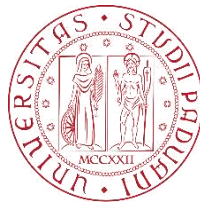


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**Master's degree in  
Human Rights and Multi-level Governance**



**ANALYZING THE REQUIREMENTS OF A  
SUSTAINABLE, WORKER-INVOLVED JUST  
TRANSITION**

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# Abstract

The current climate emergency is one of the most serious threats to our world, with weather events reaching new extremes in recent years, leading to high numbers of weather-related deaths and displacements. Scientific reports call for progressive actions to curb climate change, including the phasing out the use of fossil fuels; as it currently stands, no climate objective set by any government is far-reaching enough to limit global warming to under 2C above pre-industrial limits, as has been deemed necessary by scientists to effectively control the climate emergency. Despite the need to transition away from fossil fuels, it is equally imperative that governments consider the workers and regions who depend on these industries and who will be negatively impacted by their phasing out. This concept – that of ensuring workers’ rights and standards of living are protected during the transition away from fossil fuels – has been referred to in the past decades as “just transition” and has been included in climate legislation such as the Paris Agreement. There is a growing argument, however, that just transition cannot only be transitioning away from fossil fuels. Instead, it must also be transitioning away from how we conduct business in our society, in which we perceive economic growth as the only way forward, even at the cost of our environment and the safety of workers who make economic growth possible. This system and its focus on growth, after all, is a leading factor in how emissions got to their current level. It can therefore be argued that there is no legitimate sustainable path forward, even within “green energy”, without rethinking how our economic model should function. This research seeks to analyze what a “just transition” in the United States might look like under these considerations, and how a true just transition, one that effectively balances and progresses the needs of both a growing climate emergency and labor rights, may be realized.

Keywords: climate change, workers’ rights, just transitions, economic growth, degrowth

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And to my home, Alabama, and all the places that are either overlooked or exploited by those who don't understand their value, for being the motivation and inspiration behind my work. Because your people are hard-working and resilient, but it doesn't mean they deserve the years of exploitation they've been put through. Because your land is diverse and beautiful and isn't just a resource for people to profit from. Because generations to come deserve to live in peace with your nature rather than fight against it, to experience your soil between their toes, the sound of waves crashing along your shorelines and your pine trees waving in the wind. Because your land and your people deserve better than we've been given for years.

*The labor movement was the principal force that transformed misery and despair into hope and progress. Out of its bold struggles, economic and social reform gave birth to unemployment insurance, old-age pensions, government relief for the destitute and, above all, new wage levels that meant not mere survival but a tolerable life. **The captains of industry did not lead this transformation; they resisted it until they were overcome.** When in the thirties the wave of union organization crested over the nation, it carried to secure shores not only itself but the whole society.*

*— Dr. Martin Luther King Jr.*

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# Introduction

## Motivation for this Research and Research Questions

The motivation behind this research stems from an article published in 2022<sup>1</sup> about the Warrior Met Coal strikes in Alabama, United States of America. Miners had been striking for over a year at that point, citing various concerns regarding cuts to benefits, wages, and long working hours. While President Joe Biden has long claimed to support unions and workers as a whole, miners struggled to understand why he had been silent on the 500-day strike. Many pointed to one reason: supporting coal miners would not favor him politically, as he has also made addressing the climate crisis a priority. It is near impossible to confirm the validity of this, but it is nevertheless a sentiment shared among many of these men and women. Upon reading this, it seemed obvious that one can take the climate crisis as the emergency it is, believe that a rapid transition from fossil fuels is needed, and still stand by striking miners in their fights against corporate greed. More than disappointment, reading this raised a question: for those of us who *do* believe a rapid transition is necessary, what are we doing to ensure workers like these miners in Alabama are not left behind? It was this question that led to the field of research around “just transitions”, used to explore exactly this idea.

The Just Transition movement began almost fifty years ago, when Oil, Gas and Atomic Workers union member Tony Mazzocchi began seeing an overlap in the negative effects his line of work had on the environment at large as well as on the men and women who worked personally with these products daily. He began calling for the elimination of jobs that were simply too dangerous for the environment, workers, and society – and in this process, for policies that ensured workers were provided with severance or retirement packages, or some type of transitional pathway for new careers. Over the years, just transitions have been referred to in countless climate action proposals, from local

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<sup>1</sup> (<https://inthesetimes.com/article/warrior-met-coal-miners-strike-democrats-biden-walsh>)



governments to international nongovernmental bodies; most prominently, the 2015 Paris Agreement refers to the need for a just transition.

While the just transition movement was originally rooted within the labor movement, my personal experiences with working-class, blue-collar people in industrial sectors as well as similar reflections in books and articles about places like my home state of Alabama (largely conservative and largely blue-collar, lower- or working-class communities who heavily value desperately needed job opportunities) made me question whether they felt as strongly about eliminating these jobs for the sake of environmental progress as Mazzocchi once did. This led to a first research question:

*What do American fossil fuel workers expect out of a Just Transition?*

In consideration of the continuing climate emergency, a general disappointment has been the disconnect between commitments to address it and measurable actions by countries. Commitments, of course, are only as good as the actions taken to realize them. And yet, despite new promises that seemingly meet the demands of the current emergency, year after year scientists ring new alarms that the emergency is getting worse rather than better. In researching just transitions, it appeared to be largely the same scenario: references to just transitions became more and more commonplace, but it was hard to find a concrete example of one taking place. For the sake of this research, a “true” just transition is defined as one that effectively enacted full transitions from fossil fuel sources, while protecting the livelihoods of workers and providing them with transitional pathways for the future. The following research questions sought to explore a whether an example of a “true” just transition exists:

*What does a Just Transition for fossil fuel workers look like?*

*Are “Just Transition” models of the past enough to significantly combat climate change?*

Just transition discourse is often divided into two groups. The first group generally believe just transitions will be handled best by a pursuit for “green economic growth”, in which market incentives will lead the energy transition and create good, green jobs in the process.

This is the general path taken by international nongovernmental bodies, state governments, and trade unions, as well as some environmental groups. Of the two groups, this can be viewed as the “easier” path; it allows for a just transition under the dominant economic model in the Global North, of whom are largely considered those most responsible for climate change and respectively those most obliged to undergo rapid transitions. The other group, instead, argues that a just transition cannot occur under capitalism. It finds capitalism to be at the root of the climate emergency; moreover, it does not perceive a way of ensuring “good” jobs for workers under the naturally exploitive process of capitalism. This group, then, argues for a reconsideration of our current economic model followed by radical systematic and societal change. This led to a third research question, focuses on the United States as they are both considered the most responsible country for climate change and have one of the most underregulated forms of a free market economy. This research question is as follows:

*How does the current business model affect climate change and, more specifically, how does it hinder a “Just Transition”?*

*What role, if any, does the U.S. government play within this?*

The fourth research question stems from previous questions and seeks to understand the feasibility of a just transition that the first group calls for, one that pursues economic growth through renewable energy. The fifth and final question explores alternative pathways for a just transition that the second group imagine.

*Can a **true** Just Transition occur under the current economic model?*

*If not, what does a **true** Just Transition require?*

## State of Research

The idea of just transitions has been heavily researched and follows numerous paths. Much research highlights the state of just transition policies and legislation in practice across the world, and more realistically, the hurdles in navigating a full transition. As stated previously, just transition research has often either promoted green economic growth as the “simplest” solution or has criticized economic growth entirely as incompatible with climate

legislation. A separate field of just transition research wholly focuses on a worker-led transition, and many interviews have been done with coal miners across countries to better understand their perspective. Others focus on coal-dependent regions as a whole rather than workers themselves, exploring what is necessary to protect regions that would otherwise be left devastated by a transition from coal. These areas of research, however, do not generally address how capitalism and weak social structures have historically harmed fossil fuel workers and coal regions, nor does it address capitalism's role in the climate crisis. Other areas of research focus on capitalism's role in the climate crisis and call for just transitions that reject capitalism. These areas, while acknowledging the effect capitalism has on labor, are generally written from a climate activism perspective and do not address fossil fuel workers specifically. Much research has been done on Global North and Global South relations in the context of just transition, a necessary field given the historical exploitation of the Global South. However, just transition research on inequalities within the Global North is limited.

This research, then, hopes to contribute to the field by highlighting the interconnectedness between much of the existing research. It argues that capitalism's role in both the exploitative conditions fossil fuel workers face and the current climate crisis go hand in hand, and we cannot navigate a just transition without explicitly acknowledging this. It attempts to compare the possibilities of a just transition in various forms of market economies, from the most underregulated to those with strong social systems. It further addresses the goals of its original motivation; to offer coal miners a legitimate voice within just transition, to highlight their own experiences, and to argue that we can support meaningful climate legislation and any workers' fights for better conditions at the same time, regardless of that worker's sector. Even more so, it hopes to tie all of these narratives together by arguing that the baseline for supporting both climate legislation and coal miners is in fact recognizing that they are both ultimately the same fight against a business model that has for centuries seen them as resources to extract from.

## Methodology

This research largely approaches just transition from both sociological and economic perspectives, using research from both fields to set a framework to better understand *why* the exploitation of labor and the natural world occurs within society. Then, the daily business operations in the United States were analyzed under this framework, applying economic and social theories to understand how and why exploitation could repeatedly occur. German social and economic systems were used to compare various forms of capitalism, from the United States' liberal market economy to Germany's social market economy.

While this research sought to highlight worker's voices directly, due to the scope of the thesis on American fossil fuel workers and the research being carried out in Italy, it used secondary research rather than directly conducting interviews. Searches for "just transition" and "oil and gas workers", "fossil fuel workers", and "coal miners" were used to find various surveys, interviews, and statements by fossil fuel trade unions, using only direct quotes from workers.

## Thesis Structure

The first chapter of this thesis provides a general framework for the following chapters. It first explores the state of the current climate crisis in detail, as well as the responsible parties. It then analyzes the history of international commitments on climate change and the progress (or lack thereof) parties have made to achieving these goals, and further explores the reactions from climate activists and scientists to these perceived failures. Finally, it introduces just transition, from its history to its current iterations, and the two diverging perspectives on just transitions mentioned previously.

The second chapter explores the connection between a profit-first business model, climate change, and labor exploitation. It uses the United States as a case study for these relationships, highlighting a complex, interconnected history between the three. It explores how a manner of doing business that prioritizes profit maximization affects everything from

seemingly minor labor violations to devastating industrial disasters. It also considers how this model has effected climate legislation and the general politicization of the climate emergency within the U.S., exploring the fossil fuel industry's influence on politicians and the American public, and its promotion of a "jobs versus environment" argument. Finally, it gives light to the concerns and demands American fossil fuel workers have for a just transition, using quotes taken from interviews, surveys, and labor union statements.

The third chapter draws from the German model to compare a difference in economic and social structures within market economies. It highlights how German labor and environmental regulations differ from those in the United States, and the effects this has had on German workers. It further explores Germany's Ruhr energy transition, which has been promoted within just transition research and a model for other countries. It evaluates whether this transition does in fact meet the two requirements of a just transition as defined in the previous section, and how Germany's current transition in its Lusatia region is progressing.

The fourth and final chapter explores the two diverging pathways of realizing just transitions. It first analyzes and evaluates current energy plans that focus on economic growth and rely on market incentives, finding many of the same concerns addressed in the second chapter under U.S. capitalism. It then explores the arguments of the second group, those who argue that the current crisis requires us to reconsider this business model as a whole, in depth. It introduces the concept of degrowth, one which calls for a change of focus from economic growth to quality of life as a measure for human development. It then explores how the two parties of a just transition, labor and environmental movements, can reconcile the tensions explored in the second chapter, and how this reconciliation may be a tool for confronting the business model that has harmed them both. Finally, it explores whether Ruhr transition policies may still have a place within a just transition that rejects a business model focused on profit maximization and economic growth.

# Chapter 1

## Introduction

Climate change has been a central topic amongst world leaders, politicians, scientists, economists, and activists for some years now. It has highlighted how interconnected and dependent countries are on each other, calling for a global solution. Moreover, recent world events have proven how far-reaching the effects of climate change are and, simultaneously, how even seemingly unrelated actions contribute to the emergency. Reports on Russia's invasion of and continued attack on Ukraine have addressed the high level of polluting emissions it has caused and will continue to cause in future rebuilding efforts (Paddison 2023); others have argued that as wild animals are forced out of changing and disappearing ecosystems, public health emergencies such as the COVID-19 pandemic may become more prevalent (Gupta et al., 2021). Climate change has further shown to affect and destabilize economies and migration and extreme weather threatens crops, livestock, and infrastructure. In light of a growing climate crisis, calls for immediate and significant action have become more and more frequent.

This chapter seeks to explore the current climate emergency in greater depth, from its root causes to its most devastating effects. It analyzes the most recent scientific reports on climate change, as well as the response from intergovernmental organizations. It then introduces the concept of “just transition”, which confronts the “jobs versus environment” argument (wherein opponents of climate action highlight the need to protect the jobs of workers in the fossil fuel sector) by suggesting the protection of both can be guaranteed. It further highlights this history of just transition within labor movements, as well as its recent emergence in the mainstream international political sphere. Finally, this chapter presents the argument by some that despite world leaders often suggesting a just transition can occur within “green economic growth”, a true just transition cannot exist without reconsidering capitalism altogether – an argument that will then be fully explored in later chapters.

# 1. Current Status of the Climate Emergency

## 1.1 Climate Change

Climate change, or the “long term shift in temperatures and weather patterns” has been acknowledged as one of the greatest threats to our world for some time. Despite the climate having fluctuated naturally in the past, human activity has been the main driver of climate change for the past 200 years. Our actions have caused the global surface temperature to rise by 1.1 degrees Celsius from 1850-1900 to today, increasing “faster since 1970 than in any other 50-year period over at least the last 2000 years” (Calvin et al. 2023:42). Global warming has led to an increase in volatile weather, including longer droughts, more intense storms and flooding, wildfires, sea level rise, and “decreasing biodiversity” (Nations, n.d.). Scientists have warned that in order to mitigate the current crisis and prevent deterioration, countries must commit to limiting global warming to 1.5 degrees higher than what they were at the start of the Industrial Revolution. Current behavioral trends, however, forecast a warming of 2.8 degrees by the end of the century (Nations n.d.).

## 1.2 Extreme Weather

Weather extremes over the past few years have shown the very real, life-threatening effects of climate change. 2015-2022 were the warmest years in a 173-year period (World Meteorological Organization, 2023). During an intense European heat wave spanning the summer months of 2022, Great Britain saw historical record highs of 40 degrees, and over 15,000 heat-related deaths were recorded in the European region. China and South America also saw record heat waves, with China’s being the “most extensive and long lasting” in the country’s record. Droughts and wildfires were significant across much of the world, with Europe experiencing its second worst “wildfire season” in 2022 and droughts causing \$22 billion in economic losses for the United States, as well as economic losses and food insecurity in Greater Horn Africa (European Commission, 2023).

Record rainfall in Pakistan caused widespread flooding, resulting in 1,700 deaths, displacing around 8 million people, and totaling \$30 billion in economic losses (World Meteorological Organization, 2023). 270 deaths in Brazil were recorded from two landslides. Subtropical depression Issa caused 400 deaths in South Africa, and Hurricane Ian caused 152 in the United States. Tropical storms Megi and Nalgae caused over 350 deaths combined in the Philippines. In the United States, an intense cold outbreak in late December 2022 also caused “significant loss of life”. Iceland’s winter was its coldest since 1973, and Chile had its second-coldest winter on record.

The IPCC, in their most recent report published March 2023, has warned that global warming will get worse in the near future, and that it is “more likely than not” that we will reach 1.5 degrees. The weather extremes seen over the previous year are likely to intensify, with “very wet and very dry weather and climate events and seasons” becoming more common. The months following the report’s publication have seemingly confirmed this warning. In May 2023, northern Italy experienced six months of rainfall over a 3-day period, causing extreme flooding and landslides and leaving 36,000 without homes (Hughes, 2023). While the underlying causes of the disaster are many – with authorities blaming poor infrastructure – both the droughts of 2022 and the unprecedented rainfall can no doubt be connected to changing weather patterns highlighted by the IPCC report. In August 2023, Hawaii experienced the deadliest wildfire in the United States in over 100 years. As of writing, 115 people are confirmed dead and just under 300 are still reported missing. Over 2,000 are in emergency shelters after having lost their homes. Again, the wildfires cannot be blamed entirely on climate change; local authorities have accused power companies of the “mismanagement of power lines” that started fires (Hassan, 2023). Still, climate scientists look to unusually dry conditions combined with the winds from passing Hurricane Dora to explain the increase in wildfire land coverage, with wildfires burning “four times the amount of area than in previous decades” (Milman, 2023b).



### 1.3 Vulnerable Populations

While extreme weather is becoming more and more frequent in every continent across the globe, its effects are more devastating for particularly vulnerable populations. The International Panel on Climate Change finds around “3.3–3.6 billion people live in contexts that are highly vulnerable to climate change” (Calvin et al. 2023:51), specifically those in the Global South, as well as indigenous and low-income populations around the world. It also finds that these people are 15 times more likely to die from extreme weather events compared to less vulnerable regions. 2.3 billion people experienced food insecurity in 2021, a problem exasperated by weather events such as flooding and droughts.

Millions of people have been internally and externally displaced from weather events, among them Ethiopian refugees who were living in Somalia and Afghan refugees living in Pakistan, now twice displaced (World Meteorological Organization, 2023). The number of “climate refugees” is expected to rise in following years; predictions suggest one billion people could become climate refugees by 2050 (Ida, 2021). With the European Union already seeing significant increases in migrant arrivals from previous years, coupled with the current lack of protections or legislation regarding climate refugees, this growing number of migrants will only further exacerbate the current crisis (Özdemir 2023).

While increased susceptibility to climate change is especially true for communities within the Global South, climate-resilience inequalities exist within the Global North as well. As hurricanes along the Gulf Coast in the United States become stronger and more frequent, low-income communities disproportionately suffer. After Hurricane Harvey caused immense flooding in Houston, Texas, research found that low-income housing was more likely to be located in flood-vulnerable areas (Lazetic & Jacobsen, 2021). Furthermore, unexpected costs associated with preparing for a hurricane (such as power generators and canned food) as well as with evacuating a hurricane zone (such as gasoline, food expenses, and hotels) are often too heavy a financial burden for low-income residents. These residents are then more likely to stay in their homes, where they are highly exposed to the most dangerous impacts, including flooding, life-threatening winds, power outages and subsequent heat (Horn-Muller, 2022).

## 1.3 Responsibility for the Climate Emergency

### 1.3.1 Responsibility of Countries

The discourse surrounding which countries are most responsible for the current crisis has been, at times, complex. In recent years, China has been the largest emitter of carbon dioxide, contributing more than 25% of global emissions in 2017, with the United States following at 17%. In the same year, the 28 European Union countries were responsible for 9.8%, while South America and Africa contributed only 3-4% each (Ritchie et al., 2020). However, many argue that to fairly attribute responsibility, we must also consider who has emitted the most historically, beginning with the Industrial Revolution. In doing so, we find that the United States is responsible for 25%, the EU countries for 22%, and China falling to only 12.7%. South America and Africa are still only responsible for about 3% each (Ritchie et al., 2020).

Others argue that we must consider per capita emissions, because it is unfair to place responsibility for higher emissions on a country that has a significantly higher population. For example, although India surpassed the EU in greenhouse gas emissions in 2019, when populations are taken into consideration, India has lower emissions per capita (Vigna & Friedrich, 2023). When considering per capita emissions, we see smaller countries move up significantly. In 2019, for example, the Solomon Islands were the largest emitter per capita, with Qatar following as second. Of course, responsibility for global climate change cannot be placed on countries like the Solomon Islands, who despite having a large emission per capita, still emit significantly less than most countries. It can, however, be helpful to take into consideration when analyzing a country like India, who has been viewed as a new “high emitting” country, but also has the second largest population in the world. When we look at the ten highest emitters’ per capita emissions, Russia moves to second place, behind the United States. Despite this, the United States, Russia, the EU, and Brazil have all lowered their per capita emissions from 1990 – a sign that progress is possible, although there is significantly more to be done.

Regardless of whether we look at current, historical, or per capita emissions, it remains true that there is a distinct gap between emitters. “Least developed countries” emit up to forty times less than “developed” countries (Stoddard et al., 2021). And, despite variables, we find the United States among the top emitting countries. Moreover, despite this fact, the United States has a contradictory history of international climate commitment. In 2001, President George W. Bush withdrew from the Kyoto Protocol, and President Trump withdrew from the Paris Agreement, both considered key international climate agreements to reduce emissions (Phillipson, 2001). Deserving or not, the United States has a long-held reputation as the somewhat “leading” the world, and it can be argued that the country often sets trends for the world. If this is true, then there is even more responsibility on the United States to set a clear precedent that countries must act, and act now, to prevent the increasingly likely climate catastrophe experts have warned about.

### 1.3.2 Fossil Fuel Sector

Fossil fuels – coal, oil, and natural gas – are “the largest source of anthropogenic greenhouse gas emissions in the world”, contributing almost 70% of GHG emissions in 2015 (Griffin 2017). Moreover, just 25 public and private entities are responsible for over half of global emissions. Fossil fuel emissions from 1988 to present day are greater than emissions from the start of the Industrial Revolution to 1988, a time period that spans over 200 years, despite the creation of the IPCC in 1988. In 1950, 6 billion tons of CO<sub>2</sub> were emitted; today, we emit over 34 billion (Ritchie et al., 2020). Coal “supplies a third of all energy worldwide” and is the “biggest single source” of global warming (Nunez, 2019). Crude oil, used to make gasoline and diesel as well as many plastics, contributes to around one third of emissions worldwide, while natural gas accounts for one fifth. The IPCC report found that the “largest share and growth in GHG emissions” came from fossil fuels (Calvin et al. 2023:4). The responsibility of the fossil fuel industry bears for the current crisis is much deeper than their share of emissions alone; they have for decades fought scientific reports on climate change to promote the continued use of their products, despite their effect on the environment and society at large. The full extent of their efforts, as well as their effects on delaying climate action, will be discussed in Chapter 2.

## 1.4 Addressing the Climate Crisis

### 1.4.1 History of International Commitments to Combat Climate Change

The first World Climate Conference was held in 1979, with one of its main conclusions being that the countries of the world needed “to foresee and prevent potential man-made changes in climate that might be adverse to the well-being of humanity” (Zillman, 2015). To address this, the World Meteorological Organization (WMO) established the World Climate Programme, whose objective was to study climate change and its effects. Less than ten years later, in 1988, the Intergovernmental Panel on Climate Change met for the first time. In the years following, the IPCC publishes an annual report on the current climate situation and what actions they find necessary to combat further exacerbation of the emergency. The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992, with Parties acknowledging “that change in the Earth’s climate and its adverse effects are a common concern of humankind ... that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases ... and that this will result on average in an additional warming of the Earth’s surface and atmosphere and may adversely affect natural ecosystems and humankind” and committing to “protect the climate system for present and future generations” (“United Nations Framework Convention” 1992). A Conference of the Parties (COP) is held every year, starting in 1995, in which Parties submit their nationally determined contributions (NDCs) to reduce global emissions, review their efforts to implement the UNFCCC and “take decisions necessary to promote the effective implementation”.

The UNFCCC is complemented by the Kyoto Protocol and, more recently, the Paris Agreement. The Kyoto Protocol bound industrialized countries to limit their emissions, and was replaced in 2016 by the Paris Agreement, which built upon the Kyoto Protocol and committed Parties to limiting emissions sufficiently to ensure the global temperature stays below 2 degrees higher than what it was before the Industrial Revolution. The Paris Agreement also replaced a \$100 billion goal set during COP16; this “climate fund” would be financed by developed countries in order to assist developing countries in meeting their climate targets (Maslin et al., 2023). As of January 2021, 195 countries had signed and 190

ratified the agreement, with the United States notably withdrawing in 2017 under Donald Trump and reentering in 2021 ("Paris Agreement").

