

Energy, Justice, and low-carbon transitions: a governmentality analysis of the role of community energy in the UK.

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Abstract

This thesis asks what role community renewable energy organisations (CREOs) can play in achieving a low-carbon energy transition in the UK. The UK government has consistently favoured supply-side action and large, centralised solutions such as offshore wind or nuclear power, as opposed demand-side local action. Regulatory mechanisms were introduced, such as the Feed-in-Tariff (FiT), which allowed households and community renewable energy organisations (CREOs) to directly contribute to and benefit from initiatives aimed at decarbonisation of the energy system. However, many of these mechanisms have been terminated leaving households and communities locked-in to a high-carbon, high price energy system with a deficit of meaningful opportunity to engage with and create change. This situation results in multiple energy related injustices and is preventing a just transition.

Using a governmentality framework, this thesis examines how the conceptual frameworks of energy justice (EJ) and energy democracy (ED) can be supplemented by World-Ecology and decolonial perspectives. A qualitative, multi-case study research design was used to collect data via embedded participant observation in three community energy organisations and semi-structured interviews with key stakeholders (27). The data were analysed using a framework which directs attention to the relationships between four specific categories of governance: techniques of power; visibilities; rationalities; and subjectivities. From this perspective, historicised analysis was used to understand precisely how the history and present characteristics of the policy and regulatory environment for community energy promote and/or limit justice concerns.

This analysis finds a bifurcation in the practices of community energy organisations that creates an agonistic pull between community action and innovation. At the core of this agonism is a porous border between poverty and energy poverty, which in the practices of community energy organisations, are present as a convergence of dysfunction and extractivism in both energy and social support systems. In addition, community energy organisations were found to be working in a hostile environment, often including conflict with local authorities, over who remains the key deliverer of services and democracy under the financial and political retrenchments brought about by austerity. Finally, in a national energy context, this research finds that despite community energy being widely supported and advocated for, it is nonetheless forced to find alternative modes through which to sustain its work, due to a policy pull toward centralised energy infrastructure. The thesis concludes that these findings indicate injustice and democratic deficits at multiple junctures and scales and that these injustices and deficits are entangled with the materiality of energy, its scale and the continued

influence of fossil fuel interests. It argues that facing the climate crisis will require focused efforts to further democratise both our energy systems and wider social and political systems. This thesis proposes that the prospect of furthering such democratic efforts can be critically assessed via two environmentally focused governmentalities, or environmentalities, developed over the course of this thesis, respectively referred to as: radical and reformist.

Contents list

- i: Declaration
- ii: Acknowledgements
- iii: List of tables and figures
- vi: List of Abbreviations

Chapter 1: Introduction

- 1.1: Research Questions
- 1.2: Definitions of Key Terms and Concepts
- 1.3: Structure/Map of Thesis
 - 1.3.1: Literature Review
 - 1.3.2: Methodology
 - 1.3.3: Methods
 - 1.3.4: Data Collection and Analysis
 - 1.3.5: Empirical Chapters: Local
 - 1.3.6: Empirical Chapter: National
 - 1.3.7: Discussion
- 1.4: Conclusions and Contribution

Chapter 2: Literature Review

- 2: Introduction
 - 2.1: Energy Justice, Energy Democracy and Energy Poverty
 - 2.1.1: The Three Tenets of Justice
 - 2.1.2: An Energy Justice Framework
 - 2.1.3: Historical Roots of Energy In/Justice
 - 2.1.4: Energy Democracy
 - 2.1.5: Energy Poverty
 - 2.2: History Lessons
 - 2.3: Governmentality, Decoloniality and World-Ecology
 - 2.4: Community and Community Energy

2.5: Conclusion: Bridging Energy Justice and Energy Democracy

Chapter 3: Methodology

3. Introduction

3.1: Research Questions

3.1.1: Research Design

3.2: Epistemology and Research Approach

3.2.1: Governmentality

3.2.2: World-Ecology, Decoloniality and the Human Subject

3.2.2.1: World-Ecology

3.2.2.2: Decolonisation and Epistemic Un-linking

3.2.2.3: The Human Subject

3.2.3: Justice and Deliberative Democracy Decolonised

3.3: Research Design and Case Study Approach: Methodology

3.3.1: A Qualitative Approach

3.3.2: Multi-Case Study

3.3.3: Action Research/Embedded Researcher Approach

3.3.4: Covid 19

3.4: Data Collection Methods

3.4.1: Data Collection: Participant Observation

3.4.2: Data Collection: Dialogical Interviews

3.5: Data Analysis Strategy

3.6: Ethical Approval and Limitations

3.7: Conclusion

Chapter 4: Energy Poverty

4: Introduction

4.1: Participant Observation: Energy Advice Amidst an Extractive System

4.1.1: Technical Aspects: Short-Changing and Price Gouging the Energy Poor

4.1.2: Visibilities: Intersecting Impoverishment

4.1.3: Forms of Knowledge: Resisting Neoliberalism through an Ethic of Care

4.1.4: Formation of Identities: Homo Disobedient?

4.2: Interviews: Fighting Against the Tide

- 4.2.1: Poverty, Democracy and Justice
 - 4.2.2: Maslow's Basic Needs Unmet
 - 4.2.3: Performing Democracy (Badly)
 - 4.2.5: The Warm Home Discount for Whom?
 - 4.2.6: Justice for the Few
- 4.3: Conclusion

Chapter 5: Community Energy

- 5: Introduction
- 5.1: What are CREOs and What are they For?
- 5.2: Participant Observation: Contrasting CREOs
- 5.2.1: Technical Aspects: The Search for Funds
 - 5.2.1.1: How Rationed funding Effects CREO Activities
- 5.2.2: Visibilities: Unpicking Just Transitions
- 5.2.3: Rationalities: Progressive Neoliberalism and its Contrarians
- 5.3: Interviews: Not Recognising Community
 - 5.3.1: Technical Aspects: Money, Debt, Misplaced and Misunderstood
 - 5.3.1.1: The Politics of Technologies and Innovation
 - 5.3.1.2: Energy Efficiency or Sufficiency?
 - 5.3.2: Visibilities: Views Through the Pandemic
 - 5.3.2.1: What is Energy?
 - 5.3.2.2: What is Community and what is its Role in a Just Transition?
 - 5.3.2.3: The Contrasts and Connections of Covid 19 and the Climate Crisis
 - 5.3.3: Rationalities: Thinking Inside and Outside of Neoliberalism
 - 5.3.3.1: The Art of Neoliberal Governance
 - 5.3.3.2: Internalised Neoliberalism
 - 5.3.3.3: Democratic Contradictions
 - 5.3.4: Subjectivities: Green Entrepreneurs and Community Activists
- 5.4: Conclusion

Chapter 6: Community Energy England

- 6: Introduction
- 6.1: What is CEE and What does it do?

6.2: Participant Observation: A Sector Searching Solutions and Support

6.2.1: Technical Aspects: Ofgem as Blind to CREOs and their Benefits

6.2.2: Visibilities and Rationalities: Innovate to Survive in a Post-Subsidy Landscape

6.3: Interviews: Energy In/Justice in England

6.3.1: Technical Aspects: Ep and Poverty as not/Connected to the Energy Transition

6.3.1.1: Energy Poverty Experts Defining EP

6.3.1.2: Practitioners and a Just Transition

6.3.2: Visibilities: Thinking the Unthinkable – Pandemic Thinking on the Climate Crisis

6.3.2.1: Energy as a Thing or Relation? Countering Necropolitics

6.3.2.2: Community Empowered or Marginalised?

6.3.3: Rationalities: Upward Extraction or Redistribution?

6.3.3.1: Neoliberal Capitalism: There is no/an Alternative

6.3.3.2: The Fading Illusion of Democracy

6.3.3.3: Value/s: People Versus Profits

6.3.4: Subjectivities: Is the Cage Inevitable?

6.4: Conclusion

Chapter 7: Analysis and Discussion

7: Introduction

7.1: CREO Regimes of Practice – Two Pathways

7.2: Money, Debt and Funding: Democratic Deficits and Technologies of Control

7.3: A Brief History of CREOs and their Contingency

7.4: Rationalities of Power: A Regressing Neoliberalism Versus Radical Ecological Democracy

7.5: Energopower Though Time and Space

7.6: Environmentality, the Past, the Future and Freedom

7.8: Conclusion

Chapter 8: Conclusion

8: Overview

8.1: Contribution

8.1.1: Methodological Contribution

8.1.2: Theoretical Contribution

8.2: Analytical Findings

8.3: Limitations of Thesis

8.4: Future Research

References

Appendices

- 1: Governmentality Analysis of Myself
- 2: Draft Recruitment Email
- 3: Energy Advice Record Sheet
- 4: Participant Observation - Webinar with PRASEG and Ofgem
- 5: Participant Observation – Immigration Advice Centre
- 6: Interview – Food Bank Manager
- 7: Participant Observation – Lottery Funding Meeting
- 8: Interview – CREO Financier
- 9: Interview – Energy Democracy Academic

List of Tables & Figures

Tables:

- 1: The three tenets of energy justice and the evaluative and the normative questions (Jenkins et al 2016, p. 175)
- 2: The energy justice framework (Adapted from Delina & Sovacool 2019, p. 4)
- 3: Energy democracy, dimensions, components and indicators (Adapted from Szulecki 2018, p. 36).
- 4: Analytical framework for this thesis (Developed from Oels 2006).
- 5: Different modes of governmentality (Adapted from Fletcher 2010)
- 6: The Aligning of Methodological and Justice Concerns
- 7: Case dimensions and classifications (Adapted from: Scholz & Tietje 2002, p. 10)
- 8: Participant observation, case studies and research questions addressed
- 9: Methods chosen and how they address research questions
- 10: Energy advice interventions
- 11: EP Interviewee details
- 12: Governmentality summary to two local CREOs
- 13: Organisational Environmentalities (adapted from Dryzek 2013)
- 14: CREO interviewee details
- 15: Make up of boards of regulators. (Thomas 2019, p. 225)
- 16: National Level Interviewee details
- 17: Analytical anchor points of thesis (adapted from Ettlinger 2011)
- 18: Governmentality Analysis of Myself

Figures:

- 1: Carbon dioxide (CO₂) By sector/source: Reproduced from Our World in Data (2019)
- 2: The top 40 CO₂ emitting countries in the world in 1990 and 2012 (in giga-tonnes), including per capita figures (in tonnes per-year) (Rhodes 2016, p. 98).
- 3: Share by region of world manufacturing output: 1750-1900: Huber (2008, p. 107)

- 4: Global shares of prime energy source (percent): 1700-1900: Huber (2008, p. 107)
- 5: Total Energy Consumed by Type: (Our World In Data 2022)
- 6: The multifaceted nature of CRE organisation motivation (Hicks & Ison 2018, p. 527)
- 7: CREOs in the UK (CEE 2020, p. 11)
- 8: CREO electricity generation in the UK (CEE 2020, p. 14)
- 9: Triangulation in case studies methods (Woodside 2010, p. 7)
- 10: The Amount (N=27) and Type of Interviews
- 11: Flow Chart of Analytical Process
- 12: How the Pandemic has Exacerbated Injustices Globally (Oxfam 2022, p. 6)
- 13: The reduction in council service spending per person from 2009/10 to 2017/18 (Marmot et al 2020b, p. 10)
- 14: Energy Efficiency Measures Completed During the Green Deal (Rosenow & Sagar 2015, p. 4)
- 15: The Inconsistent Policy Support for CREOs (Nolden et al 2020, p. 4.)
- 16: Sites of CREO renewable assets (CEE 2021a)
- 17: The Undiscounted Benefits of a National Deep Retrofit (Brown et al 2020, p. 27)
- 18: Renewable Subsidy Rates and Removal (From CEE 2020b, p. 7).
- 19: CREO Groups Numbers 1999-2016 and Policy Changes (From Mirzania et al 2019, p. 1285)
- 20: Number of CREO Projects Over Time, Cumulative Capacity and Policy Change (Nolden et al 2020, p. 2)
- 21: Registered donations to political parties in the 2019 elections (House of Commons Library 2022)
- 22: Oil & Gas industry effective tax rate, income and government tax revenue (Christophers 2021, p. 117)
- 23: Percentage of pre-tax revenue paid in taxes In US (direct, indirect, federal & other)

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Declaration

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Signed:

Lee John Luke Towers

Dated: 30/06/2022

List of Abbreviations

AAP – analytical anchor points

BEC – Brighton Energy Cooperative

BESN – Big Energy Saving Network

BHESCo – Brighton and Hove Energy Services Cooperative

BLM – Black Lives Matter

CA – Citizens Advice

CBA – cost benefit analysis

CC - climate crisis

CCS – carbon capture and storage

CEE – Community Energy England

CES – Community Energy South

COP – Conference of the Parties

CREO - community renewable energy organisations

CTO – chief technology officer

DAP – Decarbonisation Action Plan

DAPL – Dakota Access Pipeline

DNO – district network operators

EA – energy advice

EAC – Environmental Audit Committee

ECSM – embedded case study methods

ECT – Energy Charter Treaty

ED – energy democracy

EE – energy efficiency

EJ – energy justice

EP – energy poverty

ES – Energise South

ESC – Energise Sussex Coast

EV – electric vehicle

FB – food bank

FFCS – Ferry Farm Community Solar

FiT – Feed-in tariff

FPP – first-past-the-post

GHG – greenhouse gases

IMF – International Monetary Fund

IPCC – International Panel on Climate Change

LA – local authority

LIHC – low income high cost (definition of EP)

LILEE – low income low energy efficiency

MIS – minimum income standard

NDA – non-disclosure agreement

PPM – pre-payment meters

PR – proportional representation

QE – quantitative easing

ROI – return on investment

SAP – structural adjustment programmes

TN – Transition Network

UBI – universal basic income

UKPN – UK Power Networks

WB – World Bank

WFP – Winter Fuel Payment

WHC – Warm Home Check

WHD – Warm Home Discount

XR – Extinction Rebellion

Chapter 1: Introduction

This thesis is an examination of how and to what extent local action can reduce injustices surrounding energy provision as the UK transitions to a low-carbon economy, with a regional focus on community renewable energy organisations (CREOs) in the south of the UK. However, the climate crisis (CC) which is one part of much broader socio-ecological crisis (Gelderloos 2022) cannot be considered from a local perspective exclusively. These crises are global and have been a long time in development – at least since 1492 (Táiwò 2022, Moore 2015; Blaut et al 1992). A brief example will illustrate this.

Potosí, now in Bolivia, was founded by the Spanish empire in 1545 as a mining town and used to extract over 150,000 tonnes of silver, or 80% of world production between 1500-1800 (Táiwò 2022). This wealth flowed to the Spanish empire, through to Genoese bankers funding this empire, onto the Ming Dynasty in the East; however, this wealth was based on slavery, genocide and ecocide in the Potosí region (Patel & Moore 2020). It is only in the last decade that Bolivia has moved from “low income” to “lower middle income” in World Bank parlance, yet the mines of Potosí are still extracting and continue to be the economic centre of the region (Táiwò 2022). Close to Potosí is the Salar de Uyuni salt flat, which contains one of the world’s largest deposits of lithium, a crucial resource for electric vehicle (EV) batteries and many other electronic devices. Demand for lithium is set to soar by near 1000% by 2050 under scenarios assuming wide EV roll out (Sovacool et al 2019a; Sovacool et al 2020a). The socioeconomic and environmental impacts and the directional flows of these impacts are not hard to imagine. This is a part of the global racial empire “cut out of the rock of political history” with channels of wealth flowing away from Potosí but channels of toxicity leading to and accumulating among those with little economic and political power (Táiwò 2022, p. 22).

The CC is perhaps the most complex, high-stakes problem humanity has ever faced (Chomsky & Pollin 2020). The International Panel on Climate change (IPCC 2022) emphasised this when they warned the world “[A]ny further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all.” This thesis argues that a fundamental aspect of this transformation is addressing the drastic social injustices and inequalities that exist between and within countries and are ongoing/exacerbating, but built upon genocides and ecocides of the colonial past.

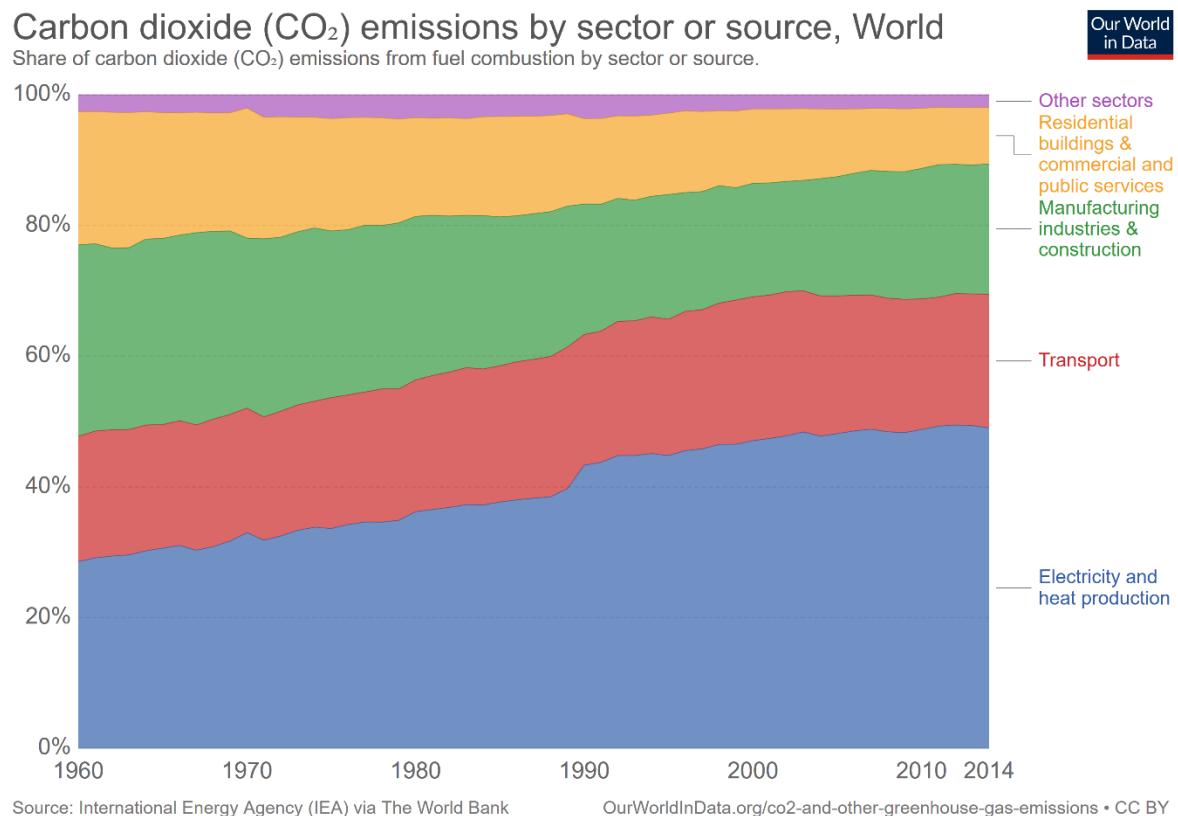
Redressing injustice and inequality are essential as we live in a world in which vast amounts of the world’s wealth and resources are controlled by a very few individuals (Oxfam 2022; Galvin 2020a; Dorling 2015), and those with higher incomes everywhere have a higher share of CO₂ emissions (Oxfam 2022; Chancel & Piketty 2015). Simultaneously, the Global North has higher total and per-

capita CO₂ emissions than those in the Global South (Our World in Data (OWD 2019)). These injustices and inequalities have fundamental gendered, racialised, ableist and classist roots and ongoing aspects. Therefore, this project sees this as an overall intersectional struggle involving anti-racist and decolonial, feminist and radical eco-socialist movements that should endeavour to make some kind of common purpose (Fraser 2021; Wynter 2003).

Without action, the current social organisation will result in the double injustice of the poorest and most marginalised groups in both the Global South and the Global North, who are least responsible for, or able to adapt to the CC, suffering most from its impacts (Táíwò 2022, Hickel 2020; Sovacool et al 2017). However, if the Global North reduced CO₂ emissions and resource use and supported the South in its transition, the CC and other global pollution issues could be mitigated (IPCC 2022; O'Neill et al 2018). Within affluent countries addressing injustices and reducing inequality could reduce CO₂ emissions also (Grunewald et al 2017). Thus, acting on inequality between and within countries is not only a moral imperative, but also a practical one.

Two related theoretical approaches, energy democracy (ED) and energy justice (EJ) aim to address the CC but have different focuses, which if combined could lead to a more comprehensive approach. EJ is a mainly academic framework aiming to share the benefits and cost of energy more fairly and has three core tenets of justice of distribution, process and recognition and ten more specific principles (Delina & Sovacool 2019). ED is an activist/academic movement broadly aiming to re-democratise our societies via a localised community owned energy system (Burke & Stephens 2018). As such, this project places these approaches on a justice spectrum with EJ starting on the right side and denoting incremental calls for justice (the next chapter will show the most advanced of the EJ ten principles are more radical so move leftward) while ED would be on the left end as it implies a radical overhaul of the socio-political (Thombs 2019). Around half of global CO₂ emissions are the result of electricity use and heat production (OWD 2019), as can be seen in figure 1 below. Therefore, it is clear that a focus on energy and reducing these emissions will go far to mitigating society's overall emissions.

