with better working conditions (Schmalz, Ludwig and Webster 2018). *Associational power* arises from the organisation of workers in works councils, trade unions, workers' parties or international trade union bodies (Schmalz, Ludwig and Webster 2018). It depends on the number of members, but also on other elements such as infrastructural resources – financial and human ones, organisational efficiency, member participation and internal cohesion (Schmalz, Ludwig and Webster 2018). *Institutional power* is described as the power trade unions may derive from institutions such as labour rights, decision-making competencies in specific policy fields as well as the specific system of collective bargaining and employee representation (Schmalz, Ludwig and Webster 2018) Institutional power is characterised by its ambiguous nature: on the one hand, it can give trade unions the power to influence policy-making, e.g. through social dialogue structures, however, on the other hand, it can also restrict the ability of trade unions to act autonomously (Schmalz, Ludwig and Webster 2018). Finally, *social power* describes the ability of trade unions to make their struggle for better employment conditions a society's struggle (Schmalz, Ludwig and Webster 2018). This can be achieved by forging alliances with other societal actors having similar goals, e.g. NGOs or local communities (coalitional power) and by influencing public debate (discursive power) (Schmalz, Ludwig and Webster 2018).

The literature on the power resources approach shows that trade unions can use a wide range of strategies to pursue their goals. When it comes to fostering a just transition, trade unions can thus draw on various instruments such as strikes, using their influence within tripartite decision-making bodies and by cooperating with other trade unions and NGOs. As mentioned by Stevis and Felli (2015), the resources available may also influence what trade unions understand under a just transition, e.g. when trade unions draw on their powers within bipartite or tripartite institutions, they are likely to pursue a less radical transformation of economic and social relations than trade unions that decide to use more confrontational strategies such as strikes or sabotage or who decide to cooperate with environmental NGOs who are likely to pursue a more radical approach to just transition including a departure from capitalist production processes.

The different power resources are interrelated and may be used simultaneously. The PRA can thus only give an overview over the diverse strategies and instruments that trade unions could use in theory. The ability to

draw on those resources depends on a wide range of factors such as the ability of trade union leaders to balance conflicting interests within their unions or to learn from past experiences (Lévesque and Murray 2010). In this regard, also the specific industrial relations regime, that is the interrelations between labour, capital and the state that have manifested itself over a long period, also have a huge impact on the respective trade union strategies on a just transition. In the next part, the various industrial relations regimes in Europe will therefore be described.

3.3. Impact of industrial relations regimes on the role of trade unions as environmental actors

The various industrial relations regimes in Europe trace back to the famous book "The Three Worlds of Welfare Capitalism" written by the Danish sociologist Gøsta Esping-Andersen and published in 1990. Based on his typology in which he distinguishes between social-democratic, conservative and liberal welfare states, it is also possible to cluster countries according to their respective relations between economic actors differentiating between Nordic countries, Western/Central European countries, Central/Eastern European countries, Southern countries and Anglophone countries.

The industrial relations regime of the *Nordic countries*, that is Denmark, Sweden and Finland, is characterised by *organised corporatism* (Furåker and Larsson 2020). Employers' organisations and trade unions are strong and are engaging in negotiations which each other autonomously from the state whose role is reduced to a mediating function (Furåker and Larsson 2020). Despite neoliberal policies, trade union density and collective bargaining coverage is still high (Bernaciak, Gumbrell-McCormick and Hyman 2014). Moreover, most of the countries have had strong social democratic parties dominating government, the result of which are extensive and universal welfare systems (Bernaciak, Gumbrell-McCormick and Hyman 2014).

The *Southern countries*, notably France, Italy, Spain, Portugal and Greece are labelled as *polarised/state-centred* industrial relations regimes (Furåker and Larsson 2020). In contrast to the Nordic countries, the state plays a central role in determining employment conditions, while the relations between labour and capital are characterised by stark conflict (Bernaciak, Gumbrell-McCormick and Hyman 2014). Trade union density is rather low and the trade union movements are fragmented with smaller, ideologically diverse trade unions (Furåker and Larsson 2020). Because of that, active membership and the use of strikes are seen as crucial for unions in order to reach regulation by the state (Furåker and Larsson 2020).

The *Western/Central European countries* including the Netherlands, Austria, Luxembourg, Belgium and Germany are characterised by *social partnership* (Furåker and Larsson 2020). Most countries in this group have well-developed bipartite and tripartite relations between social partners and the state (Furåker and Larsson 2020). Although trade union density is low to medium with the exception of Belgium, collective bargaining coverage is high due to extension clauses spanning whole sectors (Furåker and Larsson 2020; Bernaciak, Gumbrell-McCormick and Hyman 2014). Dual employee representation through both works council and trade unions is common and social partners are given an important role in policy formulation and administration (Furåker and Larsson 2020; Bernaciak, Gumbrell-McCormick and Hyman 2014).

The *Anglophone countries*, Great Britain and Ireland, are *liberal pluralist* regimes that are characterised by a low level of state intervention in industrial relations and a low level of trade union and social and employment rights protection through law (Furåker and Larsson 2020). Collective bargaining is decentralised and trade union density is moderately high and rather than being divided along ideological

lines, trade unions tend to be more fragmented in relation to occupational and industrial lines (Bernaciak, Gumbrell-McCormick and Hyman 2014). The level of institutional support unions enjoy is arguably the lowest in this regime. Trade unions are thus particular dependent on their members, while recruitment is aggravated due to a growing number of workers employed in atypical employment (Bernaciak, Gumbrell-McCormick and Hyman 2014).

The various *Central and Eastern European countries* are often put into one group and labelled either *transitional or fragmented* industrial relations regime (Furåker and Larsson 2020). The countries in this group share some characteristics such as a history of communist rule and the transition towards liberal democracy and market capitalism that involved an immense restructuring effort that also led to deindustrialisation, high levels of unemployment and rising income inequality. The levels of social expenditure and income are on average lower than in other regimes (Bernaciak, Gumbrell-McCormick and Hyman 2014). In contrast, there are also many differences which is why there have been various efforts to re-clustering them. Slovenia is for example, often included in the Western/Central European industrial relations regime due to the importance of tripartite bodies and social pacts in determining social and economic policy (Bernaciak, Gumbrell-McCormick and Hyman 2014). In contrast, the Baltic states took the radical transition path towards market capitalism and due to a lack of foreign direct investment (FDI) during this process experienced significant deindustrialisation. Trade union density and collective bargaining coverage is among the lowest in the whole EU and trade unions are also not included in policy formulation nor administration (Bernaciak, Gumbrell-McCormick and Hyman 2014). Romania and Bulgaria also have a very low level of social expenditures but experienced less radical privatisation and deindustrialisation (Bernaciak, Gumbrell-McCormick and Hyman 2014). The Visegrád countries take a middle position, as they have been able to largely preserve their welfare states and their industrial base due to large FDI inflows however the governments did not establish strong corporatist structures but instead rely on regulation by law (Bernaciak, Gumbrell-McCormick and Hyman 2014).

In the last part of this chapter the various insights provided by the literature on unions as environmental actors, on the PRA and on the industrial relations regimes will be summarised in order to narrow the focus of the analysis and to draw attention to the most important concepts and factors that influence how trade unions may understand a just transition and which strategies they may choose to translate it into concrete policies on the ground. The debate on a just transition will also be placed into the broader context of other trends and challenges that are putting the different trade union movements in Europe under pressure.

3.4. Summary & Discussion: Trade union renewal and the role of a just transition

Typically, at the end of the theory part, several hypotheses are formulated that are then tested within the scope of an analysis. With regard to a just transition and specifically from the perspective of trade unions, there is, however, still not enough research to formulate such hypotheses as they would lead to an unnecessarily narrow view and may divert attention away from potentially interesting observations.

The three approaches put forward by Stevis and Felli (2015) ranging from ‘Green Keynesianism’, ‘Return to regulated capitalism with a sustainable face’ and ‘Democratic ecological socialism’ are nevertheless representing a good starting to give an idea as to the goals that trade unions may seek to achieve with a just transition, still, those approaches are not exclusive nor exhaustive. Trade unions may for example, choose to combine them depending on the economic sector. There is also no exhaustive list of the different instruments and whether they would exclusively fit to one approach or the other. Moreover, the choice of strategies may be influenced and restricted by a wide range of factors, e.g. the existence of corporate

institutions or the availability of green technologies, which may in turn affect how trade unions understand the concept of a just transition. In addition, the literature on the PRA and the industrial relations regimes provide an overview over the different strategies that trade unions may use to foster a just transition, but they cannot determine a clear direction since local and regional factors as well as the specific historical, social and economic traditions of the trade union in question may similarly influence the goals and the strategies pursued within the context of a just transition.

Despite these shortcomings, it is possible to identify several aspects that need to be taken into account when it comes to the analysis of the just transition strategies of the various trade unions in the case studies. First, it is necessary to explore the impact of climate policies on the specific economic sectors and on employment to identify which sectors are especially vulnerable to changes. When it comes to the goals that are to be achieved within the context of a just transition, one can distinguish between approaches that aim to uphold the status quo and that are merely dedicated to replace brown jobs with green jobs and approaches that seek to significantly transform the relations between capital and labour. Such approaches may for example, entail a strengthening of the role of the state in economic policy, a stronger focus on the quality of jobs that should be created as a result of the transition as well as a transformation of work identity and work values. When analysing the strategies and instruments used to achieve a just transition, particular attention should be given to the conflict potential of those strategies, e.g. are they based on mutual understanding between labour and capital or are they focused on confrontational strategies, such as strikes? Do those strategies aim at 'giving workers a seat at the table' or at giving them decisional power? The choice of cooperation partners is similarly important: Do trade unions regard the government, specific parties or employers as their partner or do they prefer to ally with environmental movements?

In addition, in order to explore the factors that are influencing the choice of instruments and the goals to be achieved with a just transition, it is necessary to take into account the specific industrial relations regime as it significantly influences the resources and capabilities of trade unions to become an important actor in the transition towards a carbon free society. Speaking of resources and capabilities, the size and public standing of the trade union may also be important factors that need to be considered in the analysis. In this sense, it must also not be concealed that the trade union movements in Europe have been facing some tough decades.

Everywhere in Europe, trade union density and the number of workers covered by collective bargaining agreements has declined rapidly in the past 30 years, even though recent data suggests that trade union density is now stabilising (cf. Visser 2019). Due to major global trends such as automatization, the decline of large-scale manufacturing industries, the individualisation of employment relations and the weakening link to political parties among others, trade unions have nevertheless been attested with dwindling importance and resources to protect the interests of the working population (Erne 2018; Galgózci 2014; Lévsque and Murray 2010). As a consequence, it has been argued that trade unions have decided to withdraw from their role as 'swords of justice' and focus more on the narrower, immediate interests of their members ('vested interests') (cf. Galgózci 2014; Snell and Fairbrother 2010). Accordingly, the same scholars are now stating that the engagement of trade unions with climate policies and their efforts to achieve a just transition could be a way of renewing the purpose and role of unions as important societal actors fighting for social justice and the well-being of the working class as a whole (Snell and Fairbrother 2010). It will therefore be interesting to explore to what extent those considerations also play a role for trade unions within their respective just transition strategies. At the same time, other mega trends such as automatisation and digitalisation may divert trade unions' attention away from climate policies and, depending on the specific context, other challenges such as persistent high unemployment or lack of financial resources due to

membership loss may represent more pressing challenges influencing the resources unions can use for developing just transition strategies.

After having thus connected the bits and pieces of the theoretical literature on trade unions as environmental actors, on the origins of the just transition concept and on the power resources available to trade unions, the next chapter will present the research strategy and the methods used to answer the research questions formulated in the first chapter.

4. PRESENTATION OF THE RESEARCH STRATEGY AND THE METHODS USED

In order to be able to answer the question as to how trade unions in Europe are fostering a just transition, several case studies from four European countries have been chosen. Regarding data collection and operationalisation, a mix of different methods has been employed including both desk-research as well as expert interviews with policy officers at sectoral, national and international trade union organisations. In the following, a short overview over the research strategy and the methods will be given.

4.1. Case studies

Case studies are a useful research strategy if a certain phenomenon should be analysed in great depth, instead of aiming at a high generalisability (external validity) of the results (Van Thiel 2014). Because the aim of this thesis is to provide examples of just transitions and to analyse trade unions' understanding and strategies as well as the challenges and chances they are encountering in different countries and contexts, an in-depth study of a limited number of representative cases is considered to be a fruitful strategy to pay attention to a wide range of different aspects, some of them may even be unobserved yet. Although there is already some research on the different approaches trade unions may follow with regard to a just transition (cf. Stevis and Felli 2015), the factors influencing the choice of strategies as well as the policies meant to give effect to them are still not fully explored. Since the factors that may affect the various just transition strategies of trade unions are numerous and may dependent on the specific regional or local circumstances, a high level of generalisability seems not to be feasible nor desirable.

The choice of the case studies was motivated by both theoretical as well as practical issues, notably availability of data, e.g. secondary documents but also interview partners as well as language. Because the object under analysis are the just transition strategies European trade unions, several issues had to be considered when making the selection. Trade unions are essentially tied to the nation state. As has been shown in chapter 2.3. the specific industrial relations regime determines the role of trade unions as economic and social actors. However, also internal issues such as membership and internal cohesion as well as external issues such as underlying economic conditions in the respective sectors may determine trade unions' just transition strategies (cf. chapter 2.2.). Moreover, trade unions may be divided along ideological or occupational lines or both and they may be organised in occupational, national, or even supranational trade union federations (cf. chapter 2.3.; Bernaciak, Gumbrell-McCormick and Hyman 2014). All of this can influence what trade unions may understand under a just transition and how they seek to achieve it.

Because the goal of this thesis is to provide a variety of different examples of just transition strategies as well as present possible factors that might influence the respective strategies of trade unions, a set of heterogeneous case studies was chosen. The focus is therefore on trade unions in four European countries, each representing a specific industrial relations regime-type: Czech Republic (Central/Eastern: transitional),

Germany (Western/Central: social partnership), Spain (Southern: polarised/state-centred) and Sweden (Nordic: organised corporatism). For reasons of length and feasibility, no representative of the Anglophone regime was included. By choosing countries from different regime types, it is thus possible to find out to what extent this influences the just transition strategies of trade unions. From each country, due attention was paid to collect data from at least two trade unions or trade union federations, one of those should be organising workers in one of the sectors deemed to be most affected by climate policies. Since the impact of decarbonisation differs across sectors, the focus was on the goals, strategies and instruments of sectoral unions or union federations since those have a good overview over the situation in their industries as well as the needs of workers in those sectors. However, because climate policies are state-driven, positioning themselves towards these policies as well as rising demands as to how the transition can be made in a just way, e.g. through public investments, requires action at national, European or even international level which is often carried out by (inter-) national or European trade union confederations. Therefore, also data from those union organisations was collected. In the next part, the data collection methods will be described in greater detail.

4.2. Desk research

For this thesis, a combination of both desk research and expert interviews with trade union representatives has been chosen in order to be able to analyse the different trade union strategies in great depth. Desk research, that is the analysis of existing data such as databases, policy documents or newspaper articles, can be employed for various reasons, e.g. to analyse developments over time or because of cost-efficiency considerations (Van Thiel 2014). In this thesis, it was mainly used in the preparatory stage: to describe the context within which the trade unions' just transition strategies are placed and to provide additional material on their strategies and in preparation for the expert interviews.

In this sense, both policy papers, impact analyses as well as statistical material provided by public entities on the impact of climate policies on the economy and on employment in the four countries were analysed. In addition, policy papers, statements and strategy documents from the various trade unions under study were similarly examined to provide background information on their just transition strategies as well as on examples of successful transitions. This method is then supplemented by interviews with trade unionists and policy officers at national and sectoral trade unions.

4.3. Expert interviews

Expert interviews are a form of semi-structured interviews (cf. Van Thiel 2014). Interviews offer a great degree of flexibility, e.g. to ask follow-up questions or to adapt questions and style based on previous interviews. However, due to their flexibility, the results cannot be easily standardised and they require in general a great deal of preparation and practise (Van Thiel 2014). Within semi-structured interviews, a list of topics that the researcher wishes to explore during the interview is developed – either before the interview based on the theoretical groundwork and previous interviews or during the interview depending on the course of the conservation (Van Thiel 2014). The operationalisation of the interview guide for this thesis is described in the next part of this paper.

Expert interviews are especially useful for investigating experiences and perspectives that can contribute to an enhanced understanding of social reality (Döringer 2020). Due to their position, experts are considered to have special knowledge about the situation that the researcher seeks to analyse. In particular, experts have three different kinds of knowledge: *technical knowledge*, e.g. access to information and data; *processional*

knowledge, e.g. practical experience about routines, interactions and the institutional framework; and *interpretative knowledge* which refers to the subjective viewpoints and priorities of the expert (Döringer 2020). For this Master thesis, all three kinds of knowledge are relevant. In the following, information about the respective interview partners will be provided. All information that could lead to the identification of the person was anonymised.

4.3.1. Selection of experts

The selection of experts was constrained by practical issues such as great physical distance as well as language barriers. Because different economic sectors are affected in different ways by climate policies, the goal was to choose interview partners from sectoral level trade union confederations, federations and unions, e.g. at national or regional level as well as from unions organising workers in sectors strongly affected by the transition towards a green economy. In particular, unions organising workers in sectors that are already transforming, e.g. mining and extraction, energy and industry were chosen because it was expected that those unions have the most advanced just transition strategies. In addition, when contacting the unions, the request was often directed towards policy officers and sectoral unions in charge of industrial sectors such as the energy industry which already reveals that the concept of a just transition is more relevant in those sectors than in others.

In total, twelve interviews with policy officers working at European and national (sectoral) trade union organisations could be conducted. In the case of the Czech Republic, three interviews with representatives of unions organising workers in the mining industry (OS PHGN), in the metal industry (OS KOVO) and in the energy industry (OS ECHO) could be carried out. In Germany, also three interviewees with policy officers from the German Trade Union Confederation (DGB) and from the Industrial Union of Metalworkers (IG Metall) as well as from the United Services Trade Union (Ver.di) were conducted. Turning to Spain, it was possible to reach out to three policy officers organising workers in industry, and in particular in the energy and mining industry: FICA-UGT, FI-USO and CCOO Industria. Finally, in the case of Sweden, one interviewee was carried out with a policy officer at IF Metall, the Swedish Metalworkers union, whereas another interview could be conducted with a policy officer from the Council of Nordic Trade Unions which represents the interests of Nordic unions, that is unions from Sweden, Norway, Denmark, Finland, Iceland and the autonomous areas of the Faroe Islands, Greenland and Åland Islands, at the Nordic Council and the Nordic Council of Ministers which is the inter-parliamentary and inter-governmental regional cooperation format that was consolidated between those countries. In addition, one interview with a policy officer at the supranational IndustriALL European Trade Union (IndustriALL) representing workers in mining, energy and manufacturing sectors at the European level was carried out. Since those sectors are affected the most by climate policies and because they are facing considerable international competition, the interview was very valuable in gaining an insight into the possibilities for transnational trade union cooperation on a just transition.

In the final part of this Methods chapter it is explained how the research questions were operationalised by drawing on the theoretical groundwork developed in the third chapter. The evaluation method is similarly described.