The UN 2030 Agenda for Sustainable Development, adopted by all Member States in 2015, includes 17 Sustainable Development Goals (SDGs), many of which are targeted towards or include addressing climate change. Goal 13, Climate Action, more specifically states “take urgent action to combat climate change and its impacts”, while 2 goals address protecting “life under water” and “on land”, 3 support sustainable cities, consumption, and energy, and 2 (zero hunger as well as good health and wellbeing) address issues that climate change has been proven to exacerbate ("The 17 Goals").

#### 1.4.2 Assessing International Progress on Paris Agreement Commitments

Despite these international commitments, the most recent Emissions Gap Report finds most countries' NDCs to be “highly inefficient”, and furthermore, no country is currently projected to meet these commitments. We are on track to see 2.8 degrees increase by the end of the century; even if all NDCs are implemented, we would see 2.4. The report further finds that there are no clearly stated policies or NDCs that would meet a net-zero commitment by 2030. Even more concerning, global emissions have seen an increase from previous years. CO<sub>2</sub> levels from 2021 to 2021 saw an equal rise from 2019 to 2020, but still higher than any year in the previous decade (World Meteorological Organization, 2023). Methane increases were the highest on record from 2020 to 2021. A 2019 United in Science report found commitments would have to be “at least tripled and increased by up to fivefold” to meet the Paris Agreement goal of keeping global warming under 2C (Morton, 2019).

The most recent IPCC Report finds that developing countries are struggling to transition to “low-emission technologies”, in part because they lack the financial resources to do so, largely due to developed countries failing to meet the \$100 billion fund target (Calvin et al., 2023). Of course, it is not just developing countries who are failing to meet their NDCs – the European Union stated in 2018 that all of its countries had “fallen behind” on meeting theirs, with Sweden making the most progress, reaching 77% of their 2020 targets (“Paris

Agreement”). To address their shortcomings, Member States have often followed up by strengthening their goals – despite having failed to meet them as is. The UK, EU, and China all increased their goals leading up to COP26, and the U.S. notably rejoined the Paris Agreement before the conference (Maslin et al., 2023). COP27, hosted in Egypt in November 2022, was heavily viewed as a failure to enact any necessary new commitments, including India’s push to phase down “all fossil fuels” (Slavin & Slavin, 2022).

## 1.5 Critique of International/Political Climate Goals

Despite an increase in recent decades of climate action declarations, commitments, and agreements among the international political community, climate scientists and activists have often criticized them for not including concrete measures and failing to achieve any significant results. James Hansen, whose 1988 Senate testimony is considered the “first high-profile revelation of global heating”, has expressed frustration with politicians for not being “capable of a more intelligent response” (Milman, 2023a). Some scientists have gone even further, calling for a “moratorium on climate change research” in response to what they consider a ruptured “science-society contract”, whereby governments and leaders have failed to respond appropriately to scientific evidence of climate change (Glavovic et al., 2022). Activists have largely reacted with the same disappointment and calls for radical action in recent years. Greta Thunberg, a climate activist from Sweden, condemned UN Members at the 2019 Climate Action Summit, calling their failure to act a “betrayal” and citing the shortfalls of current action plans for “pretending [climate change] can be solved with technical solutions and ‘business as usual’” (Chappell, 2019). This sentiment is shared among many climate activists, with groups and movements such as Extinction Rebellion and Fridays for Change (started by Thunberg) calling for significantly more progressive actions to meet the emergency. Resentment among activists have led to “radical direct action”; in recent years, these have included activists gluing themselves to roads and throwing soup on famous paintings (Maslin et al., 2023).

As detailed in the previous section, these criticisms are well supported by the recent IPCC report. International commitments, despite falling short of what research deems necessary,

have not been met. Despite countries having made some progress, this progress has been too slow to meet Paris Agreement goals, and as a result the crisis has rapidly worsened rather than improved. Politicians routinely refer to global warming as an “emergency” and an “existential threat” but have fallen short of taking the radical actions necessary to manage an actual emergency. In a speech announcing the new IPCC report findings, Antonio Guterres, UN Secretary General, accused “governments and business leaders” of “saying one thing, but doing another” (“Secretary General Warns”, 2022). And so, while politicians and states are able to position themselves as dedicated to combating this catastrophe, their commitments often result in being nothing more than “just nice words” (Milman, 2019).

Despite what politicians’ actions or lack thereof may indicate, there is no doubt that the world is in fact experiencing a climate emergency. We have already seen the devastating effects over the previous year, and they will continue to deteriorate. The IPCC report makes clear that in order to avoid the worst consequences of climate change, we must reach net zero emissions, and do so soon. It further finds that “[estimates] of future CO2 emissions” from the fossil fuel industry will exceed 1.5 degrees warming. While, of course, preventing future warming is not limited only to an energy transition, as the leading contributor to global emissions, there is no way forward without phasing out fossil fuels.

## 2. Just Transition

The argument for transitioning completely from fossil fuels remains unpopular, as evidenced by parties’ failure to include a commitment to phase out “all fossil fuels” during COP27. As the debate over when and how to transition becomes more and more central, opponents argue that if we are to phase out an entire sector, we will be left with a significant number of displaced workers. In response, climate action policies have begun using the term *just transition* to confront this truth. Just Transition has generally been used to represent the idea that climate action must be fair and inclusive and ensure that policies navigate an energy transition in a way that addresses potential consequences, “leaving no one behind” (“Frequently Asked Questions” 2021). Just transition then calls for the

protection of would-be displaced workers throughout this process, generally proposing various alternatives are made available to them as their current jobs disappear. Over time, the phrase has also been used to broadly address various forms of ‘climate justice’, often to refer to the significant disparity between how climate change impacts the Global North and South, and generally to include specific vulnerable communities who are harmed more directly by climate change itself rather than the transition away from fossil fuels.

## 2.1 History of Just Transition

The just transition movement finds itself strongly rooted within the labor movement. The concept is generally credited to Tony Mazzocchi, a member of the Oil, Chemical and Atomic Workers’ Union in the United States. In the 1970s, he called for jobs that were “too detrimental to workers, society and the environment” to either be “scrapped” or be “replaced by automation” (Morena, Krause, and Stevis 2019:9). He led the first “environmental strike” at refineries in the U.S. over this issue. Over the 1970s and 80s, the intersectionality between environment and workers became more prevalent. In 1995, Les Leopold and Brian Kohler introduced a “superfund for workers” that would provide industrial workers with (1) wage and benefit replacement until retirement or rehire, (2) paid tuition plus a stipend for vocational or college education, (3) an allowance for the post-graduation job search period, and (4) “relocation assistance” (Morena et al., 2019). As will be analyzed in later chapters, these proposals can be found in German just transition policies of the past and are also proposed currently by the United Mine Workers of America union. In the years following, just transition “sought to bridge the gaps between workers, environmentalists and communities” (Morena et al. 2019:11). International trade unions began arguing the need for a just transition, including the International Confederation of Free Trade Unions’ call for one at the 1997 COP. Over time the movement was “globalized”, largely in part thanks to national labor unions, and the need for a just transition has become a fundamental part of most unions’ positions on climate action.



## 2.2 Just Transition in International Organizations and Politics

As calls for climate action have grown, so have calls for a just transition to be embedded within climate action. In light of this, references to just transition have become more common. The International Labour Organization (ILO) published a Just Transition Agenda in 2013, and the Paris Agreement includes “taking 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” (“Adoption of the Paris Agreement”, 2015:90). Two of the Sustainable Development Goals, eight (decent work and economic growth) and thirteen (climate action) directly respond to the concept (“The 17 Goals”). The Paris Agreement’s inclusion of the term has been credited for its “mainstreaming in the UN space” in the years following. COP24, hosted in Poland in 2018, has been referred to as the “Just Transition COP”, including an “Ambition and Just Transition Day” as well as the “Solidarity and Just Transition Silesia Declaration” (Morena et al. 2019:1).

As just transition has become a central component of climate action discourse among politicians and state actors, governments have begun to design just transition policies at regional and state levels. Various Just Transition policies exist among North America, Europe, South Africa, New Zealand and Australia (Heffron, 2021). The European Union has launched a Just Transition Fund of 17.5 billion euros, available to all EU countries but prioritizing countries more dependent on fossil fuels as well as those with higher financial needs (“Just Transition Fund”, 2020). Some countries have had relative success with just transitions. Germany’s Ruhr region experienced a transition from hard coal beginning in the 1960s as the sector faced economic decline; this transition, while not rooted in the need for climate action, is often viewed as a model for other countries to follow (Furnaro et al., 2021). Considering this, the policies and programs of this transition will be analyzed in-depth in Chapter 3.

## 2.3 Just Transition and Capitalism: Compatible or Mutually Exclusive

Within intergovernmental organizations and state governments, this transition is often paired with talks of “green” or “sustainable” growth – an argument that the phase out of

fossil fuels can even be a tool for new economic opportunities. For example, while many of the Sustainable Development Goals include aspects of climate action, SDG 8 focuses on “sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all” and a “green economy” (“The 17 Goals”); Article 10 of the Paris Agreement also references the necessity of economic growth (“Adoption of the Paris Agreement”, 2015:103).

Critics of this line of thinking argue that a continued focus on growth is the same capitalistic mindset that has historically exploited both the environment and the health and safety of workers for the sake of profit, and that this in and of itself is incompatible with just transition. Recalling that just transition is rooted in the labor movement, the “mainstreaming” of the concept by intergovernmental and governmental organizations risks “[separating] it from the frontline communities and labour unions that originally developed it” (Morena et al. 2019:5). By framing just transition as something that could aid economic growth, they put these very communities and workers once again in the shadow of capitalism and its incessant need for *more*.

And so, ‘just transition’ finds itself between two very different definitions: “a modest claim for jobs in the ‘green economy’” and “a radical and alternative global vision that replaces extractive capitalism” (Bainton et al., 2021). Nevertheless, one can find two main overlapping objectives of *any* so-called “just transition”: 1) address the environmental damage and global warming caused by polluting industries and 2) ensure fair and decent work is guaranteed for all affected by the first objective. What then must be considered is whether or not these two objectives can fully be realized under an economy and social structure molded by capitalism, which will be fully explored in Chapter 4.

## Conclusion

In light of the climate emergency, it is imperative that world and state leaders find a just transition mechanism that progresses climate action and ensures no person is left unfairly carrying the burden of that transition. Doing so entails a number of considerations that the following chapters seek to address. First and foremost, world leaders must fully

acknowledge how we found ourselves in this current crisis. Is the blame entirely on raw materials such as fossil fuels themselves, or is it, as critics have suggested, the fault of our economic model under capitalism? Any attempt to design policies without first understanding what must be avoided moving forward will fail.

Additionally, there is no way to offer a “just” transition without the inclusion of those who will be most affected. What are their concerns regarding the phase out of their industry? What are their demands for a transition? Ensuring workers have a voice in the development of policies is the most significant manner of ensuring their part in any just transition – the guaranteed protection of their livelihoods and of transitional paths – is fulfilled. Finally, leaders must consider what is needed to fulfill the other half of a just transition, that of ensuring substantial progress on achieving the objectives of the Paris Agreement. We understand what we are transitioning from, but it is equally essential that world leaders are clear in what we are transitioning to – and whether or not it can operate within the necessary limits of the environment. Anything short of this, any “just transition” that shuts an entire sector without ultimately resulting in concrete climate action, will only contribute to both the further exacerbation of this emergency and inequalities already felt by those most vulnerable communities. Chapters two, three and four will seek to explore these ideas in depth, to fully explore how a true just transition may be realized.

# Chapter 2

## Introduction

Chapter 2 seeks to address two of the research questions, the first being: how does the current business model affect climate change, and further, how does it hinder a just transition as defined in Chapter 1? To answer this, we must first understand the relationship between capitalism, workers' rights, and climate change. As such, Chapter 2 seeks to address this relationship; more specifically, it analyzes free market capitalism in the United States and argues that it has historically allowed industry to exploit both workers and the environment, prioritizing profits. While it goes without saying that this system effects industries well beyond the fossil fuel sector, for the scope of this research, this chapter will focus on the American fossil fuel sector specifically.

This chapter will further explore how fossil fuel's desire to maximize profits has led the industry to spend millions of dollars on influencing climate change discourse for decades, and how their successes in doing so have had far-reaching consequences on the overall debate surrounding climate change in the United States. It addresses how their "what about jobs" argument has been used to target politicians and citizens alike, how they have managed to unroll governmental environmental regulations, and how they have influenced the United States' position on climate action on the international stage.

Finally, it addresses a second research question: what do American fossil fuel workers expect out of a just transition? Analyzing interviews and surveys of fossil fuel workers, as well as news articles and press releases on the United Mine Workers of America's website, it explores their concerns and proposals. While trade unions and workers have often been viewed as a hindrance to effective climate progress, it is important to recognize that many of them have personal lived experiences with the devastating effects of shuttered industries and fear a repeating cycle with the phase out of fossil fuels. Moreover, these men and women also have personal, lived experiences working in an industry that values profit above their wellbeing. Their first-hand experiences offer valuable insight as to the harmful

practices by government and industry that must be acknowledged when designing just transition policies.

## 1. Profit Above Everything

While we cannot place the blame for the current climate catastrophe entirely on specific industries, it is true that the emissions that come from the fossil fuel industry are largely responsible, accounting for almost three-fourths of greenhouse gas emissions (Griffin, 2017). But it is also true that the manner of production under their current business model exacerbates this problem, a model focused on continued economic and industry growth at the expense of our people and our planet.

Under free market capitalism, maximizing profits is prioritized, which in turn means cutting costs. The implications of this are far-reaching and go well beyond the scope of this research. Nevertheless, the two counterparts of a just transition – labor and the environment – find themselves interconnected under free market capitalism, wherein the latter views both as expendable resources used to generate profit. And, in its never-ending need for growth, it has often pushed them beyond their natural limits. This has had devastating effects: heavy workloads on individuals, replacement of employees with automation, union busting, employee intimidation, calculated decisions to skirt safety and environmental regulations, governmental lobbying for less stringent regulations, and resulting workplace disasters, all of which can often be traced back to the objective of cutting production costs to maximize final profits. The following sections will explore these effects in further detail, in order to generate an understanding of how far-reaching and grave the consequences of a profit-above-everything system have been.

### 1.2 BP Oil Spill

On April 20th, 2010, an explosion at the Macondo Prospect well and Deepwater Horizon oil rig, located in the Gulf of Mexico, killed 11 men, and over the following months, would go on to spill 4 million barrels of oil into Gulf water (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011). It was the worst environmental

disaster in the history of the United States of America. The Deepwater Horizon mobile rig was owned by Transocean, and operated by BP, with Halliburton Energy Services providing “cementing and mud logging services” (*Findings of fact and conclusions of law phase one trial: United States of America v. BP Exploration & Production, Inc., et al*, 2014). All three companies would later be found guilty of the disaster.

The oil spill was devastating to the Gulf Coast. Thousands of animals suffered and were killed. A study in 2013 found “roughly half [of dolphins in Barataria Bay, Louisiana] were extremely sick”, their illnesses all linked to oil exposure (“Deepwater Horizon...” 2023). It was considered “the largest mortality event to occur in the Gulf of Mexico”. One study found “up to 800,000 birds were thought to have died” and four years after the spill, the Ecosystem Impacts of Oil and Gas Inputs to the Gulf research group found that despite “some ecological recovery of oiled areas of the seafloor ... detectable oil levels in sediment cores remained the same” (“Deepwater Horizon...” 2023). The National Oceanic Atmospheric Administration declared it the “largest and longest marine mammal unusual mortality event ever recorded in the Gulf of Mexico” (NMMF, 2017).

On May 21st, 2010, one month after the spill, President Barack Obama established the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling to investigate the events surrounding the explosion. The commission released its final report in January 2011, concluding

“(1) each of the mistakes made on the rig and onshore by industry and government increased the risk of a well blowout; (2) the cumulative risk that resulted from these decisions and actions was both unreasonably large and avoidable; and (3) the risk of a catastrophic blowout was ultimately realized on April 20 and several of the mistakes were contributing causes of the blowout.” (2011:115).

For years leading up to the event, BP successfully lobbied the Minerals Management Services (MMS), the governmental body responsible for overseeing and regulating drilling operations, to allow for more lax regulations (Ladd, 2012). During these same years, BP was responsible for multiple events that highlighted the need for more, rather than less, stringent surveillance. Between 2007 and 2010, the company was responsible for almost

half of citations by the Occupational Safety and Health Administration (OSHA); in 2005, an explosion at one oil rig in Texas killed 15 workers and injured another 180, and the following year, “two massive BP oil leaks erupted in Alaska due to corroded pipelines, despite repeated warnings by workers and midlevel managers” (Ladd 2012). In all three instances, preliminary investigations found BP at fault. In the first case, BP paid a \$50 million fine. In the second case, BP faced a misdemeanor charge and \$20 million fine. BP had earned a reputation among government agencies such as OSHA and the Environmental Protection Agency (EPA), as well as its employees, for its culture of skirting safety regulations.

The Deepwater Horizon explosion was caused by a number of erroneous decisions. The first contributor was the crew’s decisions to continue their plan of drilling to 22,000 feet, despite being outside of the safe drilling margins set forth by the regulatory body. An expert testified that this decision was “one of the most dangerous things [he] had ever seen in [his] 20 years’ experience”; the Court additionally deemed it “motivated by profit” (Barbier 2014:19)). The Court found other decisions, such as BP’s decision to skip a cement bond, evidence of “a desire to save time and money, rather than ensuring that the well was secure” (Barbier 2014:50). On the day of the explosion, unusual readings on pressure tests should have alerted operators something was wrong; instead, they deviated from standard operating procedures, directly contributing to the explosion. The Court further found these unusual readings were the result of a clog caused by BP using materials which differed from industry standards in order to cut costs.

### 1.3 Upper Big Branch Mine Disaster

The same year, just 15 days prior to the Deepwater Horizon oil spill, a coal dust explosion at the Upper Big Branch coal mine in Montcoal, Virginia killed 29 mine workers. A Report to the Governor submitted by the Governor’s Independent Investigative Panel in May 2011 found, similar to the events that preceded and ultimately led to the BP Oil Spill, there was a “normalization of deviance” – or “a gradual process through which unacceptable practices or standards become acceptable” – from appropriate safety standards within Massey Energy

and Performance Coal, the companies which operated the mine (McAteer et al. 2011:97). It blamed this normalization for numerous dangerous situations within the mine, all of which directly led to the explosion and deaths of these men.

Many employees at Upper Big Branch, along with relatives and friends of the deceased miners, testified that there was a significant, ongoing ventilation issue within the mine. An ex-employee and neighbor of Gary Quarles, who died in the explosion, recalled a conversation he had with Gary days before the disaster, in which Gary says “Man, they got us up there mining, and we ain’t got no air... Every day, I just thank God when I get out of that coal mines that I ain’t got to be here no more... I’m just scared to death to go to work because I’m just scared to death something bad is going to happen” (McAteer et al. 2011:15). Another employee called the situation “a ticking time bomb”. Gina Jones, the wife of a foreman killed in the explosion, said her husband complained multiple times to mine superintendents and the President of Performance Coal Company about the ventilation problem. After her husband once stopped work due to “lack of air”, the President threatened to have him fired if he didn't restart. An electrician in the mine said these problems were “very common knowledge” (McAteer et al. 2011:59).

And it wasn't only employees who were aware of ventilation problems. In 2009, the year prior to the explosion, “Upper Big Branch was cited every month ... 64 citations in all (57 from MSHA [U.S. Mine Safety and Health Administration], seven from the state) – for failure to ventilate the mine according to the approved ventilation plan” (McAteer et al. 2011:60). In January of 2010, an inspector found officials at Performance Coal had instructed a foreman to ignore citations. A well-ventilated mine would have cleared lethal gases that “triggered the explosion (McAteer et al. 2011:23-24).

A second “normalization of deviance” found in their investigation was a routine lack of proper rock dusting, which is considered “one of the most basic elements of safe mining” (McAteer et al. 2011:98). One of the two rock dusters testified that he had had no formal job training, and that in the days leading up to the explosion they were informed they were applying the rock dust incorrectly. He also stated he was frequently asked to do other jobs,



with one miner saying, “we hardly ever seen them because they were always doing other things instead of rock dusting like they should have been” (McAteer et al. 2011:52).

Once again, these failures were well-documented by inspectors. From March 10th to April 4th (one day before the explosion), there were 561 notations that conveyor belts needed dusting; in that same time period, only 65 dustings were carried out - or 11.6 percent. MSHA lab examinations of dust samples found that “78.92 percent were out of compliance with the federal standard” (McAteer et al. 2011:53). Furthermore, “In the 15 months preceding the disaster, UBB received citations from federal or state inspectors every month but one for rock dust issues”. The failure to properly rock dust the mine is especially tragic considering the investigative panel’s words: “had coal dust not been a factor in the explosion, the damage at Upper Big Branch might well have been contained to the longwall area. The victims on Headgate 22 were located about 0.75 miles from the longwall. The victims on the mantrip at 66 break were found approximately 1.15 miles from the longwall face” (McAteer et al. 2011:55).

Employees’ reported attempts at addressing these failures often led to threats of being fired, suspensions, and harassment. Foreman Brian Collins was suspended for 3 days by Vice President Jason Whitehead, for halting production – of his crew only – for about an hour while ventilation issues were addressed. Stanley Stewart, a miner who survived the explosion, testified in court that there was a “code of silence” among miners, along with “an element of fear, intimidation and propaganda working there ... we knew if we didn’t [produce], we would be fired, or they would harass you until you quit” (Marra, 2015). The United States allows for “at-will” employment, meaning workers can be terminated for any reason – however, the retaliation for reporting dangerous working conditions is specifically excluded. Nevertheless, in practice, research finds that employees do not fare well in these cases, with only 11% of contracts being restored (Spieler 2014). As such, the threat of employment termination is commonplace.

In April 2016, Don Blankenship, the CEO of Massey Energy at the time of the explosion, was found guilty and sentenced to one year in prison and fined \$250,000 for “conspiring to violate federal mine safety laws” (Marra, 2016). Prosecutors stated Blankenship ran the

company as a “lawless enterprise”. Additionally, in 2013, superintendent Gary May was also found guilty of conspiracy after admitting he “[ordered] a company electrician to disable a methane monitor on a mining machine so it could continue to cut coal without automatic shutdowns” (Berkes, 2013). He was sentenced to 21 months in prison and given a \$20,000 fine. David Hughart, former executive at the company, was sentenced to 42 months in prison for conspiracy charges, admitting he was “part of a corporate conspiracy to evade surprise mine safety inspections by giving advance warning to miners underground”.

The reason for this disaster was made clear both in the investigative report and in their trials – “Massey exhibited a corporate mentality that placed the drive to produce above worker safety” (McAteer et al. 2011:99). Massey officials have said “both the number of violations issued against the company and the severity of those violations are part of the cost of mining coal” (McAteer et al. 2011:99). Any industry and business model in which top officials consider hundreds of serious violations – which can essentially predict a forthcoming disaster with the potential to kill workers – as a necessary part of that industry functioning, is an industry and business model we must transition away from.

#### 1.4 The Everyday Consequences of Unregulated Business

These catastrophes, occurring within two weeks of each other, were both preventable. Forty men lost their lives serving a small group’s incessant chase of company profit. Both cases made it clear that within this industry, safety is always second to production, and a company’s bottom line is always the number one priority. But they are not isolated incidents, they are solely the worst in past decades. These events brought national attention because of the scope of their damage, but accidents, injuries, and deaths happen routinely. Throughout these industries, this culture of putting the company’s profits over the safety of its employees runs rampant. In fact, a study by the public policy collaborative True Transition found “despite constituting .00005% of the total American civilian workforce, upstream oil and gas jobs constitute 3% of all workplace related hospitalizations and 4% of all workplace related amputations”; it also found 35% of surveyed workers had been

instructed to violate safety standards by their employers (Biven and Lindner 2023:30). From 2008 to 2017, injuries in the field caused “almost exactly” the same number of deaths as U.S. troops in Afghanistan (Morris, 2018). 64% of the more than 10,000 citations received over a 10 year period were classified as “serious” indicating they were likely to cause “death or serious harm”, and 3% were classified as “repeated” or “willful”. Employees routinely work long hours; James Hiatt, an ex-refinery operator, attributes this to the idea that by implementing 12 hour shifts rather than 8 hours, a company can hire two men rather than three, saving money (Alvarez, 2022). And, depending on state laws, they often work 7 days a week, going weeks or months without a day off – Clarke, who worked as a commercial diver in the Gulf of Mexico, stated he has worked 160 consecutive days at times.