Figure 1: Carbon dioxide (CO₂) By sector/source: Reproduced from Our World in Data (2019)



This project proposes that EJ literature opens up the discussion of what justice actually is, rather than just present principles gathered from mainly Western-oriented philosophers and theorists. Sovacool et al (2017) began this process, but this thesis argues that a concept of justice should be built from a dialogue with activists working in local organisations who see and deal with injustice in their daily practice. Further, this project argues justice is entangled with notions of democracy. Therefore, this project aims to help develop the ties of EJ and ED literature and provide some cross-fertilisation of bottom-up and academic notions of justice. This is because at a fundamental level, justice is not some abstract concept but one that develops in our daily social practices and interactions (Galvin 2020b). Finally, this project witnessed the Black Lives Matter (BLM) protests, was researched and written during a global pandemic, and some of the material was gathered in a food bank. Collectively, these experiences demanded radical perspectives and approaches, as do the deep race/gender/ableist/class dynamics of the pandemic and CC.

One way of describing and evaluating environmental and justice discourses (Fletcher 2017; Oels 2006) is the governmentality approach, which was developed from initial work by Foucault. This framework will be used in this thesis with the aim to suggest more equitable forms and institutional arrangements for non/humans in any one time/space (Cavanagh 2018). When crises hit societies, it seems myopic and unwise to try to solve the crisis with the very tools, techniques and overall patterns of thinking that cause the crises, yet this dynamic can be seen in the pandemic (Davies et al 2022) and CC responses so far (Moore 2016). For instance, science and its institutions, through which we know the CC is happening, are also part of the problem through its technological discoveries now and in the past, but also how large sections of this community frame the CC through a technical lens, when it is clearly a socio-political problem (Erickson 2016; Adams 2016). We need new modes of thought as well as new modes of production (Moore 2016) and this project humbly attempts to be part of these new modes of thought. As such, the governmentality approach is informed by World Ecology (Patel & Moore 2020) and decolonial (Paradies 2020; Mignolo 2007) perspectives.

Community renewable energy organisations (CREOs) are a site of mitigation of the CC through their installation of renewable infrastructure but also through their heterodox economic models and the devolved scale, which is arguably more suited to renewable infrastructure. However, they are also entangled in capitalistic modes of production, supply and thought. As such they are the core focus of this project, as a site of subjectification by the forces of wider society, but also places of resistant and heterodox subjectivities.

1.1: Research Questions

A main aim of this thesis is to create a dialogue of justice between practitioners working in and in connection to CREOs, and energy justice concerns coming from academia. This is because this thesis argues justice is something we do and learn in our daily, material practices. The specific research questions are (research questions and objectives will be abbreviated to RN and ON below):

1. How do community energy sector actors conceive of energy justice?
2. What are the key characteristics of the policy and regulatory environment in the UK in which community-led energy generation and distribution schemes operate?
3. What kind of subjectivities are posited by these notions of justice and what are the implications of this?

Answering these research questions will be specifically achieved by the following thesis **objectives**:

- a) to further integrate the relevant literatures of energy justice and energy democracy and create dialogue on the notion of justice beyond academic energy justice discourse
- b) to assess the current policy and regulatory environment, in terms of enabling community energy and increasing energy justice, with a focus on energy poverty, and assessing possible policy/regulation that may enhance community energy and energy justice
- c) to explore core categories associated with energy, democracy and justice and historicise these ideas

How we do and learn justice impacts who and what we are as humans. With the CC looming, questions of how we relate to each other and our wider world are perhaps the most important.

1.2: Definitions of Key Terms and Concepts

Appendix 1 will define the core concepts that underpin this thesis and its aims. This thesis is an examination of how local action through CREOs can help achieve EJ and ED during a low-carbon transition. But within this, and the research questions and objectives above, are contested concepts that must be unpacked.

1.3: Structure/Map of Thesis

This is a bottom-up project in multiple senses. EJ is a systemic framework that focuses on the upstream/supply processes, and downstream/productive processes (Jenkins et al 2016). In geopolitical terms, this means moving through the local, regional, national and international levels. In a justice sense, Sen (2009) argues that an incremental search for justice starts with those most denied justice, or as Fanon (1963) would advocate the most marginalised or damned. Governmentality as a framework is a bottom-up approach starting with events in a locale that it sees as inherently contingent and following specific regimes of practice that can be carefully traced upward to government schemas and rationalities (Ettlinger 2011). Finally, while much of the primary participant observation work was done in local CREOs, these organisations depend upon regional and national governance frameworks. At the same time, CREOs are buying much of their solar PV from the

international markets, which is a problem as injustices are present in mining, manufacture and disposal of these low-carbon technologies (Sovacool et al 2019; Brock et al 2021). This shows we can neither solve the CC in one country or region, nor have justice in one place that relies on injustice in another. Thus, the most logical structure for this project is local to national to international. This section maps out how the thesis moves through these interconnected levels.

1.3.1: Literature Review

This chapter firstly explores the literatures EJ, ED and their common historical roots then explores the injustice of EP. Secondly it examines the notion of energy and the histories of energy transitions, for as Grubler (2012) says, it is the only observational field we have. Next, literatures of governmentality, decolonisation and world-ecology are introduced before these are further expanded on in the methodology chapter. Finally, community and community energy literature are reviewed.

1.3.2: Methodology

Fundamentally, this project takes an action research approach; meaning it is not merely a descriptive endeavour but one that aims to make the world a better place (Reason & Bradbury 2008). The CC threatens the most deprived members of society both within and between countries and these people are the least responsible for the crisis. This is wrong and should change. Similarly, injustice and inequality are not some facts of life but contingent situations made, and reduced or increased, by certain institutional arrangements. As stated above, those who benefit from this unfair system are also responsible for the highest environmental impacts. This is also wrong and should change. Overall, this project advocates and aims to outline the systemic change the IPCC (2022; 2018) calls for.

Moreover, science in general is deeply implicated in the systematic oppression of the majority of people and wider lifeforms historically and currently. This was/is through mapping, surveying, administrating, rationalising and perhaps most importantly, quantifying life in general, in how far it can work for capital or service it (Daggert 2019; Moore 2016). This happened in early colonial history, with for instance, the classification of *races* of humans (Anderson 2006), and is happening now with biopiracy and genome mapping aimed at capitalist accumulation (Moore 2016). Finally, modern slavery, which this project will argue can be seen as the first international energy system (Lennon 2017), is alive and well with more slaves now than ever before (Scott 2020), as is a neo-colonial system or coloniality existing between countries and within them (Paradies 2020; Mignolo 2007; Wynter 2003). For example, many of the colonial processes of dispossession, land grabbing and privatisation

of common land that characterised the early modern period (Graeber 2011; Moore 2016b; Federici 2004), were recycled by the World Bank (WB) and International Monetary Fund (IMF) during the 1980s structural adjustment programmes (SAP) throughout the Global South (Federici 2019; Graeber 2011). Therefore, this project humbly aims to be part of what Moore (2016, p.114) calls a new “ontology of nature, humanity and justice” that goes beyond distribution of wealth, but aims for the emancipation of all life. To the charge that this is not *realistic* or *feasible*, Butler (2020) replies that maybe those that saying this are too enamoured of, or colonised by, a *reality* that serves no one ultimately, and serves very few right now.

More specifically, this project adopts an overall qualitative approach and is guided theoretically by an argued correspondence between governmentality, incremental and more radical justice approaches and world ecology and anti/decolonial approaches. Governmentality has been used as a framework to analyse and compare different modes of governance, including environmental governance (Oels 2006). However, through its highlighting of contingency of any governing discourse it also opens space in conceiving how things could be done more democratically and fairly (Fletcher 2017; Hajer & Verteeg 2005). Justice approaches reject notions of transcendental justice and accept that justice is a moving concept, but counter that this does not mean that things cannot be distributed/processes conducted more fairly. However, achieving this arguably requires a deeper and expanded notion of the democratic process. Thus, this thesis follows other scholars in tying justice to democracy (Rawls 2009; Sen 2009), but as stated above, not in the narrow sense but in the broader sense. So, this project explores this connection and how deliberative democratic ideas may serve in a fairer future (Kothari 2020; Dryzek 2000).

Finally, appending world ecology and anti/decolonial perspectives to the governmentality framework goes someway to addressing a contemporary impasse identified in Foucauldian studies (Dean & Zamora 2021; Lemke 2019; Fraser 1985). Put briefly, this concerns how Foucault’s methodological choices and positions undermine normative conclusions. Or as Fraser (1981) suggests, Foucault either has an alternative normative framework he does not elaborate on, he does critique without a normative framework, or he rejects the need for any such framework to guide politics. Dean & Zamora (2021) link this normative ambiguity to Foucault’s aversion to European Marxist thought in his specific French context, and toward the end of his life his ambivalent but in some respects positive, if selective, reading of neoliberalism and its potential for more emancipatory forms of living. Unfortunately, this leads arguably to strange, individualistic ideas of ordeals of the self, which also arguably undermine more collective forms of organisation. Also, as Dean & Zamora (2021) argue and this thesis will show, neoliberalism has only intensified injustices and the CC, which in turn seems likely to reinforce and create new forms of injustice. Thus, this thesis uses governmentality as starting point (Dean & Zamora

2021) bringing in the more normative and CC appropriate approaches of world-ecology and decolonisation. This corresponds with governmentality scholar Fletcher's (2017) call for theoretical contributions to a liberatory governmentality/environmentality in two broad ways. Firstly, this approach allows a reconceptualization of what it is to be human – equal but interdependent on each other and the wider web of life (Estes 2019; Kimmerer 2013; Sioui 1999) and so vulnerable in different times/places/levels (Mbembe 2019). This requires treating all with dignity and respect (Butler 2020; Wynter 2003). Second, both world ecology and anti/decolonial approaches frame the environment/ecosystem as an active agent in the socio-ecological system, something EJ and ED fail to do.

1.3.3: Methods

This thesis adopts a case study approach, which can be seen as both a product and process of enquiry that can take a number of methodological directions (Stake 2005). Case study methods can focus on one case or up to 12, with one case offering more depth/resolution, while more cases have less depth but allow for more generalisability (Gerring 2006). This study originally aimed for 5 cases of varying types; however, Covid 19 disrupted this so now it involves three cases (although chapter 4 focuses on the energy advice service of one CREO – see section 3.5). These are two local CREOs and Community Energy England (CEE) the national CREO advocacy organisation. This case study approach aims to describe and understand human activity and therefore should be conducted *in situ* (Woodside 2010; Gillham 2000). An overall objective of this method is to record the complexity of the case in a narrative structure, which in turn allows readers to understand this narrative and make their own conclusions (Stake 2005).

The more specific methods used within the thesis are participant observation, semi-structured interviews and documentary analysis. As stated above, science is tied/entangled with capitalisms and colonialism and so are its methods. Therefore, this thesis will note that all these above methods have histories and that these are related to oppressive use that has characterised much of the history of social sciences (Smith 1999; Wallerstein 2006). In mitigation, this thesis rejects various binaries that support these oppressive practices including subject/object, theory/practice and subjective/objective. As a result, the partiality and contingency of this data and the project's arguments are accepted and emphasised.

1.3.4: Data Collection and Analysis

The collection and analysis of data in qualitative research is recursive in general (Mason 2002a), and particularly in ethnographic methods (Neyland 2008). This means that as data is gathered it is read/reread, compared to literature leading to new questions or avenues of enquiry, and/or consolidating established ones (Gerson & Horowitz 2002). This recursive process allows overall for natural dialogue between the researcher and the data, which includes the emergence of new patterns and the unexpected (Stake 2005).

Language will be the core data of this project. This language will include discourses beyond and within descriptions of places, cases, things, events and informants. However, as a study of governmentalities there is an inherent materiality to these discourses as they imply and use techniques and technologies (Oels 2006). Moreover, this project's use of the concept of energopower has an inherent materiality. Finally, participant observation has a certain innate materiality, which includes physical interactions but also building layout and technologies in use (Schubert & Rohl 2017). Thus, while language is a core focus of this project this implies and is connected to social relations and material artefacts in participant observation.

The analysis of this data is thematic and organised according to the governmentality framework and core concepts and categories detailed above. An initial step when reading over field notes and transcribing interviews was to note potential themes and topics. A further step was to link relevant literature to these themes. As this was an ongoing process these themes were provisional and were expanded, excluded or amalgamated. For instance, a theme that expanded during my time at CEE was the international decarbonisation divide and its historical roots and present root in coloniality. This led me to read about this history and in turn rewrite a history of energy/energy transitions in the literature review and in the analysis. This is an example of how fieldwork, interviews and desk-based research is an iterative process of analysis and provisional categorisation, reading, reanalysis and re-categorisation and back again (Stake 2005). As stated, this was a recursive process, but a first concrete step was the grouping the fuel poverty fieldnotes and relevant interview transcripts and organising them into coherent themes, with any problematic material used to interrogate these themes to see if they remain coherent (Neyland 2008).

1.3.5: Empirical Chapters: Local

4

The first empirical chapter examines fuel poverty in Hastings/Eastbourne and the UK. The primary data collected consists of fieldnotes collected as an energy advisor with Energise Sussex Coast (ESC) in a foodbank in Hastings and immigration/asylum advice centre in Eastbourne. This data was supplemented by interviews with foodbank employees/volunteers and the CREO actors involved. This chapter begins to explore R1/O1 on how CREOs construct the notion of justice through their fuel poverty work. It also begins to explore R2/O2 which looks into the key characteristics of the UK's policy and regulatory arrangements and how these promote justice, preserve the status quo, or entrench injustice.

5

The second empirical chapter focuses on ESC and Brighton and Hove Energy Services Cooperative's (BHESCo) histories, organisation, projects and activities. The primary data for this chapter are the fieldnotes taken while working with these organisations, various documents and emails, and interviews with the employees of ESC, other CREO actors and associated regional political and energy actors. A follow-up interview one of these ESC's employees was conducted in winter 2021, which served to add a temporal aspect (Neyland 2008) to this case. This is of particular import here as 2019-2020 was a critical period for CREOs in general with much government support being removed, while the pandemic changed many things including how energy advice would be given. This chapter contributes to R1/O1 on how justice is constructed and how this maps onto the EJ framework, and R2/O2 on how government regulation and policy enhances justice, maintains the status quo, or increases injustices. It will also start to address R3 in outlining subjectivities in this space.

1.3.6: Empirical Chapter: National

6

Chapter six examines the national policy and regulatory environment through the case study of CEE a national CREO advocacy and representative body. This involved a remote internship with CEE for three months during the summer 2020. Much of this work revolved around two summer conferences, which themselves revolved around adapting to the new post-subsidy conditions, but also how to get more government help and support. CEE was also involved in documenting CREO benefits to

communities in order to convince Government to support the sector by using CREOs in the Government's transition plans. Also, during this placement CEE produced a number of publications concerning justice and ED. Therefore, the data of this chapter is from fieldnotes detailing a range of activities from team meetings to Government or regulatory sponsored webinars. This data is supplemented by CEEs website resources and subsequent interviews with two of the CEE team in the summer of 2021, again adding a crucial temporal element to this data. This chapter also includes interviews with a range of relevant stakeholders including national level politicians, financial, energy poverty (EP) and ED experts. As such, this chapter will provide evidence for R1&2/O1&2, with a focus on what is helping or hindering CREOs in the national regulatory and policy context. It also provides data on CREO and associated actor subjectivities thus contributing to R3.

1.3.7: Discussion

Chapter seven analyses/discusses the empirical data as a whole in a number of ways. Broadly it uses the governmentality framework to draw out rationalities, visibilities, technologies and subjectivities from this thesis's data and connect this in dialogue to EJ and ED frameworks. Beginning with the local regimes of practice it examines how CREOs work practically in trying circumstances to relieve basic energy injustices such as unaffordable energy or unfair and discriminatory processes. Then it explores the techniques of governmentality and how the rationing of funds shapes CREOs, discussing the bifurcating trajectories of innovation and community action that are a partial result of this rationing. The analysis then pans out to focus on the wider historical developmental conditions surrounding CREOs and how this has shaped them. This is then connected to the broader rationalities that were evident in this data and by inference guiding actors and organisations in this space. This is followed by a short energopower genealogy to take a wider perspective and shed light on how we seem to have arrived at such an undemocratic impasse. Finally, the two broad environmentalities that emerge from this data are outlined with reference to the justice implications of each.

1.4: Conclusions and Contribution

The three empirical chapters find a system of carelessness and democratic deficits characterise the UK's energy and wider social system. In chapter 4 it finds CREO and associated actors providing energy advice in food banks in difficult circumstances, including rationed funding for this advice and an extractive energy market. It also finds a contrast in framing of the subject of energy advice. CREO and associated actors see this as a generally impoverished subject beset by high costs for basic needs including energy and low renumeration for work or benefits. The official energy poverty subject is framed in a much more limited and technical way as one living in a thermally inefficient home. The pandemic acts to both highlight and exacerbate the injustice of energy poverty and is an example of this system of carelessness degrading further. Chapter 5 finds two CREOs working in challenging circumstances, including significantly reduced funding of CREOs and a defunded local state. It also finds two CREOs working in different geographical and demographic contexts, which combined with differing mission statements and corresponding discourses amount to differing constructions of justice and associated organisational pathways or trajectories, namely one that works within the energy markets innovating and framing itself as a disruptor, while the other focuses more on community action and sees the energy market as broken and dysfunctional. However, both pathways are poorly served by the broader dynamics of an energy and wider social system geared toward the upward extraction of wealth. Finally, chapter 6 focuses on the national level CREO actors and the sector as a whole. It finds many CREOs providing mutual aid during the pandemic thus replicating the ethic of care seen in chapter 4. It also finds the differing pathways of the CREOs seen in chapter 5 can be inferred across England. This distinction is in turn connected to the discourses of the interviewees with a broad split between CREO actors and academics seeing the capitalist or neoliberal system as the problem and favouring much more local and deliberative democratic solutions, while the economic/political elites are much more sanguine about the UK's energy transition progress and capitalist system more generally.

The knowledge contributions of this thesis can be distinguished as theoretical and methodological. Theoretically, it offers a governmentality framework apposite for historicised analyses of political systems and power dynamics, but retooled with world-ecology and decolonial perspectives to make

this framework suitable for a justice seeking, socioenvironmental analysis. Methodologically, this thesis offers a case study approach combined with embedded participant observer approach which allows for the justice seeking aspects of the theoretical framework. These two methods were combined with dialogical semi-structured interviews, which again allowed for the theoretical commitments. Overall, there is an aim to align the theoretical claims of seeking a better, more just world with the methodology and methods of study. This is because in justice terms, process and outcome are like ends and means, inseparable.

Chapter 2: Literature Review

2: Introduction

This chapter reviews the academic literature relevant to this thesis beginning with the energy justice (EJ) and energy democracy (ED) literatures. Within EJ and ED literatures there will be a focus on energy poverty (EP) for this is a major concern of this thesis. Following this the histories of energy transitions will be examined with an aim to address the polemics within this literature. This is because a central aim of this thesis is to provide a historicization of energy to show how it is integrally tied to both justice and democracy. Next, the governmentality, decolonial and world ecology literatures will be introduced. The integration of these literatures within the conceptual framework of this thesis occurs in the next chapter, as does a discussion of the broader literatures relevant to justice and democracy that this thesis argues are central to epistemological and ethical questions. Finally, community energy literature will be explored as this is the unit of analysis of this thesis and the empirical space in which it is understood that various practices and possibilities of EJ and ED play out. The overall aim of this chapter is to show that by employing a governmentality framework, which is suspicious of grand narratives (Darier 1999), and underexplored categories such as energy, illuminating connections can be made that hold implications for how justice is understood.

A first task before defining and exploring energy literatures and associated concepts is to define energy. A technical definition is offered by Smil (2008) of $W = J/s$. Here j is joule, s is seconds and W is Watt, or unit of power. However, if we replace energy with the synonym power (used in the above definition) we see that in English (unlike Spanish, French and German) this has a dual social and technical use (Malm 2016a). Researchers from a variety of perspectives have argued this point, that energy/power is a material thing that can be seen/ counted in units but also framed as social relations (Lennon 2017; Malm 2016a; Kinder 2016; Huber 2008). Indeed, if we consider how far energy as a unit is entwined with our modern lives, from the computer this thesis was written on to the phones we use to talk to each other – it is true to say that energy enables and constrains our lives and social interactions. As such energy questions are “deeply political” and about the moral choices we make and the kind of society we want to be (Van de Graaf & Sovacool 2020, p. 2). Framing energy as a social relation allows projections into the future and seeing energy as directly tied to more democratic and equitable futures, while also allowing historical analysis of how deeply entangled energy questions are

with capitalisms and its many oppressive features (Paradies 2020; Daggert 2019; Lennon 2017; Kinder 2016; Malm 2016a).