4.4. Operationalisation and Evaluation Method

For the expert interviews, an interview guide was developed. To this end, the four sub-questions that have been developed in chapter 1 of this thesis represented a good starting point as they already draw attention to the four different dimensions that are the subject of the analysis: the goals that are to be pursued with a just transition (outcome); the strategies used to achieve this goal (process); the factors that are influencing the strategies (input); and examples of policies that have already been achieved within the context of a just transition (outcome). For each dimension, several categories were developed that were then translated into questions. The different dimensions and categories have been visualised in a table which can be found in the appendix (A1). Because the questions were slightly different depending on the position of the interview partner, the specific political and economic context as well as experiences from earlier interviews only an exemplary interview guide is included in this thesis (A2).

The interviews were either conducted via video communications software or due to language barriers or time constraints were carried out in written form. Whereas the interviews that were carried out by video communication were between 40 and 50 minutes long, the written responses were very different from each other, although the responses were on average shorter than the ones carried out face-to face. The interviews conducted via video communication were recorded using a recording device and subsequently transcribed. In order to evaluate the interviews, a combination of both inductive and deductive methods was used by drawing both on the topics identified for the interview guide as well as by including new perspectives that came up during the interviews. Through this, it was both possible to maintain a focus on the relevant concepts and approaches developed in the theory chapter while also being open to new aspects.

In order to conclude this chapter, several points about the advantages and disadvantages of the research strategy and the methods chosen are made. First, although the case studies allow for an in-depth examination of the just transition strategies of the various trade unions in Europe, because of the small number of units analysed (12), no generalisations can be made. Moreover, because language barriers as well as availability of data had to be taken into account, practical considerations clearly prevailed over theoretical ones which is why the only precondition was to have each of the industrial relations regime covered in this Master thesis. The cases therefore do not represent the most different ones, but may in fact also share several characteristics, e.g. such as the energy mix or the structure of the economy. Nevertheless, the aim of this Master thesis is not to provide an economic analysis of the effects of decarbonisation but to look at the topic from a broader perspective also taking into account social and legal aspects. Therefore, the specific industrial relations regime was considered to be a good indicator since the typology itself is based on a wide range of economic, social, cultural and political factors. During the data collection process, it became clear that while climate policies impact on all kinds of sectors, just transition strategies were most developed in sectors where the transition has the most immediate and drastic effects on workers, e.g. in extractive and energy industries. Therefore, the thesis has a bias in this respect as not all the sectors identified in chapter 2 could be covered by the analysis.

Although many of the policy officers interviewed were previously working in the sectors they are now organising, they may nevertheless have a different opinion on how the just transition should look like than the workers ‘on the ground’ in the factories. In addition, the statements made in the interviews may significantly diverge from the statements or opinions they may hold or express in other situations and with different interview partners. By combining both desk research and interviews, these effects were however tried to be accounted for. In this sense, it has to be noted that it is of course easier to ask follow-up questions as part of face-to-face interviews than as part of written interviews where answers also tended to be shorter.

Finally, the thesis seeks to analyse a 'moving target', since trade unions' just transition policies are subject to changes depending on the underlying economic conditions or policies adopted by governments. Because the measurements were only done at one point in time, it was not possible to describe how the just transition policies of trade unions evolved over a longer time span or in response to specific events.

It therefore must be mentioned that during the time of the data collection and writing of the Master thesis, the outbreak of the Covid-19 pandemic severely affected human population and put countries' health and social systems as well as the economy under pressure. The pandemic also impacted on employees and on the work of trade unions both in the short-term, e.g. ensuring that safety and health at work can be guaranteed or by preventing mass dismissals, but also in the long-term. For example, irrespective of the country, several interviewees mentioned that the pandemic could give impetus to speed up the transition towards a low carbon economy, while others argued that the opposite could be the case. The impact of the crisis, both in terms of the number of infections and deaths as well as in economic terms was very uneven across regions. Within the EU, GDP contracted by about 3.2% with significant differences across countries, e.g. the Southern countries saw a bigger contraction (European Commission 2020). Also, economic sectors were affected in different ways hitting especially trade, transport, accommodation and food services, but also industrial production (European Commission 2020). Although there are already signs of a recovery and mass unemployment could so far be prevented, e.g. due to the expansion of short-term work schemes, there is still a high level of uncertainty about the economic and social effects of the pandemic, let alone the uncertainty related to the consequences of a second outbreak (European Commission 2020). The impact of this outbreak on the just transition strategies of trade unions will thus not be subject of discussion in this Master thesis even though it has the potential to significantly influence trade union strategies on a number of issues also with regard to the just transition towards a sustainable economy.

The next chapter will proceed by presenting the various trade union strategies on fostering a just transition in the Czech Republic, Germany, Spain and Sweden. The chapter will thus present the results of both the qualitative analysis of policy papers, statements and analyses on a just transition conducted by the respective trade unions themselves as well as the findings acquired during the interviews with the union representatives. Each sub-chapter will start with a brief overview over the specific socio-economic situation and the respective climate policy framework before looking in depth into the just transition strategies of the different trade unions.

5. ZOOMING IN: TRADE UNION STRATEGIES ON JUST TRANSITION IN FOUR EUROPEAN COUNTRIES

In this chapter, the different understandings, strategies and instruments of trade unions on fostering a just transition in the Czech Republic, Germany, Spain and Sweden will be analysed. The structure will loosely follow the order of the questions posed in chapter 1.2. Therefore, in each sub-chapter, the goals trade unions pursue with regard to a just transition, the strategies and instruments by which they seek to implement them as well as the factors that are influencing their strategies will be explored. At the end of each part, one example of a successful just transition will be presented in greater detail. In the last part of this chapter, the findings from the case studies will then be discussed while also drawing attention to similarities and differences, the role of transnational trade union cooperation within the unions' strategies and with a view to answering the research questions posed in chapter 1 of this thesis.

Before starting with the respective trade union strategies in each of the case studies, a brief overview over relevant economic, social and legal aspects will be given. Throughout the analysis part, excerpts taken from the interviews or the written responses will be included to put emphasis on certain statements and to paint a more accurate picture of the various trade unions' perspectives on a just transition. Again, the reader should keep in mind that due to the limited number of cases, the analysis does not aim at completeness but at giving examples of successful or promising just transition strategies of and from the view of trade unions. Therefore, the analysis will only include the just transition strategies of trade unions with whom also interviews could be conducted. During the interviews it also became clear that in many sectors the effects of decarbonisation on employment and on working conditions can only be assumed but were not experienced yet. Because such comprehensive structural changes take time, the interviewees emphasized that the examples they mentioned were only promising initiatives, but they still need to prove that they also lead to a just transition in practice.

Going with the alphabetical order, the analysis will start with the just transition strategies of trade unions in the Czech Republic.

5.1. Czech Republic

In the case of the Czech Republic, three interviews could be conducted with policy officers and trade unionists coming from three different trade union organisations: OS ECHO which organises trade unions in the energy and chemical industry; OS KOVO which represents mainly unions in the metal and automotive industry as well as OS PHGN comprising unions organising workers in mining, geology and the oil industry. All three trade unions are thus representing workers that are strongly affected by the transition towards a low carbon economy. OS KOVO is with roughly 180.000 members the biggest trade union in the Czech Republic. OS ECHO has above 30.000, whereas OS PHGN has above 20.000 members (ČMKOS 2015). Due to the language barrier, all interviews were carried out in written form. Next to the insights gained from the trade unions' responses, also their strategy papers, statements and other documents on the topic of climate policies and a just transition were examined. All unions are affiliated with the Czech-Moravian Confederation of Trade Unions (ČMKOS) which is a member of the ITUC, the European Trade Union Confederation (ETUC) and the Trade Union Advisory Committee to the OECD (TUAC). Including the three above-mentioned organisations, the federation comprises 32 trade unions and trade union federations and has in total close to 300.000 members (ČMKOS 2020a). OS ECHO and OS KOVO are also affiliates of IndustriALL Europe and OS ECHO is also a member of the European Federation of Public Service Unions (EPSU).

Before analysing the trade unions' approach to a just transition, a brief overview over the economic situation in the Czech Republic as well as recent efforts of the Czech government to cut GHG emissions will be provided.

5.1.1. Presentation of the economic, legal and social background

In the theory chapter of this thesis it was described that the Visegrád countries could largely preserve their industries despite the economic restructuring that took place in the 1990s. In the Czech Republic, the industrial sector plays a stronger role both in terms of employment and GDP than in many other European countries. According to the Ministry of Labour and Social Affairs (MSVP), of the roughly 4 million people who were in employment in 2017, 59.1% were working in the service sector, 38.1% in industry and 2.8%

in agriculture (MSVP 2018). Moreover, as is revealed by recent data from the Ministry of Industry and Trade (MPO), GDP in 2018 stood at CZK 5.323 billion (€202 billion) of which one third is accounted for by industry (MPO 2019a). In 2018, around 1.2 million people worked in manufacturing alone (CZSO 2020). In addition, the country's exports, and in particular its exports in goods such as machinery and transport vehicles as well as manufacturing products contributed significantly to the strong GDP growth that the country experienced in the past years, e.g. in 2018, GDP growth amounted to 3% (MPO 2019a). Moreover, because of the strong labour market situation, wages have been growing by more than 8% in 2018 which also spurred an increase in domestic demand and private investment and which caused the unemployment rate to drop to 2,87% (CZSO 2020), its lowest point in Czech history (MPO 2019a). Nevertheless, this GDP growth has been very uneven across regions. While the regions of Prague and the Central Bohemian Region managed to double their GDP between 1995 and 2017, GDP in the Ústecký region only grew by 20% and stagnated in the Karlovarský region (MPO 2019a). And although the country's exports and imports have been growing in 2018 and the goods and services balance was positive, the numbers revealed a deficit in primary income due to the outflow of FDI, e.g. dividends and repatriation of profits (MPO 2019a; MPO 2019b).

Since the outflow of FDI has become quite a matter of public debate in the Czech Republic and also because the topic was mentioned by one of the trade union officers interviewed, it is useful to say a few sentences about the role of FDI and Multinational Corporations (MNCs) in the Czech Republic and in Central and Eastern European countries (CEEC) as a whole. FDI inflows coming mostly from North-Western countries helped to largely preserve the industrial base of CEEC after the fall of communism (IMF 2018, Figure 5). At peak times, the share of FDI as percentage of GDP was for example above 10% in the Czech Republic (2005) (Myant 2018). Since the financial crisis in 2008, the amount of FDI flows has however declined in most CEEC raising questions as to how sustainable it has been for the domestic economy, since convergence, e.g. in terms of wages did not occur (Myant 2018). In Czech Republic, the average wage in 2014 was still one-third of the EU average (Eurostat 2020), even though labour productivity has almost reached the same level as in the EU15 (IMF 2018, Figure 11). According to Galgózci and Drahokoupil (2015), FDI can be a double-edged sword, because on the one hand it can provide access to capital, know-how and technology can also spill-over to domestic companies, but on the other hand, MNCs can also push local competitors out of the market, e.g. through superior technology or by being able to pay higher wages (Galgózci and Drahokoupil 2015). In addition, when MNCs are attracted solely by lower labour costs and if their investments concentrate in areas, where the potential for productivity increases is small, economic development is closely tied to the MNC and will not reach the so-called innovative stage (Myant 2018).

In 2011, around 60% of companies in manufacturing, 74% in computers and electronics and 92% in the automotive industry were controlled by foreign companies (Myant 2018). This can become problematic in times of economic crises but also with regard to the transition towards low carbon production processes, if investments in innovations, e.g. BEV, are only done within the home country (Pícl 2019; Myant 2018). This will also have effects on employment, especially in the automotive industry which is heavily concentrated in some regions and that creates about one fourth of value of total Czech industrial production and represents about 22% of the country's exports (Pícl 2019). In addition, 150.000 people are directly employed in the automotive sector, while the number of indirect employees, e.g. in the supply companies may be significantly higher (Pícl 2019). The effect of the transition towards electromobility on employment depends on the concrete policies and measures that will be adopted, however, it is expected that while employment in the automotive sector in the Czech Republic may grow in the short to mid-term, as the production of combustion vehicles is located to CEEC, it could decline in the long-term when the car fleet will be replaced

by BEV completely (Drahokoupil 2019; Pícl 2019). The development is still uncertain, e.g. whereas VW plans to build its electromobility centre in Germany, BMW announced that it also wants to produce BEV in Hungary (Drahokoupil 2019; Pícl 2019). Still, this makes the call for a state-led industrial policy ever more urgent in the Czech Republic as well as in other CEEC.

When looking at the GHG emissions trajectory of the Czech Republic, the legacy of the communist past as well as the country's strong industrial base also play an important role, e.g. according to the EEA, the country is one of the most GHG intensive countries in the EU (EEA 2017). Due to economic restructuring and the phase out of heavy industry, emissions declined fast in the years 1990-1995, however, between 2010-2018, emissions only decreased by 1% (MZP and Czech Hydrometeorological Institute 2020). According to the latest available data, GHG emissions could be reduced by -35.4% in the period 1990-2018, thus, emissions amounted to 127.5 Mt CO2-equivalent in 2018 (MZP and Czech Hydrometeorological Institute 2020). Of those, around 72.7% is due to energy generation and especially combustion of fossil fuels in the energy industries (52.7%), in transportation (19.7%) and in the manufacturing and construction industry (10.3%). Industrial processes account for 12.2% of total emissions while agriculture and waste account for 6.5% and 4.3% respectively (MZP and Czech Hydrometeorological Institute 2020). In the past decades, emissions decreased the most in the agricultural sector (-45%), followed by the energy sector (-39.9%) and industry (-4.9%). Emissions from waste saw an increase of 82.5% (MZP and Czech Hydrometeorological Institute 2020).

In 2015, more than 53% of electricity was produced in coal-fired power plants running mostly on lignite, while the second biggest source was nuclear power (32%) (MZP 2017). Although the share of renewable energies increased steadily, it made up only 11.2% of total energy generation in the Czech Republic in 2015 (MZP 2017). As it is estimated that the country's coal deposits will be depleted by 2030, the country needs to expand energy generation from alternative sources (MZP 2017). Although the government has thus started to support the deployment of renewable energies with subsidies as well as through feed-in-tariffs in 2012, support was scaled back in 2014 (Grantham Research Institute on Climate Change and the Environment 2020). In addition, also public opinion is said to be more favourable towards the expansion of nuclear power instead of renewables and just in July this year, the government negotiated an agreement for the construction of a new nuclear power plant in Dukovany (MPO 2020; Půr 2020). In contrast, with the adoption of the National Energy and Climate Plan of the Czech Republic in November 2019, the government announced that it wants to increase the share of renewables in energy consumption to 22%, especially in residential heating and transportation, however, a new support scheme still needs to be prepared (MPO 2019b).

The most important legislative document in terms of climate change mitigation is the climate protection policy of the Czech Republic that was adopted in 2017. It includes emission reduction targets and measures of how to achieve them, e.g. by 2020 emissions shall be reduced by 20%, by 2030 by 40% and by 2050 by 80-95% compared to 1990-levels (MPO 2019b). The country is thus in line with the emission reduction targets at EU level and the Czech government recently announced that it is also backing the long-term goal of reaching climate neutrality by 2050, while a reduction of 55% by 2030 is seen as controversial (Simon 2020). Since 2015, a special emission reduction policy for improving the quality of air is in place (MPO 2019b). Because emissions from transport as well as the combustion of fossil fuels used for residential heating represent a serious problem in the country that causes a high level of air pollution, this is of special concern for the Czech government (MPO 2019b). In 2015, also the National Action Plan for Clean Mobility was launched that aims at improving the infrastructure for electromobility as well as alternative fuels in

transportation through investments in charging stations and measures increasing the demand for BEV, e.g. through discounts and bonuses (MPO 2019b). At the end of 2019, there were only 7.637 registered electric vehicles in Czech Republic however it is expected that this amount will see a strong increase in the coming years (Transport Research Centre (CDV) 2020).

In 2019, the government announced the establishment of a Coal Commission (Uhelná komise) that consists of 19 members coming from national and local level politics, industry, environmental organisations as well as trade unions (MPO 2019c). It follows the example of the German Commission on Growth, Structural Change and Employment (more information in ch. 5.2.). The task of the Commission is to produce a consensus on the future use of lignite in the Czech Republic and on all aspects that are related to it such as setting a timetable for the phasing out of coal, assessing perspectives for the use of alternative sources of electricity generation, quantifying the costs and impacts on the affected regions, on employees as well as for consumers and to develop compensatory measures, e.g. in cooperation with the RE:START programme that aims at the economic restructuring of the coal regions in the Czech Republic (Czech Government 2019). It was planned that the Commission should meet every month but due to the outbreak of the Covid-19 pandemic, only 5 meetings could be held so far. The outcome will be important – for the climate, coal regions as well as for energy generation within country.

Although the Coal Commission did not produce an outcome yet, the policy officer from OS PHGN viewed its introduction as a positive step to provide security for the workers in the remaining coal mines and coal-fired power plants. However, given that many hard coal and lignite mines already closed or reduced the number of employees, it was argued that it should have been established a lot earlier. In addition, the interviewee working at OS ECHO remarked that the Commission is supposed to also give recommendations on the future energy mix of the country which could similarly lead to a higher demand for workers in renewable energies. According to a study from the consulting company Deloitte, the expansion of renewable energies could create an additional 25.000 jobs in the country by 2030 (Deloitte 2019). Due to the high number of vacancies and the tight labour market, also education would however need to adapt to train young people for renewable energy technology.

The description of the economic, social and legal context has provided some useful insights into the possible challenges as well as chances of decarbonisation in the Czech Republic. The coming years will be especially crucial for the energy sector. While the government announced in its National Energy and Climate Plan that was adopted in November last year that it aims at supporting the further growth of renewable energies, the latest support for the new nuclear power plant reveals that it may rather seek to direct support towards the expansion of nuclear energy. Because the public leans more towards nuclear power, while EU policy is more supportive of renewable energies, this could lead to tensions and might obscure a clear path in the country's energy policy (Tanil and Jurek 2020). In addition, the negotiating position of the Czech government and of trade unions towards MNCs, in particular in the automotive industry, may be weakened, since most of them have their headquarters in other countries (Pícl 2019). On the contrary, in 2017, the government signed a memorandum with major automotive manufacturers in the Czech Republic to develop measures that could support the production and operation of electromobility in the Czech Republic (Pícl 2019; MPO 2017). Finally, the government also announced in its National Energy and Climate Plan that several new legislative proposals are currently in preparation, the country may thus see further changes in its climate policy in the coming years.

In the next part, the strategies and instruments of trade unions in the Czech Republic on fostering a just transition will be explored in more detail.

5.1.2. Just transition strategies of trade unions in the Czech Republic – Goals, Strategies and Instruments

In both the action programmes of the sectoral trade union federations as well as in the current programme of ČMKOS, neither climate change nor a just transition is explicitly mentioned. Instead, the focus is on 'traditional' trade union topics such as wage bargaining, OSH, pensions, labour market policy but also on social policy, e.g. within the area of social protection as well as family policy. Another topic that is receiving attention in the unions' programmes is that of digitalisation, automatisation as well as the changes that are expected to take place within the framework of industry 4.0 (ČMKOS 2020b). As a member of the ETUC, ČMKOS is however supporting the climate goals that have been agreed at the COP21 in Paris (Patočka 2019) and all three policy officers that were interviewed stated that climate change and climate policies are affecting their members – in the case of OS PHGN very strongly – and thus also their trade union work.