A similar pattern emerges when analyzing environmental damages by these industries. For decades companies have violated environmental regulations or manipulated them to conduct business in manners that are technically legal but result in the same consequences these regulations are meant to avoid.

Environmental Protection Agency (EPA) violations are rife among oil and gas companies. In April 2023, the U.S. Department of Justice announced a settlement with three oil companies that will require the companies to pay \$9.25 million and make improvements at locations across the U.S (Office of Public Affairs, 2023). Companies had been accused of violating “federal and state clean air laws related to leak detection and repair (LDAR) requirements”, resulting in increased emissions of hazardous pollutants and greenhouse gases. Furthermore, a search on the Environmental Protection Agency’s Facility Compliance Database filtered to show results for the five biggest oil companies – Shell, ExxonMobil, BP, Chevron, and ConocoPhillips – found 210 facilities with current EPA violations, 84 of which are “significant violations”; over the past 3 years, 500 facilities were found to have violated EPA regulations. A filtered search on the same database for the word “mine” or “mining” found 1,304 mining facilities with current violations, 458 being significant, and a total of 2,171 facilities with violations over the past 3 years (“Facility Search Results...”). The criteria for what constitute a significant violation differs among

departments within the EPA, but generally refer to highly significant risks to health and safety or the environment.

### 1.5 Free Market Capitalism: Government's Role

While it must be acknowledged that the *culpability* for this attitude falls on businesses and businesses alone, it is imperative to also consider that the *responsibility* to protect workers and the environment is not solely on them. History has shown that under free market capitalism companies will rarely, if ever, put concern for our planet and its people above their profit. They have, for decades, risked the wellbeing of their employees and the future of the planet for the sake of their bottom line. But if one asks themselves how businesses have been able to operate in this manner for so long, the answer is clear. They push government regulations as far as they can; more importantly, they spend hundreds of millions annually lobbying for increasingly lax regulations (Sayki & Cloutier, 2023). And, history shows, governments have failed to respond appropriately to discourage or prohibit business from continuing in this manner.

The government oversight, or lack thereof, surrounding the events of both the Deepwater Horizon and Upper Big Branch disasters demonstrates this. The National Commission on the BP Oil Spill found the Minerals Management Service, the government agency responsible for offshore drilling, routinely failed to sufficiently regulate and fulfill their role as the government watchdog, partially because its mandate covered two very different objectives — one being environmental protection, and the other American oil independence. The latter often came at the expense of the former, especially in regard to the Gulf of Mexico. In fact, a 1978 National Energy Act included a provision requiring companies to submit a development and production plan including “environmental safeguards to be implemented” when applying for an offshore drilling lease; the Act specifically exempted leases in the Gulf of Mexico from this measure, reasoning that “the Gulf was already mature and therefore the environmental risks were already better known” (National Commission 2011).

The MMS was also limited in its resources, leaving it unable to sufficiently monitor drilling operations, at one time having only “55 federal inspectors [responsible for] more than 3,000 Gulf production facilities” (Ladd, 2012). Its budget decreased while offshore drilling increased, and as drilling production technology changed, the MMS struggled to keep up. As such, regulations on offshore drilling fell behind operations, and newer methods of drilling were often under regulated.

Moreover, as mentioned previously under the summary of the Deepwater Horizon disaster, BP for years lobbied the agency for less stringent regulations, arguing and finally convincing the agency that “oil and gas companies could best evaluate the marine impacts of their own operations” (Ladd, 2012). Investigations also found employees at some MMS offices, including one in Lake Charles, Louisiana, accepted gifts from oil and gas companies, and in one case, an MMS employee performed inspections for a company he then took a position with (National Commission 2011).

In the context of the Deepwater Horizon explosion, we see the effects of a governmental agency that is both underfunded as well as continuously caving to the interests of the very industry it is responsible for regulating. The combination of these two has resulted in an industry that operates with seemingly no regard for meeting what regulations do exist, and an oversight agency who allows this to happen over and over again. Such company carelessness is evidenced in a BP oil spill response plan that “contained strategies for protecting walrus, seals, sea lions, and other nonexistent species in the Gulf of Mexico, as well as a contact number for an on-call wildlife expert who had been dead for 5 years”, which gained federal approval (Ladd 2012). Moreover, the company was able to drill further than its permit technically allowed – and, recalling the chain of events leading up to the explosion, this action was the first of many that directly attributed to the Deepwater Horizon disaster.

And, unsurprisingly, we see a similar pattern with the Upper Big Branch disaster and the U.S. Mine Safety and Health Administration. The investigative panel found reviews of MSHA’s performance to show a “troubling and widespread pattern of oversight failure”, including “incomplete” and “inadequate” inspections (McAteer et al. 2011:77). It also

found that in the case of the UBB mine, MSHA inspectors were well aware of the lack of an adequate ventilation plan, and despite having issued multiple citations without seeing improvements, did not take further appropriate actions within their mandate in order to protect miners.

## 2. Profit-First Business Model: Impact on Climate Change Response

It is clear, then, how this profit-above-everything model has impacted workers as well as the environment. However, the impacts of this model are far-reaching, as evidenced perhaps no clearer than within the overall debate surrounding climate change in the United States. Scientists have been calling for the reduction of greenhouse gas emissions from the late twentieth century, citing their significant contribution to global warming. Of course, the fossil fuel industry understood what effect this would have on their profit. Their response may have single-handedly changed the United States' course of action on climate change.

### 2.1 Misinformation Campaign

Reports in recent years have found that oil and gas companies in the 1970s hired scientists to research the impact of their emissions on the environment, and then used this research to purposely feed disinformation regarding climate change to the public (Cook et al., 2019). In fact, scientists hired by Exxon told executives in 1977 that “the most likely manner in which mankind is influencing the global climate is through carbon dioxide released from the burning of fossil fuels” and in 1979, “the present trend of fossil fuel consumption will cause dramatic environmental effects before the year 2050” (“Examining the Oil Industry...” 2019:37). There was a clear consensus within the company that their own production was accelerating global warming, and rather than addressing this and exploring alternatives at that time, they developed misinformation campaigns. In fact, following James Hansen’s 1988 testimony, Exxon’s head of corporate research sent an email stating the company’s new goal: “Any additional R&D efforts within Corporate Research on Greenhouse should have two primary purposes: 1. Protect the value of our resources (oil, gas, and coal). 2. Preserve Exxon’s business options” (Copley, 2023).

The “Global Climate Science Communications Action Plan” was developed by the American Petroleum Institute along with Exxon, Chevron, Southern Company, and various other institutes in response to the United States signing the Kyoto Protocol. The plan explicitly stated its objective was to “emphasize the uncertainty in scientific conclusions regarding the potential enhanced Greenhouse effect” – scientific conclusions their own scientists found (Cook et al., 2019). It further states, “yet if we can show that science does not support the Kyoto treaty – which most true climate scientists believe to be the case – this puts the United States in a stronger moral position and frees its negotiators from the need to make concessions as a defense against perceived selfish economic concerns” (“1998 American Petroleum...” 1998). Below is their “Victory Plan”.

#### **Victory Will Be Achieved When**

- Average citizens “understand” (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the “conventional wisdom”
- Media “understands” (recognizes) uncertainties in climate science.
- Media coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current “conventional wisdom”
- Industry senior leadership understands uncertainties in climate science, making them stronger ambassadors to those who shape climate policy
- Those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.

2

The goal of the American Petroleum Institute and its partners were as follows: to deliberately mislead the American public, using media to promote the idea that there was no settled science on the extent of climate change, to depict those concerned with a growing climate emergency as “out of touch with reality”, and to empower fossil fuel lobbyists to influence politicians and prevent climate legislation. The first paragraphs of the internal memo outlining the plan included a study that found when Americans are told that some scientists were conflicted on whether human activity is causing climate change, 58% were

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<sup>2</sup> <https://www.climatefiles.com/trade-group/american-petroleum-institute/1998-global-climate-science-communications-team-action-plan/>

“more likely to oppose the Kyoto treaty” (“1998 American Petroleum...” 1998). And, despite routinely stating that they were only trying to “balance” the conversation and point out that climate change was not settled science, a senior Exxon lobbyist was recorded in June 2021 saying “did we aggressively fight against some of the science? Yes... but there's nothing illegal about that. You know, we were looking out for our investments. We were looking out for our shareholders” (Pierre & Neuman, 2021). A scientist previously employed by Exxon stated in a Congressional hearing that “Exxon was publicly promoting views that its own scientists knew were wrong, and we knew that because we were the major group working on this<sup>3</sup>” (“Examining the Oil Industry...” 2019:8). In a time where scientists were coming forward to raise alarm surrounding climate change, the fossil fuel industry took calculated decisions to promote an alternative view, one they knew based on their own research was founded in misinformation.

### 2.1.1 Politicizing of Climate Change

Although climate change (and environmental issues more generally) is perceived as a highly politicized and partisan issue, it was not always. The Environmental Protection Agency, charged with setting and regulating “pollution-control standards”, was created by Republican President Richard Nixon in 1970 (“Environmental Protection Agency” 2023). During his 1988 campaign, Republican candidate George H.W. Bush called for bipartisan support of environmental regulations in light of new information surrounding climate change (Worland, 2017). Shortly thereafter, following the targeted misinformation campaign (wherein one of the explicit measurements of success was the amount of Congress members “exposed” to the campaign), political positions on climate change began to shift. In response to industry-talking points regarding the potential negative impact environmental regulations would have on business and the economy, “business-friendly” Republicans began publicly opposing climate action (Worland 2017). The first sign of the

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<sup>3</sup> It should be noted that during these years, Exxon executives were “quietly incorporating climate change projections into the company’s planning and closely studying how to adapt the company’s Arctic operations”. <https://perma.cc/NA86-5PWH>



misinformation campaign's impact on American politics occurred in 1997, when the U.S. Senate passed a resolution to block the ratification of the Kyoto Protocol following pushback from oil lobbyists, claiming it was due to the fact that developing countries like China and India were not also required to cut emissions (Pierre & Neuman, 2021). The 2000 general election also highlighted how significant the issue was to some voters – Al Gore, the democratic candidate, is considered to have lost the “Democratic stronghold” West Virginia over the fear that his environmental policies would threaten coal jobs, the backbone of their economy (Worland 2017). In the years since, the divide has only grown, and the United States' stance on climate change has fluctuated depending on which party is in control. President George W. Bush withdrew from the Kyoto Protocol altogether in 2004, claiming the Protocol was based on “unsound science” and would have a negative economic impact on the country (Phillipson, 2001). In 2009, lobbyists fought against a bipartisan cap-and-trade bill which would have “[limited] greenhouse gas emissions and [gave] polluting energy companies ‘allowances’ to buy and sell the right to produce the carbon pollution”; in the end, the bill failed to pass (Pierre & Neuman, 2021). Still, during this time period, the EPA under the Obama Administration issued 4,000 new regulations (Worland, 2017). When his Republican successor Donald Trump entered office, he significantly cut the agency's budget and “rolled back” over 100 environmental rules, including 28 relating to “air pollution and emissions” and 12 on “drilling and extraction” (Popovich et al., 2020). Of course, the Trump administration's most famous disregard for the climate emergency was its withdrawal from the Paris Agreement.

### 2.1.2 American Public's Attitude Towards Climate Change

This misinformation campaign, along with the subsequent politicization of climate change, has no doubt affected the way American citizens perceive it. A 2017 Yale study found that only 13% of Americans knew there is a general consensus among scientists that “human-caused global warming” is occurring (over 90% agreement), while 28% of Americans stated that they were unsure of the percent of scientists that agreed with this statement (Leiserowitz et al., n.d.). Moreover, 13% of Americans do not believe global warming is caused by human activity, and 5% do not believe it is occurring at all – the highest

percentage among Western countries (Milman & Harvey, 2019). Considering that Americans were subjected to decades of targeted misinformation regarding climate change by the fossil fuel industry, including the industry “send[ing] literature to science teachers in schools”, it is no coincidence that they are among the most skeptical of the current climate emergency (Milman and Harvey 2019). Research finds there is a heavy correlation between views on climate action and government intervention, with Democrats significantly more likely to support both over Republicans (Elgin, 2014). Still, 70% of Americans believe global warming is occurring, and 58% believe it is caused by human activity (Leiserowitz et al., n.d.). 48% of Americans believe humans have the ability to reduce global warming.

### 3. “Jobs vs. Environment”

#### 3.1 American Fossil Fuel Workers Demographics

The United States Bureau of Labor Statistics finds that in March 2023, there were 119,000 people employed in oil and gas extraction, 105,900 employed in petroleum and coal products manufacturing, 48,000 employed in pipeline transportation, and 41,300 employed in coal mining (Carley et al., 2018). For the past decade or so, employment in the industry has been volatile. For coal workers, the period of uncertainty has lasted significantly longer, with coal experiencing “boom” and “bust” periods for decades. In the 1970s, the coal sector was extremely prosperous; this was followed by economic decline in the 1980s, and the sector did not experience another “boom” until the 2000s. Nevertheless, it has never recovered to its highest point (O’Leary & Boettner, 2011). Since 2011, employment in coal has been cut in half. This is largely due to the costs of natural gas and renewables becoming significantly cheaper, making coal production less economically advantageous (Carley et al., 2018).

Employment in natural gas and oil has been equally unstable. Extracting natural gas became cheaper with the rise of hydraulic fracturing, allowing the United States to “access unconventional reserves”, and allowed the oil and natural gas sectors to experience their own boom, starting in 2008. Oil production increased by 145% and natural gas production by 66% over a ten-year period (Biven & Lindner, 2023). The U.S. became the largest

producer of natural gas in 2015, and Congress ended a 40-year ban on exporting oil. Oversaturation on the global market caused prices to crash. Because technological advancements meant less workers were needed to drill oil, companies laid off workers to make up for profit losses from the price crash. In recent years, this has meant an increase in production and a simultaneous decrease in jobs. From 2015 to 2019, companies laid off 28% of the workforce.

### 3.2 “Jobs vs Environment” as a Political Tool

The politicization of climate change has thoroughly carried over into the “jobs versus environment” debate. Democratic nominee Hillary Clinton, during the 2016 presidential election, called her comments announcing plans to “put a lot of coal miners and coal companies out of business” one of her “biggest regrets of the campaign”; never mind her clarification following that she also intended to protect the workers who powered our country for decades (Egli et al., 2022). Her comments were compared to Donald Trump, who instead ran on a promise to “put those miners back to work” and “get those mines open”. A study found that during times of coal decline, residents in coal-dependent counties are more likely to vote for the party who clearly states their support for coal, rendering it a powerful political tool.

Other politicians have been more explicit regarding their positions. During a 2021 Congressional Hearing on the oil industry’s misinformation campaign, Republican members repeatedly accused their counterparts of “demonizing” oil companies as well as their workers (“Fueling the Climate...” 2021). This tactic, grouping both industry leaders and blue-collar workers together, has been used by both the industry and politicians to appear as though any opposition to the former is by nature opposition to the latter. The consequences of this tactic will be explored in later sections; on one hand, blue-collar fossil fuel workers are under no illusion that their employers value them equally, on the other, they do often feel threatened by climate rhetoric targeted at the fossil fuel industry. During the same hearing, Republican Congressman Chip Roy referred to climate regulations such as a proposed ban on fracking as “massive [violations] of civil liberties”, comparing

Americans' access to the "lifeblood of power" to Europeans' "onerous regulations" ("Examining the Oil Industry..." 2019:6). During a subsequent hearing, Congressman Clay Higgins accused Democrats of "[demonizing] American industry whose products make modern life possible" and "attacking American workers"<sup>4</sup> ("Fueling the Climate..." 2021:60). Nancy Gunesevara, who worked on the Trump Administration's plan for exiting the Paris Agreement, claimed their reason for doing so was because the ratification of the Agreement would have resulted in "[shipping] American jobs overseas to countries like China and India" ("Examining the Oil Industry..." 2019:20).

Proponents of climate action do not ignore that fossil fuel jobs will go away. It is the obvious conclusion to the phasing out of fossil fuels. They do, however, dispute the idea that a transition would end here; hence calls for a just transition in which these men and women are offered various opportunities in the form of early retirement, retraining programs, and alternative job creation. Moreover, as highlighted in the "American Fossil Fuel Workers Demographics" section, fossil fuel jobs are already in decline, and evidence shows that climate action has thus far not been the main contributor. While environmental regulations have often been accused as the main reason for a loss in jobs, a Columbia University study found that they accounted for only 3.5% of the 33% decline in coal (Carley et al., 2018). The main contributors have been rising prices of coal and mining processes, technological improvements leading to fewer jobs, and, in recent decades, the cost of natural gas falling below the cost of coal.

As stated in the previous section, the oil and gas industries have seen a decline in employment as well. An oil and business research company in Norway suggests that this decline will continue due to automation, with U.S. companies potentially able to reduce their workforce by around 140,000 employees over the next ten years (Biven & Lindner, 2023). In Louisiana alone, one of the nation's largest providers, three oil refineries have

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<sup>4</sup> It should be noted that Higgins' represented district lies along the Louisiana Gulf Coast, a region marked by its extreme vulnerability to climate-change induced hurricanes and coastal erosion as well as its residents' unusually high exposure to toxic pollutants (Rogers, 2015). His district is also home to a significant number of gas plants, refineries, and pipelines – for many Louisianans, the "jobs versus environment" debate is in their front yard.

closed in the past three years, laying off 2,100 workers, despite the state distilling the same amount of oil. Respondents to a survey of American oil and gas workers often cited companies hiring less workers for the same workload, with one pipeline safety inspector saying the practice results in “a lot of inspectors at the house unemployed, while working people like me to death, doing multiple inspector’s jobs” (Biven & Lindner, 2023, p. 20). Another worker highlighted regulations in Louisiana that erode the power of unions as a catalyst for this practice (Alvarez, 2022). And so, while politicians and industry posit their stance on the “jobs versus environment” as caring about American fossil fuel workers, when we consider the root causes of downward employment trends, we find a very different picture. It is true, of course, that a transition from fossil fuels will result in the loss of fossil fuel jobs. But one may recall that these industries have historically prioritized profit maximization over workers. Acknowledging this, the root causes – automation and increasing the workload for each employee – can be seen as further attempts to maximize profit while cutting production costs. As such, under this business model, even a continuance use of fossil fuels will result in the loss of fossil fuel jobs. The focus moving forward must be what opportunities we create for these workers to replace that loss.

#### 4. Workers’ Voices

For years, climate action and the debate surrounding it has been ruled by world leaders, politicians, scientists, and top industry leaders. Little room has been made for fossil fuel workers: not only the group with the most to lose from an energy transition, but the group who, as explored in previous sections, has faced the dangers of fossil fuel extraction personally. Given these facts, the importance of a plan that focuses on the wellbeing of displaced workers and affected regions cannot be understated. Just transition debates must not only provide them a place in the conversation but should depend on their input continuously when developing policies. For that reason, this section includes direct quotes from coal miners and oil and gas workers in the United States. Many of these come from the True Transition American Oil and Gas Workers survey published in 2022; these along with other interviews were generally found using combination searches for “fossil fuel workers” or “oil and gas workers” along with “just transition”, “energy transition”, “climate

change”, or “climate action”. Quotes from the UMWA website were pulled from website search results including the terms “just transition”, “energy transition” or “climate change”.

What we find is that these workers have genuine concerns about their futures that are fair and real. Furthermore, many of the proposals and demands of a just transition these workers put forth are in line with Just Transition policies already successfully implemented in the Ruhr region of Germany, which will be analyzed in the following chapter. The Ruhr model was selected to be analyzed because early research found many working groups or committees on just transition often look to it for guidance; the fact that there is so much overlap between successful Ruhr policies and proposals from American workers only gives credence to their understanding of what a just transition looks like. Workers understand well the effects of phasing out fossil fuels as well as what must happen to ensure they are protected from the consequences of any transition. Of course, there are those who continue to deny the climate emergency and are against any transition; this section does not seek to imply that listening to the demands of workers necessarily means caving to them, or passing watered down legislation that does not meet targets to prevent further climate disasters. Instead, it attempts to highlight a side that has, in their own words, felt overlooked or disregarded in climate action discourse, and to understand exactly their concerns and propositions, a necessary step in beginning to consider what a worker-involved just transition in the United States may look like.

#### 4.1 Workers’ Concerns

There is an idea within the discourse surrounding just transition that workers in the fossil fuel industry are often against a transition, and that trade unions are one of the biggest hindrances to phasing out coal and natural gas. But if we truly listen to the words of these workers, often blue-collar or middle-class, they are not against a just transition as much as they are skeptical about its realization. And while politicians can put forth green job policies and cite success stories from other regions in the world, we can think of industry workers as a ‘first responder’ to the effects of phasing out fossil fuels – they see first-hand

the often-devastating effects on their communities when coal jobs leave (Snyder, 2018).

Consider the words of UMWA President below:

*“It’s one thing to want these things to happen, but it’s another thing for those things to materialize,” he said. “People in Appalachia believe that there’ll be the second coming of the Lord before they see a ‘just transition’ - Cecil Roberts, President of the United Mine Workers of America (Young, 2021).*

#### 4.1.1 Unemployment

It is important to first state that many trade unions have acknowledged climate change as a very real and urgent issue. Roberts has said the UMWA has “long supported an economy-wide program to reduce CO<sub>2</sub> [carbon dioxide] emissions, covering all major sectors of emissions—transportation, utilities, and industrial. We support global efforts to reduce greenhouse gas emissions, and believe it is short-sighted for the United States to isolate itself from international climate negotiations” (Showstack, 2019). They have, however, been clear that their first priority is and always will be to secure their livelihood by way of working.

*“It’s tough, I mean I get the clean energy. Nobody wants to see our planet get ruined. We don’t want it to be our fault, but it’s definitely not all on us. It just seems like we’ve always been under attack, more so than anybody else,” - Gary Campbell, 16-year miner (Tsirkin, 2021)*

*“Now, there’s a whole generation of workers coming up, and if they want to pursue careers in green energy, then I support that, just like I support private companies’ rights to develop green energy. What I don’t support is the government limiting my employment opportunities in my chosen field ... My crisis right now isn’t the climate. My crisis is the mortgage payments I have due every month, it’s the food I need to put on my table, and it’s the healthcare I need to provide to my family” - Neil Crabtree, Pipeline foreman who would have been employed on the Keystone XL Pipeline ("Fueling the Climate..." 2021:17)*

And so, while the “jobs versus environment” argument should rightfully be criticized for being used as a fear tactic by the industry to garner support, it must also be acknowledged that, historically, blue-collar workers have been “unjustly ... made to pay for the energy transition” (Morena et al., 2019, p. 3). Of course, whether the responsibility of this falls on the government for not assisting workers or on businesses for threatening to shutter factories to avoid complying with environmental regulations<sup>5</sup> is debatable. Still, the end result remains jobs disappearing and towns which are left devastated, and with decades of this knowledge, the government (including politicians who fight for these regulations) has not yet managed to address the issue sufficiently. And there is a growing resentment among these workers who feel their employers are not the only ones making the “jobs versus environment” argument; that when climate activists and politicians denounce the fossil fuel industry as a whole, they are villainizing the tens of thousands of workers who have powered our world for decades. It matters little to them that climate activism is specifically referring to the *jobs* which contribute to climate change and not the workers, arguing that we should provide them with replacement jobs. The sentiment for these working-class men and women, who are proud to work hard for their livelihood, is that when those on the other side look down on the work they do, they are simultaneously looking down on the workers themselves. Moreover, for them the “jobs versus environment” is not an abstract idea; it signals to them that supporting climate action means they lose their source of income. As Crabtree states above, this is their crisis, and they are often exhausted by people asking them to give up their jobs for the sake of the earth without ever seeing the new jobs they are promised materialize.