Just like the notion of energy, the idea of an energy transition is contested, with some seeing this as a largely technical process (IEA 2019), while others interpret it as a much more social process as technical and social systems are entwined and co-evolve (Shove 2017; Malm 2016a; Huber 2008). It is also recognised that the agents involved or leading the process will likely shape the outcomes, with government, market or more civil society-led transitions likely to lead to very different outcomes (Foxon 2013). This thesis defines an energy transition as a social and technical transformation, involving alternative technologies, behaviour and institutions with a twofold aim of decarbonising our economy and reorganising society and social relations into more just formations. The following section will examine the EJ and ED literatures framing these environmentalities as on a spectrum moving from normatively broadly accepted ideas to those that are much more radical.

2.1: Energy Justice, Energy Democracy and Energy Poverty

Energy has traditionally been studied from a technical angle and thus in a moral vacuum (Sovacool et al 2017; Sovacool 2014). To remedy this, the emergent field of EJ scholarship has added essential considerations of morality and justice to technical questions of energy supply and consumption. The first part of this section will outline EJ theory and how this has developed since 2013, with a brief consideration of its historical roots. The next part will examine the adjacent concept of ED and how this complements and adds missing ethical dimensions, while feeding into conceptualisations of community. Then the issue of energy poverty (EP) will be presented, for this arguably constitutes part of what Wynter (2003: Mbembe 2019) describes as the modern heir of the colonial subject; those economically damned as the jobless, homeless and the poor.

2.1.1 The Three Tenets of Justice

EJ aims to discover where injustice emerges, who this affects and how best to remediate and reduce this injustice (Jenkins et al 2016). EJ is founded on three tenets of justice: distributional justice that

frames justice as a fundamentally spatial concept through which different locales and social groups receive different outcomes in terms of benefits and costs of energy; recognition justice concerns the *othering* effects of injustice where individual and social groups are disrespected, maligned, devalued or ignored; and procedural justice which concerns the processes of planning and decision-making of energy questions, and calls for democratic participation and engagement in these processes (Jenkins et al 2016; McCauley et al 2013). Crucially, these three pillars offer both an evaluative and normative focus (Jenkins et al 2016), linking to Avelino & Grin's (2017) argument, that in energy transitions we should both describe what *is*, and explore what *could* and *should* be. Table 3 below poses evaluative and normative questions for the three tenets of justice, and each aspect will be expanded upon below.

Table 1: The three tenets of energy justice and the evaluative and normative questions (Jenkins et al 2016, p. 175).

Tenets	Evaluative	Normative
Distributional	Where are the injustices?	How should we solve them?
Recognitional	Who is ignored?	How should we recognise them?
Procedural	Is there a fair process?	Which new process?

The unfair distribution of the costs and benefits of energy provision and consumption is a multi-level cross scalar phenomenon. On a geographical scale at the global level the cumulative CO₂ emissions of the US and EU are estimated to be over 50% of the total (Skeie et al 2017), yet it is the developing world with less developed infrastructure and ability to adapt to the CC that is being worst affected now and will be in the future. On a temporal scale, the world we are leaving to the next generation and those following is going to be challenging at best, and a dystopian societal collapse at worst (IPCC 2014). This procrastination in mitigating the CC is partly a result of the assumption that people today value their welfare above those that follow, an idea hardwired into economics through the practice of discounting the future through application of a time weight on policy (Britain 2003). This significantly diminishes the benefits of policies in the mid to long-term future, making proactive investment unattractive and partly explaining the lack of celerity in energy transitions in the UK and many parts of the world. However, whether people actually hold these myopic and selfish inclinations is not clear, as evidence from a survey of UK adults displayed a clear majority that would favour future generations over themselves (Graham et al 2017). Zooming back to the UK household level, the poorest 10% are paying around six times as much as a proportion of their income than the richest 10% for the UK's low-

carbon transition (Garman & Aldridge 2015). EJ scholarship aims to find these injustices recognising individuals and groups who have been wronged and how to remediate this.

Recognition justice goes beyond tolerance of difference, stipulating all should enjoy full, equal rights (Jenkins et al 2016; McCauley et al 2013). It demands that people must be free from physical threat, disrespect, insults and degradation and other forms of misrecognition, including non-recognition and misrepresentation, which can result from cultural and political domination (Schlosberg 2004; Heffron et al 2015). A global example of non-recognition is documented by Fogel (2004) who describes how after the Kyoto Protocol, climate scientists and government planners, endeavouring to mitigate the CC, used reductive techniques which simplified the definition of a forest. When adopted this definition had the effect of creating a “monolingual forest discourse” which defined a forest as a carbon sink while removing human use and biodiversity from consideration (Fogel 2004, p. 108). This led to instances of forced evictions, forced labour, old growth forest clearances and the enriching of existing elites who had the required contacts and ability to play the system (Fogel 2004).

A historical example of non-recognition can be found in Marx’s (1887) account of primitive accumulation and colonisation. Marx firstly and quite rightly points out the brutality of the early part of colonisation with the “extirpation, enslavement and entombment in mines of the aboriginal population.” (Marx 1887, p. 533). He then goes on to link this the exploitation of workers in the metropole arguing, “the veiled slavery of the wage workers in Europe needed, for its pedestal, slavery pure and simple in the new world.” However, Marx mistakenly believed as the chapter title suggests, this process was now in the colonial past. Thus, he goes on to compare how in Europe the capitalist mode of production required the alienation of people from the land; however, in the colony “the bulk of the soil is still public property, and every settler on it therefore can turn part of it into his private property and individual means of production” (Marx, 1887, p. 544). This notion of public property which the settler could turn into private property is a curious blindness. This is because these lands were occupied and being fought over at this time, and the settlers and *private property* were key actors/tools in displacing the indigenous communal and complex systems of user-rights (Estes 2019). Colonisation and coloniality was and is a tale of the violent and genocidal overwriting of European property rights and capitalistic relations over a mosaic of indigenous systems and ways of being (Estes 2019; Federici 2019; Mbembe 2019; Luxemburg 2015). As such, primitive accumulation is neither fixed in the past of capitalist development, nor was this land there for European settlers to develop their own means of production, as Marx believed.

A more specific example of how the justice of distribution and recognition interact is provided by Nick Estes a Native American scholar. Estes (2019) shows how the US Military Corps in 2014 rerouted the

Dakota Access Pipeline (DAPL) from near the North Dakota state capital Bismarck, largely made up of white people, to run through Lakota lands with no consent sought or given. This is an example of environmental racism or coloniality in that the cost is quite clearly shifted from the dominant ethno-class to the indigenous group. However, it is also constituted by how the Native American and their land is unrecognised (as by Marx above), impugned and dismissed, discursively through the polarity of the noble savage/blood thirsty savage, and materially through a two-tier legal infrastructure (Estes 2019; Allen 1992). This 2014 injustice is merely a recent incidence of a historical pattern of colonial energy injustices imposed upon Native Americans (Estes 2019; Whyte 2017; Daggert 2019; Powell 2018).

A classic form of misrecognition highlighted in the science and technology studies literature is that of the deficit model of public understanding of science. In this deficit model any public questioning or disputing of science is characterised as ignorance and fixed through information provision, while science is portrayed as objective, disinterested and public service motivated (Sturgis & Allum 2004; Welsh & Wynne 2013). This simplistic dichotomy is repeatedly revived in various guises despite being soundly deconstructed (Wynne 2014; Catney et al 2013; Fischer 2000). In the EJ context, a form of the deficit model is present in the construction of lower income groups' awareness of the CC. Government and the big energy companies paint this as disinterested, irrational and socially irresponsible (Catney et al 2013), yet this is more likely scarcity thinking – the need to focus on more immediate needs such as food and health (Jenkins 2019). The deficit model applied to the CC is also a form of displacement in that the vast bulk of environmental impacts are structurally determined and beyond individual control (Unruh 2000). Further, it is individuals at the other end of the income and wealth scale we should be concerned with if individualising the CC, as it is the 1% and upward who do the most environmental damage (Nielson et al 2021; Galvin 2020e; Chancel & Piketty 2015)

The administrative and legal processes through which injustice develops or is remediated, form the third tenet, procedural justice. The concepts underpinning this form of justice are participation and legitimacy (Todd & Zografos 2005). Thus, for energy policies and projects to be legitimate, decision-making must be impartial and representative of people regardless of gender, race, sexuality, ableness, culture or political grouping (Jenkins 2019; McCauley et al 2013). This includes full disclosure by government and industry of information regarding project financing, application and acceptance processes (Jenkins et al 2016; McCauley et al 2013). It also includes meaningful consultation with the people that will be impacted by decisions and projects, and this consultation should be sympathetic and suitable to the context (Todd & Zografos 2005). Allowing space in processes for objections, opposition and representative deliberation can lead to fairer outcomes (Heffron et al 2015) and increased social acceptance (McCauley & Heffron 2018). Further, evidence from mini-publics involved

in environmentally themed deliberative processes show signs of increased ecological values (Dryzek & Stevenson 2011). Business models help or hinder participation in decisions and influence how organisations cooperate with local authorities and other organisations (Jenkins 2019). Thus, EJ calls for fair and transparent processes within and around energy choices and procedures. However, EJ does not go as far as calling for the democratisation of these processes, which arguably stems from an underappreciation of how entwined questions of democracy and energy are. This entanglement of energy and democracy will be a theme of this thesis and why it argues for a closer aligning of EJ and ED concerns.

2.1.2 An Energy Justice Framework

To complement these evaluative and normative aims of EJ described above, Sovacool & Dworkin (2015) proposed it be further developed and used as a conceptual, analytical and decision-making tool. As a conceptual tool it marries the three often distinct conceptualisations of justice outlined above, as an analytical tool it enables researchers to investigate energy systems at all levels and highlight injustice and those involved, and as a decision-making tool it can enable better choices by politicians and the public (Sovacool et al 2017).

Conceptually, Sovacool & Dworkin (2015) argue, EJ has facilitated the integration of justice insights and scholarship from ancient Greece, through the enlightenment and Kant, to Rawls. Sovacool et al (2017) began to address western biases of EJ by including insights from indigenous perspectives of the Americas, Confucianism, Taoism, Hinduism, Buddhism. Calls have also been made to reduce western bias in a more contemporary sense, by raising awareness of post-colonial arguments against imposed models of development and addressing EJ theory to the complex demands of the Global South (Broto et al 2018). This is of crucial import, as currently there is an unnecessary tension between climate mitigation and economic development in the Global South (Delina & Sovacool 2019). This tension is largely down to the Global North's (mainly the US and UK) refusal to accept historical responsibility for the CC and thus pay for the Global South to leapfrog fossil fuel-based development.

Anthropocentric tendencies have also been highlighted (Sovacool et al 2017), extending the notion of justice to the non-human world, which we are arguably pushing towards mass extinction (IPBES 2019; Ceballos et al 2017). In this respect a justice approach might challenge neoliberal technological biases which could have damaging impacts on already highly stressed ecosystems. An alternative (Natural

Climate Solutions 2019) would be to allow ecosystems to recover and naturally sequester carbon dioxide, alongside transitioning to a renewable energy system. Indigenous (Estes 2019; Sioui 1999) and situated science (Haraway 2016; Kimmerer 2013) critiques would go further, arguing we are but a thread of an interrelated web of being and that a just future depends upon cognition of this. Both of these attempts to push the boundaries of energy justice purview are crucial, as they challenge the hegemonic complacency of the western and the human, and more, the damaging core of modernity, - instrumental reason – that places an external *nature* as a resource for some human's use and exploitation (Gelderloos 2022; Moore 2015; Adorno & Horkheimer 1997). This thesis aims to develop these aspects of EJ by addressing historical, decolonial and indigenous perspectives.

As an analytical tool energy justice allows the evaluation of energy systems and processes and the injustices in-built within them (Sovacool et al 2017). For instance, Sovacool et al (2019b) analyse how four low-carbon innovations (electric vehicles (EV), solar PV panels, energy service contracts and low-carbon heating) are affecting justice outcomes now and into the future. They find that although these innovations have many potential co-benefits to carbon mitigation, such as alleviation of fuel poverty, there are existing injustices associated with these innovations that could exacerbate in the future. This injustice is especially connected to lack of home ownership and by implication wealth (Sovacool et al 2019b). Energy justice also allows the analytical reframing of energy policy/infrastructure from a question of economic efficiency, which is largely oblivious to injustice, to that of questions of social virtue and freedom (Sovacool & Dworkin 2015). This reframing allows for more sophisticated analytical tools than cost-benefit analysis, such as the multi-criteria analysis tool the Analytical Hierarchy Process, resulting in more nuanced just outcomes (Todd & Zografos 2005).

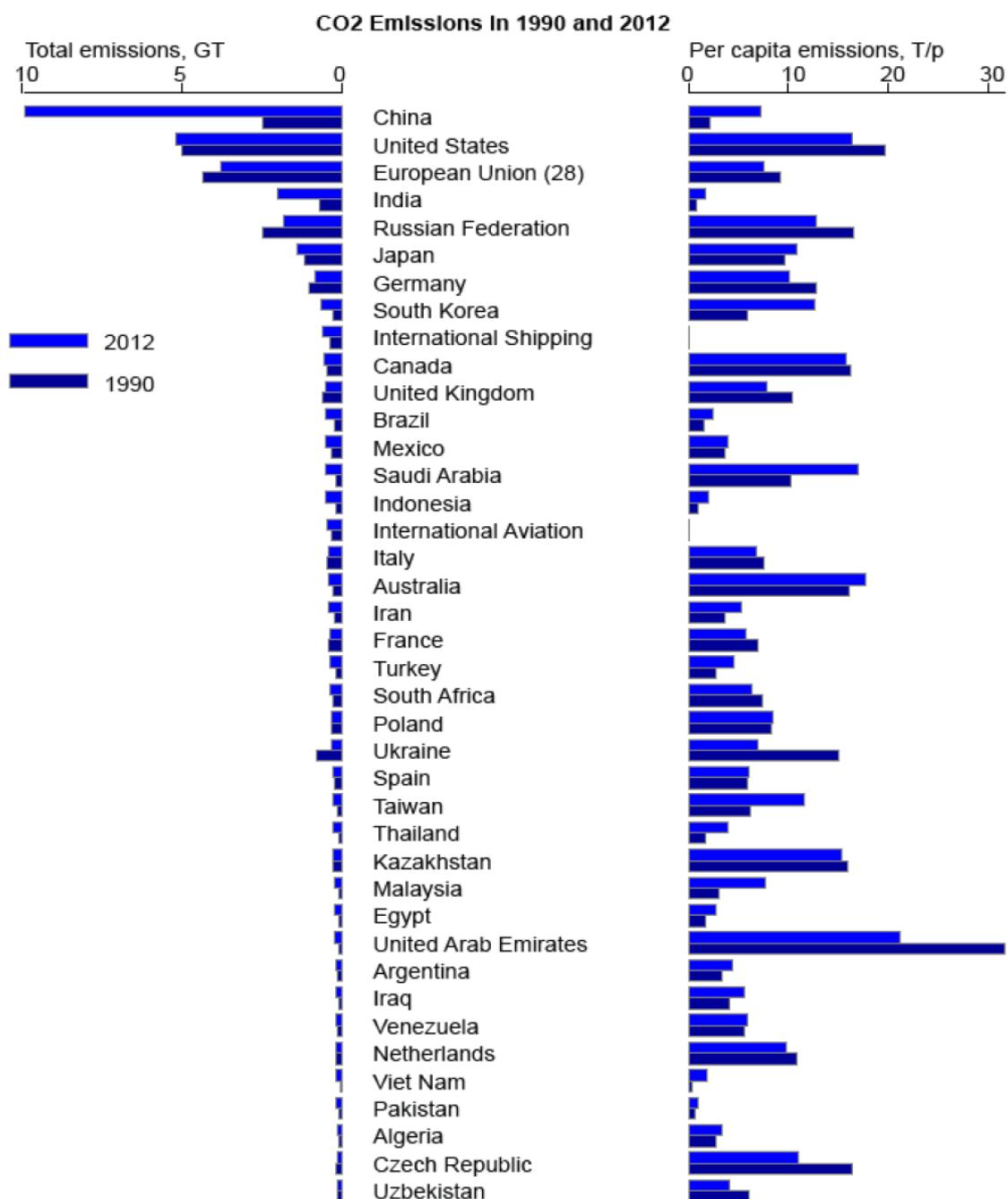
To support EJ as a decision-making tool, a framework of eight principles was developed along with a preliminary checklist of questions to help evaluate a range of situations (Sovacool & Dworkin 2015). These eight principles were subsequently increased to ten and include: affordability, availability, due process, transparency and accountability, sustainability, intragenerational equity, intergenerational equity, responsibility, resistance, and respect (Delina & Sovacool 2019). Table 2 gives more information about these principles. This framework is proposed to bridge the normative aims of the three tenets of justice with more practical but people-centric governance objectives (Delina & Sovacool 2019). These principles start off with straight-forward, relatively well-accepted ideas like energy should be universally available and affordable, then become more complex and controversial, with ideas such as resistance and respect (Sovacool & Dworkin 2015).

Table 2: The energy justice framework (Adapted from Delina & Sovacool 2019, p. 4)

Principle	Explanation	Corresponding Tenet of Justice
Availability	People deserve sufficient energy resources of high quality	Distributional
Affordability	All people, including the poor, should pay no more than 10% of their income for energy services.	Distributional
Due process	Countries should respect due process and human rights in their production and use of energy.	Procedural
Transparency/accountability	All people should have access to high-quality information about energy and the environment and fair, transparent, and accountable forms of energy decision-making.	Procedural
Sustainability	Energy resources should not be depleted too quickly.	Distributional
Intragenerational equity	All nations have a responsibility to protect the natural environment and minimize energy-related environmental threats.	Distributional/recognition
Intergenerational equity	Future generations have a right to enjoy a good life undisturbed by the damage our energy systems inflict on the world today.	Distributional/recognition
Responsibility	All nations have a responsibility to protect the natural environment and minimize energy-related environmental threats.	Recognition
Resistance	Energy injustices must be actively, deliberately opposed.	Recognition
Respect	Intersectional differences in knowledge and epistemic upbringing, culture and experience, and race and gender have to be respected in energy decision-making.	Recognition

A consideration of responsibility (EJ principle 8) for the CC is instructive. Presently, China is the world's leading carbon dioxide emitter (Qi et al 2016). However, this picture is complicated by three factors: the developed world is largely cumulatively responsible for the CC but under US influence any acceptance of this has been precluded in internationally negotiated agreements since Kyoto (Clemenccon 2016); China's per-capita emissions are modest by comparison to richer countries (Rhodes 2016, see figure 5 below); and emissions accounting is currently done on a national production basis, which excludes an estimated quarter of global emissions tied into international trade, air transit and shipping (Sovacool et al 2017; Barrett et al 2013). In the UK, CO₂ reductions achieved since 1990 have been offset by a rise in consumption-based emissions embodied in products imported (Barrett et al 2013) and this is similar in other developed nations (Chancel & Piketty 2015; Peters et al 2011). This suggests a political economy in the accounting of emissions that favours those most responsible for creating the problem in the first place. A just approach would accept historical responsibility, consider total and per-capita emissions and consumption-embodied emissions. This is not to say this would be uncomplicated, but it would have the benefit of being fairer and therefore more likely to promote international cooperation in mitigating and adapting to the CC.

Figure 2: The top 40 CO₂ emitting countries in the world in 1990 and 2012 (in giga-tonnes), including per capita figures (in tonnes per-year) (Rhodes 2016, p. 98).



2.1.3 Historical Roots of Energy In/Justice

While this project aims to offer a longer historical perspective on EJ not common in energy studies (Sovacool & Hess 2017), it is important to note that EJ has theoretical roots in the environmental and climate justice movements of the 20th and 21st centuries. The environmental justice movement began in the US during the 1970s when the polluting and contaminating impacts of industry and energy were disproportionately affecting poor, indigenous and minority groups (Davis 2006). The academic side of environmental justice developed during the 1990s aiding citizens to express and publicise these injustices (Schlosberg 2013). Campaigning by NGOs, academics and residents led to a series of high-profile political victories that established environmental justice principles in a variety of institutions including the US Environmental Protection Agency (Davis 2006).

Theoretically, environmental justice used Rawls' (2009) idea of distributive justice, whereby principles are decided from an agreed theoretical original position. This position imagines a person is behind a veil of ignorance where they have no knowledge of their social standing, wealth, abilities or in which generation they will be born. From this perspective free and equal people in a democratic society can establish a basic set of principles to ensure distributive justice (Rawls 2009). However, Rawls' focus on distributive justice was seen as too narrow or focusing only on the *what* of justice: expanding this to answer *who/why* (recognition justice) and *how* (procedural justice) allowed a more complete conceptualisation (Schlosberg 2004).