> At present, it is mainly a decline in coal-fired power plants, which will soon not meet the limits either in terms of CO2 or in terms of profitability of production. It is precisely the employees from these installations or municipalities that should receive due attention regarding their future employment opportunities in the labour market thereby ensuring that the living needs of their families can be met. […] In this part of the energy sector [renewable energies], there will certainly be a development and an increase in the share, but on the other hand, I believe that the need for labour with regard to current technologies will be lower than at current production sites. From this point of view, I see a problem, the solution could be to have social programs for older employees at the existing production sources. (interviewee, OS ECHO)

Despite this and with the exception of the mining sector, trade unionists however admitted that although those changes may be at the back of the heads of their members, they do not see any changes at the company level yet. For example, the policy officer at OS ECHO mentioned that this is more so a topic at the higher levels of trade union organisation, e.g. at sectoral or national level while at company level, trade unions are focusing more on immediate concerns such as wage bargaining, OSH and pensions. In addition, also the policy officer at OS PHGN argued that climate policies are the tasks of the state, while it is the trade unions' responsibility to focus on the social effects those policies have on the working population and on vulnerable groups in the society. A similar perspective was also expressed by the policy officer at OS KOVO. According to Patočka who conducted a comprehensive study on the relationship between the environment and Czech unions over time, this "impartiality" towards climate policies can be traced back to the unions' history and especially the stigmatisation and depoliticization of trade unions in the post-communist times (Patočka 2019, 80). As is the case also in other CEEC, trade unions still have a relatively small membership base. Due to country-wide campaigns, e.g. the 'An end of cheap labour in the Czech Republic'- campaign, trade unions could however improve their public standing, even though this did not translate into an increasing number of members so far (Myant and Drahokoupil 2017).

In contrast, all interviewees held that because trade unions are representing the interests of the working population, they need to be heard and should also be included in decision-making processes, e.g. within the Coal Commission that was set up by the government but also in future (regional) tripartite bodies, e.g. in relation to the development and establishment of alternative energy technology, as was argued by the policy officer from OS ECHO. In this sense, all interviewees also aligned with the demand for a just transition. Within the interviews, a just transition was thus understood in a defensive way: to protect employees and vulnerable groups from the negative effects climate policies could for example have on rising electricity prices as well as on job security. Moreover, the individual needs of specific sectors as well as the different capabilities of countries need to be taken into account.

> ‘Just’ means that nobody must be left behind, the process must be such that as little as possible is lost – on the contrary so that everyone can benefit – for example by gaining new qualifications and thus the possibility of a wider job market. We cannot allow employers to reap large profits and employees to fall into or even through the social safety net. The precondition is that Member States of the EU whose GDP largely constitutes of industry, are having enough time and financial resources to help companies make a smooth transition to a sustainable and climate neutral economy. It is unacceptable that Member States that have a completely different share of industry have uniform limits and deadlines for the “transition” with the threat of sanctions for non-compliance by the EU. (interviewee, OS KOVO)

Two of the interviewees also raised the need to ensure that climate policies are not undermining the competitiveness of the Czech economy. Therefore, the trade unions’ statements reveal an understanding of a just transition that is closely aligned with the ‘differentiated responsibility and respective capabilities approach’. Because climate policy is seen as the realm of the state, it is however not clear whether unions want the transition at all which was already raised by Patočka (2019). For example, the policy officer from OS KOVO stated that due to the consequences that the pandemic will have and already has on industrial production, the transition towards climate neutrality should be slowed down a bit so that companies can actually survive and stay in Europe and do not relocate to other regions. As became clear in the remainder of the interview this was also based on a rather critical view towards the benefits of low carbon technologies. For example, it was mentioned that because most companies are in foreign hands, profits that are made in the Czech Republic are reinvested back home which is why they do not benefit workers in the Czech Republic. Moreover, the interviewee also argued that it is not realistic to retrain former workers in the automotive factories so that they can take up jobs in services or IT professions.

According to Pícl (2019) this is also because investments of the MNCs in automatization and digitalisation or in BEV did not play such a strong role in Czech industry yet, mostly because the costs for labour are still cheaper than the costs of introducing automation technology. This is also why ČMKOS continues to pressure for higher wages as this can be a strategy to increase productivity and to channel FDI into higher value activity which could thus be more beneficial for the domestic economy than it currently is (Myant 2018; Chmelař 2017). Since those issues are thus the kind of transformations that are more relevant and closer to the actual changes that employees experience at the workplace or in their everyday lives, this may also be the case why they receive greater attention in the unions’ programmes than climate policies and why trade union strategies are thus more developed on this topic.

Nevertheless, all three interviewees stressed that cooperation with employers is crucial for fostering a just transition, still, the relationship with employers was evaluated quite differently. Whereas the policy officer from OS ECHO argued that there are some positive examples of a (partial) just transition that were reached as part of collective bargaining agreements in individual companies, the policy officer from OS KOVO argued that currently the situation of trade unions within collective bargaining at sectoral level is weaker than in other countries. Since it is this level that is important when it comes for example to retraining and education measures, it was seen as difficult to raise transformation issues that go beyond the ‘usual topics’ such as wages and working conditions. However, the interviewee further argued that in order to fight the pandemic, cooperation with employers and the state improved significantly which is also something that the union wants to build on in the future. In contrast, the policy officer from OS PHGN stated that there exists a higher-level collective bargaining agreement with the employer’s association of the mining and petroleum industry which ensures social security and job protection for the employees. Such a sectoral agreement is

rare in the Czech Republic, as collective bargaining is decentralised and takes place mostly at company level (Chmelař 2017). According to Patočka (2019) the focus on social partnership is also due to the very close relations with German unions who are more strongly in favour of this approach. However, he questions whether this strategy is useful for Czech unions when social partnership is not that well developed (Patočka 2019).

The centrality that is thus given to social partnership is also in line with the 'differentiated responsibility and respective capabilities approach'. Because workers and thus also their representatives are dependent on the growth of the sectors, the interests of workers and employers are aligned which can prevent more ambitious climate policies (Stevis and Felli 2015). This is especially the case in regions that are strongly dependent on coal mining or coal-fired power generation as is the case for the Moravskoslezský region in the North-East of the Czech Republic. In an interview from January this year, the former chairperson of OS PHGN argued that because of this dependency he still sees a future for lignite mining and lignite-fired coal power plants in the Czech Republic even though he admits that those mines need state support to keep running (OS PHGN 2020).

Against this background, all three unionists agreed that there is also the need for an active state that can provide legal certainty as well as the necessary investments – both for retraining and compensating workers who are made redundant but also for building up the necessary infrastructure for new kinds of industrial activity. In this sense, all interviewees mentioned social programmes such as early retirement schemes and compensatory payments as well as retraining measures as important tools for protecting employees and communities.

> As far as we know, there are programs underway in some countries that link employers who lay off workers with those that have a demand for an additional workforce. Already before dismissal, employees are being prepared for the new workplace with the help of retraining programs. In the Czech Republic, retraining currently takes place in such a way that job seekers are often retraining for professions in which they similarly do not find employment. At the moment, the Ministry of Labour is preparing programs related to the topic of employment, so that the transition to new positions is as smooth as possible and so that long-term unemployment does not rise. It is necessary to also take care of especially vulnerable groups such as young people. (interviewee, OS KOVO)

The policy officer from OS PHGN also described that in one of the old hard coal shafts that was closed in the beginning of the 1990s, a consortium of three companies together with scientists and technicians from the faculty of Mining and Geology of the Technical University in Ostrava installed a pumped storage hydroelectric power plant used for electricity storage which is currently running on a test phase (Štalmach 2015). According to the interviewee, miners who had been laid off from work, could find employment in this project. Moreover, the interviewee also mentioned the Restart programme as a promising initiative that trade unions support. The government programme is supporting measures aimed at the reactivation of the economy in the Ústecký, Moravskoslezký and Karlovarský regions by providing financial aid and technical assistance. As was mentioned in the previous part, those regions have a higher level of unemployment than other regions and have seen a lower level of economic growth in the past decades. Moreover, those regions are strongly dependent on coal mining and on energy generation from coal which makes them especially vulnerable to the expected changes within the context of a transition towards a low carbon economy. The programme will be presented in greater detail in the next part.

> In order to attract new industrial activity to those regions, it is necessary to of course first build up the necessary infrastructure, to reduce the bureaucratic hurdles for investors and above all to establish a system of re-and upskilling for potential employees in the respective sectors. Last but not least, to offer employees social and wage conditions that are similar to the ones in today's mining industry. (interviewee, OS PHGN)

Apart from those initiatives at regional and local level, the policy officer also stated that the union is seeking to influence state legislation through ČMKOS and in particular through its representation in the Council of Economic and Social Agreement (RHSD). This tripartite forum which consists of representatives from the government, employers' organisations and unions should find consensual solutions on all kinds of topics related to social, economic and labour market policy (Kyzlinková, Pojer and Ververková 2017). Since its agreements are only consultative, it however strongly depends on the willingness of governments to also include social partners in policymaking (Kyzlinková, Pojer and Ververková 2017).

With the exception of the coal mining sector, the responses that were received revealed that the transition towards a climate neutral society does not play a strong role for unions yet, because the effects on employment depend on the specific policies adopted by the government as well as on the strategies of individual employers. Although trade unions and especially ČMKOS are trying to influence the state on a wide range of social and labour market policies and also position themselves with regard to developments related to automatization and robotization, climate policies seem not to be on the top of the agenda. With the launch of the Coal Commission as well as with the adoption of more ambitious climate policies on the part of the government, this could however raise the need for unions to position themselves.

The strategies that were mentioned so far are mostly in line with the 'differentiated responsibility and respective capabilities approach' by calling for solutions that do not affect the competitiveness of the economy and by ensuring that the state spans a strong social safety net for employees as well as by trying to prolong carbon-intensive activities as long as possible so that employment can be safeguarded. As mentioned by the policy officer from OS PHGN in the case of the coal regions, alternatives to employment in coal mining or coal power generation are still lacking which is why their closure will directly affect the lives of the union's members and, due the concentration of those activities, whole communities.

The unionists interviewed expressed their support for finding tripartite solutions between the government, employers and unions – both at national as well as regional and local level. Consequently, calls for a more radical social-ecological transformation were thus absent and although ČMKOS was supporting the Fridays for Future protests ("ČMKOS supports school strike Fridays for Future" 2019), no trade unionist mentioned that they were having any cooperation with environmental organisations on this issue.

In 2016, OS PHGN called for the public ownership of the OKD coal mines, however, this was not for ecological reasons, but to prevent insolvency and thus unemployment of the workers in the remaining mines (Kolev 2016b). The state eventually took over the mines and employees could keep their job, while the mining activity should slowly cease until 2026 when all mines will be closed (Czech News Agency (ČTK) 2018). In addition, a law was adopted that allowed miners to go into retirement seven years earlier (Kolev 2016a). A just transition is therefore understood mainly as a means to protect jobs and to ensure that living conditions do not worsen as a result of climate policies. Moreover, the policy officer from OS KOVO remarked that union members and employees are often reluctant to organise, let alone to engage and that paradoxically, workers would often vote for politicians that are making laws that are more in favour of employers than for employees. Apart from the difficulty to mobilise workers this also shows that the state is seen as the most important actor that should ensure that the transition proceeds in a just way and by taking

into account the interests of the employees. Because the interviewees argued that it is still to early to speak of a just transition and because the officer from OS PHGN as well as ČMKOS have expressed their support for the government-led Restart programme, it represents a promising initiative that could enable a just transition which is why it will be represented in the next part.

5.1.3. Example of a just transition: The RE:START programme

The Restart programme is a long-term strategy for the reactivation of the Ústecký, Moravskoslezký and Karlovarský regions that was brought to life in 2015 by the Czech government and that is executed by the Ministry of Regional Development of the Czech Republic ("Restart will gain people's trust if it is stable" 2018). The initiative initially aimed at dealing with the consequences of declining coal mining activity in those regions but it was quickly realised that this will require a far greater restructuring process requiring action in different policy fields that goes beyond the renaturation of former coal sites but requires a resocialisation of these areas ("Restart will gain people's trust if it is stable" 2018). Specifically, the programme seeks to bring about economic restructuring through action in seven areas: Business and innovation; FDI; research and development; human resources; environment; social stabilisation and infrastructure and public administration (Ministry of Regional Development (MMR) and Czech Government 2016).

In the first stage of the programme, an in-depth analysis of the three regions was conducted that involved not only macroeconomic analyses, but also relied on information provided by citizens and stakeholders within the affected regions (MMR and Czech Government 2016). Based on this analysis, a strategic framework was developed that represents the government's long-term strategy on how it aims to support the regions. Every three years, this strategy is updated (MMR and Czech Governmentt 2016). Taking this long-term strategy as a framework, annual action plans for each region are launched. Those action plans contain concrete measures aimed at the reactivation of the regions and thus range from the regeneration and revitalisation of brownfields to the development of low carbon public transport to the modernisation of company equipment and supporting cooperation between companies, universities, schools and other organisations to the development of human resources and measures aimed at the activation of the long-term unemployed among others (J.D. 2017). Through the project's website but also through public events taking place in the regions and that are made visible through advertising campaigns, citizens and organisations can submit ideas for projects that are then evaluated by thematic working groups set up by the Ministry of Regional Development ("Restart will gain people's trust if it is stable" 2018). The draft action plans then need to be approved by the Regional Supervisory Boards which consist of a joint meeting of the regional tripartite and the Regional Standing Conference comprising regional and local representatives, employers and unions as well as non-governmental organisations (MMR and Czech Government 2016). The draft action plan will then be discussed by the relevant ministries at national level and after approval from the government, an implementation agreement will eventually be signed between the government and the regions. Every year, the implementation agreements are evaluated by the government (MMR and Czech Government 2016).

Currently there are 71 measures in force (Souček 2019), almost half of them are of an investment nature (MPO 2018). In total, two and half a billion Czech crowns (€95 million) were spent since 2017 and the amount for the Moarvskoslezký region, only one of the three regions, for the period 2021-2027 is estimated to exceed 100 billion Czech crowns (€3.81 billion) ("Včera, dnes i zítra - do regionu proudí evropské zdroje

díky programu RE:START" 2019). Around 20% of the money comes from EU structural and investments, while the biggest part (75%) is provided for by national funds (European Commission 2019). Allocations from the newly established Just Transition Fund should also contribute to the Restart programme ("Včera, dnes i zítra - do regionu proudí evropské zdroje díky programu RE:START" 2019). The project was also represented at a meeting of the Platform for Coal Regions in Transition and is viewed as a role model by the European Commission that can also inspire similar projects in other countries (European Commission 2019).

It is still too early to evaluate the effects of this initiative since such a comprehensive change takes several decades and it is only running for three years. However, because of its participatory nature as well as the systematic and holistic approach with which the government seeks to address structural change in those coal regions, it received and still receives a lot of support – also from the unions. For the coming years, it will be crucial to secure funding so that more measures can be implemented ("Restart will gain people's trust if it is stable" 2018).

5.2. Germany

Similar to the Czech Republic, three interviews could be conducted with policy officers from trade unions in Germany. However, contrary to as was the case with the Czech unions, all interviews were carried out via video communication. One interviewee was employed as a policy officer at the German Trade Union Confederation (DGB). The DGB is mainly responsible for the political work and represents its eight member unions comprising 6 million members at the national, European and international level, e.g. within the ETUC, ITUC and TUAC. A second interview was carried out with a policy officer at Ver.di which represents employees in the service sectors, including transportation, waste management, IT and financial services as well as public services and logistics among others. It currently has about 2 million members. The interviewee was working in the area of transportation. In addition, a third interview was conducted with a policy officer working for the IG Metall at regional level. IG Metall is the biggest trade union in Germany and most of their members are working in manufacturing and industrial sectors, for example, automotive manufacturing, steelmaking, textiles, machine engineering as well as the wind and solar industry. Both Ver.di and IG Metall are affiliates of the DGB and whereas IG Metall is also a member of IndustriALL, Ver.di is a member of EPSU. Apart from the interviews, also recent publications and statements on climate policies were analysed. Particularly helpful was a decision taken by the DGB Federal Congress in 2018 on climate, energy and mobility that also contains a number of demands and proposals on how the upcoming transformations can be shaped in a just way (DGB 2018). Before presenting those proposals, some background information, e.g. on the state of GHG emissions in Germany will be provided.

5.2.1. Presentation of the economic, legal and social background

As was indicated in the previous part, economic relations between Germany and the Czech Republic are strong and also unions are cooperating very closely with each other. In addition, also the economic structure is very similar such as the importance of exports in goods such as motor vehicles and parts thereof, machinery, computer, electronic and optical products as well as chemicals (Destatis 2020). Similarly, unemployment has been very low and last year the country counted a record high of people in employment (Federal Government of Germany 2020). As is the case for the Czech Republic, also the automotive industry is of special importance in Germany – both in terms of employment as well as in terms of value creation. It is the highest-grossing manufacturing sector and the biggest employer in the German industrial sector

(Bormann et al. 2018). In 2016, around 808,000 in Germany were directly employed in the automotive industry. Because of the high differentiation of labour, around 70% of total value created by this industry takes place in the supply network consisting of mostly small and medium-sized enterprises. The total number of employees indirectly dependent on the German automotive industry is therefore estimated to be 1.5 million people (Bormann et al. 2018). The switch to the production of electric vehicles will thus affect employment in those sectors, especially in the supply industries which is not necessarily on the radar of policymakers (Hoch et al 2019). According to a report by the government's National Platform Future of Mobility (NPM), around 410,000 jobs could be lost by the end of 2030 (Wahnbaeck 2020). A different study conducted by the Fraunhofer Institute for Industrial Engineering that was initiated by IG Metall and a group of car manufacturers comes to the conclusion that – depending on the speed of the transition – between 23,000 and 97,000 jobs in the production of drive trains alone could be lost (Fraunhofer Institute for Industrial Engineering 2018). The automotive industry is strongly export-oriented, about 77% of cars produced are exported, more than half of those to countries within Europe (Bormann et al. 2018). Also, production is increasingly taking place abroad (60%), however, investments in research and development are mostly done within the country (Bormann et al. 2018).

According to recent data from the BMU, the country managed to reduce its GHG emissions by 35,7% in 2019 compared to 1990 (BMU 2020). Due to the lock down measures and the slowdown in industrial activity to fight the spread of the Covid-19 pandemic, it is expected that Germany will reach its target of achieving a 40% reduction in emissions by the end of 2020 (Appunn, Eriksen and Wettengel 2020). The biggest reductions took place in the waste sector (-75,8%) and also the energy sector managed to reduce its emissions by -45,5% due to an increase in energy generated from renewable sources as well as the replacement of coal-fired power plants with gas-fired ones (Federal Environment Agency, UBA 2020a; BMU 2020). However, although the country experienced a strong growth of the solar and wing industry in the years 2003 to 2010 which was promoted through the introduction of the Renewable Energy Sources Act (EEG) that aimed at supporting suppliers through feed-in-tariffs, its expansion has come to a halt in recent years (Hoch et al. 2019). While this paralysis was partly due to reforms of the EEG as large consumers where exempted from paying the surcharge while electricity prices for consumers increased sparking criticism (Cludius 2015), also bureaucratic hurdles and distancing regulations are dampening the growth of renewable (Hoch et al. 2019). Because the amount of energy generated from renewables currently stands at 46.2% of total energy production and only at 13.7% of total energy consumed (AG Energiebilanzen 2018) and the country plans to exit from nuclear power by the end of 2022 (Wettengel 2020a), it will be crucial to further promote the expansion of renewable energies.