*“I was a machinist when NAFTA destroyed the industry. Now it seems that this industry is being destroyed by government intervention” - Oil/Gas Industrial Worker (Biven & Lindner, 2023, p. 66)*

*“Members understand the link between health and the workplace. But we don’t want to exchange the public health crisis of being exposed to pollution for an economic one where we can’t put food on the table” - Payton Wilkins, National*

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<sup>5</sup> (Loomis, 2018)



*Director of the Coalition of Black Trade Unionists' Education Center (Kahn et al., 2023)*

#### 4.1.2 Lack of Acknowledgment from Politicians and Environmentalists

There is a shared consensus among these workers regarding why discussions amongst climate change activists and politicians fail to appropriately address their needs. They operate in two completely different realities, in which fossil fuels play very different roles. For them, despite its inherent dangers and the risks that come with the job, – many of which, as previously discussed, are due to the nature of unregulated capitalism – the fossil fuel industry has at least provided them with jobs that allow them to provide for their families, and for many years, have given them a sense of honor in providing power for their countries. For climate activists, the fossil fuel industry is at the root of the climate crisis, having pushed the earth well beyond its natural limits, and having simultaneously pushed disinformation regarding the crisis for their own profit. The truth, of course, is that both of these things can be true. As highlighted in the previous section, there is no doubt about the irreparable harm the fossil fuel industry has done to our world – not only to the planet, but to their own workers. Nevertheless, it is also true that they have provided much-needed jobs, with many in the industry coming from working-class backgrounds, entering the field immediately after graduating high school (O’Leary & Boettner, 2011). And they are tired of a “just transition” discourse that, to them, appears to always be centered around protecting the environment first, and workers second, by people who do not understand their realities.

*“People forget what coal miners actually have done throughout history for the country ... throughout the wars, providing ... and different things, and there’s just still a sense of pride about it ... We kind of got the country going in the right direction a long time ago and you still kind of feel that, but it seems like everybody else kind of forgot about it” - Gary Campbell, West Virginia miner (Tsirkin, 2021)*

*“I wish people knew our stories” - Oil and gas industrial worker (Biven and Lindner 2023:5)*

It is true that for most of us, when we use electricity in our daily lives, it is a mostly subconscious process; for those of us who do give it a thought, it is generally about our own carbon footprint and how we can reduce it, swapping light bulbs, taking the bus instead of driving, reducing our air-conditioning use. We rarely consider the men and women underground in mines, in coal processing plants, and on oil rigs. And this is, of course, true for many of the products we consume. But for these men, this disconnect is especially highlighted in climate action discourse, when people suggest policies that would directly cost these men and women their jobs.

#### 4.1.3 Lack of Concrete Just Transition Policies

When climate action discourse does include jobs, it is often in loose terms, committing to the importance of ensuring they have work. Workers, generally speaking, are not against transitional jobs, retraining, business loans, or early retirement packages. But as the people who will be directly affected, they consider these proposals in their likelihood to be realized. They recall what has historically happened when coal jobs go away, and they struggle to believe that any transition away from fossil fuels will not further hurt their regions. When politicians and environmental activists insist that the same thing will not happen to them, it does nothing to alleviate their fears; rather, it often feels like they refused to validate the very real experiences of their colleagues or communities. For many, the phrase “just transition” has become an oxymoron.

*“I am tired of hearing people talk about a so-called ‘just transition’ in America’s coalfields. There never has been any such thing in the history of our nation.” - Cecil Roberts (“Fighting for Coal Country...”)*

It is therefore imperative that we listen to them, we acknowledge their rightful concerns and grievances, and we include their propositions and needs in policymaking. It is true that trade unions have at times prevented climate action progress. But it is also true that, by definition, a trade union’s number one objective is to protect its workers. In consideration of this, it can be argued that their resistance against climate action and distrust towards politicians and activists signals that transition plans of the past have fallen short in

protecting workers. Moreover, we have already acknowledged that unions have historically been able to block climate action. After Joe Manchin, a senator who has a largely coal-dependent constituency, effectively blocked an aggressive climate policy that would have given tax incentives to companies that switched from fossil fuels to renewable energy sources, the New York Times referred to coal miners as the “Achilles’ heel” of said policy (Scheiber 2021b). If this is truly a climate emergency, it must be acknowledged that labor unions, rightfully so, hold power in this debate, and therefore the two sides must navigate a way forward together. It is worth restating that the UMWA has been transparent in acknowledging the climate crisis and coal’s role in contributing to it, and have expressed their interest in working with politicians, NGOs, and local communities to find a solution (United Mine Workers of America, n.d.). Still, Roberts has been clear that the UMWA cannot and will not support any policy that does not ensure that their miners will have good, safe, and well-paying jobs, a right they have been fighting for for over a century. As such, this process begins by listening to what they expect out of a just transition, and what transitional paths they find suitable for themselves.

## 4.2 Workers’ Proposals

### 4.2.1 Financial Assistance

First and foremost, to Cecil Roberts, a transition will only be just if it includes “good union jobs with equivalent wages and benefits available for miners to move into on the day their mine shuts down”, and the same can be applied to oil and gas workers (CITE). From a practical perspective, it must be acknowledged that immediate employment may not be possible. Considering this, the government has a duty to ensure guaranteed financial assistance to ease the burden for these men and women during any period of unemployment. In a survey of American oil and gas workers, many respondents supported financial assistance to laid off workers, with 37% supporting wage replacement and 35% supporting health benefits extensions (Biven & Lindner, 2023, p. 66).

*“Loans to start a new business, pay off mortgage, tax free status, retirement benefits, health insurance extension.” - Oil/Gas worker (Biven & Lindner, 2023, p. 66)*

*“Eliminate mandates and reasons not to pay unemployment and have a compensation plan for displaced workers and insurance.” - Oil/Gas worker (Biven & Lindner, 2023, p. 66)*

*“Make Medicare/Medicaid available for older and physically impaired veteran oil workers... Medical insurance is important since we have a higher risk and rate of suffering occupational illness at a younger age.” - Oil/Gas Worker (Biven and Lindner 2023:38)*

While just transition plans could include specific measures to provide financial assistance to displaced fossil fuel workers, the United States should also consider passing widespread, concrete policies which would ensure financial assistance not only for workers in these sectors now, but for Americans across all sectors in the future.

#### 4.2.2 Training and Transitional Job Guarantees

The first and most commonly preferred pathway for fossil fuel workers is providing new jobs. Almost half of respondents to the True Transition survey said they would support “direct federal government employment” to plug wells and training for transitional jobs. 51% said they would support a “federal job guarantee” (True Transition). The UMWA, in its proposal, also called for sufficient training centers that have a “track record of successfully training miners” and have suggested various manners of retaining UMWA jobs as well as job creation in renewable energy.

*“Working to preserve what we have now is what’s important. That’s what started the labor movement. Keeping the union strong and alive is about securing the jobs we have now and finding real solutions to transitioning to new ones” - UMWA Union 1501 member Ryan Cottrel (Tsirkin, 2021)*

*“Best thing, help in training for a different sector of energy or infrastructure, green energy, like the coal sector dying off, soon, oil sector will die off and many oil field workers in all aspects and levels will lose jobs left and right” - Oil/Gas Industrial worker (Biven and Lindner 2023:62)*

*“Help transition displaced workers into different industries; i.e. crane operators could be transitioned to heavy construction jobs, helicopter pilots transitioned to EMS [emergency medical services] work, etc.” - Oil/Gas Industrial worker (Biven and Lindner 2023:69)*

The U.S. has existing programs, such as the Workforce Investment Act’s Dislocated Worker Program, which are specifically designed for retraining displaced workers who may need different skills to find new work and provide various forms of financial assistance for the transition period (“WIOA Dislocated Worker Program”). However, as is often the case, many respondents to the True Transition survey experienced “difficulty navigating government programs” (Biven and Lindner 2023). This should be considered in just transition policies, and the inclusion of union representatives or industry workers at the table would allow them to voice suggestions of how best to ease the process of navigating these programs for prospective participants.

It is additionally imperative that retraining and job creation are viewed as two parts of a whole. Critics of those who tout transitional job training as a solution have pointed to the number of displaced workers who have participated in retraining programs but remain unemployed, citing an insufficient number of jobs for the amount of people ready to enter the workforce (Schimmel, 2019). Furthermore, Gordon Lafar, in his book “The Job Training Charade” argues that retraining offers a “false narrative” that “places the blame” of unemployment on workers. By creating programs that ensure they have the proper tools and qualifications to enter a new sector, displaced workers become responsible for finding a job, regardless of whether there are jobs to be found. As such, training programs should, upon completion, provide direct pathways to employment.

#### 4.2.3 Job Creation through Infrastructure Upgrades: A Short- and Long-Term Investment in the Region

Despite acknowledging the lack of available jobs, these critics have pointed to a sector that will be necessary to both address adverse effects of the climate catastrophe and prevent further environmental damage, highlighting the need for infrastructure upgrades in the Appalachian (Schimmel, 2019). This necessity, however, is not limited to the region; the American Society of Civil Engineers' 2021 *Report Card for America's Infrastructure* rates America's infrastructure as a "C-" average, with a "D" defined as infrastructure that is "mostly below standard ... significant deterioration" and a "C" defined as "fair to good ... requires attention" (American Society of Civil Engineers, 2017). A federal investment in infrastructure would be a significant step towards a just transition-oriented climate plan by providing transitional jobs for displaced fossil fuel workers and investing in regions who have been dependent on fossil fuel industries. Moreover, it would address climate change by, among others, investing in electric buses and cars, passenger trains, power infrastructure, and climate resiliency for at-risk areas. The Inflation Reduction Act, passed in 2022, includes two new government-funded programs that incentivize renewable energy infrastructure in Appalachia. The Empowering Rural America program (New ERA) secured \$9.7 billion to fund "rural electric cooperatives [which] deploy renewable energy, zero-emission and carbon capture systems" while the Powering Affordable Clean Energy program (PACE) gives \$1 billion in loans to companies for clean energy ("Biden administration...").

In the Appalachian region, a significantly rural region, where 7.1% of households have no vehicle available to them and 31.7% of households share one vehicle, an increase in the availability of public transportation would erase one roadblock in finding employment (Pollard & Jacobsen, n.d.). In addition, expanded public transportation would provide direct employment to displaced workers by creating jobs in the sector; studies suggest every billion dollars invested in public transportation supports 36,000 new jobs (Weisbrod & Reno, 2009).

It is important to acknowledge that infrastructure goes further than transportation, building improvements, and water and energy upgrades. We can instead consider infrastructure to be any necessary facilities to a well-functioning society. It is also a way of developing these regions long-term. The UMWA has proposed infrastructure investments in additional areas including “broadband, schools, and healthcare facilities” (United Mine Workers of America, n.d.). 12.8% of people over the age of 25 in Appalachia have no secondary school diploma, and only 24.7% have a bachelor’s degree (Pollard & Jacobsen, n.d.). In West Virginia’s mining counties, the average number of people with a bachelor’s degree drops to only 9% (O’Leary & Boettner, 2011). In these same areas, workers with a college diploma earn 63% more than those with only a high school equivalent. The mining industry has long been a way for Appalachians to navigate this. Miners, who do not need a college degree, earn on average double the yearly income than any other sector within the counties. When these jobs leave, it will be imperative that miners have access to jobs that pay comparable and allow them to retain their standard of living. Investing in higher education is not only one manner of ensuring this, but it also provides a pathway to prosperity for future generations.

#### 4.2.4 Job Transition through Land Restoration

Thousands of direct transitional jobs can be created by the necessary decommission, restoration, or monitoring of abandoned oil wells and mine lands left behind by the industry. The following section will analyze various proposals and policies to address this need, including those proposed by the UMWA.

Currently in the United States, there are 10 million dormant oil wells. Companies are only responsible by law for the initial plugging of wells, despite evidence showing that this initial plugging has an “expiration date” (Biven, 2021). Over time, they begin to leak methane, and therefore “emit noxious fumes, threaten groundwater, depreciate property values, and threaten lives”. There is no current policy that addresses this problem. Megan Milliken Bowen, the founder of True Transition and a transition policy advocate, proposes the “Abandoned Well Act”, which would create a federal agency to overlook the

monitoring of oil wells. Her proposal would create regional offices across the country and would set up a hotline where residents can call to submit complaints or concerns. It would also include a division to research and develop sustainable projects for reclaimed land use and would seek to fulfill necessary employment by training displaced oil and gas workers to perform decommission and monitoring of wells as well as land remediation. There is evidence that oil and gas workers would support this initiative – 34% of respondents to the True Transition survey expressed interest in these jobs (Biven & Lindner, 2023).

The UMWA’s proposal for a transition includes the full federal funding of abandoned mine lands projects. As of November 2022, \$122.5 million was made available to fund these projects in “six Appalachian states with the highest number of unfunded high priority abandoned mine land problems” along with three indigenous Tribes (“Interior Department...” 2022). These projects focus on restoring water and land on these sites damaged by decades of mining and, where possible, developing new “recreation destinations, training facilities, agricultural processing centers, business parks, solar farms and more” (“Interior Department...” 2022). One such example is the Pittsburgh Botanical Garden, which is located on some of the country’s first coal mining lands. The project is ongoing and will include multiple gardens and “woodland experiences”, as well as an amphitheater, event center, and “botanical research facility” (“Reclamation in Action...”).

The ACT Now Coalition, an “exciting coalition of West Virginia cities, economic revitalization organizations, leading academic institutions, and private sector innovators”, has also developed various programs. The West Virginia Community and Business Resilience Initiative seeks to plan a community-involved economic diversification, by developing “leadership and business” skills for people and restoring manufacturing sites and brownfields to be used for new businesses and training centers. For example, the Learning, Innovation, Food and Technology Center would transform an old manufacturing plant into a site that would include a training center for displaced miners, a commercial kitchen and food processing facility, a “Marshall University Aerospace Battery Institute”, along with other clean energy programs (“ACT Now Coalition”). They have also planned



an “innovation zone” to restore abandoned brownfields, turning them into a site for manufacturing and research and development projects.

#### 4.2.5 Not Just Jobs – Good Jobs

*“I’ve tried to branch out but employers want experience in wind or solar and I don’t have any. A person can’t get experience if they won’t hire you and from what I’m seeing wind and solar doesn’t pay like O&G” - Oil/Gas Industrial worker (Biven and Lindner 2023:63)*

*“I have no doubt that President Biden wants to create good paying union jobs, but currently, the jobs that are being discussed here are not good paying union jobs. They’re a fraction of what a coal miner makes” – Cecil Roberts (Tsirkin, 2021)*

*“In order to make similar wages as oil and gas you have to work 7 days a week 365 days a year out of town” - Oil/Gas Industrial worker (Biven and Lindner 2023:63)*

Despite all of the risks associated with jobs in the oil and gas industry, as well as the coal industry, they pay well. For men and women who disproportionately enter the workforce without any university attainment, these jobs have provided them with an opportunity to earn a decent living. These men and women are not willing to sacrifice their current pay or benefits for the sake of the planet, nor should they be asked to. A study concerning the clean energy transition in California found that the average income in the fossil fuel industry is around 34% higher than that of the solar energy sector, despite solar energy being the “highest paid in California’s clean energy sectors” (Pollin et al., n.d.). The median average income for a solar installer in 2019 was \$44,890, compared to an average between \$70,000-80,000 in the fossil fuel sector (Nilsen, 2021) . Moreover, fossil fuel workers were significantly more likely to receive healthcare and retirement benefits and were also more likely to have union membership – in California’s clean energy sectors, union membership is only at around 7-19% compared to 23% in their fossil fuel sectors (Pollin et al. n.d.). The lack of union membership in clean energy has been a source of concern for fossil fuel workers, especially for coal miners whose union – the UMWA – goes back 123 years and has historically had high membership rates ("About Us..."). Union membership, and clean

energy's significant lack thereof, can be credited with the disparity not only between wages, but between healthcare and retirement benefits. Fossil fuel workers, who have fought for decades for these standards, are not willing to settle for less. A just transition must therefore ensure that green jobs are *good* jobs, and that workers in these new sectors are able to unionize.

Many fossil fuel workers, however, have expressed support for a transition or desire to change industries in search of safer, cleaner, more fair employment. 22% of respondents to the True Transition survey cited safety concerns as a reason they would leave the oil and gas industry (Biven & Lindner, 2023). Additionally, many expressed frustrations with the profit-above-people industry norm explored in previous sections.

*“Oil/gas companies have profited billions over the last 2 years while cutting jobs and benefits with little to no government oversight or protection. While polluting the waters and land, they received hundreds of millions in tax breaks to use said land and waterways. What’s the point? Stop union busting tactics and laws. Right to work laws have killed worker protections, benefits, and pay.” Oil/Gas industrial worker (Biven and Lindner 2023:67)*

*“I would move because oil & gas is more concerned about their bottom line, execs & shareholders than those who generate their revenue.” Oil/Gas industrial worker (Biven and Lindner 2023:43)*

It is worth highlighting that this norm, and the safety and health consequences that come with it, is not isolated to the fossil fuel industry. Instead, it is a result of an underregulated free market economy. As such, clean energy job initiatives must address these issues; without doing so, there is no “just” transition. Past and current initiatives have often fallen short of doing so, including those under the Inflation Reduction Act explored in the previous section. In contrast, the Abandoned Well Act explicitly calls for well-paying jobs supported by the creation of an AWA federal agency, rather than contracting this work to private companies. The existence of clean energy jobs within a free market economy, and its effects on workers, will be fully explored in Chapter 4.

#### 4.2.6 Early Retirement

Of course, not all fossil fuel workers will be able to reenter the workforce as their jobs are phased out. Many older workers have expressed concern about retraining and starting over at their age. For these men and women, a more suitable option may be early retirement packages from the government.

*“The government could allow oil workers that are prematurely retired to access earlier social security and pensions/401ks/IRAs without penalty for early withdrawal... Or fund the older workers a supplement to cover their equity gap between oil employment and underemployment.” - Oil/Gas Worker (Biven and Lindner 2023:31)*

*“I am 58 years old and physically impaired...I do not know if I am capable to do something new...I would find what I did in the refinery physically challenging but I KNOW what needs to be done and can do it at my own speed competently...I am not computer literate outside control room systems and cannot do office software quickly...I was making about \$43.00 per hour and would be hard pressed to find that kind of pay which I was using to pay mortgage (by myself) on my first and only house and my less than ten years off in the future retirement.” - Oil/Gas Worker (Biven and Lindner 2023:38)*

The True Transition survey found that 30% of respondents supported pension guarantees and 24% supported early retirement measures for workers who are close to retirement age and risk losing their jobs in the oil and gas sectors. Moreover, an early retirement path eases the sudden burden on the workforce market by reducing the number of displaced workers needing new employment. Creating multiple paths for workers to take is key to a just transition, one that both gives them autonomy over their future and is more easily implemented than a singular transition focused on funneling all displaced fossil fuel workers into transitional jobs, where there may not be sufficient resources.

#### 4.2.7 Regional Development for Affected Areas

It is also essential to remember that for many regions, industry supports the county as a whole, and when it leaves, it has historically devastated them. No region in the United States has felt this more than Appalachia, a region synonymous with coal. In fact, 23 of the 25 counties who employed more than 4% of residents in the coalfield suffered significant increases in childhood poverty as coal jobs were lost – averaging a 5% increase, with some counties seeing as much as 15% (Snyder, 2018). Furthermore, studies find that mining counties in West Virginia have the lowest health outcomes in the state and are some of the most “economically depressed” in the country (O’Leary & Boettner, 2011). The region has suffered from an opioid crisis for decades that is often attributed to its economic decline (Snyder 2018). The clear connection between the loss of coal jobs and the devastation in these areas is obvious to those who live in the region, and they have often cited these factors as their reason for being resistant against phasing out coal. The government must therefore include clear policy for regional development to not only ensure this does not happen to communities still depending on coal, but also to promote and progress counties who have already suffered from its decline.

The UMWA has proposed potential solutions, such as grants that would replace lost tax revenues for the following decades, and funding to support “infrastructure rehabilitation and development” in these regions (United Mine Workers of America n.d.). Many previously mentioned proposals focused on this idea. Incentives for higher education are also key to regional development, offering younger generations opportunities outside of the fossil fuel sector and creating the workforce needed for economic diversification. Finally, programs such as those proposed by the ACT Now coalition and those that will be financed by the Inflation Reduction Act are examples of job creation that simultaneously promote regional development and a commitment to climate action.

The concerns of fossil fuel workers are legitimate, and they have a right to ensure their livelihoods are protected during an energy transition. It is time for the United States to bring together an inclusive group of representatives and experts to develop, in the words of

Cecil Roberts, a “set of specific, concrete actions that are fully funded and long-term” (United Mine Workers of America, n.d.).

## Conclusion

American free market capitalism is marked by a fundamental belief that government’s role in regulating businesses should be minor. This has given big businesses a disproportionate amount of power, an amount they have used to further tip the scales in their direction. In the 1980s, it meant they responded to increased scrutiny of global warming by designing a misinformation campaign that targeted politicians as well as the general public. Their subsequent influence on the climate debate has been extensive, affecting which policies both voters and politicians support, including on an international level. The above sections show how this has impeded meaningful climate legislation from being signed into law.

Underregulated free market capitalism has also been shaped by an industry culture of putting their companies’ profits above anything else, including the safety and wellbeing of American workers and the health of the environment. Furthermore, when regulations are in place, agencies are either underfunded or have otherwise failed to fulfill their mandates. Previous sections show the extent of this, wherein industrial disasters, workplace deaths, and environmental damage are the culmination of companies focused on maximizing profits and governmental agencies failing to properly regulate them.

Free market capitalism has for decades failed to protect working men and women and the environment. It has exacerbated the current climate emergency. How then can we expect a just transition under this system, which requires the prioritization of the very things free market capitalism exploited? It is hard to imagine such a transition occurring within a system that is ruled by businesses as much as by government. The following chapter seeks to explore how a more regulated version of capitalism may better fit the requirements of a just transition – or whether any version of capitalism can answer its demands.

# Chapter 3

## Introduction

The German system follows a significantly more regulated model of capitalism than that of the United States, emphasizing the need for social welfare in addition to a free market. The German government has long sought to carefully navigate the desire for economic growth while also prioritizing quality of life and social protections for citizens as well as environmental protections. This has resulted in Germans enjoying strong labor rights and social welfare systems. This chapter seeks to understand these policies in greater depth, to compare them to the American system, and to question whether the German model may provide a better framework for a just transition.

The Ruhr region in Germany is often used as an example of a successful just transition, having undergone the transition from a hard coal dependent economy to what is often referred to as a “knowledge-based economy”. The transition occurred over a sixty-year period and its last hard coal mine closed in 2018. Many of the existing policies of German labor and social welfare systems were used as the framework to build specific regional transition programs. Despite its success, it can be debated as to where it falls under the context of a full just transition as defined in Chapter 1, one that both addresses environmental damage done by polluting industries as well as protecting displaced workers affected by the first objective. The Ruhr transition was centered around the economic decline of coal rather than the need to move away from fossil fuels. As such, policies were not developed around climate action, and therefore may not be fully applicable in today’s context. This chapter seeks to understand not only the Ruhr just transition and whether it can be a model for future transitions, but also the German system framework that supported it. As the last chapter explored the feasibility of (or, more truthfully, the obstacles to) a full-scale just transition under free market capitalism, this chapter analyzes its potential under well-regulated capitalism, addressing the following research questions: (1) what a just

transition for fossil fuel workers look like and (2) are just transition models of the past enough to significantly combat climate change.