This theoretical work on expanding the idea of justice was reflected in the field, where campaigners had always been concerned with distribution of benefits and ills but also issues of misrepresentation, misrecognition and participation in decision-making (Davis 2006; Schlosberg 2004). Indeed, Schlosberg (2013) argues that the way the theory and practice of environmental justice have informed each other, is essential to its ability to achieve its aims. Further, understanding how justice is experienced, articulated, conceived and demanded in the field, is of fundamental import in how academics understand and develop the concepts they use (Schlosberg 2013). This point is of crucial importance for this study, as EJ at present is largely an academic concern, and there is a lack of evidence and understanding of how and if EJ is a concern for people in the UK. This is an information gap this project aims to help reduce.

Climate justice was an offshoot of the environmental justice movement and was a response to the growing climate emergency (Schlosberg 2013) focusing attention on how the CC will alter the distribution of benefits and burdens across space and time (Page 2006). Early theoretical work in climate justice (Shue 1993) examined the fair allocation of costs of unavoidable climate change and how relative wealth should inform this allocation. Shue (1993) argues we must contextualise wealth disparities as resulting from a history of colonial and imperial oppression, war and avarice, which is occluded by the Global North's "democratic amnesia" (Weltzer 2012, p.1). Using this justice lens, it is argued, we should both allocate costs to those most responsible for the CC historically, and differentiate now between subsistence emissions, perhaps associated with rice paddy fields in developing countries, and luxury emissions such as super yacht or SUV use in the developed countries (Shue 1993). However, the implications of intergenerational justice and power complicate this. A lack of effective mitigation from the incumbent generation has tightened available carbon budgets, implying all countries need to decarbonise rapidly now regardless of historical responsibility, or we unfairly burden future generations (Shue 2014). Also, an urgent need for an international treaty with the ability to enforce decarbonisation will likely require some accommodation with the self-interest and veto power of the Global North (Posner & Weisbach 2010).

More recently, a US advocate of a Green New Deal argued that while there was a solid ethical case for differentiating between high per-capita emissions of a US citizen and those of the Global South, there "is absolutely no chance" of doing anything about this (Pollen 2018, p. 21). This is an example of *realism* and *pragmatism*, often code words for the status quo or something close, which not only serve the powerful but deny the fundamental contingency of our social organisation. This is also an example of the potential trade-offs within the EJ framework above – intragenerational justice comes at a price of intergenerational justice (Sovacool et al 2017). A question is whether this conflict could be avoided, perhaps by replacing the drive for economic growth with demand management and redistribution of wealth.

Jenkins (2018) argues EJ can succeed where environmental and climate justice have stalled or struggled to make widespread or significant impacts. On the one hand, while environmental justice has clearly had impacts in the US it has not been widely adopted in the UK. It has also failed to engage with the language of economics and therefore governance. Climate justice on the other hand has taken on too big a task – the target for limiting global warming to below 1.5 degrees has arguably failed, and dealing with inequality, divestment, adaptation and mitigation is perhaps too much (Jenkins 2018). Bickerstaff et al (2013) propose that EJ can limit energy issues from the diffuse perspectives of environmental and climate justice making the theoretical and practical focus more manageable. Another strength of EJ is its methodological diversity, including analytical and practical

applications (McCauley et al 2019; Jenkins 2018). Finally, Jenkins (2018) claims as a largely academic construct without an activist history, EJ can engage with policy more effectively, while being cognisant of the dangers involved in this engagement. This perspective is more troubling, as Schlosberg's (2013) argument that academic concepts of justice must be informed by activist experiences is supported by Sovacool et al's (2017) addition of resistance to the EJ framework. This again shows an area of tension in this field, as being at the political table has costs but also benefits and these need to be carefully weighed. Also, as justice is a contested concept, with differing visions of what it is (Sen 2009) and how it is achieved (Simcock 2016), arguably the best way of reaching common ground on such issues is through democratic and deliberative engagement. This is where the adjacent but more activist-based concept of ED can add legitimacy to EJ's claims, while at the same time pushing these claims further.

2.1.4: Energy Democracy

ED is a social movement that has emerged in response to the climate emergency. It is a diffuse movement made up of activists, trade unionists and academics (Burke & Stephens 2017). A core institution in the development of ED is the Rosa Luxemburg Foundation and two key documents outline some of the major concerns or motivations for the movement. Kunze & Becker (2014), who conducted a European survey of uses of the term ED, identify the core elements to include, democratisation and participation, property rights, employment, production profits, ecology and sufficiency. While Sweeny (2013) offering a US union perspective, argued the failure to reach a climate agreement post Rio+20 was evidence of the power of incumbent fossil fuel firms and these same actors were forwarding an extreme energy agenda. As an energy transition was not happening there is a need to “resist, reclaim and restructure”, and more broadly reject capitalisms’ answer to the crisis to commodify nature (Sweeny 2013, p. 1). Subsequently, the broad aims of integrating the demand for a low-carbon transition with social justice and economic equity were identified in the academic and activist literature (Burke & Stephens 2017; Angel 2016). Table 3 below provides an extended definition of ED based around popular sovereignty, participatory governance and civic ownership.

Table 3: Energy democracy, dimensions, components and indicators (Adapted from Szulecki 2018, p. 36).

Main dimensions	Components	Indicators
Popular sovereignty	Citizens as recipients of energy policy/ Citizens as stakeholders (producers and consumers)/ Citizens as accountholders	Welfare and energy access as key benchmarks/ Consumer prices and quality of service/ Prosumer legislation and grid access/ Public accountability of energy decision-makers
Participatory governance	Inclusiveness/ Transparency/ Access to information/ Energy education and awareness raising	Incorporation of public consultation at all levels/ Citizen interests and opinions on par with experts/ Due process and clear procedures/ Regulated lobbying/ Reporting on legislation and deliberation/ Independent research possible and available/ Dedicated educational programmes
Civic ownership	Civic ownership of power generation/ Civic ownership of transmission and distribution infrastructure	Renewable energy deployment, dispersed energy capacity/ Share of energy from private, cooperative and communal sources/ Civic ownership structure and power in the political economy of energy/ Share of grid infrastructure co-owned by municipalities and communities

In producing the more detailed definition of ED above, Szulecki (2018) asks the crucial questions of whether more democratic energy systems would be desirable and what is truly unique about ED. For example, the UK is at a crossroad in its energy systems, with many power plants needing decommissioning through age or because they are a climate liability. A progressive energy transition could remove the incumbent regime and introduce a new mode of modernity (Sterling 2014). This new mode of modernity would involve a revitalised democracy, in the sense of the verb rather than the noun (Szulecki 2018). This renewed more deliberative form of democracy may have normative and practical benefits (Fischer 2000). Normatively, it adds legitimacy to decisions enriching democratic institutions and countering authoritarian tendencies and policy capture (Szulecki 2018; Dryzek &

Stephenson 2011; Fischer 2000). Practically, it can lead to better decisions by combining expert and local knowledges, or the general and abstract with the situated and contextual (Jasanoff & Martello 2004; Fischer 2000; Scott 1999). There is also the suggestion that increased deliberative involvement in environmental problems can raise environmental awareness (Dryzek & Stephenson 2011), or in the Foucauldian sense shape/give space for more environmentally benign subjectivities (Delina 2018; Fischer 2000).

This, Szulecki (2018) identifies, is ED's unique contribution, the potential to shape a more environmental citizen. Employing the idea of co-evolution of energy and political systems, Mitchell (2013) argues that the historical expansion of the use of coal and fossil fuels, helped to usher in but also limit representative democracy. The coal miners were a key constituency of this change as a specific interest group with the power to bring the economy to a standstill for political and democratic ends (Mitchell 2013). This phenomena has analogues in the nuclear industry with the growth of expertise, infrastructure and advocates – all co-constituted (Szulecki 2018). So, rather than providing information on being more sustainable, which is the current and previous governments' favoured practice (Catney et al 2013), governments committed to a just transition should be facilitating a financial and deliberative stake in a devolved energy infrastructure. By doing so we could, as Stirling (2014) suggests, enter an era of more participatory democracy and sustainable governance. Darier (1999, p. 27) using Foucault's ideas in an environmental context, describes this as an adaptive process in which we re-work our relationships with each other and our environment, an "endless process of 'ethicization' of being human in the world." Evidence for this adaptive, democratic process is documented by Delina (2018) in rural Thailand and in a review of the community energy literature in the UK (Berka & Creamer 2018). Therefore, an aim of this project would be to find if there is any supportive evidence of this process in the cases studied and data collected.

More broadly, ED calls for the decommodification of energy as a basic human need (Thombs 2019), but also questions the nature of energy itself and how this is at root a social relation (Lennon 2017; Burke & Stephens 2018). This broader framing of energy as a social relation and this being integral to both our democracy and by implication justice works on a number of levels. Internationally and nationally, there is the recognition that the political is captured/controlled by corporate interests that are eroding our democracies (Burke & Stephens 2018). In the fossil fuel context this is a problem because of the way power is by-directional – exerting power to invest/develop fossil fuels in turn reinforces the investor/developer and fossil fuel sectors' power (Burke & Stephens 2018). These dynamics can be seen internationally, with the grotesque spectacle of fossil fuel interests using the Energy Charter Treaty (ECT) to sue governments for up to \$9 trillion (10% of the global economy) in lost earnings when these governments decarbonise (ECT Dirty Secrets 2022; Global Justice Now 2021).

At the same time, the fossil fuel industry seems as powerful as ever, with oil/gas production in the US and coal production globally set to break all previous records (Jacobs 2022; Hume 2021). Nationally, we can see this in how Shell and BP have made billions during the latest energy crisis and plan share buy backs to benefit their investors (Ambrose & Kollewe 2022), despite paying practically no taxes for the oil/gas they extract from the North Sea (Christophers 2020). The cosy relation between the oil and gas industry and the UK government will be returned to in the discussion. Suffice to say here this relationship and the broader energopower/politics behind this, is preventing an energy transition, never mind a just transition.

Finally, ED is explicit on the question of how technological choices have political implication embedded in them. The most obvious example is nuclear which by its very nature is a centralised, authoritarian choice requiring security and control mechanisms, and which has an empirical record and a scale that are inimical to local justice concerns (Van de Graaf & Sovacool 2020; Burke & Stephens 2018; Winner 1980). As a result, some ED theorists have started to work with the notion of energopower. This analysis understands that “dynamics of power over modern life [are] organized and enabled through energy, and conversely, forms of energy [are] organized and enabled through dynamics of power” (Burke & Stephens 2018, p. 80). Energopower and necropower lenses aid understanding of the historical continuities between modern slavery and subsequent industrial capitalism (Mbembe 2019; Daggert 2019; Lennon 2017). Energopower also shows when energy is narrowly defined as the *ability to do work* this excludes other more environmentality benign conceptions (Lennon 2017), while also allowing a damaging association between living and working (Daggert 2019) encapsulated in the phrase *what do you do for a living?* It is this association that Wynter (2003) identifies as economic damnation reserved for those deemed surplus to capitalisms’ designs.

It is in this complex, dual power realm of energy that Lohman et al (2013; Lennon 2017) offers the useful distinction between Big-E energy and little-e energy. Big-E energy is: the “creation of fossil-fuelled industrial capitalism”; is abstract (in time and space); can be accumulated; is implicated in and part of capitalisms’ growth fetish; and is mobilised in the oppressions of race, class, gender, ability and space/time (Lohman et al 2013, p. 26; Lennon 2017). Little-e energy is: a slippery concept that is older; contradictory and none-abstractable in time/space; it is the subsistence energy; the energy of daily and seasonal cycles; and the energy of the *flow* not the *stock* (Lohman et al 2013; Lennon 2017; Malm 2016a). As dichotomous categories there are clearly exceptions, primarily large scale hydro, wind or solar farms, which while being *flow* and dependent on the seasonal cycles, do take on many Big-E features such as being abstracted, accumulated and involved in displacement and oppression of certain groups (Dunlap & Arce 2021; Van de Graaf & Sovacool 2020). As such, these large-scale, coloniality inflected renewables are labelled by Dunlap & Arce (2021) as *fossil fuel +*.

In sum by creating a more democratic energy system the ED movement has the potential to “transcend the unequal social relations” that result in distributional, recognitional and procedural injustice (Thombs 2019, p. 163). This is why this project aims to incorporate ED arguments into EJ theory, which has been critiqued for its tendency to focus on policy-making rather than grass-roots community experience and understanding of justice (Lacey-Barnacle & Bird 2018). In the UK a crucial and egregious aspect of injustice is EP. At one point under the New Labour government (1997-2010) this injustice was intended to be eradicated, only for the subsequent coalition government to quietly roll back on this aim claiming it was *complex* and “could not be eradicated in any meaningful way” (DECC 2013, p. 5). Now under the energy crisis and inflation of spring 2022, EP is set to soar along with other aspects of poverty (Caddick et al 2022). Thus, EP will be explored next and will be the subject of the first empirical chapter.

2.1.5: Energy Poverty

EP is a shared concern of EJ, ED and CREOs as people being denied what is a basic necessity, either partially or completely, is below any minimal notion of justice. The fact sufficient and reliable clean energy is a sustainable development goal 7 supports this claim (United Nations 2022). Although EP is a global issue with an estimated billion people living without electricity and many more with intermittent supply (Van de Graaf & Sovacool 2020), this section will detail EP from a UK perspective. This is because it was research and expertise that developed in the UK that helped make this issue a recognised global phenomena. Also, as chapter four will show, it is a continuing and exacerbating injustice in the UK, that this project links to the coloniality of power wherein some people and groups are economically damned, misrecognised and exploited (Mbembe 2019; Mignolo 2007; Wynter 2003).

EP as a category requires a definition both to think about theoretically but also to act on practically. However, as such definitions are subjectively created and shaped by certain actors, they are political actions that benefit or disadvantage certain groups, while also shaping subjectivities (Middlemiss 2016; Hacking 2002). The first UK EP definition was known as the 10% definition (Boardman 1991), which the EJ principle of affordability notably maintains. To contextualise this definition, Boardman (1991) identified three main drivers of EP, these being high energy costs, low EE of residences and low incomes. The 10% definition places people in energy poverty if they spent more than 10% of their income on energy. This was replaced in 2012, after the Hills Review, with the Low Income High Cost

measure (LIHC). This measure stipulated that people were in energy poverty if they had higher than median energy costs and after paying their residual income was below the official poverty line (60% of median income). This in effect halved the numbers of EP and made the measure more insulated from increases in the price of energy, one of the main drivers of EP (Middlemiss 2016). This LIHC was in turn replaced in 2021. The latest definition is called the Low Income and Low Energy Efficiency measure (LILEE). This new definition defines energy poverty as those with a residual income after energy bills below the official poverty line and an EE rating below C (BEIS 2021).

Energy poverty as an object of concern emerged in the early 1990s largely as a result of the pioneering work of Brenda Boardman (1991; 1993). Boardman (1991) argued energy poverty was distinct from poverty in that capital investment in the building stock could largely mitigate this problem. She was also one of the earliest researchers to warn of tensions with (EU) climate mitigation policies and their impacts on lower income groups (Boardman 1993). This pioneering work ultimately influenced policy and legislation – the Warm Homes and Conservation Act of 2000 – which aimed to eradicate energy poverty in the UK by 2016.

Research developed in the 2000s shifting the focus to medical concerns and self-reported subjective measures. Medical research identified links between cold homes and cardio-respiratory diseases and early death (Lawlor 2001). This coincided with increasing emphasis on self-reported assessments of thermal comfort alongside objective circumstances (Healy and Clinch 2002). Price et al (2007, p. 7) subsequently asked their sample variations on the question: “In general, do you feel that you are able to heat your home adequately?”. Those who replied negatively were classed as feeling fuel poor.

In the mid-2000s average energy prices almost doubled (Rutherford 2018) contributing to energy poverty numbers doubling from approximately 1.25 million in 2004 to 2.5 million in 2007 (Price et al 2006, p. 3). This arguably increased the salience of this problem, with the incoming Coalition government in 2010 commissioning the Hills review that would redefine energy poverty to the LIHC measure (Hills 2012). This coincided with increasing academic attention, culminating in a 2012 special edition of the Energy Policy journal devoted to energy poverty.

Within this special edition there was a range of methods and approaches to energy poverty from which a highly sophisticated research field has developed. Regarding definitions, Moore (2012) examined how changing certain parameters and thresholds of energy poverty radically changes the scale of the problem – for instance, changing the 10% definition to apply after housing costs approximately doubled the number of people in EP. Rudge (2012) explored the UK’s history of EE and thermal comfort, pointing out much British housing was designed for open coal fires and thus high

ventilation, with an added factor of poor construction methods on industrial housing, all combining to make UK housing hard to treat in terms of energy efficiency.

Today EP research varies in methodologies, scale of analysis, but most importantly, in ambition. Methodologically, there are the usual quantitative and qualitative and mixed method approaches (Deller & Price 2018; Mould & Baker 2017; Galvin et al 2020), but more specifically capability approaches (Day et al 2016; Middlemiss et al 2019), documentary discourse analysis (Simcock et al 2016), and modelling approaches, for instance comparing rural and urban probability of EP (Roberts et al 2015). The scale of analysis can range from the regional (Darking & Wills 2017), to national (Sovacool 2015; Simcock et al 2021), to international (Simcock et al 2018). Finally, the ambition of research/activism ranges from trying to isolate EP from general poverty and address this as a problem of capital spend upon the residence (Boardman 1991; 2012), to addressing this as an injustice resultant from our extractive, billionaire serving system (Galvin 2020e). It is this latter framing that this project will follow and expand upon.

EP in the UK, as Parkes & McNeil (2020) estimate for general poverty, is certain to rise rapidly due to the structural injustices that pervade our society and how crises exacerbate these divisions. Covid 19 resulted in more mortality among old, lower income and ethnic minority groups (Davies et al 2022; PHE 2020), which could be associated with these groups being in higher risk employment that could not be done from home and tending to live in more crowded residences. These same groups have also seen both record energy prices and inflation on basic goods that will likely further impoverish them (Thomas 2022; Thomas & Sheppard 2022), while also drawing more families into poverty (Caddick et al 2022). This impoverishment is happening while the wealthiest 5% in the UK are estimated on average £3300 better off P/A since the 2019 election (Caddick & Stirling 2021). Globally there are an additional 700 billionaires to a total of 2700, or their wealth rose from \$5 trillion to \$13 trillion, the *most dramatic rise in billionaire wealth ever recorded* (Sharma 2021). This massive increase in a tiny minority's wealth was largely down to governmental action in insuring asset value through quantitative easing (QE) (Harvey 2021). These are aspects of this extractive billionaire serving system, exacerbated under crisis.

While providing energy advice, this project worked on and welcomes incremental improvements in people's daily lives; however, it also sees EP as part of imposed poverty and more broadly part of an extractive and unjust system that is neoliberal capitalisms and its relation to coloniality. The EJ principle of resistance if applied to this social system in general would arguably favour an anti-capitalist stance. This is because facing the CC with a system that feeds from the misery and suffering of the vast majority of people now, was built on the lives and lands of the colonised, and discounts

and diminishes the lives of those in the future, is not only unconscionable but simply will not work in the coming decades. The next section will explore energy history showing how the seeds of the current crises lay in the co-evolution of capitalisms and the colony.

2.2: History Lessons

The history of energy transitions is of crucial importance for understanding the challenges to come, for although the historical record does not predetermine the future, it is arguably the only observational field from which we can learn (Grubler 2012; Fouquet & Pearson 2012). More radically, time can be seen as circular instead of linear, meaning aspects of our past will be our future (Paradies 2020; Estes 2019; Sioui 1999), the question being which aspects? History is also where our current fossil fuel based economic path was set (Malm 2016a), and prior to this where capitalist socio-environmental relations were established which are the root of the many crises we face (Táíwò 2022; Fraser 2021; Moore 2015; Marx 1887). Researchers from various disciplines have explored these transitions and drawn a number of lessons that are of relevance for the future. Much research has been conducted developing general insights and observations, however the tendency to study energy in a technical and objective mode obscures as much as it reveals (Van de Graaf & Sovacool 2020). Specifically, the issue of power in the secondary sense is curiously absent in many of these histories, and as will be elaborated on below, this has relevance for a low-carbon transition (Malm 2016a).

In much of the energy transition literature there have been two major transitions: that of the agricultural revolution which allowed for the spatial concentration of energy as food, with minor additions such as wind/water/fire power; and the industrial revolution that allowed for the powering of machines through fossil fuels and thus the surpassing of the limits of muscle/wind/water/fire power (Malanima 2014; Wrigley 2010; Huber 2008; Smil 2008). This reading basically implies and parallels a teleological evolutionary model fairly standard in social sciences. In this model, humans move from simple to complex societies, using more energy as they go, with a Eurocentric model of development implied (Graeber & Wengrow 2021; Malm 2016a; Appadurai 2013).