Apart from the reduction of emissions in the energy sector, also the industrial sector (-33,8%), the buildings sector (-42%) and the agricultural sector (-24.1%) could reduce their emissions through energy efficiency measures and the reduction in livestock among others (UBA 2020a). Only emissions in the transport sector remained roughly the same in the period 1990-2019. Total GHG emissions in Germany in 2019 therefore amounted to 805 Mt of CO2-equivalent of which the biggest share is accounted for by energy production (31,6%), followed by industry (23,3%), transport (20,3%), buildings (15,1%), agriculture (8,5%) and waste (1,2%) (UBA 2020b).

In line with the Climate Action Programme 2030 which was adopted in 2019 and which contains a range of measures and targets to be reached by 2030, Germany aims to reach a 65% share of renewables in gross power consumption (Appunn, Eriksen and Wettengel 2020). Moreover, the programme also includes a measure for introducing a carbon price in the buildings and transportation sectors starting with a price of

€25 from January 2021 onwards and which subsequently rises to €55 by 2025 (Federal Government 2019a). Also, in 2019, the country passed the climate action law which sets annual emission reduction targets for each economic sector with the aim of reaching a 55% reduction in emissions by 2030 and which also enshrines the long-term goal of reaching carbon neutrality by 2050 into law (Appunn, Eriksen and Wettengel 2020; Federal Government 2019b). As is stated in the law, those targets can only be raised, not lowered and in case one sector misses its annual target, immediate adjustment measures will need to be taken to enhance efforts in the following years. Progress towards the goals will be monitored and evaluated by an independent council of experts (Appunn, Eriksen and Wettengel 2020). In order to reach those goals, the government increasingly banks on green hydrogen as became evident with the adoption of the National Hydrogen Strategy in June 2020 (Amelang 2020). In July 2020, the parliament also passed the coal exit law which lays down a roadmap for phasing out the country's power generation from hard coal and lignite by the end of 2038 the latest (Wettengel 2020b). Although energy generation from hard coal plays only a small role in the country's overall energy production, the last hard coal mine was only closed in 2018. In contrast, lignite still plays a strong role in the country's energy supply, in 2018, 38,7% of all energy produced was generated by lignite-fired power plants (AG Energiebilanzen 2018). The law also sets down compensation payments of €4.35 billion to the power companies RWE and LEAG as well as €5 billion in early retirement schemes for older workers made redundant due to the closures of the lignite mines and power plants. Moreover, the parliament also agreed to a further €40 billion in structural aid for the affected coal regions (Wettengel 2020b).

Especially in recent years there have thus been a number of ambitious policies in Germany to bring down GHG emissions and to support the transition towards a climate neutral society. The recent coal-exit and the implementation of the measures that have been agreed by the Coal Commission that prepared the exit were regarded as an important milestone and collective effort towards a just transition and received attention even beyond Germany. Unions, employers, civil society organisations and environmental groups as well as federal and regional level politicians have participated in this Commission. A major challenge that still needs to be addressed will be how to generate enough energy from renewable resources to achieve emission reductions in the hard-to-abate sectors such as energy-intensive industry and transportation. Since the wind and solar industry are facing several difficulties at the moment, it will be crucial to revive those industries. The experience with the EEG showed that distributional effects, e.g. related to higher electricity prices, need to be taken care of. With the newly adopted Climate Action programme, the government has started to address those effects, e.g. by increasing the housing allowance or by introducing a mobility premium for commuters with a low-income (Federal Government 2019b), however, those measures are still relatively modest. It is thus doubtful whether those measures will be enough to overcome public resistance against climate policies. Also, the German automotive industry will have to deal with major transformations in the coming years which will similarly affect employment in many areas. In the following, it will be explored how trade unions in Germany seek to address these challenges and to pave the way towards a just transition.

5.2.2. Just transition strategies of trade unions in Germany – Goals, Strategies and Instruments

In the DGB's decision on climate, energy and mobility that was taken at the DGB's Federal Congress in 2018, the eight member unions agreed on a set of requirements on how the transition towards a low carbon economy can be shaped in a just way. In their decision, the unions fully embrace the objective of limiting global warming to 2 °C, however, the changes this will bring to the structure of the economy will only be accepted by the society as a whole if the interests of the working population are taken into account and if

the costs are distributed in a just way (DGB 2018). In particular, a just transition should ensure 'good work' which is primarily defined as work that is covered by collective agreements and where workers are included in company decisions through co-determination. In particular, for every job that is lost, another job that is of the same quality in terms of value creation and working conditions should be created (DGB 2018). A just transition should further be guided by a proactive structural policy that supports regions in their transition and with the aim of creating full employment *before* changes take place and jobs will be lost. To this end, the state should for example use public procurement to support the development of sustainable products as well as pursue an innovation policy promoting both technological and social progress. Education and increased training of employees is also seen as an important aspect for workers to be able to adapt to these changes and to also contribute with their ideas. Finally, the costs and revenues of climate policies should be distributed in a fair manner among the members of society, while climate policy also has to ensure secure and affordable energy supply and mobility (DGB 2018).

In this decision, the goal or the aim of a just transition is therefore similarly seen in offsetting the negative effects of climate policies on employment and on low-income groups. In contrast, during the interview with the policy officer from the DGB, the interviewee stated that a just transition has to be understood in a more proactive and forward-looking way, namely to restructure global value chains and the way our economy functions so that both become climate neutral. This means that our current production processes and consumption habits need to change, however, by switching to a more sustainable economic model, also new jobs can be created, whereas 'old jobs' in energy and resource intensive sectors can modernise and can be maintained through technological development. Thus, instead of solely focusing on 'phase-outs' ("Ausstieg"), the debate should be more about how to make decisive steps towards a climate neutral society ("Einstieg"), e.g. by supporting the deployment of renewable energies or by ensuring that sustainable and affordable means of transportation are built up, e.g. through the expansion of public transport (IG Metall 2020a; DGB 2018; Ver.di 2019).

The interviewee thus strongly argued in favour of building a new economic model rather than solely focusing on compensation for redundant workers. To this end, the interviewee also cited the Swedish prime minister who said that the task of governments in the 21st century is to create the green social state. Because for the social state to be able to survive, the society has to become climate neutral. According to the policy officer this also holds true for Germany, because as long as the German economy is strongly dependent on exports, it is thus important to embrace low carbon innovations, as it can give the country a competitive advantage on the world market which can guarantee wealth and welfare. In the IG Metall's publication "Do you speak climate", the trade union has a similar stance, as it is stated that climate policy can and should also be understood as an innovation and modernisation programme for the economy (IG Metall 2015). Switching to low carbon technologies is therefore necessary to keep industrial production and thus also well-paying and co-determined workplaces in Germany.

While this view is close to the 'technological fix perspective' on the environment and on employment, during all of the interviews it was mentioned that climate change as well as climate policies have distributional effects, both within the country but also at the global level that need to be addressed. Moreover, in the light of increasing inequality, deteriorating working conditions and the undermining of co-determination also in Germany, the state needs to play a stronger role – both in supporting new, climate neutral industries but also in fiscal policy to ensure the redistribution of wealth through a progressive tax system among other measures (DGB 2018; IG Metall 2019). This social democratic conception is in line with the 'differentiated and respective capabilities approach' that advocates the 'return to regulated

capitalism with a sustainable face'. Both the policy officer at Ver.di and at IG Metall mentioned that a just transition can also be understood in reaction to how economic transformations are usually carried out, namely through the reduction of workforce, intensification of work, relocation and reduction in apprenticeships and training. Because workers and their representatives have in many cases a closer relationship and better knowledge about the company than the 'travelling class of managers' (IG Metall NRW 2020), they should also be included in how those transformation processes are shaped. The transition should thus not only be sustainable, but also social and democratic (IG Metall NRW 2020). In this sense, transformation is also understood in a broader sense comprising not only the transition towards a climate neutral society but for example, also the transformations due to increasing digitalisation and automatization.

> I mean the question is of course how can we – with innovation, with technology and with changed production and consumption processes – how can we shape economic development. You can believe or not believe a lot of things but there are hard facts showing that independent from climate issues, our resource use is far above the regenerative capacity of our ecological systems. We need to better combine those two things so that also future generations are able to produce in a viable and sustainable way. […] And when I see that we have to answer questions related to distributional justice…and that at the same time we have an ecological crisis going on, then you have to ask yourself how can we bring those things together and how can we come to an economic model that is far more sustainable. For us it is decisive that this process is evolutionary, that employees are having a say in it and that it is not revolutionary nor disruptive, because in the end I believe that this will also dramatically affect public acceptance for such a restructuring. (interviewee, DGB)

Also the policy officer from IG Metall stressed that changes need to be evolutionary and viable which means that transitional solutions need to be found, e.g. using grey instead of green hydrogen as long as there is not yet enough energy created from renewable sources. This is important to prevent disruptive changes that can threaten social cohesion, but it may also mean that certain polluting activities continue as long as there are no alternatives.

The interviewees' understanding of a just transition and the goals that are to be pursued by it were thus closely aligned. The specific policies that are supported as well as the strategies chosen by the trade unions were, however, different and depended strongly on the economic situation of the respective sector, how it is affected by climate policies as well as on the strategies of employers.

For example, the policy officer at IG Metall argued that because steel producers in Germany are struggling to make ends meet, the interests of unions and employers are closely aligned, as the changes towards more sustainable production can only be introduced when companies are able to survive. IG Metall was therefore also supporting calls for creating a merger of steel producers in Germany and with participation of the state of North-Rhine Westfalia to manage the consequences of the Covid-19 outbreak and to pave the way towards sustainable steelmaking (German News Agency (dpa) 2020). While the state should thus support the transition with an active industrial and innovation policy that does not solely focus on competition and growth and on the promotion of technologies used to those ends, but that supports also social innovations, e.g. qualification and training programmes developed by companies to shoulder the transition in cooperation with works councils and unions (IG Metall NRW 2020), strengthening social partnership is similarly seen as crucial to strengthen the role of workers in this process. To this end, the policy officer from IG Metall mentioned several examples of how the union is trying to work proactively to push the transformation topic on the agenda of policymakers and employers and to fight for a bigger say of workers and unions in those processes. For example, a very promising project in the context of shaping digitalisation at the workplace

that was mentioned during the interview was Arbeit2020 (work2020). The project is supported by several regional-level trade unions as well as industrial companies and by the Ministry of Labour, Health and Social affairs at state level. Together with works councils, employees and management, trade unions discuss what industry 4.0 means for the respective companies or specific departments, for employees, how it affects work routines and working conditions and whether different qualifications are needed and how those could be obtained. Another example that also attracted attention beyond Germany was the so-called "package for the future" (IG Metall 2020b) that IG Metall offered to employers as part of the next round of collective bargaining that was supposed to take place in March this year. Instead of going the usual way and calling for higher wages, the union demanded that in light of the coming transformations, employers should abstain from relocations and dismissals and should instead develop perspectives for maintaining production facilities and for re- and upskilling their employees to be prepared for the transformations laying ahead (IG Metall 2020b)

> [As part of the "package of the future"] many things would have been possible. The demands were focusing on qualification, on questions related to workers' participation. Participation of works councils in discussions on corporate and innovation strategy. This goes far beyond the usual ambit of co-determination. This is something different than the participation of works councils within the framework of the Works Constitution Act. In this sense it was quite a way until companies were willing to talk with us about those issues. […] This changed. I think this is also because of the projects that have been taking place, where works councils were approaching the topic of innovation in a more constructive way and where it became clear that companies who are involving their employees in innovation processes, that they are more successful in shouldering those transformations, because resistance can be reduced and people are more motivated and engaged. I mean, we are *also* experiencing that things such as digitalisation or AI can be frightening. Because there is of course this thought that this will only lead to further rationalisation and fewer jobs and then everybody starts to think about their own job and whether it is safe. And when your team is afraid of those changes, then it is of course difficult to address those transformation topics in a powerful way. This is also something that employers start to understand. (interviewee, IG Metall)

According to the interviewee, trade union are thus willing to support these transformations and to engage in a constructive dialogue with employers as to how they can be shaped in a just way. It must be clear, however, that if employers are not willing to engage with employees on those transformation issues or are even resorting to practices that are undermining the rights of employees, trade unions will also resist transformation.

> This morning I also talked with someone from the Fraunhofer Institute. And we [unions] don't want to pretend like we are engineers or factory planners, but what we want is that the perspective of employees, of those who have to work in those new factories, that their perspective is taken into account as early as possible, that is when they are developed. In order to prevent mistakes and conflicts at an early stage…And some are then arguing that this takes too much time and that developments are too fast and that we are obstructing progress…but what I know from the studies that I read is, yes, participation takes time, but it pays out in the end. And this is what research institutes and employers are also experiencing when they are working with us. (interviewee, IG Metall)

In the transportation sector, the policy officer at Ver.di mentioned similar strategies and instruments, e.g. using the union's power within collective bargaining to call for example, for the expansion of public transport. However, because climate policies in this sector do not threaten jobs but may create new ones,

the demands were different. For example, the interviewee stated that the focus was more on ensuring that the expansion does also lead to a higher number of employees and better working conditions, e.g. higher wages and a de-intensification of work. In addition, new forms of mobility, e.g. on-demand mobility should be regulated, e.g. by developing an integrated transportation concept. Moreover, even though there is widespread agreement that public transport is the climate-friendliest mode of transportation, if the electricity comes from renewable sources, the interviewee argued that its expansion is contested politically. Because of this, the next collective bargaining round that was supposed to take place in 2020 should have been accompanied by a country-wide campaign that combines the fight of employees for better working conditions with the fight against climate change (Krüger 2020). As part of this campaign, country-wide strikes and mobilisations with several climate justice movements including Fridays for Future were planned (Krüger 2020). Moreover, the policy officer mentioned that the union is currently developing collaborations with several local initiatives that call for an expansion of public, collective transport and environmentally friendly cities. Among the unions interviewed, Ver.di is also the only one that is a member of the Alliance for climate (Klimaallianz) which is a loose association of environmental and civil society organisations that are demanding more ambitious climate action from the government. In order for the transition to a sustainable society to be just, the focus in the interview was therefore more strongly on state regulation than it was in the interview with the representative from IG Metall which was also because relations with employers, e.g. airlines were seen as conflictual whereas the policy officer from IG Metall explained that in several of the sectors that the union organises, social partnership is still functioning relatively well.

> Regarding public transportation, we are calling for a doubling of the current amount in order to make public transport more attractive, to facilitate the switch from car to bus and to take back the cuts of the past years. […] This means to increase the number of employees and to improve working conditions, so that more people are willing to work in this sector. […] Whether we are in fact able to expand public transportation to such an extent as would be necessary, this is contested. On the other hand, the government is now implementing its Hydrogen Strategy which again aims at substituting the fuel, but not at changing the means of transportation. And at the same time this should be embedded in a kind of…yes, dangerous, neo-colonial, strategy of energy generation…So, a lot of topics are contested, but at the same time there are always new actors that are entering the stage such as the climate protection movement. The changing-cities or the bicycle lobby are also getting stronger, so many things are happening from below and this is also giving a lot of support and hope. (interviewee, Ver.di)

In both interviews, it was also stressed that the unions are only starting to position themselves as to how the just transition towards climate neutrality should be shaped, so internal discussions on the right strategies and instruments where still ongoing. However, both interviewees also stated that they do not want to work out in detail how sustainable production or how a sustainable transportation concept should look like in practice. This political work is more within the range of tasks of the DGB. Whereas the interviewees from the sectoral trade unions thus saw their responsibility in shaping working conditions within the company and through collective agreements, as part of social partnership and strikes, the DGB is focusing more on public relations, influencing public debate through the organisations of public discussions, forging alliances among different trade unions, with works councils and with political actors (DGB 2020). The goal is to present themselves as a proactive and important societal actor that must also be included in decision-making. During the interview, the policy officer was for example, in favour of establishing regional transformation councils that consist of representations from employers' organisations, unions, (regional) politicians, scientists and also civil society organisations. Those councils could assess how the regions are affected by climate policies and the switch to low carbon production and what needs to be done to alleviate the negative

effects. Such transformation councils are already in place in some regions, e.g. the state of Baden-Wuerttemberg created such a council for the automotive industry (State of Baden-Wuerttemberg 2017). A similar way was also chosen to address the phase out of lignite mining and lignite-fired power generation. The "Commission on Growth, Structural Change and Employment" (or in short Coal Commission) brought together representatives from coal companies, unions, local citizens' initiatives, environmental groups, scientists as well as federal and regional level politicians to develop a road map on exiting from coal as well as measures to revive the communities affected by it and to compensate workers in the coal mines and thermal plants. The Commission and the plans it produced were viewed by the DGB as a role model for a just transition, even though its effects still need to play out in practice. The main points of the German Consensus on Coal will be described in more detail in the next part.

Finally, it can be said that while all interviewees were supporting the sustainable transition and also viewed it as a chance of creating a more sustainable, social and democratic economy model, the transition can only be successful if social partnership is functioning and if the role of the state is a different one that it currently is. The strategies thus depend strongly on the conditions in the specific economic sectors and on the relations towards other relevant actors. Whereas in the case of IG Metall, due to the economic situation, the interests of employers and unions are similar and unions are actively pushing employers to introduce the necessary changes within the context of a sustainably transformation and together with unions, in the case of public transportation, due to conflictual relations, Ver.di chooses more confrontational strategies including cooperation with environmental movements.

5.2.3. Example of a just transition: The German Consensus on Coal

The Coal Commission is seen as a good example of how a just transition can look like in practice from the perspective of trade unions in Germany. According to the policy officer from the DGB, the Commission can be a role model since it did not only decide on the phase out of coal, but because it also laid the foundations for initiating a structural change in the affected regions. Through this it will be possible to create new employment opportunities and ensure that the regions can develop in a sustainable and prospering direction also in the long run. In contrast, the policy officer from IG Metall emphasised the ability of the Commission to create a consensus among a very diverse group of people ranging from environmental activists to representatives from industry and business.

The Commission consisted of 31 members representing all relevant stakeholders, e.g. coming from regional and federal politics, from environmental organisations and local citizens' movements, science and industry. Among the members were also one representative from the DGB, one from Ver.di and one from the industrial trade union IG BCE that organises workers in mining, chemicals and energy (Agora Energiewende and Aurora Energy Research 2019). The Commission was brought to life by the Federal Government in 2018. Its mandate was to develop a strategy for phasing out coal mining and coal-fired power generation in Germany. In particular, the Commission was tasked with developing an action programme that creates a perspective for sustainable employment opportunities in the affected coal regions; compiles a mix of instruments that combines climate protection with economic development, social cohesion and social acceptability; agrees on the kind of investments needed to support the structural change in the regions; achieves the target of a 61-62% reduction of emissions in the energy sector; develops a plan for an incremental coal phase out and lays down measures on how the gap in the energy supply can be compensated (Federal Ministry for Economic Affairs and Energy, BMWi 2019). The members met 10 times to hear

experts on climate and energy policy, structural change and energy supply and they also did excursions to the coal regions. After half a year, the Commission negotiated a final report that was adopted almost unanimously (one vote against) (Agora Energiewende and Aurora Energy Research 2019).