## 1. Social Market Economy

It is impossible to study the coal transition in Germany through the lens of just transition without acknowledging pillars of their governmental structure that made many “just” objectives possible. Germany has a social market economy, still a free market but with various regulations designed to ensure fair competition and social welfare. While the American structure prioritizes a market economy in which the State has a limited role, the German model in contrast utilizes the State to prevent “market externalities”. It is marked by more stringent regulations than a liberal market economy (the “Anglo-American approach”) to prevent “monopolization and exploitation of consumers as well as workers by market-dominating enterprises” (Wrobel, 2012). It is often considered to balance the economic advantages of a free market economy with the need to avoid consequential socioeconomic inequalities, and in turn many of the “American” problems explored in the previous chapter have been avoided. The following sections will explore how specific labor and environmental policies differ under the German social market framework from American equivalents.

### 1.1 Labor Protections

One aspect of the social market economy is that German employees enjoy strong labor protections. Unlike the United States’ free market economy, industries work more closely with the German government and trade unions. Because workers enjoy strong representation at top levels, their interests must be taken into consideration by companies. In the context of a just transition, it ensured miners in the Ruhr region were given a platform to share their demands. Considering the American workers who expressed discontent at having felt overlooked in the energy transition, many of the following outlined policies should be considered as essential to providing workers with a necessary voice in any just transition plans.

### 1.1.1 German Labor Law

Under German law, workers are entitled to more protections than exist in the United States. German employees are guaranteed at least one month notice before termination of their contract, except in cases of “serious misconduct”. In cases where there is a work council (discussed in the following section), the work council must also be notified before any termination and may contend the decision (“National Labour Law...” 2011). Furthermore, the legal work time is limited to eight hours daily, with the exception of Sundays and national holidays. German federal labor laws mean that tactics used by American employers, such as threatening to terminate employees for safety concerns and the use of longer daily shifts to reduce total employees, are legally barred. It is important to note here that while the first tactic is also legally barred in the U.S., it is significantly easier to get by with under “at will employment”, whereby employees can generally be immediately dismissed for no stated reason and must then prove company retaliation. When immediate dismissal is reserved for serious misconduct and therefore rare, it becomes more difficult for a company to use such a tactic. It can therefore be posited that the existence of well-managed stringent regulations is a deterrence from unethical employment practices.

### 1.1.2 Trade Unions

Unions are significantly more commonplace in Germany than in the United States, with “half of German workers [being] covered by a collective bargaining agreement, compared to 6.1 percent of private-sector Americans<sup>6</sup>” (Jäger, Noy, and Schoefer 2022:53). Collective agreements are generally set at the industry-regional level, resulting in a “standardization in wages and working conditions”. Importantly, agreements happening on the industry level also means they apply to both union and non-union workers. Employers are therefore held to these standards regardless and cannot evade them by hiring non-union employees, as often occurs in the U.S. Furthermore, the 2022 Labour Rights Index scored German and

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<sup>6</sup> Jäger et al do not state whether “half of German workers” refers to private-sector, public-sector, or all German workers. OECD data from 2018 finds 54% of German workers and 11.7% of American workers (no specification for either) are covered by collective bargaining. (Organization for Economic Cooperation and Development, n.d.)



United States trade union legislation at a 75 and 25 respectively, finding that German law both protects the right to strike and prohibits the termination of striking workers, while U.S. law does not ("Country Profiles..."). The effects of union membership on worker safety are significant, with one study finding “a one percentage point increase in the unionisation rate is associated with approximately a 2.8% decline in occupational fatalities” (Zoorob, 2018).

### 1.1.3 Codetermination

The German policy of codetermination was paramount in its Ruhr region’s transition from coal. Codetermination falls under two categories: boardroom and shop-floor representation (Jäger et al., 2021). Board-room representation requires 33% worker representation for companies with 500-2,000 employees, and “quasi-parity” for those with over 2,000 employees, in which workers and shareholders split 50-50 representation, but shareholders have a final vote. For coal, iron, and steel companies specifically, workers are entitled to full parity representation. In shop-floor representation, which applies to any company with over five employees, workers elect representatives who take part in day-to-day decisions, including working hours and conditions and the firing of any individual.

Research surrounding the outcomes of codetermination has been mixed, with many finding that board-room representation has little to no effect on employee wages or separations, and shop-floor representation has a small positive effect on employee wages and slightly more significant effect on reducing employee separations (Jäger et al., 2021). However, this is very likely due to the fact that outside of codetermination, Germany has “some of the most cooperative industrial relations in the world”, meaning board-room and shop-floor representatives may have little excess bargaining to do. Moreover, research shows that strong codetermination within a company is “strongly and positively related” to substantive corporate social responsibility policies, those which include “real changes to operations and requires the commitment of organizational resources”, including both environmental and labor related policies (Scholz & Vitols, 2019).

Still, the particular power of coal, iron and steel employees have meant codetermination played a strong role in their bargaining during coal phaseouts. In the context of this energy

transition, this process ensured workers were guaranteed a voice in the creation of transition policies, and, in turn, meant, “none of the employees of hard coal producer companies became unemployed” (Furnaro et al., 2021, p. 16).

Liberal market economies such as the U.S., in comparison, practice shareholder control in which “shareholders sole purpose [is] maximizing their own welfare”; the previous chapter has explored in depth the effects on working people when this is the company’s main driver behind decision-making (Jäger et al., 2021). A codetermination system in the United States, wherein employees directly influence not only layoffs and wages, but also safety standards, would have a significant impact on preventing disasters such as those which occurred at the Deepwater Horizon and the Upper Big Branch mine. More generally, it would mean that companies would no longer be able to make calculated decisions solely based on maximizing profits at the expense of their employees and would provide an opportunity for blue-collar workers to platform their just transition demands, as it did in the German model.

## 1.2 Social Welfare Systems

The German just transition was further supported by Germany’s robust social security system. The system provides various manners of support for people who experience income instability. In addition to unemployment benefits, it offers income support, which assists “job seekers, employees with insufficient incomes, or people who are not entitled to unemployment insurance” (Furnaro et al. 2021:14). Furthermore, the system includes vocational training programs and “job placement support” through agencies. For retirees, Germany has a pension system “considered quite generous through international standards” (Furnaro et al. 2021:15). Considering the retirement age in Germany is 64, many miners would be taken care of by their baseline retirement system by the time coal is phased out (aimed at 2038); however, just transition plans (which will be discussed in detail in further section) provided for early retirement for coal miners. Having an existing, strong social security system made a significant difference in planning for Just Transition, as just transition policies could build off of the existing framework.

### 1.2.1 Fiscal Equalization

A third but equally important facet of the German system that contributed to its just transition is that of fiscal equalization, in which “tax revenues are distributed in ways that favor fiscally weak regions” (Furnaro et al. 2021:19). For regions whose economies had been historically dependent upon coal, this was essential to ensuring they were not devastated by the energy transition. The Joint National/Lander Task for the Improvement of Regional Economic Structures is the responsible body for “promoting economically weak regions” and is funded both by national and regional (Lander) governments. Funding is allocated by need, assessing regions by (1) unemployment rates, (2) average incomes, (3) “employment forecasts” and (4) existing infrastructure. It provides grants, loan guarantees and investment grants for “SMEs [small and medium enterprises], technological development and innovation, and support of rural areas” (Furnaro et al. 2021:65). Studies have shown high success in regions that receive funding, including a “robust positive effect” on employment rates. The United States is unique in that it has no such system; in fact, it is the “only major advanced industrial federal country” that does not have some form of fiscal equalization (Béland & Lecours, 2014). Considering the role it played in providing funding to coal dependent regions in Germany, and furthermore the relationship between coal decline and poverty in Appalachian coal-dependent counties, the American lack of fiscal equalization can be understood as a roadblock in any just transition plans (Snyder, 2018).

## 2. German Environmental Law

German environmental law, much like its economic system, has sought to balance economic growth with environmental protections. Beginning in the 1970s, environmental legislation gained traction, and was often considered some of the most progressive in Europe (Schlemminger et al. 2004). The Green Party, formed in 1980, has had representation in the federal government since the 1990 election, and in 2019 won 20.5% of the vote (Kaza & Smith, 2023). Its platform has greatly contributed to prioritizing environmental protection at a federal level. German environmental legislation is guided by

three fundamental principles: the precautionary principle, the polluter pays principle, and the cooperation principle. The following sections seek to define these principles in greater detail.

## 2.1 Precautionary Principle

The precautionary principle is a foundational part of German environmental law, written into their first legislations on environment in 1970 (O’Riordan, 2013). German law defines the precautionary principle to require “[environmental] damages... should be avoided in advance...the early detection of dangers to health and environment by comprehensive, synchronized research...acting when conclusively ascertained understanding by science is not yet available”; in short, it refers to the necessity of erring on the side of caution in the context of environmental and health preservation (O’Riordan 2013). This principle provides the foundation for environmental regulations within German law.

The U.S., in contrast, generally uses cost-benefit analysis (CBA), in which government regulations are applied “only if the benefits of regulation justify its costs” (Sunstein, 2005). Proponents of CBA have argued that the precautionary principle results in spending on regulation for assumed risks that may be overcalculated; furthermore, that the cost of these regulations would generally be offloaded onto workers and consumers. Sunstein points to the residents of a coal mining town who, when the EPA found them to be at risk from toxic pollution, were angered by the EPA’s involvement and potentially economic effects of shuttered business. He further states that for many people, “precautions... seem far less attractive when people believe that precautions would produce significant costs and risks” (Sunstein 2005:368). The argument is true, but it only highlights the “American problem” more. The cost of doing business without ruining the environment or the health of the local community should simply be the cost of doing business. The most vulnerable American citizens – consumers, employees, and residents of mining towns alike – should not be worried about how environmental regulations that keep them safe may in turn negatively affect their socioeconomic status. This is the result of a free market economy, paired with

weak social welfare, that considers the benefits for industry leaders at the cost of everyday Americans.

## 2.2 Polluter Pays Principle

The polluter-pays principle requires that financial responsibility for the remediation of environmental damages is placed on the liable party, rather than state governments. The extent of that responsibility, however, is limited. In Germany, the principle does not only apply to the cleanup or remediation; it also states that the “initiator” has “responsibility for environmental protection, whether that be through avoidance, mitigation, or compensation” (Lundmark, 1998). However, when costs cannot be internalized, often because it is difficult to assign liability, the government applies a “spreading the loss” policy, in which federal taxes are used to cover the costs.

## 2.3 Cooperation Principle

The third guiding principle for German environmental law is the cooperation principle, which requires that “those who undertake an action must notify those whom the action may affect, and must involve them in the planning of the action” and is based upon the idea of “mutually dependence” (Lundmark 1998:19). The principle is codified in various environmental laws, and in some has been extended to allow associations to protest actions that may not directly affect them. (Schlemminger et al., 2004, p. 36). The general idea that this principle is formed upon, that environmental policy is better adapted in a “cooperative rather than adversary environment”, is evident in German just transition plans that will be discussed in further sections, in which decision-making gave representation to all interest groups (Lundmark 1998:19).

## 3. Just Transition Policies in the Ruhr Region

Germany is often hailed as a practical success of Just Transition, with many countries using it as a guideline for their own transition policies. It is important to recognize that the Ruhr transition was due to the economic decline of coal beginning in the late 1950s rather than

its impact on the global climate, and because of this was able to occur over the course of sixty years. This amount of time allows for a more gradual and therefore easier process, but given the state of the climate emergency, is no longer a realistic option. Still, assessing the successes and failures allows us to circumvent potential pitfalls of current plans, ensuring they better meet the intentions they aim to achieve.

Coal has been crucial to Germany's economy for over a century and was paramount to their rebuilding following the Second World War. The sector consists of two forms: hard coal mining in the West of Germany, and lignite mining in the East. The phase-out of hard coal began in the 1960s, after economic decline began due to the increasing costs of mining in the country, while importing coal and other forms of energy became a cheaper option (Furnaro et al., 2021). The mining sector saw its highest employment in 1957, and in the course of ten years, lost over half of its workers, around 320,000 jobs. The Ruhr region, where the majority of hard coal mining occurred and which was considered the "economic backbone" of Germany for this reason, saw a record 15.1% unemployment rate in 1987. Although the government saw a need to address this, the focus in the first decades (1950s and 60s) was on revitalizing coal rather than transitioning away; when this ultimately showed little success, transition policies became their main focus. The Ruhr region is now generally hailed as an example of a successful just transition.

From 1980 the German government included a focus on "diversifying" the economy of the Ruhr region; while it was once dependent on coal, it now includes various sectors such as "environmental compliance, eco-tourism, several leading universities, renewable energy manufacturing and high-tech hubs" (Mercier, 2020, p. 48). Policies that worked towards achieving this goal included specific financial investments for new businesses in the form of low interest rates, tax deductions, grants, and several other incentives for research towards clean energy and technology, for university development, and for various other sectors.

### 3.1 Education, Research and Technology

A large focus has been on creating a “knowledge-based economy”. Funding for university development has resulted in the Ruhr region being “one of the most university-dense regions in Europe”, and in addition to creating a “specialized local workforce ... not related to coal”, this has also aided in sustaining the economy throughout transition by bringing in students and university employees (Furnaro et al., 2021, p. 28). Moreover, incentivizing higher education created an additional pathway for high school graduates outside of immediately entering the job market, in turn raising the likelihood of displaced workers finding jobs. In addition to having the highest number of universities in Europe, there are 15 technical colleges and 49 research institutes in the region; combined with universities they employ “over 31,000 people” in the region (Stavchuk & Bals, n.d.). Programs that offered targeted support to fund research and development, specifically in the technology sector, were created as early as the 1970s, and the Ruhr region boasts some of the earliest technology parks in Europe (Furnaro et al., 2021). Dortmund, one of the region’s largest cities, is home to a technology park that employs over 20,000 people.

### 3.2 Compensation and Retraining of Displaced Workers

Part of diverging from a coal-based to a knowledge-based economy included assessing the skills of coal miners, in order to plan in which sectors existing skills may be applicable, and to determine which vocational training may be best for an individual. In fact, “individual re-employment strategies” were developed for each displaced worker by governments, businesses, and unions; from there, a “regional ‘hidden’ knowledge base that was skilled and innovative in renewable technology, energy efficiency, renewable resources, recycling and waste combustion”, due to years of working in the energy sector, was found (Furnaro et al., 2021, p. 30). This knowledge base directly contributed to the growth of the renewable energy sector in the Ruhr region, and by recognizing what transferable skills a person possesses and which skills can be further developed, it also provided necessary labor for the sector and necessary jobs for otherwise displaced coal workers. The Action Program Ruhr (1980-1984) funded training centers that specialized in training “disadvantaged” persons,

such as those who had experienced unemployment for longer periods, older age groups, and disabled persons.

In addition to re-training programs, the government also provided compensation to coal miners who lost their jobs, through “adjustment allowances”, which included among others: “two years of wage subsidies”, “transitional aid” for older or disadvantaged workers until retirement, financial assistance to aide with relocation and travel expenses – including for those who had to manage “double households” and family visits due to out-of-town work –, and rental assistance (Furnaro et al., 2021, p. 44).

Early retirement plans were made available for those over age fifty for underground mining and fifty-seven for surface mining; these plans were paid for five years and allowed recipients to continue working (although not for their “former employer or any of its subsidiary companies”) (Furnaro et al., 2021, pp. 44–46). These were tailored programs specifically designed for coal mine layoffs and were complimentary to standard governmental unemployment benefits. In addition to these programs, the Development Program Ruhr provided displaced workers with 24 months support to retain their “standard of living” and a “subsistence allowance” for those who participated in retraining.

In the process of analyzing past policies as models for developing new ones, it is of course necessary to consider programs that failed as well as those which were successful. This is especially true when developing policies on a time constraint such as the one that the current climate catastrophe requires in order to save time, resources, and money that we cannot afford to waste. The Subordinate National Labor Market Program for Regions with Employment Problems (ABM), which was retired in 2012, was one such program. The ABM created “low-skilled, low-paid jobs” funded by the government to provide necessary services to communities, with contracts lasting up to 2 years and ABM employees earning 60% of what they would earn through “regular employment”. The program was often criticized as falling short of supporting both workers and the labor market, with the former often still needing other forms of government assistance and the latter creating a divide between participating and nonparticipating companies, wherein nonparticipating companies struggled to compete (Furnaro et al., 2021). It should be noted that a fundamental aspect of



a successful Just Transition is that any form of employment to displaced workers must be comparable to that of “regular” employment.

### 3.3 Regional Development

Over the decades, leaders have emphasized regional development and quality of life, with targeted policies on infrastructure, museums/cultural life, and water and land restoration. Regional development can be seen as an important tool for a coal region transition, as it provides local jobs for displaced workers, restores towns which have suffered from coal decline and would otherwise be devastated from complete coal phase-outs, and attracts new businesses to the area.

### 3.4 Environmental Remediation & Tourism

A large part of regional development in these areas was restoring land ruined by decades of mining, rendering it unusable and thereby hindering potential new business ventures. In addition, mining companies refused to sell land, partially to avoid costs of restoration they would be accountable for due to the “polluter pays” principle in Germany, and partially out of fear of competition from new business (Stavchuk & Bals, n.d.). To circumvent this, the “State Development Society” was created to purchase and restore abandoned lands, many of which have been turned into “museums, historical amusement parks, and outdoor recreational centers”, transforming the region’s culture and tourism sectors as a manner of sustainable economic development (Furnaro et al., 2021, p. 33). Zollverein coal mine, which closed in the 1980s, is now a UNESCO Heritage site and its tower is sometimes referred to as the “Eiffel Tower of the Ruhr Region” (Arora & Schroeder, 2022). Visitor overnight stays to the region almost doubled from 1990 to 2012, going from 3,588,394 to 7,026,396.

Environmental remediation also focused on water and air purifying, with various policies and agencies set up to monitor continuous efforts, many of which are considered “perpetual obligations” (Furnaro et al., 2021). Earlier programs (Development Program Ruhr and Action Program Ruhr) provided funding to restore abandoned industrial sites, but also to

strengthen environmental protections moving forward, including by offering tax exemptions for businesses and individuals who invested in the region. Now, long term water management is funded by both national and local governments as well as the RAG Foundation – a foundation set up to manage environmental remediation by the RAG AG, a merger that occurred in the 1960s of previously privately owned coal companies into one company. This management includes “pit water management, polder measures, and groundwater purification”. The RAG foundation is partially funded by both the RAG AG as well as Evonik AG, a chemical company majority owned by the RAG.

The various programs above all focused on improving the urban development and quality of life in the region, both for its residents but also to improve the attractiveness of the region for businesses. In addition to these programs, financial programs were set up to further attract businesses, offering low interest rates, tax deductions and grants (Furnaro et al., 2021).

### 3.5 Ruhr Transition: Success?

All of these policies - retraining, higher education investments, research and development funding, infrastructure improvements, land and water restoration, the building of universities and technology parks, and reopening closed mines as tourism sites – provide transitional pathways for displaced workers who are not ready to retire. For those who were fairly close to retirement age already, German baseline policies, supplemented by additional targeted policies, provided early pensions along with other resources to ensure they were able to uphold their standard of living following the closing of mines. Many of these policies are concrete examples of sustainable job creation, manners of developing a region without a sole focus on profit and instead with the goal to improve quality of life for its residents while simultaneously creating job opportunities. For a region whose future was uncertain given the decline in coal, it also ensured an opportunistic future for younger generations, who otherwise would have faced significant struggles. Over the decades, a carefully navigated and well-funded set of programs was able to transform the Ruhr region from a declining coal region to a hub for culture, higher education, and technology.

Nevertheless, the region has not been left without remaining obstacles – cities in the Ruhr region still see higher unemployment rates (almost double the national rate), although some researchers find that given the phase out of their biggest industries, a higher unemployment rate is to be expected, and they find 10% to actually be a testament to the success of the above policies (Mercier, 2020). Furthermore, this transition was not at all built upon the need for urgent climate action; as such, its suitability for today’s just transitions may be limited.

## 4. Obstacles to a Full-Scale Just Transition in Germany

### 4.1 A Full Transition Still in Progress

Despite the Ruhr coal transition often being hailed as a just transition success story, their current transition plan from lignite coal in the Lusatia region, a region shared between Germany and Poland, highlights obstacles that we may also take into consideration. Moreover, despite having completed their phase out of hard coal mining in 2018, Germany still imports hard coal to use in power plants. In fact, 35.4% of its electricity came from coal as of 2018 (Mercier, 2020), and it is still the ‘largest producer of coal related GHG emissions’ in Europe (Morena et al., 2019, p. 158). In light of the Russian invasion of Ukraine and the European Union’s response to impose sanctions on Russian oil, Germany has relied on coal instead, importing 44.4 million tons in 2022 (*Germany*, 2023). In addition, the country reopened dozens of coal plants, and since 2020 has been moving forward with plans to demolish Lutzerath, a small town just south of the Ruhr area, in order to open a lignite mine in its place (Nolting, 2023) . The residents of the town had mostly moved away, with only “one farmer and a few tenants” still living there, along with climate activists who have moved in to protest the demolition ("Germany's Energy U-turn..." 2022). That Germany remains dependent on coal has called into question whether their transition can be a model for other countries, or even whether it can fairly be called a transition.

#### 4.1.1 Lignite Mining in Lusatia: A Challenge to the Ruhr Model within Germany

Coal has characterized the Lusatian region from the nineteenth century; in fact, before the reunification of Germany, lignite coal provided for 87% of energy in East Germany and was a source of pride for Lusatia. The industry struggled to transition into a market economy after reunification with the West in the 1990s, and for this reason as well as the effects it had on the surrounding environment, the government chose to close many mining sites, in turn “decimating the region’s well-paid jobs” (Heer et al., 2021). A previous source of job opportunity, the sector now only employs around 3% of the region (Schulz & Schwartzkopff, n.d.). Despite attempts to revitalize the region, creating a “Lusatian ‘Lake District’” and funding investments in tourism sectors, nothing has sufficiently filled the job losses. Many residents still reflect on the period of mine closures and subsequent economic devastation as “mostly negative, painful, and humiliating” (Heer et al. 2021). The effects of their resentment are far reaching – in 2019, the far-right extremist party Alternative for Germany (AfD) won the majority of votes in the region, likely at least in part because the party opposes coal phase-outs (Gürtler & Herberg, 2023). The political climate in the region reflects what is evidenced by the American coal country’s support for Donald Trump.

Of course, not all residents are in support of preserving coal in the region. As is the case in many coal regions, the resource is a double-edged sword. On one hand, it provides residents with jobs that have higher annual salaries than the national average without requiring formal education; on the other, residents also suffer from environmental damage to their land, air, and water. Studies show that groundwater remediation can take up to 100 years (Mercier, 2020). There is an additional sense of tension in Lusatia as, similar to what occurred in Lutzerath, small towns and villages have often been relocated for mining land use, with “between 25,000 and 30,000” residents being pushed out of their homes for this objective since 1945 (Schulz & Schwartzkopff, n.d.). As such, “residents [are] split amongst “those who support the coal industry and the need for employment in a region suffering from decline, those who want the removal of towns and villages to end, and those who support Germany’s ‘ecological modernisation’ and phase-out of coal” (Mercier, 2020,

p. 81). In many ways, the Lusatia region of Germany parallels Appalachia, and as those residents and miners have continuously demanded, it is essential that governments do not leave residents to make difficult decisions between environmental and socioeconomic risks. The struggle for the region to transition, even under a government who successfully carried out a coal transition before, begs the question as to whether the Ruhr model can be replicated over a much shorter time frame.

#### 4.1.2 Coal -Exit Commission

The Coal Exit Commission, made up of representatives from the government, trade unions, NGOs, businesses, academia, and environmental experts, has sought to fairly represent the various groups impacted by the phase out. The Commission was formed in 2018 to address the necessary transition away from any form of coal, including by assessing how the country could meet its 2020 and 2030 goals and to put forth a “coal exit” date in which the country would aim to halt coal usage altogether. In addition to a date, the Commission was tasked with forming a plan to achieve this goal, ensuring social and economic protections for affected parties (Mercier, 2020). The recommendations posed by the Commission were not legally binding, but to be used by the national and local governments to develop and enact policies in line with the recommendations. As highlighted in the previous section, so far, this transition has proved more difficult.