More specifically, in the standard account of the industrial revolution in 18th to 19th century Britain, we find a tendency to favour economics over politics. This will be a broader theme of this project as it is a core feature of capitalisms (Mitchell 2013). In this energy history context, it might be termed a proto economic growth fetish. Starting with Wrigley (1962) we get an account of the industrial

revolution, which is all about prices, technologies and within this a transition from “organic” to “mineral” resources. The word “labour” appears once as in an “employer of labour”, whereas combinations “growth” with “industry” and other similar words appears 22 times (Wrigley 1962). Similarly, Smil (2004) in a broader ranging article on world energy history, talks of utility and efficiency of Watt’s steam engine, even making an explicit argument that politics and political freedoms are independent of energy. Allen (2012) examines the emergence of the industrial revolution in Britain, adding nuance by talking of higher levels of general education and cooperation between firms as much as competition, but again price is a crucial factor, while industrial struggle is again curiously absent. Thus, many historical energy transition researchers tend to foreground price as a crucial factor while rarely if ever mentioning the role of struggle and conflict in historical energy transitions/processes (Pearson & Foxon 2012; Fouquet & Pearson 2012; Grubler 2012; Smil 2004).

However, this reading can quite quickly be turned on its head with examples of *power* in the dialectical sense evident across the centuries. Merchant (1989) documents how early medieval landlords monopolised the energy of watermills and charged rent for use, while sending underlings to peasant cottages to smash or confiscate hand mills. This specific energy conflict was reflected more broadly in struggles over land. This involved often cooperative communes using land more sustainably being pressured by extractive landlords demanding surpluses that ignored poor harvests, putting more pressure on people and land, exhausting both (Patel & Moore 2020; Hickel 2020; Merchant 1989). Moving forward into the early modern period in which early capitalism emerges, this dialectic of power becomes even more apparent.

Focusing on two major energy transitions (agricultural/industrial) seems to occlude a significant factor that constitutes modernity, namely slavery (Táíwò 2022; Mbembe 2019). Lennon (2017) claims that the first industrial scale form of energy was modern slavery. This form of slavery had certain features that support this argument and show how it fed into and prefigured the subsequent fossil fuel transition and emergence of modern capitalisms. Modern slavery was: internationalised and rationalised; financed by bankers demanding interest thus creating a continuous process of accumulation/debt servicing; motivated by profit maximisation requiring the continuous exploitation of land, lives and labour; a means of producing and exchanging commodities such as sugar, cotton and tobacco; finally, it was constructed upon race as a category of difference and through this foundational in the emergence of Europe and its elite ethno-class as the dominant world power (Táíwò 2022; Fiori 2020; Patel & Moore 2020; Lennon 2017; Wynter 2003).

In figure 3 below, we can see how Europe emerges as a world power whose rise begins in the mid-18th century and speeds up in the mid-19th century. The rise in European manufacturing prior to 1830 is

likely independent of fossil fuels while the uptick after this time is likely supported by fossil fuels. Figure 4 shows the global share of prime mover or energy source and again shows that fossil fuels had very little impact on the global stage until the late 19th Century. As Blaut (1992) details, the New World slave plantations were so profitable that they doubled in capacity every two years, and gold and silver (mined by enslaved indigenous peoples followed by slaves from Africa) flooded into Europe, allowing bankers and slave owners to reinforce their economic power both within and without Europe (Táiwò 2022). Therefore, as Europe emerges, we see it is based on war and conquest of the New World and the institution of slavery (Táiwò 2022; Mbembe 2019; Wynter 2003; Mignolo 2007). Contemporaneously, in Europe we have widespread common land enclosure and seizure causing widespread impoverishment, emigration to the colonies, and urbanisation (Standing 2019; Federici 2004). Subsequently, industrial applications of fossil fuels emerge in the 19th Century *consolidating and building on* these earlier processes (Moore 2015). Foundational to all these processes in both the core and periphery we have the emergence of capitalistic/colonial social relations (Táiwò 2022; Estes 2019; Moore 2015).

Figure 3: Share by region of world manufacturing output: 1750-1900: Huber (2008, p. 107)

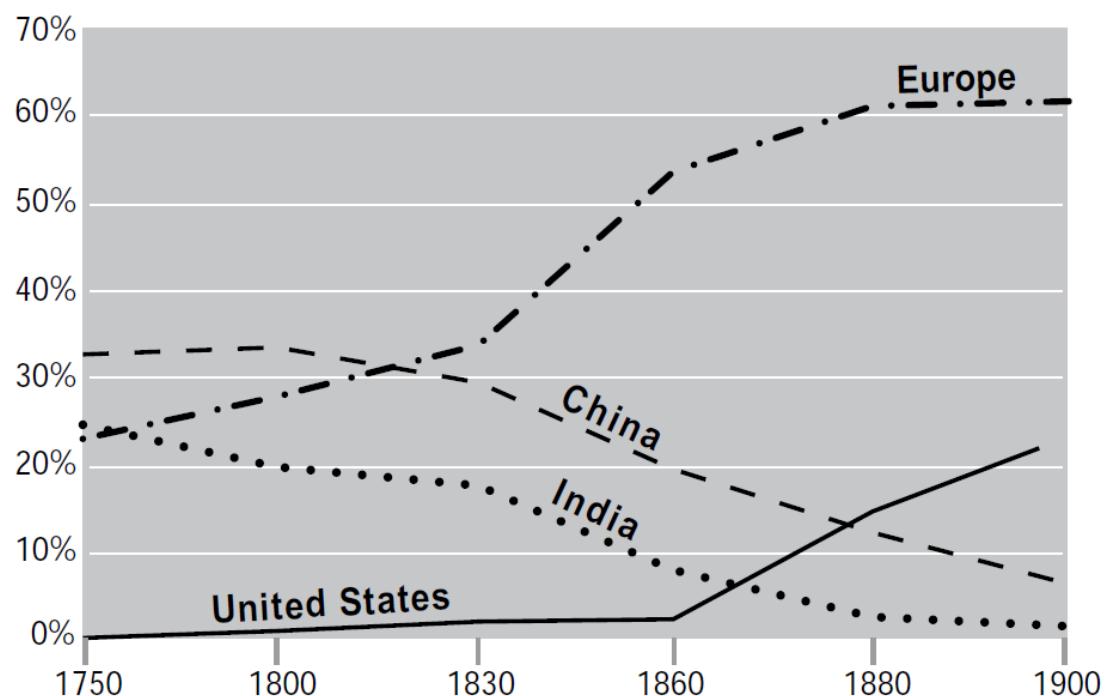
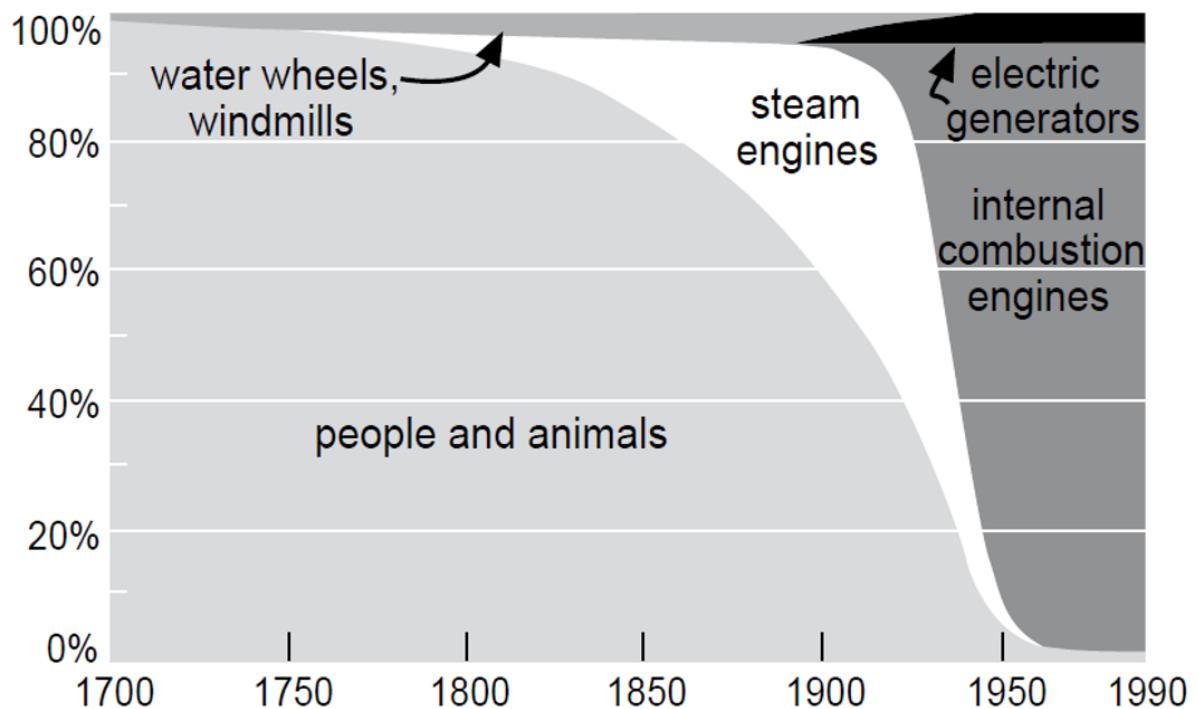


Figure 4: Global shares of prime energy source (percent): 1700-1900: Huber (2008, p. 107)



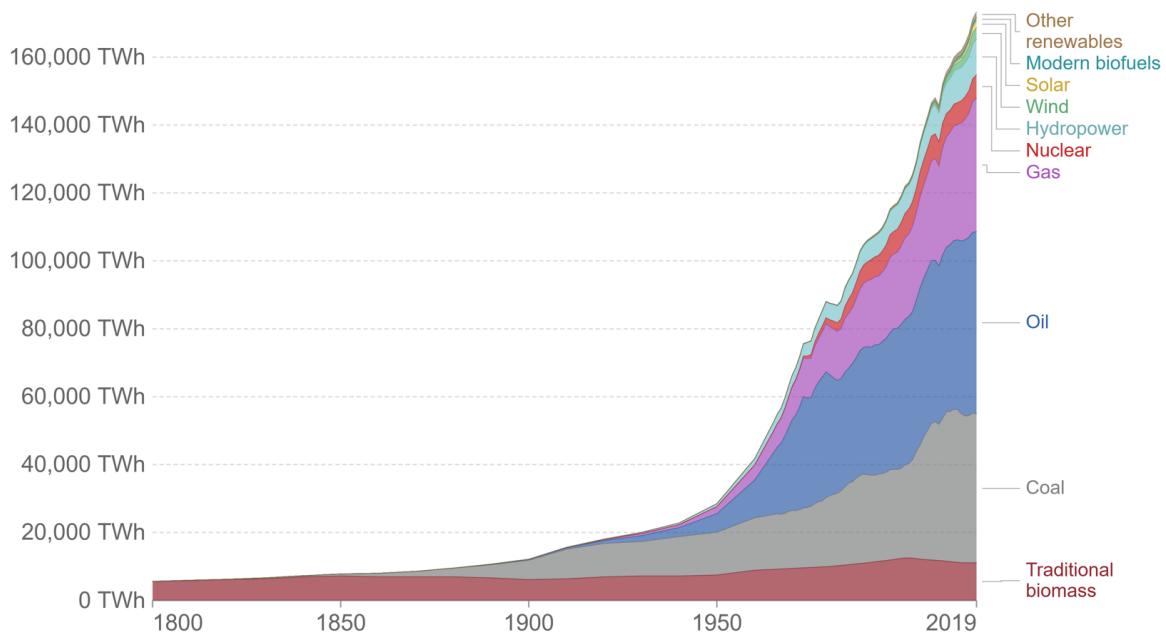
Another example of this dialectic of power can be seen in how the steam engine was introduced into the UK and displaced waterpower. This again has been framed economically as a battle of prices and finance (Allen 2012), or more broadly some kind of need to escape the limits of an organic economy (Wrigley 2010; Smil 2004). However, Malm (2016a) details how neither argument is convincing because waterpower was significantly cheaper during the key decades (1820-1840s), while the idea this was some kind of general social expansion or evolution is again undermined by specific historical data. Malm (2016a) shows how the move to the steam engine was motivated by the increased *social* power of the mill owners, in that they could locate the mill in cities with more workers who could be more easily replaced/controlled than rural counterparts. Further, the mills could be operated on the industrialist's time and *privately*, rather than via the natural cycles and more *social/collective* resource that is a watershed. He also shows how the innovative technologies applied within mills again increased this social power of mill owners by de-skilling labour, thus removing/undermining workers with more agency (Malm 2016a).

Focusing outward on the British empire and the search for coal, Malm (2016b) shows the colonial aspects of this. Firstly, through steamboats then through rail, a frantic search for the mineral to fuel the empire's expansion saw colonial extraction/production of coal soar. This required labour; however, as many locals were not interested in coal and unsurprisingly were less interested in mining, the colonisers used coercive measures. This included acquiring title to land and threatening locals with eviction if they did not mine the mineral (Malm 2016b). Therefore, at the heart of the industrial

revolution and in the colony, we see power wielded in this dual sense, but also how this was a contingent path taken by certain ethno-class interests, not some evolutionary/teleological movement up a socio-energetic ladder (Daggert 2019; Malm 2016a).

Oil, the ostensible *transition* to oil, and the politics surrounding this energy source will be the final example. Firstly, there has never really been a modern energy transition, as in absolute terms more coal often gets burnt each year (Figure 5). Rather we have had a history of energy *additions* (Bonneuil & Fressoz 2017). Again, this transition/addition has been framed as economic in character (Fouquet 2016; Smil 2004). However, coal was consistently cheaper while oil was being adopted (Bonneuil & Fressoz 2017; Mitchell 2013). The transition/addition to/of oil was consolidated post WW2 under the USA's Marshall Plan, which as Mitchell (2013) shows, was largely about financing oil infrastructure and applications throughout Europe. The question is why the US was so determined to push this uneconomic energy source. An energopower reading focuses on the materiality of energy, seeing that coal miners in the US/Europe were militant and could through industrial action bring an economy to a standstill (Bonneuil & Fressoz 2017). Indeed, Michell (2013) argues it was coal miners and associated workers, their concentration, radicalism and ability to block these energy flows, that led to democracy in the early 19th and 20th centuries. In contrast, oil is more capital intensive (meaning less workers) in both extraction and transport, therefore less easy to disrupt through industrial action (Bonneuil & Fressoz 2017; Mitchell 2013). This history of oil will be returned to in the discussion, but for now we see again how the current preoccupation with prices and economics is pushed backward, occluding the social relations of these energy processes.

Figure 5: Total Energy Consumed by Type: (Our World in Data 2022)



This is the revision to the historiography of energy transitions this project will make. Michell (2013) argues that flows of energy and its specific material aspects open and close avenues of political possibility. This is not deterministic but certainly a significant material influence on power relations and this is evident throughout history. This is why theorists have developed the concept of energopower, both to reflect energy's dual aspect but also this fundamental materiality (Szeman 2014; Boyer 2014). Energopower as "a genealogy of modern power that rethinks political power through the twin analytics of electricity and fuel", focuses on our economies' *lifeblood* and how this influences our societies politically, culturally, discursively, but especially materially (Boyer 2014, p. 325; Huber 2013; Daggert 2019). The next section will introduce literature concerning *how* this thesis will be analysed, providing more information on governmentality, decolonial and world-ecology theories.

2.3: Governmentality, Decoloniality and World Ecology

The theoretical correspondence of governmentality, world ecology and decolonisation will be addressed in detail in the next chapter as these are core epistemological questions. However, this section will briefly explore what each approach broadly argues and the particular applications these have addressed. As will be shown, governmentality is widely established and used in many disparate

areas although many of these areas involve justice and/or environmental issues. Similarly, decolonial theory/praxis is widely established with a long history, if still not fully addressed in the Eurocentric academy, an issue this thesis aims to help improve. From this rich literature, this review will summarise aspects of colonial history, ongoing colonality and decolonial perspectives on human subjectivity. In contrast, world-ecology is a fairly recent theoretical approach so its main arguments and applications can be more effectively summarised.

In brief, governmentality approaches derive from Foucault's later work and involves the "encounter between the technologies of domination of others and those of the self" (Foucault 1994, p. 225). This conceptualises power as relational and inescapable in the sense of there being no outside of power relations as they are diffuse throughout our society; however, despite this ubiquity power relations are productive in the senses that they sometimes have positive effects but also imply and invoke resistance (Foucault 1978). Thus, for present purposes the governmentality framework can be considered an heuristic of power relations, or the conduct of conduct, having four main themes: *visibilities* or what is illuminated, organised in or out, or simply occluded and invisible; the *technologies and techniques of rule/resistance* or by what particular instruments and processes is rule/resistance achieved or performed; the *rationalities* behind the governing schema guiding both the visibilities and the technologies/techniques deployed; and the *subjectivities* shaped and resisted by the above processes and discourses (Dean 1999; Oels 2006). A final thing to add here is the anti-essentialism integral to governmentality approaches (Wagenaar 2011). This anti-essentialism was a long feature of Foucault's projects and why this thesis rejects various approaches that leave categories like energy, money, the human, or even time as assumed unchanging facts or essences. Indeed, it is in opening up these categories that we may find surprising and liberatory counter-stories to the dominant neoliberal ones that are driving us all to ruin (Paradies 2020). This framework is tabulated below with some of the resulting analytical questions detailed.

Table 4: Analytical framework for this thesis (Developed from Oels 2006).

Analytical category	Questions
Fields of visibility	What is illuminated, what is obscured? What problems are to be solved?
Technical Aspects	By what instrument, procedures and technologies is rule/resistance achieved?

Forms of Knowledge	Which forms of thought/rationalities inform rule/resistance?
Formation of identities	What forms of self are presupposed by practices of government/resistance?

This governmentality field has developed rapidly to include studies of insurance and risk (Defert 1991; Dean 1998), poverty (Procacci 1991), statistics (Hacking 2002), criminology and the police (Pasquino 1991). More specific to justice concerns, Cruickshank (1999) uses governmentality to explore the US benefit system, while Jones & Mukherjee (2010) use it to examine racialised politics in the US. Luke (1999) introduced the concept of environmentalities, or governmentalities focused on the conduct of environmental conduct, which was elaborated by Rutherford (2007) under the label green governmentality, or by Agrawal (2005) in his study of environmentalities in rural India. This use of governmentality in the environmental context was followed by a range of applications exploring environmental governance including international CC governance (Oels 2006) and its depoliticization (Methman et al 2013), and urban governance under the impact of the CC (Braun 2014). Overall, this is a wide field but it has yet to be applied to the study of community energy, a broad gap this thesis fills.

Decolonial theory developed over the 20th Century with perhaps one of the most influential theorists being Fanon. His work stresses the ongoing physical and epistemic violence of the colony with the latter going in both directions as the coloniser “bloats and disfigures the face of the culture that practices it” (Fanon 1964, p. 37), while the colonised identity becomes an imposed image, a caricature of a racialised evil spirit largely made up of the coloniser’s repressed, immoral and shameful desires that the colonised cannot recognise and is doomed to struggle with (Fanon 1967). Other highly influential historical theorists include Césaire (1972), who agreed with Fanon on the point that the colony degrades and brutalises the coloniser, arguing each act of violence degraded the European culture leading ultimately to the savagery of the Nazi regime. Finally, Rodney (1973; Fanon 1963) made the case that African underdevelopment is inversely related to European development by way of plunder, as argued above (section 2.3).

Following these foundational thinkers (due to space/time and the limitation of language the above is woefully inadequate) modern decolonial theory builds on these ideas in two broad ways relevant to this thesis. The first aspect is that of coloniality which emphasises firstly that colonisation and neo-colonial relations are alive and un/well, both in settler colonial states (Estes 2019; Sioui 1999; Smith

1999) but also in the asymmetrical relations between the Global North and South and driven through four key building blocks of modernity – debt, property, institutions and the nation state (Paradies 2020). Another way of thinking of coloniality is as a Eurocentric Totality that presents a linear model of progress, democracy and freedom, that includes while occluding the prison, colony and institutionalised violence of this system (Mbembe 2019; Mignolo 2007). This Totality does epistemic violence in concert with the bodily and material, by systematically silencing alternative ontological and epistemological ways of being (Santos et al 2007; Mignolo 2007; Sioui 1999).

The second aspect focuses on decolonial subjectivities. Wynter (2003) traces how the *descriptive statement* of the human develops from pre-modern Christianity to modernity/coloniality. Moving from Christianity to the Enlightenment the *descriptive statement* of the human mutates from a theocentric cosmology in which humans, sinful by nature, gain redemption through the church, to a humanist, secular version where the human is a rational political subject of the state and gains/proves his *reason/rationality* by adherence to state law. However, this is not a clean break from one description to another, for the Christian others of Muslim or Jew are replaced by the colonial others of the world, signified by the colour line. Wynter (2003) argues that this colour line and race, while having no basis in biology, becomes the central organising principle of domination for the last 500 years. Across these years the colonised move through distinct stages of spiritual, political, to contemporary economic damnation. *Man* is “now defined as a jobholding Breadwinner, and even more optimally, as a successful ‘masterer of Natural Scarcity’” while “Human Otherness [is] to be peopled by a new category, one now comprised of the jobless, the homeless, the Poor, the systemically made jobless and criminalized – of the ‘underdeveloped’ – all as the category of the economically” damned (Wynter 2003, p. 321).