The Commission's report gives recommendations in five important areas: First, it agreed on a coal phase out by 2038 with the option of having an earlier phase out in 2035 which is earlier than when it would have been if left to the market (Agora Energiewende and Aurora Energy Research 2019). Second, it lays down an active structural policy for the coal regions through investments in modern energy systems, expansion of transport and digital infrastructure and the establishment of federal agencies and research institutes in the affected regions (Agora Energiewende and Aurora Energy Research 2019). To this end, the report also includes a list of potential projects for each region that should be supported. It further develops recommendations on how to modernise the electricity grid and the energy system, namely by promoting combined heat and power generating systems, expansion of renewable energies and the removal of emissions certificates that will no longer be needed. Fourth, it increases social acceptability of the changes by compensating consumers for higher energy prices and by supporting the 86.000 employees that are either indirectly or directly employed in the coal power plants or lignite mines through targeted labour market policies (Agora Energiewende and Aurora Energy Research 2019). In particular, redundancies should be ruled out and employees should be given the opportunity to re- or upskill, to receive compensation for loss of income and new employment opportunities. The specific design of those instruments should be negotiated between the social partners and enshrined within collective agreements before the power plant or pit closes down (BMWi 2019). In addition, workers older than 58 years should be given the option to receive a transitional allowance until they are being able to retire (BMWi 2019). In order to guarantee the financing for those measures among others, also coal power companies should receive a compensation (Agora Energiewende and Aurora Energy Research 2019). Finally, the process should be reviewed regularly by an independent body of experts and in case the implementation is not as it should be, adjustment measures must be taken (Agora Energiewende and Aurora Energy Research 2019).

Although the report was adopted almost unanimously, it still represented a compromise which is why it received criticisms from different sides. Also, the follow-up process did not run smoothly, e.g. because the government took more than a year to implement the recommendations into law and because it did not implement them completely, e.g. at the beginning of 2020, a new power plant went online which was not foreseen by the report of the Commission. Nevertheless, the unions underlined that the Commission is an important step in the right direction, because it was possible to include workers in the decision-making process and also guarantee their further participation, because it was an empirically driven process that helped to cool down the debate, and because it represents an integrated and proactive approach that combines both climate policy with structural and labour market policy and that seeks to anticipate changes before they become disruptive.

5.3. Spain

In the third part of this chapter, the just transition strategies of trade unions in Spain are analysed. To this, end, three interviews with policy officers working for the industrial federations of the three largest trade union confederations at state level – UGT, CCOO and USO – could be conducted. Two of those interviews were carried out in written form, whereas one interview was conducted via video communication. UGT and CCOO both have almost 1 million members comprising several sectoral federations as well as representations at regional and company level. USO has about 100.000 members and similarly consists of

sectoral federations and representations at various levels. It is particularly strong in several large enterprises (Köhler and Calleja 2013). In Spain, union representativeness and thus the ability to conclude collective bargaining agreements as well as participate in tripartite bodies is determined by the number of delegates in works councils at national and regional level. Unions must get a minimum of 10% of votes (15% at regional level) to be considered representative (European Trade Union Institute (ETUI) 2016). In contrast to the previous unions, unions in Spain are divided along ideological lines. UGT is the oldest trade union in Spain and had strong ties to the Spanish Socialist Party (PSOE). USO was the first union formed after the Second World War at the end of the 1950s. It has its roots in the left-wing Catholic opposition to the Franco regime. Similarly, CCOO was formed as an underground opposition against the dictatorship in the 1950s and was influenced by the Communist Party (Köhler and Calleja 2013). Although the unions thus have different origins, their positions are nowadays very similar and they are cooperating on a number of issues (Köhler and Calleja 2013).

All interviewees were working for the respective trade union federations organising workers in the industrial sector ranging from the food and beverage industry, to textiles, to the chemical and metal industry to energy and extractive industries: FICA-UGT, CCOO Industria and FI-USO. All three union federations are also affiliated with IndustriALL while their respective confederations are represented within the ETUC. Next to the interviews, recent union resolutions on the topic of a just transition as well as proposals on how such a transition could proceed were analysed. In the first part of this analysis, some information on the specific circumstances in Spain will be provided.

5.3.1. Presentation of the economic, legal and social background

As was described in chapter 2, the Southern European countries are especially vulnerable to climate change. This also holds true for Spain. According to Ciscar (2020), Spain could become a lot drier and warmer which could lead to a shortage of water resources, an increase in wildfires and in heat related mortality. Moreover, GDP could drop by about 46% by 2100 due to the economic and social consequences of climate change (Ciscar 2020). At the same time, the country has a lot of potential for increasing generation from renewable energies due to the abundance of sunlight and wind as well as research and companies in these sectors, e.g. it is the 9th world largest producer in solar photovoltaics and in 2019, wind energy became the country's most important source of electricity generation (Averchenkova and Lázaro 2020, "Wind energy becomes the first technology in Spain" 2020). Nevertheless, the expansion of renewable energies has stalled in the past years due to the financial and economic crisis in 2008/09 and 2011/12 and lack of state support. With the presentation of the Strategic Energy and Climate Framework in 2019, the Spanish government however announced to massively expand renewable energies and also in the recently adopted measures for the reactivation of the economy (Real Decreto-ley 23/2020), the expansion of renewable energies through auctions and faster permit procedures is supported.

Before the outbreak of the Covid-19 pandemic and after the recovery from the economic crisis starting in 2014, the country was experiencing years of strong economic growth and in 2018, GDP grew by 2.8% (National Statistics Institute (INE) 2019). While the service sector contributes most to GDP (66%), also the country's industry sector (16%) and specifically the manufacturing industry with the production of food and beverages, motor vehicles and trailers as well as electric power generation and transmission is important for the Spanish economy (INE 2019). The country is also very rich in natural resources such as coal, nickel, bentonite and magnesia, however, mining activity has been steadily declining and in 2014 the mining sector

counted only 28.000 employees (National Geographic Institute 2019b). In December 2018, the last coal mines in Spain had to close down due to European regulation stating that all unprofitable coal mines need to cease activity by that date. In order to cushion the social costs of those closures on the remaining workers, a tripartite agreement between the government, unions as well as the employers' coal mining association Carbounión was reached in October 2018 (Government of Spain 2018). This 'Plan de Carbón' consists of three elements: a plan for the restoration of mining regions, a plan for the development of renewable energies and energy efficiency as well as the preparation of just transition agreements for the affected regions (Government of Spain 2018). In addition, the agreement also includes a €250 Million fund for the development of those regions as well as early retirement schemes and compensation for workers who are made redundant due to the closure of the mines (Government of Spain 2018). The agreement was celebrated as a great success and as a role model of a just transition because it includes both financial security for the workers in the coal mines as well as measures to revive the affected communities (ETUC 2020).

Developing the potential of those regions is important, as both population and economic activity is highly concentrated in the metropolitan areas and medium and large municipalities, whereas many small municipalities are experiencing depopulation (National Geographic Institute 2019a). In addition and although unemployment dropped by more than 10 percentage points since the economic crisis, it is with 15.3% in 2018, still among the highest in the EU. Especially in the South-Western regions, e.g. Andalucía and Extremadura unemployment is high, whereas it has been lowest in the North-West, e.g. País Vasco, La Rioja, Navarra and Aragón (National Geographic Institute 2019c). Among the young population (< 25ys), unemployment is with above 30% the second highest in the EU (INE 2019).

In 2018, total GHG emissions amounted to 334.3 Mt CO2-equivalent which represents an increase of 15.5% compared to 1990, but a decrease of -24.5% in emissions compared to 2005 (Ministry for Ecological Transition and Demographic Challenge (MITECO) 2020c). Under the Kyoto Protocol, the country was allowed to increase its emissions by 15% in the period 2008-2012 compared to 1990, however this threshold was exceeded (Dreblow et al. 2013). Compared to 2017, most sectors saw a decline in emissions in 2018. The strongest decline could be observed in the energy sector due to a decline of power generation from coal-fired power plants (-13.3%) as well as in agriculture (-0.6%) and in waste (-0.6%) (MITECO 2020c). On the contrary, in transportation (+1.1%), in the residential and commercial buildings sector (+1.9%) as well as in industrial processes and product use (+3%), GHG emissions nevertheless increased (MITECO 2020c). More than two thirds of emissions are related to the combustion of fossil fuels for energy generation (MITECO 2020c). Whereas the generation of electricity from renewable resources amounted to 46% in 2018 (RED Eléctrica España 2019), more than 70% of the energy consumed comes from non-renewable sources such as petroleum products and natural gas (Asociación de Empresas de Energías Renovables (APPA) 2020). The decarbonisation of energy is therefore crucial in order to reach climate neutrality and it is also one of the priorities of the government of the PSOE and Unidas Podemos under Sánchez. In 2018, the Ministry of Environment was renamed to the Ministry of Ecological Transition and later to the Ministry of Ecological Transition and Demographic Challenge. The responsible minister, Teresa Ribera, who was already State Secretary for climate change under the second Zapatero administration is thus in charge of climate change mitigation and adaptation, the protection of biodiversity, the transition towards a more sustainable and social economic model, energy and mining policy as well as the fight against depopulation.

With the adoption of the Integrated Energy and Climate Plan (PNIEC) for the period 2021-2030, the country seeks to promote renewable energies, distributed generation and the creation of local energy communities (MITECO 2020d). GHG emissions should be reduced by 23% by 2030 compared to 1990 levels. To this

end, the share of renewables in energy consumption should reach 42% and energy efficiency should increase by 39.5% by the same year. By 2050, the government aims to achieve climate neutrality and a 100% renewable electricity system (MITECO 2020d). To reach those targets, the plan aims at mobilising more than €200 billion from both public and private sources (González-Eguino et al. 2020). It also lays down several measures in specific sectors and includes an assessment of the impacts on different income groups, on employment and on energy security. Because the country currently imports a lot of gas and petroleum, the promotion of renewables could save about €67 billion in imports of fossil fuels (González-Eguino et al. 2020). GDP could further increase by 1.8% due to the establishment of local renewable energies and between 250.000 and 350.000 new jobs could be created each year (González-Eguino et al. 2020). The shift to renewables also has a positive impact on human health and could reduce the number of deaths related to air pollution by 27% (González-Eguino et al. 2020). The plan also foresees that by 2030 all coal plants should be phased out (MITECO 2020d).

In order to ensure that the transition towards a low carbon energy system is addressed in an integrated and holistic way that also takes into account the social aspects of such a transition such as those related to the closure of coal mines and power plants among others, the Strategic Energy and Climate Framework consists not only of the PNIEC, but comprises the Climate Change and Energy Transition Bill and the Just Transition Strategy which also includes the Urgent Action Plan for coal-mining regions and power plant closures 2019-2021 that is based on the above-mentioned tripartite agreement reached in 2018 (Nieto, Belén and Lobato 2020).

The Climate Change and Energy Transition Bill was adopted by the government in May this year. Its aim is to facilitate the decarbonisation of the Spanish economy in a way that ensures that the country's resources are used in a sustainable and solidary way, that fosters sustainable development and decent employment and that promotes the adaptation to climate changes (Proyecto de Ley de cambio climático y transición energética (PLCCTE) 2020). With this Bill, the Spanish government enshrines the targets of the PNIEC into law. In order to fulfil those targets, the Bill includes several measures that aim at addressing climate change and the energy transition in an integrated and cross sectoral manner. For example, all new coal, oil and gas extraction projects and state aid for energy generation from fossil fuels should be abandoned and existing state aid should be phased out. Moreover, all municipalities above 50.000 inhabitants need to develop plans for the reduction of mobility-related emissions through the introduction of low emission zones and the promotion of public transport among others. Education in schools should be changed to teach children about climate change. In addition, an independent expert committee on climate change and energy transition that is of equal representation of women and men is created that monitors progress towards the targets and issues recommendations (PLCCTE 2020).

The Bill also enshrines the Just Transition Strategy which is renewed every five years and that should ensure that the transition creates new employment opportunities and guarantees equal and solidary treatment for all workers and regions affected by the changes. To this end, an industrial policy that identifies vulnerable regions and sectors and that creates alternative employment and development opportunities through the promotion of innovation, economic activity, employment and occupation development should be launched. Moreover, instruments for the adaptation of labour markets to the ecological transition should be found in cooperation with the social partners (PLCCTE 2020). As was already stipulated in the tripartite agreement on coal mines and coal mining areas, just transition agreements for those regions that are especially vulnerable to the changes related to climate change and the energy transition should be developed in a participatory process that includes all relevant ministries at national level, regional authorities, local

administrations, the respective social partners, NGOs and universities. The agreements should include an evaluation of the vulnerability of the region, compromises between the different actors, financial investments into research, development and innovation, the creation of employment as well social protection and training measures. It should also be assessed to what extent power evacuation is possible. Lastly, a timetable for the proposed measures should be set up running for a maximum of seven years with the possibility of an extension (PLCCTE 2020). The whole process should be as inclusive and transparent to the public as possible and should be regularly evaluated.

The Climate Change and Energy Transition Bill still needs to go through the parliamentary procedure in order to become fully effective. It will thus remain uncertain whether the Bill as it currently stands will also be adopted. In April 2020, the government, FICA-UGT, CCCO Industria and the owners of thermal power plants reached an agreement on the just transition of coal power plants which could provide a framework for other just transition agreements that are yet to come (MITECO 2020b). All of the interviewees mentioned that this agreement is very satisfactory from the perspective of trade unions. The content of the agreement as well as the current stage of implementation will be presented as an example of a just transition in the following parts.

In addition to the measures taken in relation to the energy transition, in February this year, the government also opened public consultations on a draft Royal decree on the Statute of Electro-intensive Consumers (Grupo Tecma Red 2020a). According to this decree, energy intensive industries that face high electricity prices as a consequence of which they could lose their competitiveness, can apply for state aid. The statute regulates the conditions and characteristics of those companies that can apply (Grupo Tecma Red 2020a). At the end of June, a fund of up to €600 million was already set up for those energy intensive industries (Grupo Tecma Red 2020b). Also in June and in response to the consequences of the Covid-19 pandemic, the government presented its "Plan to promote the value chain of the automotive industry: towards sustainable and connected mobility" (Government of Spain 2020a). As is the case for the Czech Republic and Germany, the automotive industry plays an important role in Spain. It represents up to 10% of the country's GDP and employs 650.000 persons directly, while the number of indirect and induced employment is estimated to be at about 2 million (Government of Spain 2020b). The plan aims at the sustainable renewal of the vehicle fleet, however, it still includes subsidies for diesel vehicles. Nevertheless, the plan also includes measures for improving the charging infrastructure and for training and qualification of the work force to adjust to the production of electric vehicles as well as digitalisation and automatisation (Government of Spain 2020a).

The conclusion of just transition agreements for those regions that are affected by the transition towards a sustainable economy, e.g. through the closure of coal power plants, coal mines or similar is a central demand of all three unions. All interviewees were thus very positive about the process and the progress that could be achieved so far. However, they also remarked that although some agreements are already in place, it is still too early to evaluate whether they will also lead to a just transition as this will depend on how the agreements are implemented. Because the Climate Change and Energy Transition Bill still needs to pass parliament, due to the minority government formed by PSOE and Unidas Podemos, the process is still uncertain.

In the following part, the just transition strategies of UGT, CCOO and USO will thus be explored in greater detail.

5.3.2. Just transition strategies of trade unions in Spain – Goals, Strategies and Instruments

The perspectives of the unions under analysis on a just transition were closely aligned – both with regard to the aims that are to be achieved as well as with the regard to the strategies and instruments on how to reach them. In all three action programmes, the topic of environment and of a just transition towards a sustainable economy plays an important role and all three unions regard climate change and climate change mitigation and adaptation as central challenges of trade unions in the 21st century (USO 2017; CCOO 2017; UGT 2016). As is stated by the General Secretary of CCOO, Unai Sordo, in the trade union journal 'daphnia' which is published by the union's Institute for Work, Environment and Health (ISTAS), "the ecological transition is a necessity out of which unions need to make an opportunity – an opportunity to create new and decent employment in sustainable sectors" (Merino 2019, para. 5). In addition, it is necessary for unions to ensure that workers can participate in this process at equal terms as an ecological transition that does not follow the criteria for a just transition, which is understood as a transition based on social justice and equality, cannot be viable (Merino 2019).

In CCOO's current programme it is further stated that only with companies in high value-added sectors is it possible to maintain good and stable employment and the current level of welfare (CCOO 2017). This view is also supported by the policy officer from USO who argued that because of increasing prices for carbon and the declining costs of renewables, the fossil fuel industry does not have any future. As was already stated in the previous part, Spain closed its coal mines at the end of 2018 and all coal-fired power plants should cease activity by 2030. According to the interviewee, it is therefore necessary to create new, renewable industries, but by respecting the structure of the local economy, e.g. through transitional solutions. Although the transition is thus also supported because it can create new, high value-added industries, it is above all seen as necessary from the point of view of environmental protection and human health. However, environmental protection is primarily justified by the social consequences that pollution and resource waste have. For example, in the resolutions of USO it is stated that there is the need to advance towards an economy based on sustainability as the degradation of the environment is also a cause of inequality and injustice. Therefore, environmental protection is crucial for ensuring the future use of resources, for creating a sustainable and lasting productive system and healthier living conditions (USO 2017). It is further argued that because the environment and occupational safety and health are linked, e.g. through the communities where workers and companies are established, unions need to be driving this transformation process and need to work together with other unions and social actors both at international and at country level to foster compliance with international commitments (USO 2017). Similarly, in the action programme of UGT it is stated that the goal must be to establish an equilibrium of ecosystems. Arguing from the point of view of ecological humanism, the greatest and most harmful imbalances are hunger, misery and unhealthiness which can only be eradicated through economic development. However, this development needs to be sustainable and needs to go hand in hand with the revision of the old conception that humans are the masters of nature and where nature is only seen as decorative to human activities (UGT 2016).

> UGT must cooperate in its environmental commitments with organizations and movements that defend the value of nature, with balanced ecological approaches, critically reviewing both the old industrial productivism and conservationist fundamentalism. We are still far from capturing the scope of this new ecological project, but UGT anticipates its impact with some basic commitments: […] The review of union action to adhere itself with the new values, since productive life in general and in the company in particular are an inevitable source of environmental degradation, first of all, of workers' health. (UGT 2016, 60).

In its programme, UGT therefore critically reflects on past union strategies and values and admits that those were also causing environmental degradation. Therefore, the transition towards a sustainable economy must also entail a revision of previously held conceptions and values which is more on line with the social transformation-perspective on the dilemma between jobs and environment according to which the transition does not only involve a change in technologies but also in our understanding of progress and our relationship with nature (Räthzel and Uzzell 2011). Therefore, in order to address the transition, an integrated and coordinated approach is needed drawing attention to environmental, social and economic issues and that requires both sector and territory specific solutions. Since all three interviewees are working for the industrial federations and in particular in the field of energy and mining and extractive industries, the remainder of this part will nevertheless strongly focus on the challenges, chances and the specific strategies and instruments pursued by unions in those sectors, however, it is important to note that a just transition as envisaged by the unions requires action in all sectors. Also, the Just Transition Strategy adopted by the Spanish government takes into account all kinds of sectors that could be affected by the transition and seeks to establish just transition agreements on how to minimise the impact on workers and communities by promoting economic activity and new employment opportunities. Those agreements should be reached in a participatory process including social partners but also extending to other actors. This is also a central demand that can be found in the unions' documents but that was also stressed within the interviews, namely that the transition needs to be guided by social dialogue and by a participatory process, so that the broadest possible agreement can be achieved. Unions are thus one of the central actors in this process, as, according to the policy officer at USO, unions are representing not only workers but also their families and have excellent knowledge about the situation in the respective companies as well as about the areas where they are located. Unions can thus put to use this knowledge to make suggestions on how the transition should be made and by ensuring that the transition is accepted by the people.