It is a necessary and positive component of a Commission to be equally represented by multiple parties, but it is also true that this can make developing strong recommendations more difficult. Worried about the effects of a rapid decline in coal jobs for the region, trade unions and local governments representing Lusatian towns have called for long-term transition periods and compensation both for the region as a whole and for coal miners who would lose their work (Morena et al., 2019, p. 168). Mayors have pointed to the events in the nineties to explain that their residents have a strong distrust of any exit plan, including “promised money” (Gürtler & Herberg, 2023). Business associations were often divided, as various sectors were well-represented within the Commission; those representing the energy industry were in favor of a slower transition, while those representing renewable

energy held the opposite viewpoint. Environmental experts and activists routinely pushed for a faster and more progressive phase-out, concerned that it will be otherwise impossible to meet the necessary targets (Morena et al. 2019:162-164).

Nevertheless, the Commission published its recommendations in January 2019. The Commission recommended that “no new coal-fired power plants should be connected to the grid and no new open cast lignite mines should be developed” (Mercier 2020:68). Other recommendations are mostly in line with what has historically worked in the Ruhr region, i.e., research and development, infrastructure upgrades, economic development, and training for skilled workers. Climate experts have criticized the Coal Commission's plan as not being sufficient to address the pressing emergency, and, as previously stated, although being the EU country that produces the largest amount of coal related GHG emissions, Germany's plan is also the only one in the EU with a phase-out plan that finalizes after 2030. In the early years of hard-coal economic decline in the Ruhr region, the government prioritized subsidies and policies that were intended to support and uphold the sector, rather than prepare for a transition. This is generally considered a failure of the Ruhr transition, as they were ultimately unable to “save” hard coal and the result was only a delay in implementing transitional plans that revitalized the region (Mercier, 2020). It is surprising that the government appears to be repeating this mistake in the Lusatian region; while local residents may support these measures, government officials have the responsibility of acknowledging there is no feasible way of preserving coal and planning for a just transition in the region.

Moreover, The Coal Commission recommendations, as well as previous plans for the Ruhr region, have all included compensation for coal companies who will lose profits from the transition. This has also been heavily criticized as promoting a “compensation culture” for companies in addition to raising the costs of a just transition model, rendering it impossible to apply in countries with weaker economies (Mercier 2020). The German government and two of the largest coal companies, LEAG and RWE, have since negotiated privately a compensation deal that provides a combined 4.35 billion for the companies to phase out coal before 2030. These negotiations have been heavily criticized by the German public, as

there is no clear reasoning for how they decided upon this number. The German *Okoinstitut* has argued that compensation is almost double what it should be given the “bad economic outlook” for coal on the market economy, irrespective of coal phase out plans (Heilmann & Popp, 2020). It bears reminding that, as discussed in detail in the previous chapter, industries have long held responsibility for contributing significantly to the current crisis, and, despite having addressed that the German economic model is more stringently regulated than the U.S. model, there is no arguing that these coal companies have profited for decades while damaging the environment around them. It is contradictory to argue for a “just” transition that would expect taxpayers’ money to go towards compensating those who have profited the most from this disaster.

## 5. Evaluating the German Just Transition

As this phase-out is still in progress, it is hard to fully evaluate its success. As previously mentioned, Germany moved forward with the development of a new lignite mine in Lutzerath, already contradicting the first mentioned recommendation, and coal imports were up 11% in 2022 from the previous year (“Germany's Energy U-turn...” 2022). Still, the government has reached an agreement with the “energy giant” RWE to phase out coal in the western region by 2030, earlier than the exit date proposed by the Coal Exit Commission. Climate activists and politicians have disagreed over these issues, with politicians assuring that the countries’ renewal of coal mining is short term and is still in line with its climate commitments, and climate activists accusing the government of caving to industry interests (Weise, 2022).

As far as the success of the Ruhr transition, it is necessary to consider that it was never rooted in climate change objectives, but rather due to the increasing economic cost of mining in comparison to the cost of importing coal – the objective was never to phase out the use of coal, simply the method of obtaining it. Therefore, in the context of today’s “just transition” discourse focused on climate action, it is hard to consider the Ruhr example a success story. Coal is still being burned and as discussed in the previous section, there are serious considerations as to whether Germany will meet its Paris Agreement commitments.

Nevertheless, the Ruhr transition was fairly successful in its goals, which were to diversify the local economy to safeguard it from economic devastation following coal's phaseout, and to provide both coal workers and a newer generation with varied job opportunities. Many of these policies provide direct answers to the concerns and demands of American fossil fuel workers assessed in the previous chapter. Moreover, while some policies may not be far-reaching enough to address climate change, the need for climate action may provide a basis for transitional jobs.

One important conflict is that of the continuing disagreements between environmentalists and trade unions, who represent both equal parts of a just transition. Earlier sections have highlighted the importance of trade unions in ensuring workers are not exploited, both in and outside of the context of a transition. Still, climate activists and experts have attributed the failure of the Coal-Exit Commission's recommendations to meet the Paris Agreement requirements to the push-back against more stringent climate action from trade union and local government representatives. But much like fossil fuel workers in the U.S., feelings of being overlooked or dismissed have led residents and miners to be extremely resistant to any climate action and have escalated the "jobs versus environment/us versus them" argument. As this conflict has acted as a hindrance to achieving a true just transition in both the United States and Germany, wherein both parties prioritize their own "part" rather than viewing them as one goal, the following chapter will explore how the two parties may resolve this tension. The challenge for governments moving forward is to ensure the concerns of both parties are appropriately addressed in energy transition policies; a united front between the two would propel this goal significantly.

## 6. Applicability of German Just Transitions in the U.S.

The German transition may not be enough to guide an urgent transition from fossil fuels in line with climate commitments; however, it does provide insurance that an economy can survive the necessary phase out of key sectors without sacrificing the livelihoods of blue-collar workers and vulnerable regions. In this regard, it should not be overlooked completely. Recognizing which parts of the German system may serve the purpose of a



full-scale just transition provide a potential template that can be replicated elsewhere. Of course, in the context of the United States, this replication becomes more challenging when we consider the fundamental economic and social system differences.

## 6.1 Economic and Social Systems in the Context of Just Transition

It is important to recognize that many of the German transition programs were made possible because of policies that give greater importance to social welfare. These existing “baseline policies” are imperative to assessing Germany’s successes in transition plans, having provided a strong structural framework from which to build, and it has been argued that they must be acknowledged as a possible obstacle to the “potential replicability [of German just transition plans] in other contexts with weaker social and labor protection systems” (Furnaro et al., 2021). This is, of course, not applicable in the context of the United States, where concepts such as codetermination and fiscal equalization are non-existent.

But rather than perceive these differences as an implication that the German plan is therefore not replicable in the U.S., it can be understood as an acknowledgment to reconsider social and economic policies that protect and reward the upper class and big businesses – specifically those which for years have exploited workers and the environment – while offering limited support to workers who are at risk of displacement. By considering the importance of these social safety nets in Germany’s transition, they can be taken as blueprints for a new model that protects not only fossil fuel workers today, but all future employees in the United States.

## 6.2 Just Transition Lessons from Germany

In addition to these general baseline policies, countries like the U.S. can take one key component of the German model - the “bottom-up approach” the country applied to their transition process has been acknowledged as contributing to its success, with regional governments working closely alongside the national government to develop policies “tailored to local needs and realities” (Furnaro et al. 2021:40). The inclusion of local

governments in the Coal-Exit Commission have been proven to ease resistance by coal miners and residents who are concerned what the phase out would mean for their regions and ensure they, as the people most negatively affected by it, are fairly represented in transition plans - key to developing any “just” plan. Prior to the Coal-Exit Commissions, despite funding coming from both national and Lander levels, local governments were given significant autonomy to develop the various programs aimed to promote economic diversity of the Ruhr region discussed in the previous sections, recognizing that they were most equipped to determine how transition programs could best fit local needs. For example, the Emscher Park International Building Exhibition, which sought to restore the highly polluted Emscher River area, allowed for “the region’s renewal [to be] developed and carried out by the region itself” (Mercier 2020:27). Over a ten-year period, 123 projects developed by local governments were carried out, including land remediation, business parks, housing, and various cultural and recreation sites, including the UNESCO heritage site mentioned previously (Furnaro et al., 2021). Programs such as the Action Program Ruhr included “direct investments ... to strengthen their administrative capacity” in order to ensure localities were sufficiently able to carry out development plans; similarly, the Commission’s recommendations included “strengthening the public sector in mining regions” (Furnaro et al. 2021:25).

## Conclusion

In just transition discourse, Germany is often cited as the model for a successful transition. With a goal of “no one [being] left behind in the pits”, various programs were implemented to ensure coal miners were not neglected during the country’s coal phase out, instead offering transitional job pathways or early retirement (O’Malley, 2019). Furthermore, the acknowledgement that entire regions would be economically devastated without government intervention meant targeted financial investments and development programs were implemented, and an once coal-dependent region is now home to what is often called a “knowledge-based economy”. The importance of German economic and social welfare structures cannot be understated, as principles such as codetermination, fiscal equalization, and strong social security ensured the wellbeing of workers and vulnerable communities

were prioritized. This is in stark contrast to the United States' system, marked by a liberal market economy with limited government interaction, resulting in the wellbeing of fossil fuel workers often being compromised in order to maximize company profits.

Still, calling the German model a complete success in the context of today's climate catastrophe is difficult, considering the country's continued dependence, and even the resurgence, on coal. The country is set to miss its Paris Agreement targets, and as recently as this year has reopened coal mines. And, similarly to the United States, the "jobs versus environment" argument has becoming increasingly commonplace surrounding the Lusatian region's transition from lignite coal. Considering all of these factors, it must be asked what place the German model has within just transition discourse today. It may certainly meet one of the objectives – to ensure fair and just transitional pathways are provided for workers affected by fossil fuel phaseouts – but can it achieve the other objective, to urgently meet necessary climate commitments? And if not, if both liberal market and social market economies are unable to navigate a way forward, then what is required to ensure a full-scale just transition?

# Chapter 4

## Introduction

This research has sought to understand how a true just transition, one which enacts sufficient climate action to meet the current emergency and simultaneously protects workers who may be negatively impacted by this action, may be realized in our world. Among just transition discourse, there are generally two groups: those who believe it will occur within a “green growth” model in which market forces lead an energy transition and create jobs in the process, and those who argue that a system dominated by the constant need for growth at the expense of workers and the environment is unfit for navigating a just transition. To make sense of these arguments, previous chapters explored the relationship between this system, the climate crisis, and labor exploitation (whether it be referred to as capitalism, free market economies, or economic growth, the focus is on a system that prioritizes company profits and economic growth above everything). Chapter 2 therefore explored how the American model of underregulated capitalism is a driving force of both climate change and worker-related issues. Chapter 3, in comparison, analyzed how a German model of capitalism differs from the American system, and whether or not the Ruhr transition under it could be considered a model of a just transition. Considering that these chapters found neither the United States nor Germany has successfully met both objectives of a Just Transition, this chapter seeks to answer the final research question: can a *true* just transition occur under current economic models, even those which strive for a new, “green” capitalism? And, if not, does it require that we reject the pursuit of economic growth altogether, turning to what has been referred to as “degrowth” instead? Exploring current pursuits for green economic growth, we find they often still fall victim to the same exploitation of both the environment and workers seen in other forms of capitalism, something proponents of radical systematic change argue is the result of any capitalist model, no matter the resource it sells. As a result, this chapter argues that because capitalism will always need to exploit both parties that a just transition seeks to protect, it is hard to imagine that a just transition could then take place under this system.

## 1. Green Growth: Just Transition Under Capitalism?

Recalling the various Just Transition discourses highlighted in Chapter 1, international nongovernmental bodies, state governments (specifically among the Global North), trade unions and even many of those in environmental and climate activism sectors generally call for policies that fall under Green Growth and Green Jobs discourse. The Paris Agreement's proposal for just transition is that it occurs "in accordance with nationally defined development priorities" (Wilgosh et al., 2022, p. 9). The UN Sustainable Development Goals website lists "185 documents related to Green Growth" (Belmonte-Ureña et al., 2021, p. 3). The Biden Administration's Inflation Reduction Act of 2022 has been promoted as the largest climate bill in the nation's history, while also promising economic growth, green jobs, and an energy transition that is "private-sector led and government enabled" (Worland, 2023). Ursula von der Leyen lists the EU's Green Deal Industrial Plan's objectives as "[securing] the EU's industrial lead in the fast-growing net-zero technology sector" and allowing "key clean tech industries to scale up quickly" ("The Green Deal...").

It is hard to understand how climate goals can be met under "nationally defined development priorities" in states such as the U.S., where development priorities are generally centered around economic growth and free market policies that allow for the exploitation of natural resources. Even under a more regulated economy, such as the German model, we find a failure to meet climate targets. This is in part from external factors such as the Russian invasion of Ukraine, but also because concerns relating to economic decline have led to a slower phase out of coal, rather than a focus on how they may ease economic burdens during a more rapid transition. Moreover, "renewable energy industries are currently developing in a twenty-first century context including global trade regimes, energy deregulation and competitive market pressures, which places them at risk to become non-union, low-wage and unsafe employment sectors" (Sicotte et al., 2022, p. 7). All of these factors have brought into question whether a meaningful just transition can occur under capitalism. The following sections explore how "private sector led and government enabled" energy transitions have so far led to many of the same consequences we see in Chapter 2.

## 1.1 Different Resources, Same Exploitation

While politicians have promoted the creation of green jobs within an energy transition, it must be acknowledged that under free market capitalism, there is nothing requiring these jobs to be well-paying, safe jobs. Recalling Chapter 2, many fossil fuel workers expressed concerns regarding this, having had colleagues who transitioned to clean energy that pay significantly less and are often nonunion jobs (Scheiber 2021a). Moreover, because the work such as solar panel installation is less complex, companies have often sought out unskilled laborers – a practice that electrical union leader Greg Remington considers highly dangerous, concerned that these employees are “not qualified and not supervised by a qualified person ... to perform electrical wiring and connections” (Scheiber 2021a). This issue, it should be noted, is not limited to solar panels. A coal energy plant operator interviewed about transition prospects said of his wind energy counterparts, “they're not all union, though, so they feel like they have to do stuff even if the conditions aren't really favorable. I've seen pictures of guys up in storms and stuff and it's just like, 'Why are you even up there?' 'Have to get this job done'”, referring to the same business-as-usual attitude reflected in Chapter 2 (Sicotte et al., 2022, p. 6). At Tesla plants in the United States – which produce electric vehicles – workers have cited many of the same problems fossil fuel workers expressed in Chapter 2, including excessive working hours and preventable injuries, with one worker saying, “the almighty production is king, we're all expendable” (Lamers, 2023). In response to union organizing at one of his plants, the company's CEO Elon Musk tweeted that unionizing would risk “stock options”; the National Labor Relations Board found his threat to be a violation of labor laws. Ultium Cells, an electric vehicle battery manufacturer, has paid \$12,431 in OSHA fines, had 22 workplace injuries, and 48 calls to police “related to health and safety” in the one-year period since its opening in October 2022 (Leon, 2023). The company has taken advantage of federal funding for clean energy initiatives, and yet starting wages for employees are “just above the poverty level for a family of four” (Leon 2023). It is unacceptable that any federal climate policy would offer tax breaks and funding to companies without any stipulation that employees

receive fair wages and benefits. Blue-collar workers, as they have argued for years, cannot be expected to bear the burden of an energy transition.

Significantly worse are reports of human rights violations surrounding clean energy sectors in the Global South. In the Middle East, Africa and South America, significant conflicts, some resulting in the deaths of protestors, have erupted following land disputes where hydrogen plants have planned construction (“Germany’s Great Hydrogen...”). Cobalt, which is used in EV battery manufacturing, has been tied to child labor in Congo (Ohnsman, 2023). While companies such as Tesla have pushed back against claims they use child-labor produced cobalt, researchers have argued it is “nearly impossible to separate the flow” between cobalt mined used child labor and industrially mined cobalt. In South America, tensions over lithium extraction on or near indigenous lands have sparked tensions between indigenous people and the governments, with the former accusing the latter of prioritizing “former mining companies” interests over their own (Liu, 2021). While it is beyond the scope of this thesis to explore how far-reaching and interconnected both the climate crisis and corresponding climate justice are, it must be stated that a just transition cannot include the replacement of dangerous and exploitive fossil fuel jobs in the Global North with dangerous and exploitive renewable energy jobs in the Global North. Just as blue-collar workers in the Global North cannot be expected to bear the burden, neither can those in the Global South.

## 1.2 Tesla in Germany: Liberal Market Operations in a Social Market Economy

Tesla, perhaps the most well-known brand in clean electric vehicles, has not just brought attention to the continued exploitative nature of working conditions in the U.S. and of “clean” resource extraction in the Global South. Rather, we find the American business’s influence on its German operations as well. When the company opened its Germany factory in 2021, it refused to sign collective bargaining agreements with the metalworker union IG Metall (while collective agreements are the norm in Germany, they are not legally required). Furthermore, it evaded the German requirement of codetermination within its company by registering as a “European Company or Societas Europaea (SE)”, which are

exempt from the requirement (Kinkead & Elias, 2022). In January 2023, the union accused the company of excessive working hours and creating a “culture of fear” by requiring workers to sign non-disclosure agreements along with their labor contracts. This culture of fear was furthered by the creation of a “Security Intelligence Investigator” position designed to gather “information both within and beyond Tesla walls in order to protect the company from threats” (“Tesla Under Fire...” 2023)”. The union also alleges that based on publicly posted job offers, Tesla pays 20% less than similar offers in the auto sector, a “heavily unionized” sector. In September 2021, upon the opening of the German factory, Tesla was granted permission to operate “around the clock” on weekdays and from 7 AM to 8 PM on Sundays, with authorities citing the need to “achieve the ambitious climate protection goals” (Metzner, 2021). That a country well-known for strong labor protections – which were, as evidenced in Chapter 3, essential to its Ruhr transition – would adjust them in the name of climate action sets a worrisome precedent for the “green” industry. One of the fundamental questions for this research was whether a social market economy could manage a just transition better than a liberal market economy. The Tesla business model in Germany bears striking resemblance to the experiences of overworked, underpaid oil and gas workers in the U.S. And so, we find that even a well-regulated, social market economy may opt to turn towards liberal market tendencies that exploit workers to meet rushed climate goals. It appears that market economies as a whole may not be equipped to balance the needs of both workers and the climate crisis – their policies have shown we either cling to fossil fuel jobs (many of which are hazardous to employees themselves) at the cost of the environment degradation, or we progress clean energy options at the cost of labor exploitation.

### 1.3 Misinformation Campaigns in the 21st Century: Greenwashing “Green” Energy

In the late 1900s, the fossil fuel sector funneled money into campaigns to contest growing warnings of global warming by scientists. As discussed in Chapter 2, this campaign targeted politicians as well as the American public, and had devastating effects on the



perception of the seriousness of climate change. This misinformation campaign directly contributed to the limited and delayed climate action that has led us to the current catastrophe, and it was created solely to protect the profits of the fossil fuel industry. Despite some Americans and politicians still denying the gravity of the climate crisis, fossil fuel companies have understood in recent decades that there is an opportunity within the “green economy” to profit from renewable energies. As such, they have increasingly sought a place within this market, positing themselves as potential leaders in the field. A report by the think tank Industry Map found the five largest oil companies have spent a combined \$1 billion on “misleading climate lobbying and branding activities” (InfluenceMap, 2021). Unsurprisingly, there is a significant disconnect between their commitments and actions. One study finds that despite an increased focus on lowering emissions and cleaner energy in annual reports from BP, Exxon, and Shell – three of the biggest oil companies – measurable actions have been minimal at best (Li et al., 2022) All three companies have made pledges to reduce emissions (with BP and Shell setting net-emissions goals), yet none of them have produced any concrete measures to do so. Both BP and Shell have pledged to invest 1% of capital expenditures into renewable energy sources; still, the study finds “no evidence to suggest any major has entered the renewables market at a scale that would indicate a shift away from fossil fuels” (Li et al., 2022).

German fossil fuel companies have largely appeared more open to an energy transition than their counterparts. This, however, may very well be considered its own type of “misinformation campaign”; research finds they have supported and promoted energy transitions that still benefit them, even at the cost of rising emissions – in other words, energy transitions that are promoted as clean, despite evidence that disputes this claim. A report by Corporate Europe Observatory finds that Germany has touted hydrogen as a clean transitional energy source, despite “99 per cent of globally produced hydrogen [being] made from fossil fuels” and its production “responsible for over 900 million tonnes of carbon dioxide (CO<sub>2</sub>) emissions in 2021” (“Germany's Great Hydrogen...”). The German Advisory Council on the Environment and the IPCC have both considered that hydrogen can play a minor “complimentary role” in the energy transition but cannot be considered an energy solution. Furthermore, the German government has funded German-owned

hydrogen plants in the Global South that have been at the center of intense conflicts, resulting in forced displacements and death sentences for protestors. The report further finds that German fossil fuel energy lobbyists have played a significant role in the promotion of hydrogen, likely because it encourages the continued use of fossil fuels, including by having “privileged access” to politicians and by designing PR campaigns.

In short, fossil fuel industries have publicly supported climate action, while privately lobbying for the continued dependence on their products. Recalling the decades of misinformation fueled by their profit interests, one should be skeptical of the idea that the fossil fuel sector would act in good faith. In fact, any investments and campaigning for clean energy and climate action is no doubt due to its growing popularity among consumers – i.e., it is good for their profit base to seemingly support the issue. In the 1980s, Exxon made its objectives very clear – to “protect the value of our resources” and “preserve Exxon’s business options” (Copley, 2023). Now, fossil fuel companies appear to be trying to balance the two of these, finding a potential “business option” in renewables. But to depend on the very parties responsible for fueling this crisis, with decades of evidence that they have put their profits above the wellbeing of society as a whole, would be a devastating mistake.

## 2. Just Transition Discourses that Confront Green Capitalism

The previous sections highlight how “green” sectors employ many of the same exploitative practices used by fossil fuel sectors as evidenced in Chapter 2. This should come as no surprise; the problem, at its core, is not the resources, but rather the business model itself. While it is true that renewable energies are a step in the right direction in the context of the climate emergency, the same cannot be said of the way their industries currently operate in the context of a just transition. Recalling the two objectives of a just transition defined in Chapter 1, to 1) address the environmental damage and global warming caused by polluting industries and 2) ensure fair and decent work is guaranteed for all affected by the first objective, a “just transition” that falls short of either of these objectives cannot accurately

be named as such. If Green Growth discourse and policies continuously fail to acknowledge that the system itself is the problem, Green Revolution instead does exactly this.

## 2.1 Green Revolution

Green revolution discourse rejects green growth altogether, considering it “an extension of capitalism itself, meant to wash its image and portray an eco-friendly façade without rejecting its deathly and extinctive nature” (Batalla, 2020, p. 71). It refers to the innate connection between capitalism and the climate crisis, pointing to how centuries of industrialization and development under capitalism acted as a catalyst to the current crisis. It finds that capitalism’s “inherent need for incessant growth” is underlined by a “remarkably close relationship in industrial nations between increasing output and the production of greenhouse gases” (Fox, 2022, p. 1128). Green revolution discourse further argues that the mechanisms of a market economy have been proven to fall short of meeting the climate emergency; despite years of financial incentives for renewables and carbon taxes, recent climate reports have shown the situation has only continued to deteriorate (Calvin et al., 2023). They neither “confront the power” and “control” of private industries nor “challenge the financial system that charges high interest rates to renewable energy” (Sweeney, 2015, p. 13). The U.S. government’s intertwined relationship with the oil and gas industry, as well as Germany’s with hydrogen and coal, both explored in previous sections, have shown that neither a free market nor a social market economy is necessarily equipped to well-regulate an energy transition. Green revolutionists would find this to be an inherent and obvious quality of capitalism.