All the while, as Godelier (1999) argues, the knowledge that we humans are both the origin and definers of ourselves, is repressed. This repression takes firstly supranatural form with God as creator/writer of what is human, only for a secular scientific, evolutionary *descriptive statement*, to replace this. This movement of the *descriptive statement* from god to science and the maintaining of the *other*, supports Wynter’s (2003) general point that in the *invention of man* there are, contrary to Foucault, many continuities as well as discontinuities. It also supports Feyerabend’s (1977) argument that science has taken on many aspects of religion, not least in trying to over-determine and thus limit human subjectivity. Thus, Wynter (2003, p. 268) argues “one cannot ‘unsettle’ the ‘coloniality of power’ without a redescription of the human outside the terms of our present descriptive statement of the human, *Man*, and its over representation.”

Finally, world-ecology can be seen to connect governmentality's anti-essentialism, Foucault's concerns with Cartesian thinking and anticolonial theory. World-ecology is anti-essentialist in the way it explores core categories such as nature, food, work, energy, care, lives and money, arguing that capitalisms have made all of these *cheap* in the narrow/exclusive monetary sense that hides much more than it shows (Patel & Moore 2020). This perspective also critiques the Cartesian binaries that underpin the modern order such as subject/object, woman/man, black/white as *real abstractions* or dualistic thinking that has material impacts in the world (Patel & Moore 2020; Moore 2016). Regarding coloniality, world-ecology takes a fundamentally relational perspective that sees human-in-nature and nature-in-humans, as well as capitalism-in-environment and environment-in-capitalism. However, humanity here is differentiated rather than framed as some general category, as some Anthropocene thinkers do (Steffen et al 2018). Instead, world-ecology sees the different roles/organisations/oppressions of gendered/racialised and colonised/coloniser subjects (Patel & Moore 2020; Moore 2016).

Moore (2003) began this important world-ecology work examining Braudel's contribution to environmental history. In this piece he argues that although Braudel does reproduce the nature/society binary he also opens the door for this binary's deconstruction, as Braudel recognised "world economies are ecological" and saw that the imposition of monoculture crops to an ecology "induced radical transformations of land, labor, and society" (Moore 2003, p. 453). With two serialised pieces Moore (2009; 2010) explored the sugar plantation upon the island of Madeira. This island becomes the prism in which modern slavery was established, refined and then exported, and in which the early capitalism-in-environment and environment-in-capitalism crisis inducing modality can be clearly seen (Moore 2009). Later work focused on the concept of the Anthropocene and its inadequacy and in a book edited by Moore (2016) the concept of the capitalocene is offered as an alternative. This concept avoids the facile and disingenuous lumping of the responsibility of the CC and wider ecological crises onto *humanity*, while also side-stepping the geologist's search for the golden spike or sign of the Anthropocene; instead, it lays the foundation of the CC and ecological crises, like decolonial thinkers, as a tale beginning in the Early Modern period of early capitalisms/modernity/coloniality (Moore 2016). In their latest work Patel & Moore (2020) provide a fascinating history of the world through the seven *cheaps* detailed above. The next and final section of this chapter will explore the idea of community and CREOs as the unit of analysis of this thesis, but also the space in which EJ and ED ideas will be tested and assessed.

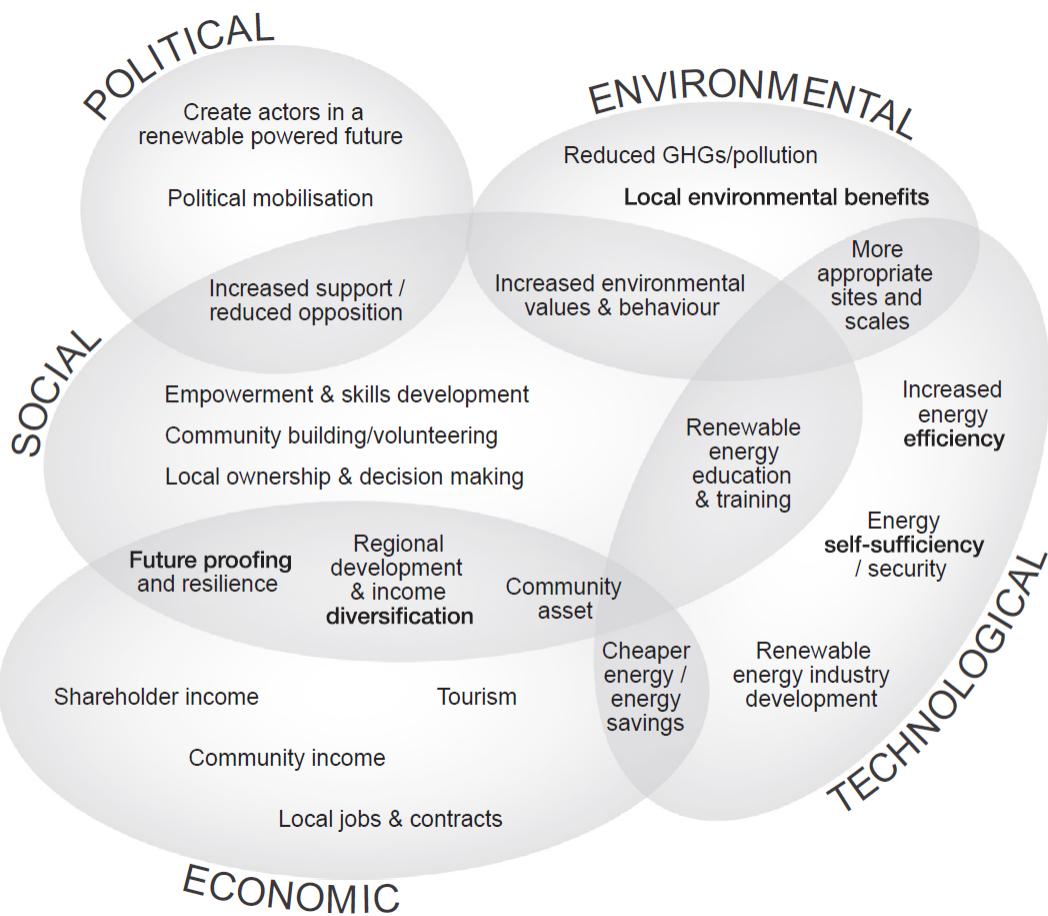
2.4 Community and Community Energy

Community, as Raymond Williams (1983) points out, is rarely used in a negative sense so its use is often attractive to organisations with tenuous links to *communities*. Broadly, the idea of community has been stretched as modern trends in information technology and international travel have, to some extent, reduced spatial and temporal limitations; however, locale still remains a crucial determiner of notions of community (Catney et al 2013). This section will examine how community is defined and the various concepts crucial to CREOs. It will argue that the mobilisation of communities of place and sharing of benefits and decision-making responsibilities with these communities could have immediate practical benefits and more long-term effects. The immediate benefits, similar to those associated with ED above, could be the increased local acceptance of renewable energy infrastructure (Berka & Creamer 2018; Jenkins et al 2016) and more appropriate and legitimate decisions (Jasanoff & Martello 2004; Fischer 2000). The more long-term effects could be the development of more convivial imaginaries (Kerschner et al 2018), or collective and institutionally stable visions of possible futures (Jasanoff & Kim 2015), where the focus is on meeting human physical and social needs, rather than a destructive fetishization of economic growth and conspicuous consumption, which is stretching planetary boundaries (O'Neill et al 2018). This could in turn motivate behaviour change toward this end (Hughes et al 2013), while building a wider natural constituency to support the socio-political change required. Through these associated benefits, CREOs can be interpreted as ED machines or institutions involved in the *democratisation* of energy.

The rather vague definition of CREOs given in the introduction is problematic. On the one hand, a certain ambiguity allows for varying and adaptable responses to context dependent community needs (Walker & Devine-Wright 2008). On the other hand, a lack of clearly defined CREOs can lead to abuse of the term community and the policy support directed toward these organisations, and thus undermine trust in these policies and CREOs (Creamer et al 2019; Hicks & Ison 2018). In an effort to characterise these organisations, Walker & Devine-Wright (2008) identified two key dimensions: both who the organisation was run *by* and *for*. These dimensions correspond to the process through which the organisation is run and what is done with the outcome, and can be linked to procedural and distributional justice. However, in practice these distinctions of process and outcome break down or are entwined, for instance democratic processes are also outcomes in an ED sense (Szulecki & Overland 2020; Creamer et al 2019).

The motivations of CREOs are important as this often shapes the organisational structure and thus the procedural and distributional aspects. These motivations are multifaceted, which implies governance must be integrated between departments responsible for law, finance, energy, and housing for instance (Seyfang et al 2014; 2013). Figure 6 below, shows the range of potential CREO motivations emphasising the cross-cutting scope of community energy. For example, Bauwens (2019; 2016), in successive quantitative surveys of cooperative members of renewable energy projects in Belgium, found some interesting differences in motivation between these members. Firstly, it was found that the larger operations that could be termed communities of interest were largely motivated by return on investment (ROI), while smaller communities of place were more motivated by environmental and social ends (Bauwens 2019). Secondly, it was found that early cooperative investors were more environmentally focused and had higher levels of interpersonal trust, than later investors more motivated by personal benefit (Bauwens 2016). In a UK study (Walker et al 2017) of community benefit funds from wind farms, it was found that making the community fund mandatory rather than optional by developers, decreased levels of distrust and opposition to wind farms. A review of the sector found more broadly that community acceptance of renewable infrastructure increased with more democratic processes and equitable sharing of profits (Berka & Creamer 2018). Although one cannot over-generalise with these findings, together they do support the idea that formally anchoring the control and benefits to communities of place in CREOs, or other local democratic institutions, would support the kind of transformative change required. These findings also support the energy *democratisation* called for in ED.

Figure 6: The multifaceted nature of CRE organisation motivation (Hicks & Ison 2018, p. 527).



More broadly, imagining a different future should not be left to EJ researchers, policy-makers and incumbent energy regime actors. As this is a global to local issue, nor should this be a domineering process where the Global North transfers predetermined technological fixes to Global South governments (Marquard & Delina 2019). The role of civil society is critical here as a place where alternate ways of being and living can be explored, and dominant norms and methods contested (Pykkonen 2015). Community organisations within civil society are key sites, or key nodes (Catney et al 2013), where innovative and radical politics can be communicated, discussed and developed forming new subjectivities (Perälä 2015). For instance, In Thailand and the Philippines, local community networks have developed low-carbon energy options and resisted damaging fossil fuel infrastructure, both offering alternative future visions of “small-scale, community-led, community-oriented energy projects” (Marquard & Delina 2019, p. 98; Delina 2018). This connects to ED’s vision

of the future with a more communitarian than individualistic idea of civil society and new attitudes, roles and modes of citizenship (Szulecki 2018). An aim of this project would be to investigate if and how CREOs can be construed as counter-conduct nodes or spaces, communicating, debating and imagining different ways of being and living.

2.5: Conclusion: Bridging Energy Justice and Energy Democracy

Governmentality approaches recognise that a governing rationality has fields of visibility that constitute what a given form of rationality can recognise, problematise and attempt to solve (Dean 1999). Both ED and EJ are discursive formations which aim to govern people their behaviour and their institutions for specific ends, thus can be seen as environmentally focused governmentalities or environmentalities. As argued earlier, both environmentalities have laudable aims, but some form of integration of the ED cognizance of the dialectic between energy and democracy with the more practical elements of EJ principles is crucial. This has been recognised in the literature (Thombs 2019) and is discussed in this conclusion.

While both frameworks emphasise the moral and justice aspects of energy, EJ seems reticent in addressing how energy in/justice is embedded in the social, political and economic systems of our societies (Thombs 2019). For instance, EJ has four principles of affordability, access, due process and transparency of energy provision, which aims to share energy cost/benefits more fairly. In contrast, ED aims to de-commodify energy as a basic need, genealogises the concept of energy, and recognises overall how our very democratic structures and culture are in dialectical relations to our energy infrastructures (Burke & Stephens 2018; Daggert 2019; Mitchell 2013).

Thus, it could be argued that EJ is the incremental tool that can chip away at the manifold injustices of our societies, while ED is the more radical vision that advocates the fundamental change that even the IPCC calls for. The next chapter will elaborate some of these positions and detail the specific methodological and epistemological choices this project's data shaped, and indeed in some respects demanded

Finally, democracies the world over are in crisis (Mbembe 2019), a crisis this project ties to energy and energopower. This is because the sources of power in our society work in both senses and are mutually reinforcing. This is why we seem and in many respects are locked into fossil fuel energy – because

each drop of oil extracted and each power plant built reinforces the social and material power of this sector and people profiting from this. This is the challenge we face and it requires, indeed demands, radical solutions. Overall, this thesis takes the form of critique Lemke (2012) describes as Foucauldian and having four features: it is an ethical/moral rather than juridical inquiry; it questions current truth regimes in favour of more collective formations; it engages in voluntary resistance; and it transgresses the norm of occluding one's own status as a subject.

Chapter 3: Methodology

3: Introduction

A main aim of this thesis is to examine the scope of local action to promote a more just energy transition in England and the wider world. The epistemological framework is a governmentality perspective, which I argue is a starting point (Dean & Zamora 2021), so it will be supplemented by decolonial and world-ecology perspectives, that this thesis argues are essential ingredients for a just transition. Methodologically, as a thesis aiming to promote just outcomes it endeavours to practise what it preaches and use methods in dialogical and deliberative ways. These methods include participant observation, semi-structured interviews and documentary analysis.

This thesis focuses on CREOs, EJ and ED during a low-carbon transition. As such it is a bottom-up approach, but also aims to take a systemic view. It does this by linking local processes and practices to national and international practices and processes. This is essential as the CC is a multi-scalar/level problem, with effects across political, geographical, ecological and temporal scales (and others). CREOs themselves recognise and act on this understanding by working to both reduce energy poverty and mitigate the CC. This thesis argues that to deal with the multiple environmental crises, of which the CC is emblematic, a fundamental change is required in both how we act and be. This action and being is bound to Foucault's Power/Knowledge dynamic (Wagenaar 2011; Foucault 1982), coloniality (Mignolo 2007) and how these factors construct the human (Wynter 2003) and its interrelation with the environment (Moore 2015). Toward this endeavour this project follows Foucault (1994a) in deconstructing self-evident universals and current common sense about energy or the human. However, this thesis tentatively goes further, suggesting and adumbrating, possible better ways of living by exploring certain decolonial and indigenous ways of thinking and being (Estes 2019; Kimmerer 2013; Mignolo 2007).

The move towards these radical indigenous and decolonial ideas is justified by the latest IPCC (2022, p. 35) report which claims "climate resilient development" chances will be increased by dialogue with such indigenous knowledges. It was also justified by the data and experience in writing this PhD, which included giving energy advice in foodbanks, drafting a failed application for funding for regional energy advice, and writing CEE's BLM response during the summer of 2021. Moreover, the data collection was interrupted by the pandemic. The pandemic while apparently *mishandled* within the Global North to the cost of impoverished people's lives and livelihoods (PHE 2020), saw stock markets soar along with the ruling ethno-class's wealth (Harvey 2021). Simultaneously, the wealthy countries of the world

supported pharmaceutical multinationals in firstly withholding vaccines then exploiting the Global South in what has been fairly characterised as vaccine apartheid (Global Justice Now 2021). These factors all speak of an extractive system that creates and feeds on injustice and impoverishment. This in turn points to decolonial arguments that show how modernity itself is co-constituted by the colony and the structural/quotidian oppression and violence upon the colonised (Paradies 2020; Mbembe 2019; Mignolo 2007; Wynter 2003). Therefore, these conditions of production of this project demanded radical tools/perspectives.

3.1: Research Questions

1. How do community energy sector actors conceive of justice?
2. What are the key characteristics of the policy and regulatory environment in the UK in which community-led energy generation and distribution schemes operate?
3. What kind of environmentalities and subjectivities are posited by these notions of justice and what are the implications of this?

The main objectives of this project are:

- a) to further integrate the relevant literatures of EJ and energy democracy (ED) and create dialogue on the notion of justice beyond academic EJ discourse
- b) to assess the current policy and regulatory environment, in terms of enabling community energy and increasing EJ, with a focus on EP.
- c) to explore core categories associated with energy, democracy and justice and historicise these ideas

3.1.1: Research Design

This thesis accepts that justice is understood differently by different groups and thus a contested concept; however, it rejects the notion of objectivity and thus takes a position in this contestation as the CC demands. This means taking a qualitative approach with a focus on discourses with the aim to

make sense of a world we discover and create (Haraway 1988), but further to try to act on and improve the world for people and the ecologies we are part of (Kimmerer 2013; Reason & Bradbury 2008; Denzin & Lincoln 2005). It uses a governmentality framework retooled for social-environmental analysis by world-ecology and decolonial perspectives. All three perspectives are anti-essentialist, arguably a requirement when so much of the current *common sense*, or accepted reality/realities, are fundamental aspects of and contributors to our current crises (Moore 2015). In addition, all three perspectives use forms of historicization to show the fundamental contingency of social formations and subjectivity. However, each perspective offers more focus in specific areas. Governmentality is a useful tool for the analysis of political rationalities and programmes stressing their contingency and thus potential for change. World-ecology focuses on the socio-environmental dialectic and how capitalisms work in/through natures and natures work through/in capitalisms, again pointing out many contingencies but also the many fundamental contradictions of our world system. Decolonial perspectives focus on the ethno-class domination and racial underpinning of our modern world system and thinking, also showing this racial order's contingent nature while offering a plurality of other stories and ontologies. More specifically, governmentality focuses attention on relations between four aspects of governance: techniques and technologies of power/resistance that will enable answers to R2 and O2; visibilities of governance/resistance that will partially answer R1/R3 and O1/R3; rationalities of governance/resistance that will also partially answer R1/O1 and R3/O3; and finally subjectivities that will mainly answer R3 and O3.

In order to integrate the EJ literature and the ED literature – R1 and O1 – this project will show that justice is a contested, moving concept, and as such it must be democratically debated, not merely academically constructed as in EJ literature. This required examination of the history of EJ through its predecessors, climate justice and environmental justice, to show how these conceptions of justice involved dialogue. It will also require gathering primary data from participants and organisations on their conceptions of justice.

To assess policy and regulatory mixes – R2 and O2- it will be essential to assess historical and current approaches. Therefore, this project will review historical UK energy policy with particular focuses on fossil fuel firms, the state and Ofgem as the energy regulator. It will also consider Burke & Stephen's (2017) aim of identifying and assessing potential policy mixes that would facilitate just outcomes, by consideration of policy determining CREO and their ability to improve justice outcomes. More broadly, this project will develop a critique of current UK capitalism as undemocratic and antithetical to basic conceptions of justice.

As stated above, this project takes an anti-essentialist perspective (Wagenaar 2011). A key method of

deconstructing essentialised categories is historicising them, showing their contingent nature. As such, a broad aim of this project is to produce a rereading of historical energy transitions, firstly to show how we need to understand and unpick the idea of *energy* itself. This rereading aims to show how modern slavery (Patel & Moore 2020) could be seen as the first international energy system (Mbembe 2019; Lennon 2017), and that both slavery, and the fossil fuels that replaced them, co-determined the development of modern capitalisms and this has modern unjust impacts and future concerns. This will help to address R2, R3 and O3.

This thesis uses a multi-case study approach focusing on CREOs supplemented by an embedded participant approach enabling the gathering of sufficiently detailed and nuanced data, while also allowing for the writer's justice commitments. This will be supported by semi-structured interviews to offer more subject, positional and geographical coverage and thus the ability to cautiously generalise findings. These methods will contribute to answering the research questions and aims in general.

Thus, the overall design is justified on three main levels. Firstly, it allows and acknowledges the justice commitments and positionality of the author, rather than rely on the *god trick* of objectivity (Haraway 1988). Second, via its varied anti-essentialism and historicization it allows the deconstruction of certain categories such as energy, social evolution and the human subject that under the current over-determination are preventing more just outcomes now and in the future. Third, via the mixed methods of embedded case studies and dialogical interviews it can practice what it preaches in a deliberative way.

3.2: Epistemology and research approach

We are in an inflection point in history in many ways. As Malm (2016a) describes, this involves the way the material weight of historical carbon emissions squeezes the present under its mass, while at the same time the lagging impact of these cumulative emissions will stretch into the mid and long-term future. In connection, world-ecology thinking rejects hard environmental limits but does see these as human-in-environment and environment-in-human boundaries that *can and are being* pushed into crises-inducing modes and formations (Moore 2015). Thus, in a way the series of crises since 2008 can be framed as both an heir and continuity of capitalisms' longer series of crises and fixes, which are a feature of this system's inherent contradictions (Dafermos et al 2021; Marx 1887). However, most recently crises seem to be more a norm than an exception, suggesting this system is

running out of frontiers upon which to wreak its temporally and spatially displaced fixes (Patel & Moore 2020). This is perhaps most apparent with the two directions taken by techno-capital. Facebook and Microsoft have aimed at a virtual metaverse (Roe 2021) while Amazon's Bezo and Tesla's Musk wrestle it out to be "space lords" (Pien 2022). Both frontiers involve discursive allusions to new worlds of opportunity, while clearly founded upon similar forms of domination by rich white men; moreover, both imply abandoning the problems and wreckage left behind on Earth (Prescod-Weinstein 2022).