> The government's responsibility is to draw up the regulations by which the appropriate mechanisms can be put in place to guarantee a just transition, in which the workers, the industry and the territories are reflected. Companies get involved in the transformation of their production processes, investing in R&D&I and training, digitizing and modernizing all processes, but keeping workers at the centre of these changes. Unions through negotiation and social dialogue have to participate in these processes since we are the ones who know what happens in companies and territories and we are necessary to ensure that the whole process proceeds in an orderly manner and to guarantee that what governments and companies have committed to are fulfilled. (interviewee, CCOO)

According to one of the interviewees, in the energy sector, the transition is particularly challenging, because it means that certain facilities need to close down completely or partly in a short period of time. Because of their size, those industries are concentrated in specific areas. Their closure will thus affect whole communities. In this case, a just transition would therefore mean that all workers who are made redundant can find new employment opportunities in sustainable industries in the same area or nearby to also prevent the depopulation of those areas and ensure sustainable rural development. As was argued by all interviewees, this involves an in-depth assessment of the situation in each area involving a public participation process as well as economic planning to ensure that new industries are being built up. In addition, all interviewees were in agreement that the government needs to anticipate those changes to ensure that "before one industry dies, a new one is being born". In fact, as was commented by the interviewee at USO, "if you do the changes without building up sustainable industries, you will have changed nothing, the model will still remain the

same". It is thus necessary to pay particular attention to what is both economically and socially feasible and to make a plan and secure new projects that can be established in the affected areas before you close down the old industry.

> The processes that we are in now, we are at the very beginning. The Ministry of Ecological Transition is still very new, after the last elections. When they formed the new government, they decided that this kind of Ministry would be necessary to do this kind of process, taking care of people, because if not, in a social-liberal government, social needs could not be fully taken into account. […] Because if you promote the transition from an ecological point of view only, it is exactly the same as if you would promote the transition from an economic point of view. You need to keep in mind the people. The affected people means in the end the families, small villages, residents […] The Ministry of Ecological Transition is more or less the organisation that keeps under control this process. Taking information from the rest of social actors. Not only trade unions, but also mayors, different social organisations…it is a public process where you can give your opinion without any problem. You receive your format where you write your opinion and they accept it. But I think it is a very good way to give your opinion…even companies and any industry could introduce their opinion. It is a good way to at least know who and what kind of activities would be affected and what could be promoted to reduce the impact on the society. (interviewee, USO)

From the point of view of the transition in the energy and mining sector, the interviewees were thus very positive about the Just Transition Strategy of the government and of the progress, e.g. the national-level and regional-level agreements that could already be stuck between the social partners such as the Plan de Carbón on the just transition of mines and mining regions as well as the just transition agreement on the of the closure of thermal power plants as well as the just transition agreements that are currently in the negotiation stage at sub-level stages. In fact, unions were closely involved in the launch of this strategy, e.g. both representatives of UGT and CCOO were members of the Commission of experts set up by the government in 2017 and that was tasked with elaborating scenarios for the energy transition (Ministry of Industry, Trade and Tourism 2018). The Just Transition Strategy as it is now enshrined in the Climate Change and Energy Transition Bill includes all central points that were also put forward in CCOO's proposals for a just energy transition (2018): A strategic plan on the just transition at state level, a plan for the reactivation of affected regions in a way of a just transition and an industrial and employment plan for the affected factories. The state-level plan lays down an analysis of the socio-economic risks of the restructuring in specific sectors and seeks to provide the instruments and means to alleviate the negative effects by supporting the transition through industrial sectoral and territorial policies, by setting criteria to be applied by companies, by securing public and private investments and other public interventions for the reactivation of the area, by providing specific social protection and by ensuring adequate training and education of labour groups, e.g. by setting up job banks for the workers who are made redundant (CCOO 2018). The regional plans then provide for a specific socio-economic assessment of the areas affected and measures to support the infrastructure and developing the potential for new industrial activity. Finally, at factory level, specific training and relocation programmes should be established for direct, indirect and induced workers, investments in the conversion of plants should be taken and permit procedures for new industrial activity in the same area should be facilitated (CCOO 2018). The plans should be reached between all relevant actors, including the social partners at national, regional and company level. In addition, CCOO also calls for a monitoring body to regularly evaluate this progress and proposes to establish a Just Transition fund at national level that consists of European and Spanish financing instruments, company funds as well as revenues from emission trading (CCOO 2018). According to the policy officer at CCOO, if the agreements that could be reached so far can

be realised, they would lead to a just transition. Right now, it is however, not possible to say whether they will be successful, because it is still early on in this process.

> As I have previously commented, if we all get to work together: government, companies and unions with clear agreements and commitments that will allow us to look for real horizons and alternatives, it will be possible to allow the territories, by analysing their inherent characteristics, to create new industries so that the affected regions continue to have their chance in the new economic model that the country and companies need…At the moment there is great mistrust on the part of workers and in the territories because the agreements that we have signed today have no reality, there is a lot of advanced work, but the workers need realities. Conflicts will be resolved when, together, we are able to start to materialize the signed agreements, and the workers dismissed from their companies are getting another opportunity. (interviewee, CCOO)

On the contrary, the policy officer at UGT stated that on the basis of the Plan de Carbón, unions could reach an agreement with the public mining company Hunosa in 2019 (Grupo Hunosa 2019). In line with the agreement, the mining company will be transformed into an energy company focusing on energy services and environmental restauration. The factory plan consists of several measures that allow the closure of the mines in a coordinated manner, that allow for the restauration of the area, that allow the company to diversify its activities and to invest in new projects and that allows for the prevention of redundancies of both direct and indirect workers through a social plan. In addition to the progress that could be achieved at Hunosa, the policy officers could also mention several other examples where unions could reach agreements with coal companies that allow for the conversion of existing plants and for the protection of jobs. Some of those will be presented in the next part.

In the case of Spain, the just transition agreements therefore represent a promising strategy for ensuring that the transition towards a sustainable energy system is proceeding a way that takes into account the needs of workers and communities. Unions are closely involved in the negotiations and in the monitoring of those processes and some first successes could already be achieved. Nevertheless, the processes are still mid-way and in many other sectors, the transition has not started yet. Therefore, on 24th June this year, CCOO, UGT and USO participated in the ITUC's World Day of Climate Action in the Work Centres. Apart from mobilisations, the unions sent thousands of cards to workplaces demanding that in each company, a dialogue between representatives of workers and employers is established to develop measures on how to mitigate and adapt to climate change (UGT 2020). In addition, a manifesto bearing the title "The just ecological transition: it is now" was given to the Minister of Ecological Transition and Demographic Challenge, Teresa Ribero, in which the unions demand that in light of the consequences of the Covid-19 outbreak, politicians need to strengthen their efforts to seize this as an opportunity to facilitate the transition to a different, sustainable production model in line with the SDGs of the UN (UGT, CCOO, USO 2020). The mobilisations were also supported by the platform climate alliance of which the unions are also members (Alianza por el clima 2020).

The just transition agreements are so far specifically to the energy sector, so unions' strategies are likely to be different in other sectors where workers are not faced with the dismantling of the total industry, e.g. by addressing climate change mitigation and adaptation measures within collective bargaining as is stated in the unions' action programmes. Moreover, in all three action programmes, one can also find that the position and competences of the workers' delegate of the environment should be strengthened. This delegate can inform, train and raise awareness about environmental pollution and its prevention at company level (Sesma

2007). According to the unions' programmes this figure should be established in every company and should also have the power to make proposals on how the company could reduce its environmental and climate impact. Moreover, the unions also demand the formation of environmental commissions in each company consisting equally of both representatives of workers and employers. Such a body could then work out strategies on how to improve environmental protection within the company (UGT 2019). Whereas negotiations between unions and companies are thus crucial for changing to sustainable production processes, the state plays a central role by ensuring that the supporting policy framework is in place. In this sense, the policy officer at USO mentioned that the just transition as it is now promoted by the current Spanish government would not have been possible under the previous government under Rajoy. However, because powers between the central government and those of the regional governments in the autonomous communities are shared, the just transition process crucially depends not only on the agreements that can be reached at national level, but even more so at regional as well as company level.

In the action programmes as well as in the interviews it was stressed that the transition needs to be made and that it needs to be made as soon as possible, however, by taking care of the impact on the society and on the economy, because otherwise acceptance for the changes will decline and social unrest occur. Therefore, it is crucial to have plans in place that protect jobs and create stable employment in sustainable industries. Nevertheless, this does not put into question the necessity of the transition as was already mentioned at the beginning of this part. Job protection and the reactivation of the communities is however a central theme that was mentioned throughout the interviews, however, this is also because of the specific situation in the energy sector where a lot of facilities need to be closed down raising of course such questions. To achieve a just transition in this sector, a joint effort of the public administration, companies, unions and other social actors is inevitable. In the next part, an example of how such a joint effort could look like will be presented in greater detail.

5.3.3. Example of a just transition: Agreement for a just transition for coal power plants: jobs, industry and territories

On 17 April 2020, Teresa Ribera, the Minister of Labour and Social Economy, Yolanda Díaz, the owners of the coal power plants in closure, Endesa, Iberdrola and Naturgy and the Secretary Generals of FICA-UGT and CCOO Industria signed the agreement for a just transition for coal power plants which will provide the basis of the just transition agreements in this sector and at company/plant level (MITECO 2020b). The adoption of such an agreement has become necessary as both international commitments on combating climate change, e.g. the Paris agreement and stricter air pollution standards as well as market factors such as declining energy sales due to increased use of renewables have already prompted several owners of coal power plants to apply for the closure of their plants. In total, there are currently 15 coal-fired power plants in Spain (MITECO 2020a). The aim of this agreement is thus to provide the necessary instruments, both of a financial and technical nature, to foster the adoption of just transition agreements in the regions that have at its main goal to preserve and create activity and employment in the areas affected, support vulnerable groups and promote the diversification and specialisation of those areas through the promotion of renewable energy projects (MITECO 2020a). In the agreement, each of the actors agrees to certain commitments. For example, the participating Ministries commit to provide assistance as regards financing measures, to allow newly established projects based on renewable energies access to use of water and power evacuation and to help in the search for investors, e.g. by conducting renewable energy auctions. Moreover, in cooperation with the autonomous communities and cities, job centres should be established that provide employability

and vocational training plans to the workers in the affected areas. In addition, special job banks for those workers should be established that allow them to find new employment at the newly established sites and workers who have difficulties finding a job, e.g. should be particular supported such as through wage subsidies (MITECO 2020a). In turn, the owners of the plants commit to submit a plan involving at least investment proposals in the affected areas, relocation plans for their workers, an active search for investors as well as measures to support reskilling and vocational training for the workers. Finally, unions are in charge of ensuring that each actor complies with the commitments made and by supporting the process, particular in areas related to OSH, training and reindustrialisation, but also in any other way that could be helpful for the transition (MITECO 2020a). Together with the owners of the power plants and the representatives of the government, unions are also part of the Monitoring Committee (MITECO 2020a).

According to the latest developments, the companies have put forward several industrial plans for their coal power plants to replace the old installations with solar photovoltaics or wind turbines, waste recycling or biogas facilities in order to secure investments for those projects (Carcar 2020). At the beginning of August, it was reported that Naturgy finalises plans for alternative energy projects within the vicinity of its two coal power plants located in the regions of Galicia and Asturias (Europa Press 2020b). The company works on developing two wind parks in each of the regions and started a feasibility study for the construction of a renewable gas centre in Galicia. It has also signed agreements with the regional authorities to foster education and training of workers in the energy sector. To this end, the company also developed a plan for all of its employees at those power plants which includes employment in the dismantlement of the old plant, relocation to other facilities of the company, or early retirement agreements (Europa Press 2020b). One of the interviewees stated that the aim of the union is to maintain at least 20-25% of the workers in these areas, both directly employed at the coal power plant as well as in auxiliary industries in order to prevent a social crisis. In addition, at the end of July, the job bank for the workers affected by the closures of the coal plants was created that gives priority to those workers in future hiring processes related to the dismantling of the power plant and in the future, renewable projects (Europa Press 2020a). The interviewee commented that starting in September and by the end of the year it will be possible to see whether the commitments in the tripartite just transition agreements signed for those plants will be able to materialise.

5.4. Sweden

For the analysis of trade union strategies towards fostering a just transition in Sweden, two interviews with policy officers from the Swedish trade union IF Metall and from the Council of Nordic Trade Unions (NFS) were carried out. Both interviews were conducted via video communication. IF Metall organises employees in the Swedish industry, e.g. in plastics, building materials, steel, chemistry or engineering. It has about 313.000 members and 90% of the workplaces where it is represented are covered by a collective bargaining agreement (IF Metall 2020). Moreover, the union is also a member of LO, the Swedish trade union confederation at national level whose affiliates are mainly organising workers with blue-collar occupations. IF Metall is also affiliated with IndustriALL. In turn, LO, is an affiliate of the NFS which brings together 15 unions and union federations from the five Nordic countries: Sweden, Norway, Denmark, Finland, Iceland as well as the autonomous Faroe Islands, Greenland, and the Åland Islands. The NFS therefore comprises about 9 million union members (NFS 2011). Although the policy officer was thus responsible for the whole Nordic region, the interviewee was working from Sweden and was in close contact with the unions at national level. In addition, the interviewee could provide valuable information about the Nordic model, e.g. the specific economic and social policy and how they are carried out which also plays a role when it

comes to a just transition and how it is approached by trade unions in the Nordic countries and in Sweden. The NFS is part of a cooperation structure that became institutionalised between the Nordic countries. In the 50s, the Nordic Council, an interparliamentary body with parliamentarians from each of the Nordic countries was established. Every year, they come together for a plenary session, while several smaller sessions are held throughout the year. In the 70s, the Nordic Council of Ministers was founded which can be compared to the Council of Ministers at EU level as it also meets in thematic formations. The NFS which was also established in the 70s works for example more closely with the Ministers of Labour. According to the interviewee, next to trade unions, also many other kinds of organisations are represented at regional level who seek to influence the respective ministers. In contrast to the EU level, the Nordic Council is however more about soft power since it does not legislate but provides a forum of exchange, collaboration and inspiration.

Again, the case study will start by providing some background information about the country's economic structure, its climate policies as well as societal aspects that may be relevant with regard to the transition towards a climate neutral society.

5.4.1. Presentation of the economic, legal and social background

Sweden is one of the forerunners when it comes to the transition towards a low carbon and resource efficient economy, e.g. measured in terms of GDP per capita, emissions in Sweden are the lowest in the whole EU and energy generation is almost fossil free (Bruhin, Dinges and Ackva 2018). Despite of that and due to the country's abundant raw materials, especially wood and iron ore, the paper and pulp industry, the iron and steel industry as well as the chemical industry have been very important for the Swedish economy – both historically, but also today as they significantly contribute to the country's exports that account for about 46% of GDP (Swedish Environmental Protection Agency 2017). GDP in 2018 amounted to SEK 4.834 billion (€471 billion) of which around 20% are due to the manufacturing industry and especially the production of machine parts, electronic equipment and motor vehicles (Swedish Environmental Protection Agency 2017). Moreover, although GDP growth has slowed down in the past years it is still at a rate of 2% and also unemployment has been low with a rate of 6.3% in 2018 (The National Institute of Economic Research (NIER) 2019).

The country wants to become one of the first fossil free welfare states and has thus set themselves more ambitious goals than the previously discussed countries. According to the climate policy framework that was adopted in 2017, Sweden aims at reaching climate neutrality by 2045 (Swedish Environmental Protection Agency 2020). This means that GHG emissions need to drop by about 85% compared to 1990-levels while the remaining 15% will be compensated through negative emissions (Swedish Environmental Protection Agency 2020). Chances for achieving that goal are good as the amount of fossil fuels used for energy production is at less than 9% (2017) and because 63% of the Swedish surface is covered with forests that can absorb 46.6 Mt CO2 equivalent per year (Swedish Environmental Protection Agency 2017). In addition, forest biomass can be converted into biofuels or biogas that can be used for energy production, in industries as well as an alternative to conventional transportation fuels. Moreover, in combination with CCS (BECCS), energy from biomass can lead to negative emissions if those plants or trees are not taken from the existing stock. This is seen as necessary for decarbonising the transportation sector which currently represents the biggest source of GHG emissions in Sweden (32% in 2018) (Swedish Environmental Protection Agency 2020). The energy industries account for 18% of GHG emissions, whereas industrial processes and product use create 14% of total GHG emissions. Emissions from manufacturing industries

and construction amount to 13% as is also the case for agriculture while emissions from waste represent about 2.4% (Swedish Environmental Protection Agency 2020). Total emissions in 2018 thus amounted to 51.8 Mt CO2 equivalent (Swedish Environmental Protection Agency 2020). About 76% of GHG emissions are energy related, e.g. due to the burning of fossil fuels in transportation or for heat production. Because of the replacement of fossil fuels with biofuels, the expansion of district heating as well as improved energy efficiency, energy-related emissions could however be reduced by about 30% in the period 1990-2018 (Swedish Environmental Protection Agency 2020). This also contributed to a reduction of emissions in the manufacturing industry (-37%) and in transportation (-12%) (Swedish Environmental Protection Agency 2020). Moreover, since the 1990s, the country has a tax on carbon dioxide as well as on energy which are also said to have significantly contributed to the reduction of emissions (Ecofys and adelphi 2018).

The current policy framework on mitigating climate change dates back to 2017. In this year, the government updated its climate goals and brought to life the climate act that establishes an enhanced climate governance framework that for example, prescribes that climate goals need to be mainstreamed across all policy fields which also means that budgetary plans as well as economic policies need to support those newly adopted targets (Bruhin, Dinges and Ackva 2018). In line with this new framework, each year the Swedish government has to submit a review of its emission reduction efforts to the parliament including a report on the current emission developments, the key decisions taken as well as an assessment of additional measures that would need to be introduced to remain on track (Swedish Environmental Protection Agency 2017). Every four years, the government further has to develop a climate policy action plan that provides information on the measures and policies planned to achieve the climate targets. Finally, the policy framework also establishes a climate policy council that consists of independent experts who evaluate the government's efforts (Swedish Environmental Protection Agency 2017). Next to the overarching goal of achieving climate neutrality by 2045, the policy framework also establishes targets for the years 2030 and 2040. For example, all sectors that are outside the EU-ETS need to reduce their emissions by 63% by 2030 and by 75% by 2040. Moreover, emissions in the transportation sector shall be reduced by 70% by 2030 compared to the level of emissions in 2010. For the year 2020, the integrated climate and energy policy lays down an emission reduction target of 40% compared to 1990 (Swedish Environmental Protection Agency 2020). Moreover, by 2020 about 50% of the energy consumed shall come from renewable sources while the long-term goal is to achieve 100% renewable energy production by 2040 (Swedish Environmental Protection Agency 2017). As of 2015, 47% of total electricity production comes from hydro power, 34% from nuclear power, 10% from wind power and only 9% from fossil fuels and bio fuels (Swedish Environmental Protection Agency 2017). Also, at regional level, the county administrative boards (CAB) set up regional climate objectives and action plans that can contribute to achieving net-zero emissions by 2045 (Swedish Environmental Protection Agency 2017).