### 2.1.1 It's not the Product, it's the Producers

Previous sections highlighted that fossil fuel sectors have publicly advocated for one thing while privately advocating another, and that we cannot depend on these industries to honestly lead an energy transition – rather, they prioritize a perpetuation of fossil fuels. From a green market economy perspective, it may be argued that as interest in renewable energy grows, both from consumers and investors, the market for renewables would strive

to reflect this, and fossil fuel companies would diversify their products to remain competitive. This may be understood as a positive occurrence, but green revolutionists highlight how the business model itself contributed to climate change and labor exploitation. Then, even under a somewhat unrealistic assumption that they may one day be leaders of renewable energy, it would certainly not be a transition one calls “just”. Söding argues that “fossil capital” from its origins can be characterized by its control over labor for profit and its destruction of nature, and that these characterizations would continue to exist in an energy transition – pointing out that the “intensification of natural resource extraction to finance the energy transition exacerbates land system change, freshwater depletion and biodiversity loss” (Söding, 2023). Thus, by placing blame solely on the product – CO<sub>2</sub> emissions – rather than the model of production, we risk allowing “fossil capital [to] fend off a broader attack on its business model and offer technocratic solutions that allow for the continued creation of abstract space and time and the accumulation of capital in a net zero world” (Söding, 2023). As highlighted by examples of Tesla’s business practices, these characterizations are not limited to fossil capital alone; rather, they are the natural byproducts of free market capitalism that places profit maximization above everything. As such, green revolutionists argue that there is no manner of a just transition under capitalism, because capitalism, “even if it moved from neoliberalism towards a less aggressive system ... would still be profoundly unequal”; at its very nature it requires the exploitation of people and of the natural world (Batalla, 2020, p. 79). Therefore, it can be said that capitalism in and of itself is incompatible with the very definition of a just transition, as the latter calls for the protection of the two things capitalism exploits. Considering this, capitalism, from the perspective of green revolution, is not redeemable. It “leads to death, inequality, extinction, exploitation and alternatives undercovered in an environmental disguise to maintain the status quo” (Batalla 2020:73). Previous chapters, most significantly the U.S. case, provide examples of this. Green capitalism will only create “new winners and losers”, wherein winners are green energy firms and investors, so-called environmentally conscious consumers, and “market-friendly international NGOs and sustainability initiatives which are playing a major facilitating role in greasing the wheels of green capitalism”. Losers, on the other hand, are likely to be small businesses, radical climate

activists, the “public sector” and finally, “labour everywhere” (Ponte, 2019, p. 105). The previous sections which analyze current production methods of “green capitalism” largely emphasize this.

## 2.2 Degrowth

Many green revolutionists offer the idea of degrowth as a counter to green capitalism, or green growth. The term *D'ecroissance* was first used by economist Nicholas Georgescu Roegen in the 1970s and 1980s and later popularized by Serge Latouche, who “[criticized] economic reasoning and the ideology of economic development” (Kallis et al., 2018, p. 292). Proponents of degrowth argue that because green capitalism continues to support a business model focused on economic growth, and therefore increased production and consumption, it still fails to acknowledge “ecological limits” (Ponte 2019). They do not consider capitalism as something limited only to the business model, instead pointing to how it has shaped societal norms around consumption. Degrowth, therefore, requires a “paradigm of sufficiency, rather than maximization of consumption” (Ponte 2019:106). Green revolutionists do not only call for reshaping the business model of capitalism, but the way we as a society have modeled our lives around it. In short, degrowth can be defined as a “downscaling of production and consumption that increases human well-being and enhances ecological conditions and equity on the planet” (“Definition...”). The exacerbation of the climate catastrophe, degrowth proponents argue, is a direct result of overproduction and overconsumption. Then, the only possible way to reduce global emissions and meet climate goals is to reduce our overall consumption – and in turn reduce production demand.

Degrowth by name may seem inherently negative, especially for average citizens in extreme free market economies such as the U.S., where one’s socioeconomic status has long been tied to attainable quality of life standards such as healthcare and education. However, degrowth does not define itself as “simply turning GDP-growth upside down, all other things being equal” (Saave & Muraca, 2021, p. 746). Instead, it attempts to recontextualize the way governments and society at large measure progress or quality of

life. Rather than tying these concepts to economic growth, it calls for “the need to ensure a better quality of life” while at the same time “living within the limits of supporting ecosystems” (Ponte 2019:105-106). Quality of life may very well be connected to development, but for decades, nongovernmental organizations and state governments have tied development to economic growth. Slim argues that “development must be valued in terms beyond simple economic analysis, and that poverty is as much about a loss of rights, freedom, culture, dignity, and environment as about low income” (Slim, 1995, p. 145). Degrowth attempts to center the idea of human development through this context, advocating for a “steady-state equilibrium with a targeted reduction of growth in sectors that are socially and environmentally damaging”, focusing instead on a system that emphasizes quality of life and equal distribution of goods and services. An open letter from over 1,000 experts calls for the following degrowth principles:

- “1. Put life at the center of our economic systems
2. Radically re-evaluate how much and what work is necessary for a good life for all
3. Organize society around the provision of essential goods and services
4. Democratize society
5. Base political and economic systems on the principle of solidarity” (Trantas, 2021, p. 237)

While research on degrowth does not often refer to just transitions and rarely if ever refers to fossil fuel workers specifically, its main goals are generally in line with those of a just transition; it seeks to rebalance society in a way that benefits lower- and middle-class workers, and to respect the natural limits of our environment. Many objectives in degrowth discourse also line up with sustainable development goals, namely (1) no poverty, (3) good health and wellbeing, (10) reduced inequalities, (11) sustainable cities and communities, (16) peace, justice, and strong institutions, and, of course, environmental goals 13-15 (“The 17 Goals”). Where they diverge is in how we achieve these goals: the UN SDG’s website has extensively promoted green growth, and SDG 8 names economic growth as its priority. While SDGs may often be seen as promoting the values of a just transition – equality,

environmental protections, and good, clean jobs – degrowth proponents would argue that the inclusion of economic growth, which has for centuries created the winners and losers listed above, largely negates the SDGs’ suitability within just transition discourse. The UN has considered all SDGs to be “strongly interdependent” and should not be viewed separately from each other (Belmonte-Ureña et al., 2021, p. 15). Degrowth rejects this idea, instead finding the majority of SDGs to be mutually exclusive with SDG 8; in a system where the pursuit for economic growth has caused so much destruction to the environment and workers, it is hard to perceive a way where these goals can be achieved simultaneously. There are small-scale examples of degrowth movements, some that have made political and social progress, albeit somewhat limited. The *Buen Vivir*, or good living, movement in Ecuador and Bolivia has often been cited within degrowth discourse. *Buen Vivir*, rooted in indigenous communities and beliefs, focuses heavily on both an intense respect for the natural world and on a social system rooted in communal dependence (Ning, 2022). In 2007, the Ecuadoran constitution was revised to include *Buen Vivir* principles, and a 2009-2013 National Plan for Good Living was adopted. This plan, however, has not been implemented, with the government’s continued reliance on oil extraction taking precedence following their claims that “the world has failed us” regarding foreign investments in renewable energy (Ning 2022a). It is worth noting here that many proponents of degrowth have acknowledged that a rebalancing or equalization of production should be considered, as some communities, largely those in the Global South, will require more development, and others, largely in the Global North, will need to balance this scale by implementing degrowth mechanisms. While it is outside of the scope of this thesis, degrowth may very well include targeted funding to the Global South, including investments in renewable energy for countries such as Ecuador to meet their own degrowth principles.

### 2.2.1 Labor within Degrowth

Under a degrowth economic model, many academics argue a “corresponding reduction of working hours” would be required (Saave & Muraca, 2021, p. 749). This connection is fairly easy to visualize: if we as a society are consuming less, production demand drops,

and less workers are needed to produce what society consumes. Of course, fossil fuel workers have already expressed concerns that renewable energy requires less labor to produce and maintain, and that this will in turn affect their employment status. Calls for a further reduction in working hours may then seem incompatible with a just transition that requires workers (and their livelihoods) to be taken care of. However, degrowth proponents generally address this by calling for methods such as work-sharing in which the reduction of hours is spread evenly throughout the workforce (without a reduction in overall salary), rather than a reduction of the number of people within the workforce. This idea has already begun to take shape among some circles; the United Autoworkers, on strike as of September 2023, are bargaining for a reduced 32-hour work week to combat the potential reduced labor needs of electric vehicle manufacturing (Peck, 2023). Other scholars contest the idea that degrowth will require a reduction of labor, finding that a societal shift in the manner of production which uses “less capital, less energy, and fewer resources per hour of labour” would not inherently mean fewer working hours (Saave & Muraca, 2021, p. 753). Regardless of whether a shift in labor hours occurs, it is important to recall that the idea is centered around an enhanced quality of life, and part of this conceptually has been the need to decouple not only income from social rights, but labor from income. As such, degrowth academics generally refer to a universal basic income, focusing on the equitable redistribution of wealth (Kallis et al 2018).

### 2.2.2 Energy Democracy

Energy democracy can be seen as practical example of how society may enact an energy transition centered around degrowth, calling for public or collective ownership of energy sources (Wilgosh et al., 2022). Proponents of energy democracy highlight how public ownership would reject the capitalistic business model of fossil fuel industries that has historically catalyzed the climate crisis; in short, it rejects “fossil capital” (*Public Ownership for Energy Democracy*, 2018). This would have significantly positive impacts for a just transition, they argue, as it means the goal for energy sectors is no longer profit maximization that is inherently unequal, but instead on ensuring everyone has equal access



to energy sources. Furthermore, because private profit is not the priority, it may result in a more rapid transition to renewable energies.

Publicly owned utilities exist on a small-scale level in the United States and have significant positive effects on local communities. As of 2018, 28% of Americans were served by publicly owned utilities or energy cooperatives. In 2016, they “contributed around 6 percent of their revenues to local governments ... 27 percent more than investor-owned utilities often paid in taxes” (“Public Ownership...” 2018). They also have the ability to address socioeconomic inequalities; in Ohio, policies exist that limit utility bills to 10% of one’s income. Globally, state ownership of energy utilities is more common. A True Transition report explores the effects state control has on the general public, arguing that the Norwegian government’s 67% of shares in oil company Equinor has resulted in the “world’s largest public endowment” (Biven & Lindner, 2023, p. 76). In Germany, “citizen-owned projects” make up 42% of renewable energy generation (*Citizens’ Participation in the Energiewende*, 2015). Free from market forces that affect a private company’s decision making, public or citizen-owned utilities offer more equitable management of energy sources and profits, rather than being held by a small number of CEOs, are reinvested into communities.

### 2.3 Limitations and Criticism of Green Revolution Discourses

Some views fall within green revolution discourse but reject degrowth specifically, arguing that while capitalism may very well be the problem, it does not go hand in hand with growth; rather, “the problem with capitalism therefore is not that it produces too much, but that it irrationally limits production to what is profitable” (Elvander 2023). This group of green revolution discourse further argue that degrowth does not fully grapple the “class analysis” of a “politics of less” (Huber 2019). Huber argues “the professional class’s own relative material security ... induces this rather guilt-ridden conviction that ‘all of us’ consumers are at the root of the problem”, despite the majority of the working class needing more. Huber, however, later acknowledges that the “more” he refers to are generally “food, energy, housing, health care, love, leisure”, all of which are connected to degrowth’s calls

for a society focused on quality of life rather than economic growth (Huber, 2019). Pollin questions how the reduction of GDP would affect funding for healthcare and education, among other public goods (Pollin, 2018). Phillips argues that a transition from capitalism is possible through the lens of socialist growth, rather than degrowth: “socialist growth is democratically coordinated and by being so, delivers equality and liberation from servitude. Socialist growth allows humanity to “design history,” to consciously decide where we want to go next” (Elvander 2023).

Pollin argues that while simply reducing the overall GDP will result in some reduction of global emissions, it will not be enough to meet the targets set out in the Paris Agreement. He finds, then, that “even under a degrowth scenario, the overwhelming factor pushing emissions down will not be a contraction of overall GDP but *massive growth* in energy efficiency and clean renewable-energy investments—which, for accounting purposes, will contribute towards increasing GDP—along with similarly dramatic cuts in fossil-fuel production and consumption, which will register as reducing GDP” (2018). That simply reducing the GDP is not enough to address the climate crisis may very well be true, but it is hard to understand how this is necessarily an argument against degrowth. Degrowth is not mutually exclusive from clean energy and energy efficiency investments; in fact, energy democracy that is not tied to economic growth has shown how publicizing energy utilities may allow for a faster transition as there is no profit maximization goal.

Critics have further pointed to the risk of unemployment and inequality as economic growth declines, as has happened historically. Pollin points to the Great Recession, in which “global unemployment rose by over 30 million” (2018). Kallis et al. highlight that this is true under a capitalist society, in which “profits and accumulation by capital holders come at the expense of other groups in society – intensifying economic inequalities and social tensions” and further argue that while “recession and depression are possible within capitalism; degrowth is probably not” (Kallis et al 2018:300). As explored in previous sections, degrowth discourse does acknowledge that a reduction in production will likely require a reduction in overall labor hours, but it calls for policies such as work-sharing and a basic universal income to address the otherwise negative effects this would cause.

The most common criticism, and one that holds relevancy, is that calls for a total economic and societal (and even psychological) transition are far too radical and unrealistic in the context of a climate emergency. Degrowth, as previously stated, is by definition largely incompatible with the dominant system in the Western world; its principles are “fiercely resisted by capitalist interests with power and are unlikely to be implemented, short of a social revolution and systemic change” (Kallis et al 2018:300). Paterson argues that, if we are to concede that the climate crisis is in fact an emergency in which a very significant, rapid reduction in global emissions is required, we cannot feasibly expect a radical systematic change such as the overhauling of capitalism within the time frame allotted to us by the crisis (Paterson, 2020). Pollin further argues that degrowth offers no concrete solutions to climate stabilization, referring to Daly’s “characterization of degrowth as a slogan without a programme” (2018). Moreover, in the political climate of today’s America, along with other Western countries, it is difficult to envision how such radical policies may come to fruition. As evidenced in Chapter 3, even a social market economy such as Germany ultimately passed watered-down legislation that compromised more stringent climate policies for conservative and coal region interests. And the Green New Deal (GND), which includes many of the public goods and quality of life tenants of degrowth, while still ultimately focusing on economic growth, has failed to materialize. The Inflation Reduction Act of 2022, often considered a direct result of the GND, is hardly a reconsideration of a for-profit economy; instead, its climate action policies are rooted in tax incentives and government funding for businesses (Huber, 2022). It is difficult, then, for those serious about both climate action and worker protections to understand how degrowth policies may be realized in the time period granted to us under the current climate crisis, and many find it an idealistic perspective rather than a realistic approach.

Nevertheless, while “green revolution” discourse is often seen as radical, it is worth noting that the man credited to the origins of just transition, Tony Mazzocchi, also found capitalism to be “an exploitive process”, one that created a “relationship between work and society [that] was fundamentally flawed and deeply inhumane” and frequently called for the redistribution of wealth (Leopold, 2007, p. 480). He founded the Labor Party, which called for a nationalized healthcare system and universal college education. Green

revolution calls for a complete overhauling of capitalism may not be realistic at this time, and it certainly should not be an all-or-nothing approach. Instead, “winnable interim victories have to be articulated” (Belliveau et al., 2021). Still, it is important to remember that the just transition movement, despite its mainstream focus on green growth today, was rooted in green revolutionist ideas; Mazzocchi himself recognized the “drive for ever-increasing profits was in fundamental conflict with public health, worker health and safety, and a sound environment” (Leopold 2007:XV). It can then be argued that any just transition that rejects the need to rethink capitalism cannot rightfully be called a just transition.

### 3. The Enemy of my Enemy is my Friend: Jobs versus Environment?

The fight for policies that rethink capitalism is not an easy feat; still, Mazzocchi argues that by “[building] a big movement from down below, regardless of who's in the White House, you can bring about change” (Greenhouse, 2002). The following section, then, attempts to visualize the sort of movement Mazzocchi sought to build, one in which a united front between labor and environmental movements may be able to confront unregulated capitalism and enact meaningful change.

Recalling the two main objectives of a just transition as defined in Chapter 1 – to 1) address the environmental damage and global warming caused by polluting industries and 2) ensure fair and decent work is guaranteed for all affected by the first objective –, it has often felt as if this is an impossible task, navigating two objectives that are on opposite sides of the aisle. Just transition has, of course, often been referred to as an answer to the “jobs versus environment” argument. Its answer is fairly simply in concept, although (as evidenced in previous chapters) more difficult in realizing – jobs AND environment.

The labor and environmental movements have, in many ways, been at odds for some years. This separation, however, was not always the case. In the early 1970s, the Oil, Chemical and Atomic Workers union and the International Woodworkers of America, among others, allied with environmentalists on many issues. Many point to the following decades, when the economy took a neoliberal turn and the Reagan administration adopted “union busting”

and anti-environmentalist policies, “[putting] both movements on the defensive” (Loomis, 2018). Blue-collar workers became increasingly worried about the state of American jobs and were hesitant to support any movement which may further threaten them – fueled by industries citing stringent environmental policies as reason to send jobs abroad. While American workers were experiencing newfound fears over income stability (the 1970s were also marked by a cost-of-living increase), some argue that the environmentalist movement began to appear out of touch with lower and middle-class Americans. The idea that environmental harm was caused by personal overconsumption, in particular, may have alienated a “working class [who] struggled to afford the basics of life” (Huber 2019). Environmentalists, responding to the threats of the Reagan administration, “became more reliant on big donors”, further distancing themselves from average Americans (Loomis 2018). Huber points to a popular bumper sticker in the 1990s, “are you an environmentalist or do you work for a living”, to highlight the increasingly hostile sentiment of some working-class Americans towards the environmental movement (2019). What has followed are decades of tension between two movements, seemingly impossible to reconcile, where both parties are often at odds with each other.

This writing has largely attempted to argue that the divide between these movements is not because they at their cores have fundamental differences. The historical cause of labor and environmental exploitation is a profit-above-everything capitalist model, and it is one we have seen play out for centuries. It is the reason for the U.S. retracting from the Kyoto Protocol and the Paris Agreement, it is the reason that countries have failed to meet climate objectives, and it is the reason that global emissions have skyrocketed despite a climate catastrophe building for decades. It is also the reason that jobs were shipped overseas in the 1970s and beyond, it is the reason for the worst environmental disaster in the United States of America, the reason 40 men lost their lives in two major workplace incidents in 2011 and countless more in the years prior and following, and the reason governmental institutions whose mandates are to oversee safety regulations in workplaces have failed workers over and over again. But most significantly – and perhaps, most devastatingly – it is this “profit first” mindset itself that separated the people of the labor and environmental movements, creating a false narrative that environmental regulations inherently meant job losses, with

no other possible solution. It is a barely regulated free market economy, furthermore, that has tied every essential item to a person's survival to the income they receive for their labor hours, creating a society where little is more important to a person than clinging on to whatever job they may have, regardless of the costs.

Both parties generally recognize the destruction this system has left them with. In a recent survey, oil and gas workers addressed their issues with it numerous times, with statements such as “oil & gas is more concerned about their bottom line, execs & shareholders than those who generate their revenue” and “employees [are] just numbers (Biven & Lindner, 2023, p. 43). Coal miners see it too: “We go underground to sacrifice our lives for our families ... They're making billions of dollars. Where's our money?” (Leon, 2021). United Auto Workers President Shawn Fain points to it as justification for their current strike: “The billionaire class keeps taking more and more and the working class keeps getting left behind” (“Transcript...” 2023). As the blue-collar workers for the industry that has exploited them for decades, this system is reflected in their personal lived experiences. Climate activists have, as discussed in the green revolutionist section, also highlighted how capitalism has acted as a catalyst to the climate crisis; moreover, they have often acknowledged how it affects workers as well: “capitalism is extractivist at its core given that it also extracts from human lives, materially and psychologically speaking” (Batalla, 2020, p. 71).

Under capitalism, both movements attempting to protect their own interests appears to only alienate the two parties further. Workers fighting to preserve jobs under capitalism means caving to industry's demands to some extent, and as long as industry finds fossil fuels profitable, this means workers fight for the preservation of fossil fuels. Some members of the environmental movement, desperately confronting the climate crisis, applaud climate policies that may not guarantee protections for fossil fuel workers. And so, what we see is that capitalism acts here in an almost circular motion, with those who benefit from the system continuously pushing the “jobs versus environment” discourse to fuel a divide, and with both parties actively furthering this perceived disconnect by fighting for their own objectives under this system, rather than fully dedicating themselves to fighting against it.

That those who benefit the most from capitalism have focused so much energy on separating the two movements speaks to the power a united front between labor and environmentalists would have on enacting change. How, then, do we reconcile the two? Highlighting grievances generally shared by fossil fuel workers, as well as where trade unions have gone wrong in their support of energy transitions, I argue below that finding a starting point may be fairly simple.

### 3.1 Environmentalists Must Recognize Fossil Fuel Workers

*Nobody wants to see our planet get ruined. We don't want it to be our fault, but it's definitely not all on us. It just seems like we've always been under attack, more so than anybody else," - Gary Campbell, 16-year miner (Tsirkin, 2021)*

*I wish people knew our stories - Oil and gas industrial worker (Biven and Lindner 2023:5)*

*It's kind of like the Republicans don't want us because we're union. And the Democrats don't want us because we run coal. You know, so we've always been in kind of a hard spot – Braxton Wright, UMWA member (Barbaro et al., 2022)*

Something fossil fuel workers have expressed, over and over again, is a resentment that the perceived “other side” does not understand them. For decades, they have done the work that powers the world, fully understanding the risks and implications that work carries for their own health and safety. For many of these men and women, this work has often been the singular opportunity they have to earn a decent living and support themselves and their families without a college education – something, it bears reminding, that is not easily attainable for the children of working-class families in the United States. The sacrifices of this industry: long hours, dangerous conditions, health implications, often being away from your family for weeks, along with the pride: generations of fossil fuel work and working hard to provide essential power to your community, have all created something that few within transition discourse have fully acknowledged and that fossil fuel workers make abundantly clear when asked about their transition fears. Being a fossil fuel worker is a large part of who they are, it in many ways forms their identity. Appalachian coal miners

have referred to it as a “way of life”, oil and gas workers also find it to be a “lifestyle” (Chamberlain, 2014)(Biven & Lindner, 2023). The psychological toll of a transition that causes workers to lose “sense of assuredness that comes with knowing exactly who you are and what your role in society is” will be large, and no one feels as though the “other side” has given any thought to this (Bombard, 2022). This loss is accentuated by workers feeling like the blame for the climate crisis is somehow placed on their shoulders, again by those who they feel do not understand the sacrifices they themselves make to produce this work.

It doesn’t help that from the perspective of blue-collar workers, there is a clear class divide between them and the “average” environmentalist. It should be noted that this narrative has been pushed by political interests, who for decades have talked about “limousine liberals” and “coastal elites” as not understanding the plights of the hard-working American (Hultgren 2018). But it should also be noted that classism within the environmental movement does, to some extent, exist. Forced to reckon with solutions under capitalism, climate action campaigns have often suggested ways in which an individual can reduce their own “carbon footprint”: veganism, electric vehicles, sustainable clothing brands, public transportation, all of which are either expensive or, for many communities, wholly unavailable. Tax credits for EVs and energy efficient home upgrades in the recent Build Back Better bill are a win for reducing household emissions, but only if a person can afford to cover their portion of the costs (Glavinskis, 2022). Climate activist Greta Thunberg’s mother has stated that she gave up an international opera career after concerns about the impact of consistent air travel (Crouch, 2018). It bears questioning how a worker who knowingly enters a workplace rife with safety concerns to provide basic necessities for their family can relate to this, or how they find a place within a movement who may expect the same from them. This sentiment has been reflected between Lusatian miners and German activists as well; Nele Buchholz, climate activist and student at Lund University, writes their motivation for interviewing Lusatian miners came after a clash between both parties during a protest, in which they themselves felt a clear classist divide (Buchholz, 2021).