Thus, it seems of less import whether we live in rentier capitalism (Christophers 2020), techno-feudalism (Graeber 2018), the end of neoliberalism (Gerbaudo 2021), or something else. This is because capitalism has always been *capitalisms*, with the form in the core differing from the periphery/frontier (Patel & Moore 2020; Wallerstein 1983), between men and women (Mellor 1998), and even *within* settler colonial states like the US (Estes 2019; Kimmerer 2013). This project takes the view that capitalism was always more than a market system, and this includes its dialectical ties with the state and its background conditions of possibility, such as care, colonialism, and its dialectical relations with the environment (Fraser 2021; Estes 2019; Graeber 2011; Moore 2015) Finally, without a fundamental rethinking of first principles of how we understand our place in this world and with each other – our cosmologies (Kimmerer 2013) in effect – the next -ism will likely reproduce similar forms of domination.

More specifically, neoliberalisms are founded upon a number of explicit and implicit binaries that it inherited from liberal forms of capitalisms before it, but that it has arguably reinforced. Firstly, the explicit binaries of economy/politics and society/nature so pervade our socio-political culture as to make them encoded in our language/thinking as to make them *common sense* in the Gramscian meaning (Gramsci 1977). Other implied or occluded binaries include the mind/body, rational/irrational, man/woman, white/black, able/disabled, logical/emotional, civilised/savage, process/outcome, and many other simplistic binaries. These binaries all serve to create an abstract but materially discriminating line upon which the long-term divisions of empire, white supremacism, and wealth and resources have been built and consolidated (Patel & Moore 2020; Federici 2004; Wynter & McKittrick 2015; Wynter 2003).

This thesis argues that there is a useful epistemological correspondence between advocacy for greater justice and democracy, decolonial and world-ecology perspectives and governmentality. As a thesis focused on the notion of justice, investigating instances of injustice or its remediation is complicated by the moving definition of this contested concept. However, this does not mean resources could not be distributed *much more fairly*, or decisions cannot be made *much more democratically*. Similarly,

decolonial and world-ecology thinking in highlighting the contingent but no less materially and epistemically violent and genocidal aspects of modernity/coloniality, aim to find historical and contemporary but localised examples that resist/escape this Eurocentric system and offer more just and democratic ways of being (Gelderloos 2022; Patel & Moore 2020; Mignolo 2007). Governmentality as a framework of analysis begins from the bottom-up via a focus on events (Ettlinger 2011), but also through its questioning of *how* regimes of truth are established it also implies the question of how things could be arranged more democratically (Hajer & Versteeg 2005). Thus, notions of justice, a focus on local place-based practices and democratic deliberation connect these three theoretical constructs. The next section will elaborate upon this argument by outlining how each area corresponds with these themes.

3.2.1: Governmentality

Foucault (1982, p. 791) defined power as action that “structures the field of other possible actions.” Thus, in kaleidoscopic forms the exercise of power throughout society is inescapable, or a society without power relations an impossibility (Foucault 1982). However, rather than accept a specific time and place’s power relations as immutable or *realistic*, it is crucial to analyse power asymmetries in specific contexts, how these developed historically and what their strengths and weaknesses are (Foucault 1982). This analytical and expository work of questioning power relations and resistance to these relations was for Foucault (1982, p. 792) a “permanent political task inherent in all social existence.” This task is exemplified in the work of governmentality researchers with a programme that has expanded rapidly, and following Foucault’s lead, examines power relations at multiple levels and beyond the state (O’Malley et al 1997).

Over the course of Foucault’s work Fletcher (2017) identifies a four part typology of governmentality. These forms of governmentality can be loosely associated with particular time/places; however, it is important to note that these forms do not replace each other but are co-evolving additions, with emphasis shifting toward one or more particular forms according to the specific flavour of governmentality in that time/place (Butler 2020; Cavanagh 2018; Fletcher 2010; Graeber 2001). Chronologically, the first form would be government by truth/wisdom and emanates from religious texts/leaders and foundational theories such as Marxism (Foucault 2008) and could be associated with the Middle Ages, although Fletcher (2017) argues discourses of traditional ecological knowledge (TEK)

deploy this form of governmentality. The second form is government by sovereign power, which is characterised by top-down government enforced through regimes of punishment and ultimately death, with the early modern period regimes in Europe being characterised by this form of governmentality (Foucault 2008). The third form is that of disciplinary governmentality and involves the development of the human, then social sciences, during the late 17th to 19th centuries in which the object of analysis became the individual body and the population of a nation at large (Foucault 1977). This form of governmentality surveys bodies/populations with the aim of rationalising life (Darier 1999), and can be seen in medicine, sociology and epidemiology setting norms/values which bodies/populations are compared to and expected/forced to assimilate to (Foucault 1997; Fletcher 2017).

Disciplinary governmentality involves the concept of biopower, although biopower can be articulated through other modes. According to Rabinow & Rose (2006) this includes three elements: truth discourses about the essential vitality of humans and institutional bodies that provide this truth; strategies to intervene to act on general or specific population's health/life; and subjectification modes which encourage individuals to self-regulate. Biopolitics can be seen as the particular strategies, conflicts and problematisations of human populations/individuals and their features (Rabinow & Rose 2006). The notion of biopolitics has been expanded as ecopolitics by Rutherford (1993, Cited in Darier 1999) to describe the more recent attempts of biologists and climate scientists to manage the global ecosystem.

The final form of governmentality Foucault (2008) described was that of neoliberal governmentality. This form of governmentality involves making the market the central guiding principle of government and the reconstruction of homo-economicus, or the competitive, rational, self-interested actor, as the subject who accepts *reality* and thus can be influenced (through incentives rather than changed through adopting norms) and analysed (Foucault 2008; Fletcher 2010). This form of governmentality emerged in the 1970s and arguably remains dominant today.

Fletcher (2017) argues that this typological framework can be usefully applied to environmentalities, or governmentalities with the aim of influencing environmental conduct. For instance, Wynne-Jones (2012) documents elements of neoliberal governmentality in a payments for ecosystem services programme in Wales, or Youdelis (2013) found elements of disciplinary and neoliberal governmentality in a Thai ecotourism project. Fletcher (2017) argues that these examples show that environmental managers mix governance strategies rather than following a single type, and that these mixed strategies may correspond and complement each other, or incite populations to resist as they seek to negotiate conflicting demands upon them.

Sustainable development discourse is an environmentality that seeks to combine economic development and social and environmental sustainability. However, this has been criticised as being almost exclusively about sustaining capital (the international financial system) and capitalisms. Luke (2005; 1995) argues that through its very nature the sustainable development project has a commitment to national economic growth and must produce experts/expertise and power/knowledge that manage the *correct* disposition of things across the globe. However, this managerialism is a “bureaucratic conceit” as trying to quantify, cost, and distribute (however unfairly) natural resources in a predictable way is doomed as the systems these resources are derived from are inherently stochastic and unpredictable (Luke 1995, p. 30; Rutherford 2007). It should be stressed here mainstream energy transitions and EJ researchers, rarely if ever question capital/capitalisms, and by implication economic growth, and thus are complicit in this bureaucratic conceit (Feola 2020). Compound growth or exponential economic growth is hardwired into capitalisms, as signalled by constant references across mainstream media to the sacred number – GDP. Nobody has shown how this can be separated from material throughput, or extraction of resources from the Earth (Hickel & Kallis 2019), so the silence of transition and EJ researchers on this point will be questioned throughout.

However, it is not enough to only critique or only do so in the narrow sense. This is what Foucault perhaps hinted at when he claims that a socialist form of governmentality is not yet written and needs to be “invented” by those in asymmetrical power relations desiring to resist or transform these relations (Foucault 2008, p. 94). Subsequent governmentality theorists, especially those concerned with environmentalities, have elaborated here with Rutherford (2007) claiming the best part of Foucault’s work is that if things are constructed rather than given, then they can be deconstructed and then rebuilt. This chimes with ideas from political ecology which argues that the *hatchet* of critique must be accompanied by the *seed* of better more equitable alternatives (Robbins 2012; Cavanagh 2018). From this angle, Cavanagh (2018) argues the role of political ecology is to push for the most equitable forms of biopower and governmentality for (non)humans. Finally, Fletcher (2010; 2017), inspired by Foucault, adds a fifth type of governmentality to the above framework which he terms liberation environmentality; based on democracy, equality, non-hierarchical and sustainable use of natural resources and local participation. Thus, while Foucault might have been vague about the forms of more equitably organised systems, he stated a number of times his commitment to fairer societies. Governmentality scholars that have followed have retained his distrust of lazy totalised theoretical positions, in favour of incrementally advocating for the fairest society we can get in any one time or place. The Table below summarises the different forms/flavours of governmentality with the first five all derived from Foucault’s work: however, the last – liberation ecology – is the space and area that this thesis aims to explore in relation to R3 and O3.

Table 5: Different modes of governmentality (Adapted from Fletcher 2010)

Governmentality	Generic mode of ‘conducting subjects’ conduct’
Biopower	Exercise of power in the interest of nurturing and sustaining life
Discipline	Governance through encouraging internalisation of norms/values
Sovereignty	Governance through top-down creation and enforcement of regulation
Neoliberalism	Governance through manipulation of external incentives
Truth	Governance according to dogmatic conception of nature and order of universe
Liberation ecology	Democratic, egalitarian, participatory and non-hierarchical governance

To explore this space and idea of liberation ecology and advocating for more incremental or comprehensive justice outcomes more generally, it is important to recognise what Wagenaar (2011) describes as the interrelating triplet of power/knowledge/ethics, which also corresponds with the three volume collected works of Foucault (1994a; 1994b; 1997). As Dryzek (2000) quips when comparing Foucault and Habermas, knowledge and the discourses, or groups of statements this is made up of, can lead to imprisonment (Foucault) or emancipation (Habermas). This is perhaps unfair to Foucault and overly generous to Habermas, and perhaps down to the lack of English translations (when Dryzek was writing) of Foucault’s later work and/or the difference between Foucault as an academic and public, activist figure (Wagenaar 2011). In an interview in 1984 Foucault said:

The problem is not of trying to dissolve them [emancipation/imprisonment] in the utopia of a perfectly transparent communication, but to give oneself the rules of law, the techniques of management, and also the ethics, the ethos, the practice of self, which would allow these games of power to be played with a minimum of domination (Cited in Wagenaar 2011).

This is firstly an allusion to Habermas’ theory of communication but more importantly, it articulates the dynamic way power works through knowledge and how, in turn, knowledge supports and constitutes the power games we are inevitably entangled in. A strategy for mitigating this entanglement is ethics and self-knowledge/practice. I take this to mean in part, that researchers such as myself, must: be reflective and reflexive; examine first principles; and make visible assumptions that occlude and reproduce injustices and domination. More broadly, this relation of power/knowledge is connected to an ostensibly objective science and social science that are, and always have been, dialectically connected to power structures within capitalisms. Finally, this power/knowledge is also part of the Eurocentric epistemic system that emerges from Europe, *but is applied globally*. Neither Foucault nor Habermas escape this system for they are part of the European philosophical tradition, even if radical elements of this (Mbembe 2019; Mignolo 2007; Santos et al

2007). The next section will elaborate on how decolonial and world-ecology perspectives can add to the governmentality framework in achieving more just processes/outcomes and escaping the tried, tested but parochial Eurocentric epistemologies.

3.2.2: World Ecology, Decoloniality and the Human Subject

Governmentality, Decolonisation and world-ecology can be connected through their focus on the human subject/subjectivity and their attention to history as a way of understanding the present and its contingency. In this way they all work against what Renan (1990) claimed was core in the creation of nations – *forgetting* the brutal processes of unification. Thus, this thesis follows Patel & Moore (2020, p. 39) in arguing that there is a pressing need for research to acknowledge and resist modernity/coloniality’s “extraordinary capacity to make us forget”. A recent example of such forgetting can be seen in Tory plans to rewrite the English school curriculum such that children are taught the ostensible *benefits* of British Empire (Alibhai 2022; Watson 2019). This forgetting is more generally evident in what McGahey (2019) describes as strategic ignorance, an aspect of which is the suppression of inconvenient information and alternatives to our extractive and deeply unjust system (Mignolo 2007; Wynter 2003).

More specifically, world-ecology adds a crucial insight into the human-in-environment and environment-in-human dialectic (which seems to be an implicit cognisance of indigenous groups – see Sioui 1999, or Whyte 2017). Decolonisation theory also elaborates on the world-ecology critique of Eurocentric epistemology. Thus, this section will detail how these two epistemological approaches contribute to the governmentality perspective to orient it towards the liberation ecology Fletcher (2017) calls for. This helps answer Sovacool et al's (2017) call for both more non-Western and non-anthropocentric theoretical approaches to EJ. The first part will summarise world-ecology insights into the human/environment and capitalisms/environment dialectics. The second section will summarise the idea of epistemic unlinking from the Eurocentric Totality. Finally, both ways of thinking will be applied to the human subject.

3.2.2.1: World-Ecology

World-ecology argues a series of Cartesian binaries form the roots of our current crises of which the overarching binary of human/nature is perhaps the most foundational and from which others follow. Underpinning these binaries are “three great thought processes that shaped the modern world”: an ontology of things and substances over relations and relationality; an *either/or* over *both/and* logic; and the notion that we can control and dominate nature (Moore 2016, p. 88). In contrast, world-ecology (Patel & Moore 2020; Moore 2015; 2016) thinking argues that humans and capitalisms are not separate from but work *within/through nature* and that this is a global phenomenon of expansion through successive frontiers and continuous but distinct cycles of accumulation. As such, forces of production/reproduction and relations of power work through the wider web of life. This approach also illustrates how modernity’s violent and unjust relations are a product of over 500 years of capitalisms and how these relations that appear timeless and common sense, are instead deeply contingent (Patel & Moore 2020; Moore 2015; 2016). An example of world-ecology will illustrate this dialectic of capitalisms/environment and the associated fundamental contradictions of capital accumulation.

Sugar is a crucial commodity in the development of modernity/coloniality and can be seen as a portent of the ever widening scope of genocides/ecocides capitalisms would wreak in the following centuries. Sugar was “wrapped up” in the constitution of early capitalisms and the incipient slave trade (Patel & Moore 2020; Moore 2015; Moore 2009). It prefigured the industrial forms that would follow and it was a crucial source of capital for the industrial revolution. The Island of Madeira is central to this story. Madeira means wood in Portuguese so it referred to an Island of timber: however, though covered in forests in 1420 by 1560 these trees were gone. Contributing to this aspect of ecocide was the invasive species that came with the colonisers killing off local species that had evolved over millions of years. Sugar production from cane was fertilised by the ashes of the forest, then produced in great boilers fed by felled trees. This cycle showed how this process was both “self-sustaining and self-defeating”; booming in the 1470’s, the Madeira’s sugar economy collapsed by 1520’s due to lack of timber – a clear example of sustaining/defeating socio-ecological contradiction (Moore 2009, pp. 342-3). The whole process was funded by Genoese bankers, while the work was done by first the indigenous Guanches from the Canary Islands and when they died of disease or brutality, they were replaced by enslaved people from the African continent. This slave labour was supplemented by European peasants and people working in rural areas whose lands had been enclosed/appropriated. When these groups combined in rebellion against the plantation authorities and slave owners, this was suppressed along with knowledge of this resistance. Subsequently, plantation owners purposefully separated these groups and this division of slaves and indentured labour along racialised lines was a crucial lesson that was part of refining and exporting this form of modern slavery to the

New World. This process, and the island of Madeira more generally, is an example of the fundamental contradiction of capitalisms then and now: how every act of producing surplus value relies upon “a disproportionately greater act of appropriating the unpaid work of humans and extra-human natures.” (Moore 2016, P. 92). More generally, “Capital is a process where money flows through nature. The trouble here is that capital is an infinite expansion through a finite web of life” (Patel & Moore 2020, p. 27; Moore 2015; Moore 2009).

This example and world-ecology thinking applies to this thesis as Madeira was an early frontier of accumulation; or the cycle of boom bust and spatial/temporal fixes that has been a feature of capitalisms ever since. An example particular to this thesis is the way the low-carbon transition is following neo-colonial, extractivist patterns. For example, Brock et al (2021) detail how the German solar industry collapsed under the pressure of China’s state sponsored expansion of renewables and German politicians’ commitment to free markets. This industry was based in an economically depressed part of the former Eastern Germany, formerly a leftist stronghold but now supporting the far right. The German government not only failed to protect workers and this industry but actively lobbied the EU not to act against cheap Chinese imports, arguing that it did not matter where solar PV panels were made (Brock et al 2021). However, many of the resources for these solar panels are from places of poor environmental governance, involve child labour, and are damaging to the land and lives of the people who rarely see the benefit of such technologies (Sovacool 2019; Sovacool et al 2020a). Thus, this rush for cheap low-carbon technologies – the tech-fix over the behaviour change – can be framed as the latest of capitalisms’ frontiers, with demand for the raw materials for solar and EVs set to soar (Sovacool et al 2019a). As such, this process will likely bear many of the racialised, gendered, class-based and environmental injustices of previous capitalistic fixes (Gelderloos 2022; Patel & Moore 2020). This is not to say these low-carbon energy sources are not needed. However, it is to argue the Global North cannot maintain its current rapacious energy demand or employ neo-colonial methods of mining, installation and disposal, otherwise these technologies are little better than *fossil fuel +* (Dunlap & Arce 2021; Gelderloos 2022).

3.2.2.2: Decolonisation and Epistemic Un-linking

Colonial history was poorly theorised by the radical left from Marx (1887) to Lenin (1999), who treat the colony as empty space after initial, violent, primitive accumulation; and imperialism as a great

game between international powers respectively. Lenin (1999, p. 71) also takes a distinct social evolutionary perspective as he frames imperialism as the *highest stage* of capitalisms and uses unfortunate references to “backward” countries. Rosa Luxemburg (2015) is an exception, and recognised that imperialism and colonisation involves an ongoing war on indigenous, socio-economic foundations as these are antithetical to capitalist formation. This is perhaps no coincidence as Luxemburg was also more appreciative of local knowledge and autonomy than her contemporary Lenin (Scott 1999). It is these heterogenous social ontologies that capitalisms attacked and continues to in multiple ways (Paradies 2020; Estes 2019), that has been named the pluriverse (Escobar 2017; Mignolo 2007). Before moving on to epistemic un-linking and this pluriverse, it will be useful to discuss world-ecology in the context of Quijano (2010) a major decolonial thinker who coined the term coloniality, and his seminal piece (Quijano 2010) highlighting the fundamental problems of Eurocentric epistemology.

Quijano (2010; Táiwò 2022) points out that despite the end of formal colonies a significant proportion of those currently economically damned are those historically racialised by coloniality. He then outlines the problems with Eurocentric rationality that correspond to world-ecology’s great thought processes that shaped the modern world. Quijano firstly points to the idea of the individualised subject, Descartes’s *I think therefore I am*, and its capacity for reflection. Secondly, is the notion of the object that is not only different to the subject but external to it and has identifiable properties that can be defined and demarcated and positioned in regard to other objects. However, Quijano argues the idea of the individualised subject occludes “intersubjectivity and social totality as the production sites of all knowledge.” Further, he claims the idea of discrete object is counter to the current scientific knowledge which emphasises relations and relationality. In addition, this dualism between subject and object due to their supposed difference in nature, is also questioned by current science that posits “a deeper communication structure in the universe.” Finally, and most profoundly in the Eurocentric Totality is the foundational dualism: “divine reason and nature, with the subject the rational and reasoning while the object that is external to this is nature (Quijano 2010, pp. 26-27). Thus, world-ecology and Quijano frame the Eurocentric Totality in similar ways with corresponding *either/or* logic, the subject differed from objects and the shared foundational binary that implies the mastery over nature that modernity/coloniality believes it has. Mignolo & Escobar, in plotting the pluriverse, do the analytical and de-linking work that may help free humanity from the “prison” of coloniality (Quijano, 2010, p. 32).

Epistemic un-linking requires an understanding and analysis of how modernity/coloniality are two sides of a coin, but then not replacing this Totality with a Marxist or other universalising project but a grounding in local difference. This local difference is the pluriverse – a history, epistemology and way

of being that fits the locale and experiences of those in that area and emerges from the bottom-up or the perspective of the economically damned (Escobar 2010; Mignolo 2007; Quijano 2010). This un-linking can be summarised around five connected themes.