For their implementation, the government relies mostly on economic instruments such as taxes and carbon markets, but it has also launched several investment programmes for supporting innovation in low carbon technology as well as for educational programmes aimed at providing the necessary skills for students and employees (Swedish Environmental Protection Agency 2017). The Swedish carbon dioxide tax was introduced in 1991 and is based on the carbon content of fuel used for energy production (Swedish Environmental Protection Agency 2017). The tax applies to all sectors not covered by the EU-ETS, however, several industries that are subject to strong competition have been exempted from it. Nevertheless, exemptions have been lifted over time, as industries were given sufficient time to adapt to those costs (Criqui, Jaccard and Sterner 2019; Ecofys and adeplhi 2018). Since 2018, all industries outside the EU-ETS are taxed at the general rate (Government Offices of Sweden 2020). Initially, the rate corresponded to €23

per ton CO2 and increased to €110 per ton CO2 in 2020 (Government Offices of Sweden 2020). The carbon dioxide tax supplements the energy tax that was introduced for fiscal purposes and to improve energy efficiency (Ecofys and adeplhi 2018). In the past, it has often been the case that the tax rate of one of those taxes has been reduced while the other one increased in order avoid that the overall level of taxation increases (Criqui, Jaccard and Sterner 2019). Moreover, the taxes were introduced at a time of great tax restructuring aiming at the reduction of labour costs and the simplification of the tax system. Therefore, the majority of the Swedish population supported and still supports their introduction (Jakubowski 2016). According to a study from 2019, it was shown that a tax on fuel poses higher costs for rural municipalities than for urban areas, however, the overall difference was considered to be small (Birgersson 2019). This is also supported by data from the European Commission that reveals that despite those taxes, the amount that low income households spent on energy in Sweden is with 3% the lowest in the EU (European Commission 2019). Other initiatives of the Swedish government include for example, the introduction of an electricity certificate system to support power from renewable energies as well as a tax on aviation that increases with the distance of the flight (Ecofys and adelphi 2018).

Next to those instruments, in 2018, the government launched "industrial leap" (industriklivet) which supports companies in the development and testing of low carbon technologies that can reduce process-related emissions from industry by providing financial support (Government Offices of Sweden 2019). About €30 million can the government spent each year up to 2040 to support those projects. From 2020 onwards, the amount will be doubled to €60 million per year (Government Offices of Sweden 2019). In addition to "industrial leap", the investment programme "climate leap" (klimaklivet) was introduced that supports mainly local projects aimed at reducing GHG emissions. For 2020, this fund was similarly increased to up to €200 million in 2020 (Government Offices of Sweden 2019).

One of the projects that receives funding from the industrial leap fund is the HYBRIT project that was developed by the state-owned steelmaking company SSAB in cooperation with the state-owned mining company LKAB and the Swedish energy company Vattenfall (Vogl, Rootzén and Svensson 2019). According to the interviewee from IF Metall, the state covers 40-50% of the costs of the project. The idea is to establish a fossil free value chain for steel by using green hydrogen for direct reduction (Vogl, Rootzén and Svensson 2019). Two pilot plants have already been built and in 2025, demonstration plants should start to produce zero carbon steel under industrial conditions. The initiative received a lot of attention – both in Sweden, but also beyond – and has also won several environmental prizes (Vogl, Rootzén and Svensson 2019). From the perspective of unions and especially of IF Metall, HYBRIT is a welcoming initiative since it can be a guarantee for the future of Swedish steelmaking. However, there are still several uncertainties, e.g. related to the geographical sites chosen and the effects on employment as well as to the overall success of the project. Although both interviewees spoke very positively about the project and the extent to which unions are involved in it, it will not be represented in great detail, because the initiative and also union's positions towards it were already covered by the above-cited paper by Vogl, Rootzén and Svensson (2019).

Lastly, already in 2015, the government started the initiative 'Fossil Free Sweden', a platform for cooperation and exchange between companies, municipalities and other stakeholders. Currently, 450 actors are active on the platform (Fossil Free Sweden n.d.).

Despite its ambitious targets, Sweden has good starting positions as most of its energy comes from renewable sources, because long-term investment programmes for low carbon technologies are already in place and because emissions are already at a low level. Nevertheless, due to its geographical position, Sweden is also strongly affected by climate change and has for example suffered from a large number of

wildfires in 2018. In addition, it is a very open and export-oriented economy with a significant share of GDP accounted for by industry. Because further emission reductions, e.g. in the transportation sector, require the development of technologies that are in many cases not ready for industrial protection yet, new policies and investments would probably need to be launched.

In the next part, the positions and strategies of Swedish unions towards climate policies will be analysed.

5.4.2. Just transition strategies of trade unions in Sweden – Goals, Strategies and Instruments

In the official documents of the NFS, LO and IF Metall, there is little reference to a just transition even though climate change and sustainable development are considered to be crucial issues for trade unions. In 2018, the LO published its Environmental and climate policy programme in which the confederation positions itself towards climate policies as well as formulates demands on how the transition towards a low carbon economy can be successful. In this document, LO supports the Paris Agreement and commits to the efforts of the international community to keep global warming at 1.5°C. However, for the transition to be successful it must be just. Therefore, the necessary investments, e.g. in circular materials and green cement, in renewable energies, in fossil free public transport, in biofuels and in increased wood construction (LO 2019) need to be made to maintain both the environment and the current standard of living (LO 2018). Especially for small and open economies that are dependent on exports, it is seen as crucial to be on the forefront of those changes in order to stay competitive which is a precondition for high wages, good working conditions as well as an equitable society (LO 2018). The government further needs to address climate change in a systematic way by including social partners and by mainstreaming climate change mitigation across different policy fields. The government should also use a mix of different instruments, e.g. taxes, subsidies and environmental labelling to facilitate the transition. Finally, it is stated that a just transition entails that the costs of the transition are distributed fairly among the population and that especially sparsely populated areas should benefit from the restructuring so that economic prosperity can reach more parts of the country (LO 2018). This 'investment-led climate policy' (LO 2018) can also be found in IF Metall's climate policy document from 2019. In this document it is stated that a simple shut-down logic is not a solution for reducing emissions from Swedish industry as those products would then need to be imported which means that they probably have a higher carbon footprint and importantly, also unions would not be able to ensure that those products were produced under decent working conditions. Therefore, the transition towards low carbon or even zero carbon industrial processes is understood as a chance to develop new products, keep workplaces within the country and to maintain the country's competitiveness in the global economy (IF Metall 2019). For this to materialise, investments in climate-friendly energy, the production of biofuels, CCS, as well as the further development of the 'industrial leap'-initiative and more efficient permit procedures are needed (IF Metall 2019). While reaching climate neutrality is thus seen as necessary to fight climate change and to ensure that the environment and the current standard of living can be upheld, being a leader in this process is similarly seen as necessary for modernising the economy, staying competitive and thus safeguarding the welfare of the society.

This stance was also supported in the two interviews. Both policy officers stressed that the Swedish – or the Nordic – model with its high level of welfare and redistribution, active labour market policies that focus on upskilling measures as well as strong social partnership already ensures that the transition towards climate neutrality is just. However due to the urgency of the topic and due to the ambitious targets set by the government, there is a need for massive investments – both in innovative technology, but also in the expansion of the electricity grid as well as in public services and education. In addition, the policy officer

from IF Metall stated that a just transition is more associated with demands of unions on the continent. In this sense, a just transition was understood as being similar to job protection which is not something that is common to trade unions in Sweden due to the Swedish model. The Swedish model builds on driving less productive firms that are not able to pay the high Swedish wages out of the market. Workers who are made redundant receive generous unemployment benefits and through active labour market policies that are focused on the development of human capital, employees are able to upskill and to find employment in companies that are more productive (Bonoli 2012). Thus, 'leaving no one behind' is already an inherent part of the Swedish welfare system. Nevertheless, the interviewee admitted that because also in Sweden there has been a deterioration of social security and because drastic shifts in employment are expected to take place, those climate policies could create a political backlash which also drives unions closer to job protection. For example, as a consequence of the Covid-19 outbreak, short-term working schemes were introduced in Swedish companies for the first time which long represented a big 'no-go' in Sweden. Despite this, the interviewee argued that the Swedish model is built to manage those changes and that there is confidence that this will happen in a just way even though it might be hard.

> So for us…we don't really use that term [just transition] that much, but if you talk to our European confederation, they have been pushing for the topic for quite some time. But for us it is kind of a strange vehicle, because we have our system that is built to be able to have this kind of social transformation, this industrial transformation all the time. And this is nothing strange for us. We don't try to stop it. Because our main aim is that our members get paid wages…I mean we are quite aware of the fact that some of them will lose their jobs because the wages will be too high, but then our main aim is to try to help them into new and better jobs. But I think this is the Nordic model, this is quite the concept here in Sweden. (interviewee, IF Metall)

In addition to that, the policy officer from the NFS mentioned that all unions who are affiliated to the NFS view those new low carbon technologies very positively and as a chance to improve competitiveness which is considered to be crucial for such small and open economies as are the Nordic countries. Those statements therefore reveal a very positive stance towards technology and the job potential that the transition towards a low carbon economy can yield. Moreover, even though distributional concerns play a role and although also the Swedish model has been weakened in the past three decades, both interviewees state that it is still functioning. Because union density is with 70% very high and because unions can influence decision-making within companies via co-determination as well as through collective bargaining, there would be no need to fundamentally change the relations between labour and capital. Due to the high level of union membership, unions are automatically seen as an important and legitimate partner to be included in such transformation issues. Nevertheless, it was argued by both interviewees that the public infrastructure needs to be improved and that a life-long learning system needs to be established to facilitate the transition and to ensure that really everyone is taken care off. Both policy officers thus underlined that the state should play an active role in industrial, innovation and research policy, however, all things that are related to what happens within the company including working conditions, training or wages are settled by the social partners. Such an approach thus takes a middle position between the 'shared solution approach' and the 'differentiated responsibility and respective capabilities approach' to a just transition. On the one hand, the status quo should not be challenged, but the state should nevertheless play an active role that goes beyond investments in education and extends to strategic support for industrial development including investments in infrastructure and innovation, town planning and regulation of unfair competition. This has to be seen against the background that the position of unions in Sweden is still strong. For example, the policy officer

from IF Metall mentioned that 90% of companies in Sweden are covered by a collective bargaining agreement. In addition, those agreements can cover a wide range of issues. In the Co-determination at Work Act from 1976 it is stated that unions have the right to negotiate with the employer on any matter where significant changes affecting the company or the employment conditions are planned (ETUI 2016). Union representatives further need to be informed and consulted on almost any matter related to the company extending for example also to product development (ETUI 2016).

> Looking back, we were in a good position, I mean all the emission cuts that we did were quite easy, so it wasn't that of a big deal to be honest. Going forward to reach those really aggressive targets that we have will be really hard and we will need a lot of investments. So, the honest question is that we really do not have any idea of how to do it. So I mean, it is easy to set emission targets of reaching a 70% reduction in the transport sector, but actually doing it, without drastically increasing costs is quite hard…but we have been starting to develop these roadmaps. You know, Fossil Free Sweden is a great institution that the government put in place like five or six years ago…where they are working with these different kind of sectors and where they have these roadmaps on how to reach for each sector the long-term targets of the UN. So, we know what we need to do, but the problem is that some of those resources are scarce, like biofuels. Everyone wants it but we can't scale it to the amount that we would need. We need energy supply which is extremely costly, we need investment in our grids which is extremely costly. And when you look at it, we are in agreement of what needs to be done, but we are not in agreement of who should take the costs. So that is where it becomes difficult…It is like at SSAB…I think the first steel will be ready in 2026/7, but if the processes are 20% more expensive than the current ones, who will pay for it? (interviewee, IF Metall)

Consequently, the policy officer from IF Metall argued that in order to pressure the state to for example increase investments in innovative policies or to ensure that the energy supply is guaranteed, the union is closely working with employers. IF Metall is for example, supporting the HYBRIT project of SSAB as it opens up the possibility to keep steelmaking in Sweden when almost everywhere in Europe steelmakers are under constant pressure due to cheap steel imports. Moreover, together with LO, the union is also pressing for 'green quotas' in public procurement and stricter sustainability requirements to fight unfair competition (LO 2018). In addition, the state also needs to ensure that those who may be laid off due to the changes need to have financial security and companies in construction could for example be required to offer more apprentice and labour market programme places in order to ensure a fair and incremental transition (LO 2018).

When analysing those statements, it has to be noted that both interviewees stated that in many cases they do not know what kind of changes the transition towards a fossil free society will bring for employees. For example, the policy officer from IF Metall argued that training so far was mostly about how to handle a new machine or how working conditions are affected by digitalisation and automatization. Environmental issues, on the contrary, do not play a role at company level so far. Although IF Metall is in close contact with the management of SSAB that is building the fossil free steel plant, even there it is still unclear how much workers can be kept or whether different kinds of skills are needed and how workers could obtain such skills. This places unions in a passive situation as they need to await employers' decisions. In addition, also in the LO's environmental and climate policy programme it is stated that it is employers who decide what is produced and in what way which indicates that unions also do not see their role in deciding those questions but to negotiate with workers on working conditions, training and pay once changes are made. Nevertheless, again, social partnership is very strong in Sweden and also unions are calling for an active state that anticipates those changes through investments as well as the establishment of a life-long learning system

for employees. Moreover, at the level of the NFS and together with the DGB, trade unions are currently working on a project that should map just transition efforts of trade unions in those countries and that can provide insights into different strategies and examples of how the transition can be managed successfully. The unions are thus trying to influence politics at an early stage to ensure that the interests of the working population are taken into account. There is thus currently an internal process going on that aims at the development of a joint just transition strategy of both Swedish and German unions.

> You could say that a just transition would be a part of this [our Nordic model]. That would be a part of it *implicitly*. So, we started with this new just transition project that we have now after a Congress last year. That would be the second point. It came on, you know, more *explicitly* that we need to work with these questions, with climate change and how to reach carbon neutrality, how to reach all these goals that our countries have committed to, whether there are within the UN, the Paris Agreement System, the EU, like also the Nordic Council of Ministers has their goals: to become the most integrated and sustainable region within fourth quartile of 2050. But how do we adapt to these challenges? That has helped us to make this project more concrete…and then we also got approached by your colleagues at the FES and the DGB. […] And I think our affiliates also appreciate the project to "put flesh on the ball", so what is "just transition" all about, what kind of investments do we need and what is our role as trade unions within this, what can we contribute, e.g. within collective bargaining […] And I hope that the Nordic model can also help our affiliates to be on board. Because they already use many of the tools that needs to be used. It has already been the case during the decades that have already passed. In Sweden we had a very big shipyard industry, but it has vanished at the beginning of the 80s, I don't know how many exactly, but I think tens of thousands of workers used to work in those industries. What are they doing, what did they do afterwards when the shipyard industry laid off all those workers? They needed to have education, they needed to be under unemployment scheme, they needed to have different, new jobs, investments in new sectors, in new technology … so, I hope that our affiliates are on board, because this is what they do and what they have been doing for many years. (interviewee, NFS)

Although Sweden has managed to cut its emission significantly and even though Swedish products are already among the most climate-friendly ones, there is still a lot of uncertainty as to how the goal of a fossil free welfare state can be reached and how it affects workers and vulnerable parts of the society. In the interview, the policy officer from IF Metall used the example of the Swedish oil refinery company Preem that faced problems receiving a permit for the expansion of its plant in order to produce renewable fuel. Although this could benefit emissions at global level, e.g. when it is used in ships or for airplanes, it could increase emissions in Sweden thus endangering the goal of reaching climate neutrality by 2045. The policy officer used this example to criticise that there is a lot of political ambition but that concrete measures, e.g. investments in low carbon technology are still not sufficient enough and that there is the need for an enhanced industrial policy to steer and support this process. Both policy officers were however confident that the changes can be managed with the existing tools and within the existing system, that is the Swedish model.

In the next part, an example of a just transition from the perspective of trade unions will be presented. Because the transition towards a climate neutral society is still in the making, the example refers to a just transition within the context of automatization. Since there was the view that all transitions are hard and that all transitions need to be just, the term was not exclusively used for the transition to a low carbon society but was seen as a precondition to manage every transition.

5.4.3. Example of a just transition: Skills development at SKF in Gothenburg

SKF is a Swedish manufacturing company that supplies bearings, lubrication, seals and other maintenance products. It has offices and factories in more than hundred countries and operates on a global scale. When part of its production of bearings in Gothenburg was to be automated, the local trade union of IF Metall together with the management of SKF in Gothenburg agreed to not fire anybody but to upskill the existing workforce so that they could keep their jobs (IF Metall 2018).

The difficulty was that a lot of employees who were working in the factory did not have a formal degree or something similar, even though they were working in the factory for many years. The union therefore decided to validate the skills of those employees with the validation tool Industriteknik Bas which IF Metall helped to develop. With the help of this tool, employees in industry can obtain a certificate of their skills which is accepted by employers (IF Metall n.d.). After validation it was possible to develop individual training programmes for each employee to provide them with the necessary skills for handling the new working tasks. This was made possible through an education fund that the local union had in place. Because the management at SKF did not want to let their staff off for training, online courses were designed which allowed employees to upskill at any time (IF Metall 2018).

Through this tool, most employees could upskill and keep their jobs at SKF in Gothenburg. Despite the success of the measure, the local union also had to overcome some initial resistance on the part of the management. In addition, it admitted that validation has to be employed as early as possible and not only when restructuring is already taking place (IF Metall 2018). This is also why the union is working to get a nation-wide system of life-long learning in place which was already mentioned above. According to a survey that IF Metall conducted among its members in 2017, more than half of its members stated that they believe that their employers do not invest enough in skills development (Nilsson 2019). Next to employers, IF Metall therefore argues that the state should also invest in the further education of professionals by setting up a life-long learning system that allows employees to have a reasonable earning while reskilling. Moreover, shorter courses, evening and part-time courses should be developed that also allow employees to combine education with employment and family life. Such courses should allow employees to both expand their existing skills but also to learn new professions (Nilsson 2019). According to both interviewees, such a system could also be useful to manage the transition towards a climate neutral economy as it would allow employees to keep up with the new technology, while being able to keep their job or receive financial support during training.

5.5. Discussion: Just transition strategies in comparative perspective and the role of transnational trade union cooperation

After having presented the just transition strategies of trade unions as well as some examples of a just transition on a case-by-case basis, the last part of this chapter will discuss these findings with a view to answering the questions posed at the beginning of this thesis and by looking at the role of transnational union cooperation on this issue.

Although there are some minor differences in what unions are understanding under a just transition, e.g. in how actively they are promoting the switch to a low carbon economy as well by which means, the just transition strategies of the trade unions under analysis are very similar. For example, with regard to the instruments and policies that are supported, there are several issues that were repeatedly mentioned throughout the interviews as well as in the unions' programmes. All unions indicate that some kind of

economic planning in the affected sectors and regions and thus a stronger role for the state in industrial policy, innovation policy, education and social policy is necessary to anticipate the transition towards a climate neutral society and to prepare workers and affected communities the best way possible for the changes that are laying ahead. This includes for example an adaptation of public procurement rules and investments in low carbon or zero carbon technology as well as in the reactivation of regions where industries would need to close in order to foster a diversified and climate neutral economy. With respect to education policy, it is necessary to establish a system of life-long learning that allows employees to re- and upskill while being able to keep their job or having a sufficient income. In the realm of social policy, (pro-)active labour market policies such as wage subsidies that are especially focused on vulnerable labour groups are needed to equip workers for new jobs in sustainable industries. Also, early retirement programmes or other forms of financial aids should be guaranteed for those workers who are becoming redundant and who are facing difficulties finding new employment, e.g. due to old age. The agreements that could be reached as part of the German Consensus on Coal as well as the just transition agreements on the closure of coal mines and coal power plants in Spain include several of those instruments and also the Restart programme in the Czech Republic also comprises some of the above-mentioned elements such as some degree of economic planning and public investments to support sustainable projects and reactivate communities.