The answer to all which has been expressed above is fairly simple, and one that can already be found within just transition and, to some extent, green revolutionist discourse. Climate



activists can make significant progress in resolving this perceived alienation by listening to fossil fuel workers, acknowledging their role in powering the world for decades, and empathizing with the hardships they face during a necessary transition. As far as identity goes, there is little just transition policies or plans can do to remediate this loss that fossil fuel workers may struggle with. We can, however, acknowledge that despite being a necessary part of climate action, it is not an easy change to personally undergo. A small example of this can be found in the German model; on the night of the last coal miners' hard coal shift in 2018, the "Lichtbeidernacht", or "light in the night" campaign showed support and gratitude for miners by households hanging posters in their windows (Mercier, 2020). Proponents of just transition and more specifically green revolution do acknowledge the struggles of workers under fossil capital, but they often fall short of acknowledging the struggles a worker will face, both physically and psychologically, from the kind of radical transitions green revolution asks for. It is worth noting here that a part of the "elitism" working-class fossil fuel workers feel is an academic divide between the two; many of these men and women entered the workforce after high school and have not spent time within academia. They do, however, live the realities green revolutionists write about. Being spoken to in overly academic terms that describe their own experiences without them understanding this only further alienates them, and environmentalists should be wary of this. This includes the way they introduce concepts such as degrowth – for coal regions who have seen communities decimated by the loss of jobs and economic decline, the ideas of degrowth (fair distribution of wealth, universal basic income, public goods) should take precedent over a term that appears to be offering less of everything for everyone (Huber 2019). Fossil fuel workers, especially true in coal communities, have long felt abandoned by both political parties, and generally speaking, by most outside of their communities. Considering how often this sentiment is expressed, clear, empathetic communication is an essential first step. The second, however, is even more important.

### 3.2 Support Legislation that Includes Concrete Measures for Workers

*My crisis right now isn't the climate. My crisis is the mortgage payments I have due every month, it's the food I need to put on my table, and it's the healthcare I need to provide to my family - Neil Crabtree, Pipeline foreman who would have been employed on the Keystone XL Pipeline ("Fueling the Climate..." 2021:17)*

*So, if there was an opportunity for the energy policies in the United States to change, I would wholeheartedly support it and I would follow it. If tomorrow I showed up to work and [they] say, 'Hey, bad news guys, we shut off all the gas pipelines. We're all working at the solar.' I'd be like, 'Hell yeah, let's go!' Seriously, let's go. Yeah. I don't like heights, so don't make me climb a windmill, but I'll work on solar all day long - Natural gas technician, Pennsylvania (Sicotte et al., 2022, p. 7)*

As discussed in Chapter 2, and as discussed in the previous section, trade unions have often blocked climate legislation. Nevertheless, the United Mine Workers of America have been clear that they acknowledge the reality and immediateness of the climate crisis. Many fossil fuel workers, like the one quoted above, have expressed interest and willingness to work in renewable energy, given that these jobs are good, safe, union jobs – and that they exist altogether. Recent climate legislation such as the Inflation Reduction Act have been touted as promoting green jobs, but if we frame this under a green capitalism analysis, the creation of these jobs exists as a result of market incentives to clean energy businesses. The Ultium Cells EV battery plant received federal funding, and yet none of these benefits were passed on to employees, as evidenced by working conditions explored in previous sections. Environmental groups applauded the passing of these bills despite limited evidence they provided protection for transitional workers (Galst, 2023). Green revolutionist discourse does fairly highlight that despite the fact that green capitalism will provide jobs, the quality of these jobs will suffer as long as they are tied to a system that prioritizes profit. But far too much of climate activism and literature asks workers to support ideas, rather than concrete measures. Author Naomi Klein suggested members of the Laborer's International Union of North America should be “confident that the Green New Deal will not leave them

behind” and vote out their “pro-boss leaders” (Klein, 2019). Expecting their confidence in this is especially questionable considering the Inflation Reduction Act, which the politicians and activists behind the Green New Deal (GND) consider a direct result of their work, did not include any concrete GND measures that actually ensure good, union jobs and “large-scale public investment and decommodified public goods” (Huber, 2023). The environmental movement, in order to find common ground with the labor movement, can no longer support clean energy policies that do not protect workers. The climate crisis is an urgent matter, but for these men and women, so is access to basic necessities a decent paying union job provides for.

### 3.3 Fossil Fuel Trade Unions Must Support Swift Energy Transitions

Trade unions representing fossil fuel sectors have been the among the largest opponents of significant climate proposals. Germany’s Union for Mining, Chemical Industry and Energy “effective campaigning” of the Coal Exit Commission “focused on slowing down the coal phase out” (Morena et al., 2019, p. 163). In a New York Times article reposted on the UMWA’s own website, the union is referred to as the “Achilles’ heel of Biden’s climate plan” (Scheiber, 2021). They have often cited concerns that climate policies do not do enough to actually ensure a just transition, and as the previous section highlights, in many cases this is true. Furthermore, they have openly acknowledged the seriousness of the climate catastrophe and the urgency it requires. Still, far too many of the policies they support call for the prolonged use of coal, albeit applying technologies like carbon capture to reduce emissions; Cecil Roberts, president of the UMWA, has pointed to the IPCC report’s inclusion of carbon capture technology. Still, IPCC authors have rejected the idea that carbon capture, and more generally anything other than a reduction in fossil fuel usage, can be viewed independently as a “solution” for climate change (Harvey, 2023).

One-third of the UMWA’s proposal for a just energy transition focus on “preserving coal jobs”. Roberts has said of that proposal that “rule number one” requires that coal miners “keep their jobs” (United Mine Workers of America, 2021). It is important to recall, as explored in Chapter 2, that coal employment has been on a decline for decades, largely to

due market factors that have made coal less competitive among cheaper energy sources. While some of these sources may be renewable clean energy, it is also due to natural gas. As such, proposing policies that preserve coal jobs is neither realistic from a climate action perspective nor from a market economy perspective. Considering the unbalanced power dynamics of a market economy, one thing can be said for certain: coal jobs will decline, whether it be for market profit or for an energy transition, and the union's method of simply blocking climate legislation for not including measures to preserve these jobs is both ineffective for protecting coal miners and harmful to society at large. In 2021, when Senator Joe Manchin "effectively killed" a federal program that would have rewarded utilities for switching to renewables and punished those who did not, "miners applauded" (Scheiber, 2021). Of course, as pointed out in previous sections, there are no current guarantees that renewable energy jobs will be up to par with the benefits and pay the UMWA have earned by century-long fights. Under a social system where workers are "uniquely dependent on their jobs for basic rights like health care", one can reason with the desire to protect what they currently have. The United Autoworkers, however, has navigated this in a different manner. They have chosen to support electric vehicle transitions while simultaneously protesting the exclusion of union contracts and fair pay requirements in federal policies ("Statement by UAW President..." 2023). It bears questioning why the UMWA has primarily focused on rejecting renewable energy bills that would harm the coal industry, rather than fighting for transitional job provisions for their members within those bills.

Miners may very well have reasons to reject policies that do not include protections for coal miners themselves, such as severance and early retirement pay, grants for retraining, or requiring clean energy union contracts. But rejecting meaningful climate legislation altogether because it does not allow for the continued use of coal only alienates them from other movements while simultaneously handing a win to the very industry that has exploited them for decades. Unions, who have repeatedly acknowledged the reality and urgency of the climate crisis, must stop promoting policies that fall short of enacting meaningful climate action to hold on to jobs that are declining regardless of a clean energy transition. The Ruhr transition model has already shown that a transition from coal is

possible, but it requires the support and input from miners themselves, and as long as their leaders are promising to preserve coal jobs, this cannot happen. If miners want to be a part of a true just transition (again, one that achieves the two objectives defined in Chapter 1), they have to be willing to take a seat at the table.

### 3.4 A United Front

And so, we find that the disconnect between labor and environmental movements largely exists in both parties attempting to function within capitalism, rather than fully rejecting it. As such, they take any perceived wins for their “side”, despite potential losses for the “other”. More significantly, neither party has been able to achieve total wins – because capitalism *requires* the exploitation of labor and natural resources. There is no way for capitalism to thrive without this exploitation, and in turn, neither labor nor environmental movements can actually achieve full progress under this system. Considering a just transition as defined within this thesis (one that fully achieves its two objectives) requires wins for both parties, it is hard to imagine a just transition under capitalism. The necessary need to rethink this system must be fully acknowledged by both labor and environmental movements; moreover, they must reject capitalism’s suggestion of a hypothesized divide between the two, in which their interests are supposedly misaligned, and instead find a united front against those who profit the most over their exploitation. There are reasons to be hopeful of this alliance; as of September 2023, the United Autoworkers union have gone on strike against the “Big Three” automobile companies, demanding increased benefits and job security as the sector transitions to electric vehicles. The companies have largely blamed the transition as a reason they cannot afford to increase pay, but the union has fought back against this as company profits and CEOs’ salaries soar (Kaye, 2023). The United Autoworkers have consistently supported the need for an energy transition, releasing statements of support for “standards that are good for workers and good for the environment” (“UAW STATEMENT ON NEW EMISSIONS RULES PROPOSED BY THE ENVIRONMENTAL PROTECTION AGENCY,” 2023). Despite reporting that an ongoing strike may delay the electric vehicle transitions, an open letter from over 100

“labor, racial justice, and environmental groups” endorsed the UAW strike, citing the need for a rapid transition to include strong labor protections and stating that the “UAW fight is our fight” (Lefebvre, 2023).

#### 4. Can Ruhr Transition Policies Still be Applied in Line with Climate Objectives?

If both American and German models of capitalism have not been able to enact a true just transition as defined in Chapter 1, and if the reason for this is largely because capitalism has proven time and time again to be an exploitive process that pushes both workers and the environment beyond their natural limits, then the obvious conclusion is that we must look for solutions that do not rely on market economy mechanisms. Green revolutionists may very well be correct that the only solution is a complete overhaul of capitalism, but critics may also be correct that this is not entirely feasible in the near future. Nevertheless, even small-scale steps in the right direction for the time being make a difference for future generations in achieving the “good life” degrowth proponents advocate for, and they are certainly better than the continued stalling of effective just transition legislation. Earlier chapters analyzed what policies American fossil fuel workers imagined in the context of a just transition, as well as the effectiveness of Ruhr just transition plans. Considering how Germany, 60 years after the beginning of its hard coal phase out in the Ruhr region, continues to depend on coal and has failed to meet its climate targets, it may seem as though the Ruhr transition cannot be upheld as a just transition model. But there were certainly wins from the transition, especially for coal miners and coal regions. Most significantly, the success of the region offers surety that a transition is possible without sacrificing the livelihoods of working-class people. In the context of a “jobs versus environment” perspective, these wins do not inherently require the losses of the perceived “other side”; in fact, many could be applied while being complimented by intensive climate action policies. It may seem contradictory to employ policies that focus on boosting a region’s economy, if we are to understand from previous sections that the climate crisis is fueled by persistent economic growth. But much of the Ruhr transition focused on a

heightened quality of life, local development, and economic security for affected workers. Many of these policies can therefore fit within the principles of degrowth, namely: reduced production and consumption, quality of life standards, and fair work. Below are examples from Chapter 3's analysis of the Ruhr model to examine how they may fit within the context of degrowth principles.

## 4.1 Regional Development

An important tenant of the Ruhr transition was on diversifying an economy that previously had been wholly dependent on coal. Today, it includes sectors such as “environmental compliance, eco-tourism, several leading universities, renewable energy manufacturing and high-tech hubs” (Mercier, 2020, p. 48). American fossil fuel workers have often expressed doubts that transitional jobs will be available without relocation, a demand they generally felt did not uphold a “just” transition. While some forms of renewable energy – wind turbines and solar panel fields – may very well require particular landscapes, Ruhr regional development policies have shown that creating a vibrant local workforce is possible, nevertheless. Proponents of degrowth focus on the idea of localized production as a means of reducing consumption generated by shipping and transportation; although, in this regard, it is often visualized as community gardens and cooperatives, which have not generally been discussed within Ruhr transition analyses. Still, many sectors are examples of providing local work while simultaneously uplifting the quality of life for residents.

Many regional development policies in the Ruhr transition focused on quality of life and equalization of the Ruhr region with non-coal dependent regions. This was a central tenant of their just transition, and it is a central tenant to degrowth. There was a large focus on infrastructure improvements, which as discussed in Chapter 2 are largely necessary throughout the United States. Infrastructure projects both improve energy efficiency and climate resilience and provide jobs that are not tied to economic growth but rather improve standards of living.

Policies which centered on environmental remediation were widespread, considering the damage decades of mining left behind. Restoration of coal fields, water pit management,

and air purification were all central to improving living standards for residents. The “Abandoned Well Act” explored in Chapter 2 is an example of how American fossil fuel workers can find employment in environmental remediation; it further calls for a government agency to manage this remediation, ensuring these are fair, well-paying jobs. Under the polluter pays principle, German coal companies were required to contribute funds to environmental remediation regions. A “Polluters Pay Climate Fund” has been proposed by some American politicians, in which “U.S.-based fossil fuel extractors and oil refiners and those foreign-owned companies doing business in the U.S. that were responsible for at least 0.05% of the total carbon dioxide and methane gas emissions between January 1, 2000 and December 31, 2019” would pay into a fund that would later be used for environmental and climate justice projects throughout the United States (*Van Hollen Leads Senate Democrats in Announcing New Legislation to Make Polluters Pay for Climate Damage* | *U.S. Senator Chris Van Hollen of Maryland*, n.d.). Requiring those who have benefitted from the exploitation of workers and the environment to fund the programs necessary to mediate this damage is a significant example of realizing a just transition, but it is also an example of redistribution of wealth.

Regional development projects that focused on social and cultural life, including “museums, historical amusement parks, and outdoor recreational centers” are another practical example of degrowth principles (Furnaro et al., 2021, p. 33). Many of these areas were built on restored former industrial sites. Projects like this can be seen as two-fold: they create temporary jobs for environmental remediation, and they also create long-term jobs. It is worth noting that in regions like Ruhr and Appalachia where coal is the lifeline of the economy, when those workers lose their jobs, surrounding businesses that support workers or their families also suffer. A focus on this type of regional development provides jobs and stability for communities which have been devastated while also fulfilling one’s cultural and social needs rather than promoting overconsumption and do not inherently focus on profit maximization.



## 4.2 Compensation for Workers

Perhaps the most obvious policies which fall under degrowth principles were those which sought to ensure the livelihoods of coal miners were protected during the transition. While they did not specifically employ often-proposed policies such as work-sharing, reduced working hours, and a universal basic income, the basic goal of ensuring every person had access to basic needs and goods as well as fair work were prioritized. This was easier done in Germany than it has and will be in the United States, largely due to the differences in social systems explored in Chapters 2 and 3. Using Germany as a model, then, the U.S. can certainly make improvements in labor protections, as well as in removing the connection between access to basic services such as health and education to one's income. The challenge for Germany, as evidenced by the example of Tesla, is to not weaken labor protections in the name of a faster energy transition.

Of course, the German transition was not rooted in climate action, nor was it rooted in degrowth. As much as it focused on quality of life for residents, it also focused on rebuilding the economy of the Ruhr region. For those who find the only solution to climate action is a degrowth economy, it is hard to say whether Ruhr transition policies can be deployed. However, there is certainly an argument for using them as baseline models for a just transition, complimented by what we now know is necessary – significant upscales in renewable energies, a change in a business model that sees profit maximization as the priority, and a change in the governance model that sees economic growth as the main indicator of human development.

## Conclusion

From its beginnings in the Oil, Chemical and Atomic Workers union, the just transition movement has set out to fight for better labor standards and for environmental protection. Tony Mazzocchi understood well that companies were willing to harm both the people and the world around them for the sake of their bottom line, and he also understood that by joining two movements, the people could form a united front to demand change. The just transition movement had a promising beginning, rooted in working-class struggles and the

determination to enact structural changes in the way businesses operate. However, as the movement was popularized internationally, it has evolved. Despite gaining relevance in climate action and labor discourse, with referrals to just transition included in the Paris Agreement and International Labor Organization agendas, the radical demands of its early days have been significantly weakened. At international and state levels, there has been little to no effort to address the root causes of labor and environmental exploitation. This is rather surprising, considering how closely the two are related. Nevertheless, these parties have long promoted the idea that a just transition can occur within our current economic models, wherein market incentives to transition to renewable energies will simultaneously create many of the jobs needed for a just transition. Green revolutionists argue that this ignores the fact that even renewable energy sources are not free from nature and labor exploitation under capitalism, because capitalism will always seek to extract *more*, when the natural limits of our resources and our people call for *less*. Green revolutionists, however, offer a proposal that, while seemingly addresses both objectives of a just transition, critics argue are wholly unrealistic both within the time frame granted to us by this emergency and the political context of today's world. Taking all of this into consideration, one can conclude that while the very objectives of a just transition are innately incompatible with the objectives of capitalism, the implications of this appear bleak: a systematic change as radical as overcoming capitalism seems far too ambitious to meet the urgent requirements of the climate emergency. Still, there is reason for hope: as Mazzocchi argued nearly fifty years ago, a movement built from the ground up can very well enact change, despite what those at the top may desire. The greatest challenge to this has been the divide between the labor and environmental movements, but there is significant common ground for the two parties, who are ultimately both rooted in power struggles against capitalist forces. And, while green revolutionist ideals may seem far from achievable in their totality, a reanalysis of Ruhr transition policies finds that many of them are not entirely removed from degrowth principles and could further be complimented by the urgent need for renewable energy.

# Conclusion

*“We do not want to find fault with each other, but to solidify our forces and say to each other: We must be together; our masters are joined together and we must do the same thing.” - Mother Jones, labor activist*

## Answers to Research Questions

*What do American fossil fuel workers expect out of a Just Transition?*

The motivation for this research stemmed from a sentiment that fossil fuel workers generally share, one of being overlooked as the world searches for ways to move beyond their industries. In light of this, it was important to place them at the center of this conversation, to ensure their voices were heard as the people who have been and will continue to be most affected by this transition. The concerns and demands of these workers are fair and legitimate. For most workers, they want what they have always wanted: a career and income that allows them to provide for themselves and for their families, and one that makes them feel as though they are contributing to society. They want to be recognized for their past contributions, to have their grievances not only acknowledged, but addressed, by governments and leaders who have failed them in the past. While this research, limited in its scope, largely focused on American workers, it found parallels among Lusatian miners and residents as well. Whether it be the economic devastation felt in Lusatia following the reunification of Germany in the 1990s, or the same devastation Appalachian towns experience as coal leaves the region, those who have long depended on coal do not want and cannot be expected to continue to bear the burden of this transition.

*How does the current business model affect climate change and, more specifically, how does it hinder a “Just Transition”? What role, if any, does the U.S. government play within this?*

Exploring the United States as a case study, there are countless examples of worker exploitation and environmental degradation that, upon investigations, all stem from a desire from industry leaders to maximize their own profits, seemingly careless to how it affects

the world around them. An industry pattern of skirting safety and environmental regulations and deviating from industry standards has resulted in multiples disasters that have killed workers, devastated wildlife, and caused irreparable damage to surrounding communities. Moreover, for decades these industries sought to influence the politics around environmental regulations and climate change, lobbying for lax regulations and sowing distrust in climate science. The United States government, marked by a weak social system and underfunded regulatory bodies, has largely proved inept to both oversee and hold accountable these industries. How, then, can the United States manage a just transition, when it cannot protect the two parties as it currently stands?

*What does a Just Transition for fossil fuel workers look like? Are “Just Transition” models of the past enough to significantly combat climate change?*

If the United States in its current state has proven inept to navigate a just transition, the third chapter explored the German model, one that has been used in just transition discourse as a potential guidelines for future transitions. Over a sixty-year period, the country’s Ruhr region phased out hard coal production, while managing to diversify the local economy and ensure no workers were left without a transitional pathway moving forward. Many good policies were developed; displaced workers underwent retraining based on skill assessments to better place them in appropriate transitional jobs, they further received various forms of assistance to protect their livelihoods as they underwent these transitions. Regional development programs included environmental remediation, infrastructure upgrades, and the building of various recreational parks, technology business hubs, and universities. Nevertheless, as the Ruhr transition was not rooted in addressing climate change, it is difficult to consider it a true model of a just transition as defined in this research, as it did nothing to address the first objective. Furthermore, Germany is still dependent on coal, has continued to miss its climate targets, and has as recently as 2023 opened new lignite coal mines in its Lusatia region.

*Can a **true** Just Transition occur under the current economic model? If not, what does a **true** Just Transition require?*

In light of the failures of both the U.S. and German models, it seems impossible for a just transition to occur under market economies. The final chapter sought to further address this

consideration, analyzing how current energy transition policies centered around market incentives have progressed. It found many of the same abusive labor practices seen in chapter two, despite happening under promised “good, green jobs”. In Germany, it found a weakening of previously strong labor protections in the name of a rapid energy transition. Fossil fuel industries have continuously attempted to influence “green” energy, promising to be leaders despite searching for ways to prolong the use of their own products. The result is that even green growth or green capitalism is, at its root, still capitalism. And a just transition is inherently in conflict with capitalism because capitalism cannot function without pushing the two things just transitions aim to protect – labor and the environment – beyond their natural limits for the sake of its profit. As such, a true just transition ultimately requires a reconsideration of the way our society conducts business, towards a manner that is focused on the quality of life for all rather than the maximization of profits for few. To answer the leading research question: under these considerations, what might a just transition look like? The beginnings of a just transition look like a united front between two movements which confronts a system that cannot and never was able to navigate the crises of our world.

## Final Remarks

The conclusions of this research may not appear to have a very hopeful outlook for the future. Rejecting capitalism, the dominant economic system in the Western world, is a heavy and often unpopular task. In the United States especially, where “freedom” has been a fundamental value since the country’s founding, and where any risk to a person’s job is a risk to their access to basic goods and services, many citizens reject the idea of increasing government regulations – even in areas that would seemingly benefit them. Nevertheless, reflecting on the words of coal miners and oil and gas workers (many, even, who voted for Donald Trump in previous elections, based on a promise of protecting their industry), they often refer to the damage capitalism has caused them personally, despite not using these words. The bottom line of capitalism, and its effects on them as workers, is not lost of these men and women. They refer often to the inequalities between corporate executives and

themselves, and to both the company's and the government's failure to protect workers and their communities. In light of these considerations, it is worth positing that rejecting capitalism may not happen rapidly, and it may not happen by explicitly announcing this as the goal. But there are reasons to believe that environmentalists and workers alike can find common ground by addressing grievances both parties feel, grievances which are ultimately caused by capitalism. This may take shape in demanding government legislation that includes concrete protections for workers and funds safety and environmental oversight agencies that are wholly independent of industry desires.

Finally, while the acknowledgment that capitalism is ultimately the problem for the current emergency is essential in moving forward, we must also acknowledge that a real emergency requires us to act with the tools we have. These tools may not be perfect, but emergencies often occur without the necessary tools to address them, and adapting what one has in the moment is often the only solution. To be clear, these "tools" cannot be market incentives; while emergencies require adaption market incentives have proven not to be adaptable. However, there are examples explored in this thesis that despite *occurring* under a market economy are not defined by one and can be adapted to address the climate emergency while improving quality of life and redistributing wealth – in other words, they can be viewed as steppingstones to a much larger, albeit longer, goal. What is essential here is that we no longer continue to accept legislation or policies that do not balance the two objectives of a just transition. For a just transition to be realized, it is essential that two movements who have long been at odds come together again as one "just transition" movement, use the tools currently granted to them, and move forward as a united front that views labor wins as environmental wins, environmental wins as labor wins, and no longer accepts partial wins for either side.

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