In addition to that, in order for the transition to be successful, workers and workers' representatives need to be involved in these processes, e.g. by strengthening workers' powers within collective bargaining, as part of participation in tripartite bodies, in regional transformation councils or through environmental commissions at company level as is proposed by unions in Spain. In the case of the Swedish unions, strengthening workers' decision-making capacity vis-à-vis the state or employers is not part of their just transition strategies. Because social partnership is strong, e.g. nearly all companies are covered by a collective bargaining agreement and unions can negotiate with employers on any matter where significant changes are affecting the company or employment conditions, existing instruments are seen as sufficient to involve workers in those processes. Since more than 70% of the working population is unionised, unions are automatically seen as important actors that need to be included in such transformation processes. Consequently, the focus of unions is more on establishing a system of life-long learning as well as to raise demands – in cooperation with employers – to increase investment in low carbon technology and pursue an active industrial policy. Also, all other interviewees mentioned that active social partnership and tripartite social dialogue is crucial for ensuring that workers' demands are heard and social issues are taken care of. As was put by the interviewee from the union IG Metall, it is impossible to foster such large restructuring processes as the transition towards sustainable production undoubtedly entails in a conflict-ridden situation. However, apart from the unions in Sweden, social partnership is not that strong everywhere and unions have to develop new strategies, e.g. through mobilisations, as part of collective bargaining and through cooperation with other actors, e.g. research institutes and platforms such as the climate alliance, to demonstrate that unions and workers need to be involved in the transformation and that they also want to play an active part in it.

Of course, they are differences in how actively unions are pushing forward the transition. For example, in the case of the Spanish unions, the transition has to be better now than later. This may be because from the countries analysed in this study, Spain is probably the one that faces the most severe consequences because of climate change, but it is also due to the economic situation in the sectors that the unions are organising. For example, all coal mines had to close and also all coal-fired power plants are currently in the process of closing down. In addition, the country wants to phase out nuclear power between 2025-2035 (MITECO 2020d). Therefore, there is the need to rapidly and massively expand the amount of renewable energies.

Moreover, after the recovery from the economic crises, emissions increased again in several sectors raising the need to advance towards a more sustainable model. In contrast, in the Czech Republic, within the Coal Commission, the government as well as social actors are only starting to negotiate on the future use of coal in the Czech Republic, therefore the need for unions to engage with climate policies is probably less urgent. Also, because unions are smaller and less politicised due to the communist era, several interviewees mentioned that the transition towards a climate neutral society is within the realm of state policies, while it is the responsibility of unions to focus on the impacts of the working population and their communities which also entails that unions had a strong focus on job protection.

Nevertheless, with regard to the policies and instruments pursued by unions within the context of a just transition (outcome and process) as well as the goals pursued, there is thus a remarkable overlap across unions and countries. When recalling the different varieties of just transition approaches developed by Stevis and Felli (2015), the unions' strategies are close to the 'differentiated responsibility and respective capabilities' approach to a just transition that aims at returning to a strong social state albeit with a green face. This may also be the reason why the Swedish unions commented that the concept of a 'just transition' is a "strange vehicle" for them as Sweden still has a generous welfare state, whereas in other countries, the welfare state was not as well developed from the outset or was radically cut back as a consequence of neoliberal policies and austerity politics. In contrast to the impression that this approach is focused on sustaining polluting activities as long as possible, most unions are however actively supporting the transition towards renewable energies or the use of green hydrogen instead of fossil fuels in steelmaking as was for example, mentioned by the policy officers from IF Metall and IG Metall. In this sense, an integrated approach is needed combining both educational and social policies with economic planning and technological improvement. Thus, elements of all approaches were present. Moreover, there is also a difference between what unions may prefer in the long run as well as what is possible in the short run. Therefore, to minimise resistance against climate policies and to prevent social unrest, before one activity is abandoned, alternatives have to be created which raises the need for transitional solutions instead of radical breaks. However, it has to be noted that with the exception of the statements found in the action programme of UGT, during the interviews the role also unions played in environmental degradation and resource waste was not discussed. While the introduction of low carbon technology was thus often viewed as positive from the point of view of job creation and economic development, a similar transformation of work identities and values was largely absent. As was argued by Stevis and Felli (2015) this is because in many (Northern) European countries, unions are divided along occupational lines and are thus dependent on the growth of their sectors, while in countries where unions are divided along ideological lines, this may be less of an issue and makes it also easier to critically reflect on past decisions.

The similarity with the 'differentiated responsibility and respective capabilities approach' is however also due to the bias of this thesis towards industrial unions. 9 out of 12 interviews and unions analysed are organising workers in energy industry, in extractive industries or in energy-intensive industries. According to Stevis and Felli (2015), the differentiated approach is very prominent with unions in industrial sectors where the changes, e.g. due to job loss or redefinition of work due to climate policies are probably the greatest. Further, the similarity in unions approaches is also because in sectors such as coal mining or coal-fired power generation as well as with regard to the automotive or steel industry, the challenges unions are facing, are the same. While the conditions for sustainable production may be the most favourable in Sweden, also there, companies are only starting to test the production of sustainable steel, for example. Although the industrial sectors are thus the most affected by the transition, there is still a lot that is uncertain, in particular how workers may be affected by those changes. Therefore, the similarity of the unions' approaches to a just

transition may also be that, faced with uncertain impacts, unions stick to the agreements that could be reached on the phase out of coal or they drew on the ILO guidelines on a just transition (2015).

This raises the question whether the concept of a just transition is primarily used by unions in industrial sectors where it is mostly understood in a defensive way, e.g. protecting jobs and ensuring that working conditions in newly created sectors are at least as good as in those lost, or whether it can also be understood in a broader sense, encompassing all economic sectors and society as a whole. As was mentioned before, the focus on industrial unions was partly self-chosen, as just transition strategies were considered to be more developed in those sectors, but it was also because interview requests were often directed to industrial unions right away. The policy officer at Ver.di who was responsible for the transportation sector represented an exception in this regard. According to this interviewee, in public transportation a just transition would mean expansion, but expansion that takes into account the interests of workers, e.g. more personnel and better working conditions, while it also means to improve the existing infrastructure, establish an integrated mobility concept as well as regulate new forms of on-demand mobility. Whereas those demands are compatible with the ultimate goal of a stronger social and green state, the respective policies and strategies would of course look different. In the manifest "The just ecological transition: it is now" of UGT, CCOO and USO, the just transition concept also extents to all economic sectors and to the transition processes that society as a whole has to undergo. And also in the DGB's decision on climate, energy and mobility, the just transition is also embedded in a broader transformation strategy extending to different economic sectors. Nevertheless, because the transition affects especially the industrial sector, and because of the magnitude of those changes as well as because of the negative effects this could have on employment, the need for a just transition is especially relevant for industrial unions.

This view is also supported in the interview that could be carried out with the policy officer from IndustriALL Europe. The European federation seeks to represent their members at European level, e.g. within European sectoral social dialogues or on the Platform for Coal Regions in Transition. It is also closely cooperating with the Just Transition Centre on the topic of climate policies and a just transition. According to the interviewee, the transition towards sustainable production plays a very decisive role for their affiliates and the interests of their members are also closely aligned. For example, all unions can agree on the need for investments and some kind of economic planning as well as active social partnership as an important precondition to ensure that workers can influence this process and make sure that social issues are taken care of. The policy officer argued that there are also having a close cooperation with most of their member unions on this issue. This cooperation, e.g. through IndustriALL, the ETUC, through the platform of coal regions in transition or also on a bilateral basis was also frequently mentioned by the other policy officers interviewed, e.g. in this thesis the project that the NFS is currently working on together with the DGB was shortly introduced and also the policy officer from OS PHGN described that the union is in contact with their Slovak counterpart on how to develop new economic activity on former coal extraction sites. This exchange also influences the just transition strategies that unions are pursuing within their countries. However, at the same time, the interviewee admitted that countries and unions across Europe face different underlying conditions, e.g. in terms of investments in low carbon technology and energy from renewable sources.

> I think the platform for coal regions in transition currently represents 20 out of 42 coal regions in Europe. And in some regions, it is very clear that the trade unions are active partners in the discussions, e.g. in Germany and in Spain there is an active social partnership. And there was an agreement there a month ago for the coal-fired power plants, which are now being shut down

> there. And these are two very good examples where trade unions are also actively involved and where governments have also actively promoted this. But there are also plenty of examples where the unions are not necessarily sitting at the table. There are different reasons for this. (interviewee, IndustriALL)

In this thesis, it was also demonstrated that the policy officers from unions in the Czech Republic were more sceptically towards the benefits of low carbon technology for employment and for their economies than the unions in the other countries analysed who saw them more as an opportunity to modernise their economies and to maintain a competitive advantage. One of the reasons for the mostly negative stance is the structure of the economy in the Czech Republic with its strong reliance on MNCs and which raises the fear that the necessary investments in low carbon production processes are done elsewhere but not where they would benefit workers in the Czech Republic. In the absence of industrial policies – at best coordinated at European level and that are not solely focused on competitiveness but also social aspects – this could lead to declining social and labour standards and tensions, also between unions when for example, unions in high-wage countries mobilise against the relocation of the production of BEV to regions where wages and labour costs are lower, while the unions in those regions would welcome such investments. Within the interviews, this issue was however not discussed as the European level was mostly seen as providing the necessary funds. However, the policy officer at IndustriALL argued that with the Just Transition Fund as well as the new European Industrial Strategy published in March 2020, there is at least recognition that market instruments alone are not enough to manage the transition in a just and thus successful way. Already Stevis and Felli (2015) show that the focus on competitiveness, as one of the main features of the 'differentiated responsibility and capabilities approach' could prevent effective climate protection in the long run since it is focused on the national level while climate action requires a global response. This can lead to situations as the one that was described by the interviewee from IF Metall, where one oil refinery company faced problems obtaining a permit for producing less carbon intensive oil used for maritime transport. While this could bring down emissions at global level, it could lead to higher emissions in Sweden which was seen as controversial as this could mean that Sweden will not reach its goal of climate neutrality by 2045. Also, the policy officer from USO mentioned that the transition should not be about "who rules the world" but needs to be feasible and above all needs to take into account social aspects and not only ecological or economical ones if it should be successful. Whereas most interviews thus argued that the transition could be a way of improving the competitiveness of economic sectors, they will only support it, if also workers and their communities are protected and if the transition at least does not lead to a worsening of their situation, e.g. as was mentioned by the policy officer from IG Metall, public funds for innovations should be made dependent on whether the company is covered by a collective bargaining agreement, for example. Accordingly, the concept of a just transition has a broader meaning than job protection because it calls for mainstreaming both environmental and social issues into all policy areas and calling for a directional change away from solely concerns for competitiveness. In this sense, it would also be interesting to further examine to what extent and under which conditions unions are cooperating across borders and within international and European forums on fostering a just transition. A few initiatives have already been mentioned, however, an in-depth analysis could yield promising insights as this would to some extent also challenge the competitive-driven view on the introduction of low carbon technologies and the transition towards a climate neutral society.

After this final discussion, the thesis will conclude by drawing attention to the shortcomings of this thesis, to future developments that could affect the just transition towards a climate neutral society, e.g. with regard

to the outbreak of Covid-19 as well by mentioning some aspects that could be interesting to address in future research projects.

6. CONCLUSION

At the beginning of this thesis it was stated that the aim of this research project is twofold: To shed some light on the concept of a just transition and to look into how unions as representatives of the working population and as originators of this concept are understanding it and which strategies they are using to make it a reality. The analysis revealed that in all four countries that were examined, there are already some promising examples of a just transition where also unions are actively involved. Those examples are mostly focused on the energy sector, e.g. phasing out coal and promoting the expansion of renewable energies. In many other industrial sectors, e.g. in the energy-intensive industries such as steelmaking or in the automotive industry, the social effects of the transition are still uncertain, depending for example, on company or political decisions, and thus also union strategies are only developing. Although many interviewees argued that they are trying to become involved in the debate and to present themselves as a progressive and active partner in the process towards a climate neutral society, a lot of strategies that were discussed were still in the beginning or only theoretical. With the proposed European Climate Law, all countries in the EU commit to reach climate neutrality in 2050. In the coming years, as governments adopt measures to achieve this target, also union action may further evolve and thus additional research and insights into how unions are understanding a just transition and how they seek to foster it in different sectors and countries.

As was mentioned in the theory part of this thesis, the biggest weakness of the just transition concept which at the same time is however also its greatest strength is its vagueness. It has been shown that it can be used in a broad sense to draw attention to the need to take into account social issues when transitioning to a climate neutral economy, but it can also be used in a more specific sense to react to local circumstances as was for example, demonstrated by the just transition agreements for coal power plants in Spain. Although all unions in this study are supporting the climate goals that have been agreed at the COP21 in Paris, the concept of a just transition is nevertheless primarily seen from the perspective of labour by ensuring that workers and communities are taken care of, while environmental concerns are only secondary to further social aims. Despite that, a just transition also entails that all relevant actors need to participate in this process; thus, unions are only one, central actor next to companies, politicians and environmental groups.

In order to analyse how a just transition can look like in practice, the examples of just transitions reveal that it is useful to study just transition initiatives at local level, e.g. in a specific region or company. Due to the focus of this thesis on the sectoral and national level, many good strategies could only be briefly mentioned, but it was not possible to address the challenges and opportunities that unions are facing in greater detail. While it was thus possible to show a range of strategies and policies unions are using to foster a just transition, to assess whether the transition really leads to a just outcome can only be assessed on a case-by-case basis. This could be realised in future, probably long-term studies. To this end, the implementation of the German Consensus on Coal as well as the just transition agreements in Spain and the coal phase-out in the Czech Republic could therefore represent interesting research objects. Apart from the conditions at local level, also a supporting policy framework needs to be put in place. This was for example shown in the case of Spain, where the just transition agreements at company and regional level are embedded in a broader just transition strategy at national level. Particularly important in this regard is that the necessary investments and above that, also an industrial policy promoting both technological and social innovations are in place.

Because the effects are often felt in areas that are already facing difficulties, there is the need for public intervention to activate and diversify economic activities.

Finally, with the outbreak of the Covid-19 pandemic, climate change and the transition towards a climate neutral society were pushed out of the headlines, however, as countries are channelling large sums of money into their economies, many voices including those of unions have been calling for a 'green recovery'. Several companies, especially in sectors with a strong international competition are facing difficulties to compensate the decline in orders let alone make the investments in low carbon technology. Therefore, companies receiving state aid should use this as an opportunity to 'green' their production processes. There have been numerous examples of such conditional aids. For example, as was mentioned in this thesis, the Spanish government announced that it helps car producers by offering bonuses for cars with reduced CO2 emissions, while also committing companies to invest in the production of BEV and in the charging infrastructure as well as in skills development of their employees (Government of Spain 2020b). Moreover, in July, the German government announced that it seeks to support steel producers in their switch from conventional to zero carbon steelmaking through investments and the adaption of procurement rules (BMWi 2020). And in many countries, short-term working schemes have been introduced for the first time and special support for groups that are hit particularly hard have been set up. Nevertheless, others have criticised that less than supporting the transition towards a climate neutral economy, state aid is also used to prolong polluting activities. While the crisis has thus pushed the state to play a stronger role both in industrial as well as social policy to cushion the impact of the pandemic, it is still not clear how this will affect climate policies and the transition towards a climate neutral economy. Throughout this thesis, it became clear that for unions to develop just transition strategies, action at political level is crucial, e.g. in Spain and Sweden, governments are actively promoting a just transition towards a climate neutral economy. And in many other countries, governments are currently working on the phase-out of coal and the expansion of renewables. In Sweden, where energy generation is almost fossil free, the government is already directing efforts towards the production of hydrogen and biofuels that could drive forward decarbonisation in transportation and industry. In many ways, the transition is thus still at the beginning. In the coming years, unions will therefore be crucial to ensure that the transition will be ecological, social and democratic.

7. BIBLIOGRAPHY

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APPENDIX

A1: Operationalisation of the research question

Research questions	Dimension	Questions
How are trade unions in Europe fostering a just transition? 1) What are trade unions understanding under a just transition, e.g. regarding the goals that are pursued? 2) Which strategies to they use to achieve a just transition? 3) Which factors are influencing trade unions’ understanding of a just transition and their respective strategies? 4) What are examples of successful transitions from the perspective of trade unions?	Goal of a just transition (Outcome)	1) Relevance 2) Priorities 3) Actors
	Strategies (Process)	4) Instruments 5) Alliances/Cooperation
	Factors influencing strategies (Input)	6) Challenges (internal/external) 7) Chances (internal/external)
	Policies (Outcome)	8) Example of a successful ‘just transition’

Source: Kolde (2020), adaptation LM.

A2: Exemplary semi-structured interview guide

Interview guide, FICA-UGT

General:

1. How important is the topic of climate change for FICA-UGT? For example, in comparison to other concerns of the trade union such as wage bargaining, pensions and health and safety at work?

2. The Spanish government wants to become carbon neutral by 2050. Because this will lead to changes in production and consumption and will affect a lot of workers, trade unions in many countries are demanding that the transition towards carbon neutrality needs to be just. Is this also something that the FICA-UGT demands?

3. If yes, what does FICA-UGT understand under a "just transition"?

4. What are the responsibilities of the Spanish government, regional governments, companies and of trade unions in the process towards a carbon neutral society?

Strategies/Instruments:

5. Last year, the Spanish government signed a tripartite agreement with UGT, CCOO, USO and Carbounión for a just transition of the coal regions. Are you satisfied with the outcome of the agreement? Do you think it could be a role model for other coal mines/carbon-intensive regions?

6. In the agreement, early retirement schemes, vocational training as well as employment in mine reconstruction work is promised to those coal workers who are made redundant as a consequence of the closure of the coal mines. What other measures would FICA-UGT support to foster a just transition?

7. Apart from participation in tripartite bodies, what other strategies would FICA-UGT consider to protect the interests of the working population on the way towards a sustainable economy? For example, strikes, campaigns? Who would be good allies?

8. Not only the greening of the economy, also digitalisation and increasing automatization are impacting on workers. In addition, especially in Spain a lot of people are working in so-called atypical employment. Does the transition towards a carbon neutral economy therefore also raise questions about the future of work and the quality of work in Spain? What does FICA-UGT do to ensure that 'green jobs' are also 'good jobs'?

Challenges/Chances:

9. Do you think that FICA-UGT will be successful in implementing its demands in the context of a just transition? Do trade unions maybe need to develop new capabilities to address challenges such as climate change?

10. To manage the transition towards a carbon neutral economy, some unions call for a stronger role of the state in economic policy and about restoring the equilibrium between labour and capital. In some countries, trade unions have called for the public ownership of the remaining coal mines to better protect workers. Does FICA-UGT therefore see the transition as a chance to also change economic relations? What policies would then be needed?

11. In several coal-mining regions, new low carbon industries need to be built up. To this end, just transition agreements should be set up. Do you think that those agreements would be enough to attract new industrial activity? Would maybe other measures also be needed?

12. Finally, do you have a successful example of a just transition where both emissions could be reduced and workers were given a perspective? (In Spain or in other countries)