Firstly, it involves an analysis of repressed histories, subjectivities, subaltern knowledges and languages, which includes moving away from the European idea of emancipation grounded in the European revolutions which all employed the parochial universalisms (Christianity, liberalism, Marxism or Socialism) and all resulted in bourgeois rule. Rather there is a focus on the Haitian revolution, the Zapatistas, the 1960s decolonial movements, and the rich and varied knowledge systems of indigenous groups and racialised peoples behind these liberation movements (Escobar 2010; Mignolo 2007). This contrast between European *emancipation* and the decolonial idea of *liberation* will be returned to at the end of the analysis of this thesis when considering the environmentalities that emerge from it. Secondly, un-linking involves the practice of border epistemology that recognises there is no outside or means of avoiding modernity/coloniality, but also sees this ontological Totality as highly limiting and dangerous (Mignolo 2007). This requires exploring the many beginnings and traditions that are not founded on Adam & Eve, or Greece, but are those of Asia, Africa or the Americas, that are nonhegemonic, that have been “dominated, silenced, forgotten, and virtually excluded – that which constitutes the alterity of Modernity.” (Dussel 2013, p. 46; Mignolo 2007). Thirdly, although there is the focus from below on the subjectivity of the damned, decolonisation is for both coloniser and colonised; however, the favoured agent of change in both the colony and metropole is the damned (Gelderloos 2022; Fanon 1967; Mignolo 2007). Fourthly, the colonised have no epistemic privileges – these are the universalisations of the Eurocentric; thus, the aim is a “vision of human life that is not dependent on or structured by the forced imposition of one ideal of society over those that differ”, thus changing not the content but terms of civilisational conversation (Mignolo 2007, p.459). Finally, decoloniality requires a fundamental rethinking of a rationality that is parochial in that it emerges out of a strange European philosophical tradition that frames knowledge as individually produced, owned and wielded, rather than an intersubjective process and resource (Quijano 2010; Graeber & Wengrow 2021). This implies a radical rethinking of the human subjectivity, which as Wynter (2003) shows, is severely limited by the author function of modernity/coloniality.

3.2.2.3: The Human Subject

Mainstream economic theory, utilitarianism and liberal rights-based approaches all suggest what it is to be human in the world in a very narrow and specific way. White, European male thinkers such as Descartes, Bacon, Kant, Locke and Hobbes, started to redefine in the 16th, 17th and 18th Centuries what it was to be human in the world (Butler 2020; Patel & Moore 2020; Federici 2004). We can track this discourse of the human and the social contract back through liberal and enlightenment thinkers: Rawls says he aims to generalise and abstract the theory of social contract to a higher level (Rawls 2009); Kant emphasises that only rational beings who understand duty may be moral agents (Kant 2017); Locke presented a view of freedom and a social contract based on equality under the law and based on reason, while specifically excluding nature and human's enemies *as part of this nature* (Locke 2017); and Hobbes declares that nature has made men equal in body and mind, and thus prone to incessant warfare, so arguing that to avoid this people mutually transfer rights in contracts backed by the state (Hobbes 1914). Descartes' thinking pushed the binary division of mind and body, while also promoting the idea of the body as a machine that should be subject to the will of the mind (Descartes 2017). This move by Descartes, is complemented by Bacon's "scientific", and misogynistic instructions to "conquer", "shake up" and "dissect" nature's secrets out of *her* (Bacon 2017, pp. 3, 11, 34; Merchant 2008).

This way of thinking narrowly defines the human condition as masculine, rational, self-interested/prone to conflict, equal in body and mind with others, with the mind in control of the body and its impulses and desires. However, this truncated notion of what it is to be human elides over half the world's population in both time and space. This is because we are all in some places and times vulnerable, irrational and partially subject to the vagaries of our bodies, environments and social situations, and as prone to cooperation as much as conflict (Mbembe 2019; Graeber 2011; Federici 2004). This narrow way of thinking about humans justified the enclosures within Europe and the colonialism and slavery of the New World, upon which capitalisms were born and developed (Wynter 2003; Hickel 2020; Moore 2016; Federici 2004). Cartesian dualism relegates a large proportion of humanity to nature, while at the same time dividing society from nature, with nature reduced to an external series of inputs/outputs to be put to work for profit (Daggert 2019; Moore 2016), or more colloquially as both gold mine and toilet (Gelderloos 2022). This is a broad example of Foucault's (1977, p. 29) power/knowledge through "which power relations give rise to a possible corpus of knowledge, and the knowledge extends and reinforces the effects of this power."

Alongside not recognising and demattering/devaluing/dehumanising the bulk of humanity, there is another problem of this framing of the human subject through what it justifies today. This is the cumulative increase in the surveillance and oppressive apparatus of the state to control this bellicose human subject (Graeber & Wengrow 2021; Butler 2020). Considering the chaos and brutality of the 16th and 17th centuries, largely caused by elites expropriating common and religious lands, Graeber (2011) wryly points out it is no surprise Hobbes saw humanity as essentially belligerent. Today this has the dark irony of a system of prison, racialised capitalism, war and imperial looting, that literally produces violent men, being framed in liberal discourse as only solvable through more police, prisons and violence (Vergès 2020). This is part of the fundamentally ahistorical and unevidenced way the human subject has been and is constructed, or as Wynter (2003) would say, *over-determined*.

This project favours a decolonised ontology and epistemology of what is to be human in the world, for the ways of thinking and being that have been instrumental in creating social/environmental crises are not going to get us out of it (Escobar 2010; Sioui 1999; Hickel 2020; Moore 2016). Ontologically, *Shaman*, Kim Stanley Robinson's (2013) novel, offers a counter-view to Hobbes' state of nature, which prefigures Graeber & Wengrow's (2021) history of humanity and the indigenous scholar accounts this study draws on (Sioui 1999; Mann 2001). In this pre-history imaginary and these empirical studies, humans live within nature, are part of its web of life and *aware of this*. They fear, love and respect their environment because they depend upon it, *and are a fundamental part of it*. Finally, while there are primate antagonisms and dynamics including war and slavery, this is not the rule or destiny, and there are many examples of more cooperative and equitable societies in which humans *consciously choose and adapt their social institutions* to encourage cooperation and equity *at scale* (Graeber & Wengrow 2021; Robinson 2013).

This novel and these studies open up the book of humanity to new and exciting possibilities that current thinking occludes through reified notions of the human subject. Epistemologically, if I follow Haraway and Habermas in saying we both describe and create our world, this implies we do that with ourselves, a point Foucault explored in his later work (Dean & Zamora 2021). Or, in other words, we are constantly *becoming over being*, in flux and malleable, rather than fixed as either self-interested or cooperative (Mbembe 2019; Fanon 2018; 1967). And despite this flux and state of becoming, we are fundamentally social and interdependent on each other and the wider web of life. Mbembe (2019) argues a fundamental commonality within this human becoming is a shared vulnerability and that recognition of this is an essential requirement of societies based upon care and caring. This story is offered over the neoliberal story of humans in constant conflict, working exclusively on self-interest and distinct from the natural world. In Ursula Le Guin's (1986) terms, changing the human story of

science/technology as man with *arrow/spear*, replacing it with people with cultural *carrier bag*, potentially freeing our imaginations from Promethean or apocalyptic dead ends.

As part of this epistemology of what we know it is to be human, I argue in this thesis that core relational concepts like justice must be part of a wider democratic debate. Justice is socially constructed/negotiated in our daily interactions (Galvin 2020b; Rorty 2000). Therefore, both conceptually and empirically this research aims to facilitate this dialogue of EJ between the academics that have developed it, and the activists and practitioners working in CREOs, and the impoverished people most impacted now by EP and likely in the future by the CC. I take the position that this dialogue is core to the notion of ED which holds that just and fair energy systems require a “shift to democratic institutions, organisations and processes of everyday life.” (Thombs 2019, p. 162)

3.2.3: Justice and Deliberative Democracy

Many justice scholars tie the pursuit of a fairer society to democracy. Rawls (2009) for instance, identifies the liberal constitutional democracy and its institutions as the vehicle that can ensure basic equality, which avoids transcendental ideas of justice, but instead deliberates on them through public reason. Sen (2009, p. 326) agrees, stating that as public reasoning is central to democracy and justice, then justice and democracy share an “intimate connection” and “discursive features”. Similarly, Habermas (1996, p. 28) argues for fairness through the communicative “processes that flow through both the parliamentary bodies and the informal networks of the public sphere.” Therefore, the way democracy is defined and conceived and the way the limits of democracy/public reason are conceived, impacts both the discursive features and practicalities of justice.

However, these liberal capitalist democracies Rawls uses as a model are not working well and never did for most of the world (Paradies 2020); moreover, they seem to be getting even worse. This general democratic crisis is recognised by many (IDEA 2021; Mbembe 2019; Taylor 2019; Fishkin & Mansbridge 2017), except it seems the elites with influential roles in these largely performative systems (Graeber & Wengrow 2021) and the affluent and connected these systems serve. Aspects of the health of the UK’s democracy will be dealt with in the following chapters, but it is useful here to briefly summarise some of these issues facing modern liberal democracies. These issues include: more countries moving toward authoritarian rather than democratic forms of governance and many of those elected democratically adopting authoritarian tactics and this having some popular support; the pandemic

exacerbating this authoritarian trend; this trend evident in some of the world's biggest countries including the USA, India and Brazil (all crucial countries in terms of the CC); this authoritarian trend using spurious claims about electoral integrity; human rights violations and government repression of free speech; violent conflict over resource extraction; and more slaves today than ever in history with many of these racialised women (Scott 2021; IDEA 2021; Banerjee 2021; Fishkin & Mansbridge 2017). Deliberative democratic advocates argue that expanding and deepening our democracies can help to address these alarming trends (Fishkin & Mansbridge 2017; Curato et al 2017).

The deliberative democratic critique argues for a broadening of the notion of democracy and more citizen involvement in deliberative processes. The dominant definition of democracy (representative) equates it narrowly with institutions such as parliaments and practices of voting and elections, which is problematic for practical and theoretical reasons (Sen 2009; Dryzek 2000). Practically, this ignores the wider role of functioning public reason, which can be seen representatively through an independent media. Sen (2009, p. 336) argues this has four essential functions which improve the quality of people's lives: it helps people communicate and learn about each other and the world; it provides information and critical scrutiny of authority; it protects and highlights the plight of the vulnerable, encouraging insulated elites to act; it aids "informed" and "unregimented" value formation through communication and debate. Thus, a fully functioning democracy in terms of elections and voting can still be undermined by a state controlled or corporate compromised media. Theoretically, limiting democracy to these Western institutions/practices incorrectly identifies democracy as some kind of Western invention (Sen 2009). This narrow definition of democracy also risks the theoretical attenuation of democracy through Kenneth Arrow's (1963) and the social choice theory charge, that any aggregative democratic mechanism is inherently subject to manipulation and/or regression into dictatorship (Dryzek 2000). A broader understanding of democracy (Sen 2009) and a discursive one (Dryzek 2000), helps to overcome these issues.

This broader understanding of democracy involves three themes of political participation, dialogue and public interaction (Sen 2009). This includes free speech and a free press (Habermas 1996), access to information, toleration of dissent and a public sphere including social movements and "deliberative enclaves" of resistance or mini publics, where vulnerable and oppressed groups can communicate in confidence, raise awareness and develop strategies, or in less stratified societies differences can be maintained and celebrated (Mansbridge 1996, p. 47; Fraser 1990). Dryzek (2000) characterises this as a re-conception of the public sphere where discourses, interact, compete and rise/fall in salience and have impacts on legislation. Examples of these discourses include that around family law which has moved the private/public boundary making some (not enough) progress on domestic abuse (Fraser 1990) and environmental discourses which have resulted in clean air acts and other legislation (Dryzek

2000). Combined with this broader understanding of democracy, deliberative democrats also need to explain what deliberative democracy is and how it works.

Deliberative democracy has a number of core features, although theorists disagree on these features and emphases. Gutmann & Thompson (2004, p. 7) define it as “a form of government in which free and equal citizens (and their representatives), justify decisions in a process in which they give one another reasons that are mutually acceptable and generally accessible, with the aim of reaching conclusions that are binding in the present on all citizens but open to challenge in the future.” A vital aspect of this definition is the provisional temporal nature of it, which is crucial once we accept there are no transcendental/timeless moral/ethical codes (Rorty 2000).

This understanding of deliberative democracy can be further conceptualised along a number of spectrums (Gutmann & Thompson 2004): an *instrumental* form which focuses on facilitating citizens to make the most justifiable decisions or an *expressive* form which sees value in deliberation as this builds citizenship and mutual respect (Dryzek 2000); a *procedural* form that focuses on how decisions are made (Knight 1999) or a *substantive* form which advocates specific human rights (Cohen 2008); and a *consensual* form that seeks the public good (Habermas 1984) or a *pluralistic* form which seeks the most just forms of living with difference (Gutmann & Thompson 2004; Young 1996).

However, this whole theory can be questioned for wide lacunas on both theorising power and not dealing with coloniality (Banejee 2021). Even within a Eurocentric framework it fails on the way it theorises communicative action as a rational process that can be done in ways that are non-dominating, as Foucault (1982) would argue. Accordingly, Fraser (1990) has critiqued Habermas's (1991) notion of *the public sphere* – the European cafés in which people (bourgeoisie men) would hold forth on the issues of the day and do the public reason – as excluding women but moreover being only one of many public spheres and many social groups doing public reason. Fraser (1990) also argues that these idealised public sphere ideas do not automatically translate into policy and that this would not be desirable anyway as it would entrench bourgeoisie power. Another issue is this ignores the role of affect and emotion in decisions, which is a particular problem for the left which tends to still work on facts and providing information, while the right and far right seem to understand this factor more and exploit it (Wayne 2021). Looking beyond Europe, these men doing public reason might/might not have been aware their coffee was produced by enslaved people (Banejee 2021). Thus, the way Habermas presents this public sphere has a double elision in occluding precisely which groups were doing public reasoning within Europe, but also the brutal colony, with both elisions enabling the very form of public reason he idealises. These problems with Habermas are also issues with Foucault who curiously never applied biopower to the increasing control of women's bodies from the 16th century onward (Federici

2004) and employed similar European reading lists as Habermas. These elisions and lacunae can be applied to deliberative democratic theory more generally.

Deliberative democrats claim their theory has a nuanced view of power and that procedural design can limit domination, by, for instance selecting less partisan participants (Curato et al 2017). There is a contradiction here as this exclusion of more partisan participants would likely remove some of those most affected by injustice and more radical solutions. It is therefore an act of power in setting boundaries of discourse. This relates to the age old question of *who shaves the barber* or *who polices the police*, and there is not much reflection on this, with deliberative democrats (see Renwick et al 2022 for instance) like many mainstream democratic theorists not really analysing their own power (Koelble & Lipuma 2008). This is a form of subject/object division and thus an implicit adherence to Quijano's (2010) and Patel & Moore's (2020) binaries and *great thought processes* detailed above. Finally, there is a troubling and unquestioned assumption that the state is the *legitimate* user of force (Curato et al 2017), which in settler colonial states is highly problematic as the state is often the main problem (Mignolo & Walsh 2018).

Deliberative democracy forums might work in places that have never been colonised but run into different but connected problems in post-colonial and settler colonial states. Estes (2019) details how deliberation around the DAPL were compromised from the start, and reflected a longer history of *deliberation* via treaties which were always one-way and used as a method of control and expropriation by the genocidal US state. Banejee (2021) connects this to the US state firstly refusing to sign the UN declaration of Indigenous Rights, only to subsequently sign it, but specify they would consult with leaders of Native American groups but not require their consent. In post-colonial states extractivism continues on indigenous lands as well as broader injustices/inequalities with the main difference being that it is local elites in control of the state, all the while encouraged by the imperial metropole (Koelble & Lipuma 2008; Fanon 1963). More broadly, there can be no reasonable deliberation between those that see land as property and a resource to extract from, and those that see the land as a relational field of which they are part, as these are incommensurate ontological and epistemic positions (Banejee 2021). Unfortunately, deliberative democracy as a product of the Eurocentric academy fails here as it cannot deal with a pluriverse it does not recognise. However, this does not mean we should give up on deliberative democracy but rather reimagine it, deepen it, and decolonise it.

Thus, in a constructive spirit this thesis uses Dryzek's (2000) deliberative democratic ideas but in a specifically decolonial way. For example, Dryzek (2000) talks about increasing/deepening democracy along three dimensions: extending the franchise, or the number/groups who are involved in decisions

that affect them (Rorty 2000); extending the scope of issues and areas of life that are democratically discussed, or democratically excluding these from purview; and increasing the authenticity of control, for the success of deliberative democracy is dependent on outcomes as well as process (Meadowcroft 2004). The decolonial aspects of this would involve a sceptical attitude toward the state while still engaging as the CC demands this (Thombs 2019), but a focus on bottom-up and local processes with a specific direct democracy at the smallest unit, or starting with Fanon's economically damned (Kothari 2020; Mignolo 2007). There should be a focus on economic democracy with more local control of production, markets and housing, for this is where lives are lived; however, currently these are highly hierarchical and unjust spaces (Kothari 2020; Thombs 2019; Albert 2003). Also, there should be a focus on more democratic and fair knowledge production with cognisance that this is a social product, and that the private control of knowledge and suppression of alternatives are epistemic injustices that constitute and connect to socio-political injustices (Kothari 2020; Quijano 2010).

Additionally, this thesis favours a learning and adapting format that works upon the principle that democracy is a verb and that we can always achieve things in different ways and with different methods, as long as these are provisional and fair. For instance, elections are perhaps not the best way of doing things, certainly not first-past-the-post, so these could be tempered by sortition, similar to jury service. This conscious adaptation/ability of social organisation is something indigenous groups still understand and practice (Whyte 2017) and human societies seem to have done over the longer arch of history (Graeber & Wengrow 2021), implying we could do this again. Finally, and crucially, decolonial democratic systems will be unique to a place and time, serving those fairly within it while not loading costs and exploiting those without. In this way we can approach a pluriverse of many democratic ways of living and being that: interact, but do not dictate; learn but do not school; and lastly are cognisant of human place and interdependence in the wider chain of being (Escobar 2017; 2010).

Accordingly, the methodological approach and methods that follow are designed to practise these deliberative democratic principles, as can be seen below (Table 6). The theoretical approach is to deconstruct through historicization and current counter-examples, then to reconstruct tentatively and provisionally more just options and socio/enviro/economic formations (Avelino & Grin 2017). Methodologically, it takes a qualitative approach but one cognizant of science and social science's oppressive history and connected techniques. Thus, it takes a situated science approach that argues but does not affirm, seeing knowledge creation as a shared social endeavour and the social as a thing of many parts and understandings (Stake 2005). The case study allows research into the complexity that is the social while also allowing for open dialogue on positions and interpretations. The embedded researcher approach breaks down the binary of researcher/researched, highlighting I am a subject

with socio-economic-environmental commitments to a more just world. It also helps break down the binary of expert/lay another impediment to a fairer world (Fischer 2000).

Table 6: The Aligning of Methodological and Justice Concerns

Methodological Focus	Justice/democratic element	Correspondent Aspect of Method
Theoretical Approach	A 'hatchet' and 'seed' approach that overtly rejects academic study as descriptive	A dialogical/reflexive approach to interactions
Methodological Approach	A qualitative approach that reflects on oppressive history of social sciences and rejects various associated techniques of this oppressive use such as the notion of objectivity	An admission of my data's contingency and my power as 'editor'. To mitigate this various techniques of triangulation/reflexivity are employed
Case study approach	A method and object of research that allows for complex, ecologically valid data to be gathered in a dialogical way	Communicating openly with participants about my thoughts, positions and conclusions in ongoing way
Embedded research	A commitment to making the world a better place through my actions and interactions	Openly explaining in placements my position and commitment to social/environmental justice and how I would be an advocate as well as observer. In interviews taking a dialogical and feminist approach that is open about position but respectful of difference

Thus, this thesis rejects the notion that the ends justify the means as part of the Cartesian thinking in separating process/outcome. Instead, this thesis aims to fuse this binary and proceed as if the ends are the means and the means are the ends. The next section will elaborate on the specifics of how I intend to do this.

3.3: Research design and case study approach: Methodology

This is a study of the theory/practice of justice and governmentalities, or how we are ruled and respond to this rule. Therefore, a central concern of this project will be discourses and language and how these shape/constrain, but also enable and empower. This paradox of discourse both freeing/constraining links to Foucault's and Habermas' contradictory conceptions of discourse. However, as Michael Moorcock (1992, p. 463) once wrote; "the nearest we ever come to knowing the truth is when we are witness to a paradox." Nevertheless, this thesis moves beyond this Eurocentric dispute, for a crisis rooted in coloniality, with its impacts endangering the lives in the Global South now and more seriously in the future, cannot be solved by theories and thinkers from this privileged space alone. This can be framed as a global epistemic injustice that this thesis aims to confront. The following will detail the specific methodological approach this research takes to achieve this endeavour.

3.3.1: A Qualitative Approach

This thesis employs qualitative methods with its focus on language/discourse, a partially socially constructed world and rejection of positivism (Mason 2002a; Haraway 1988). More specifically, as a study of justice and transitions governance, both inherently complex and multifaceted, this thesis must take an overall qualitative approach. Justice is both a social construct, understood differently depending on position and worldview and is also a concept that is difficult and problematic to quantify. In addition, the governmentality approach is an examination/excavation of rationalities, mechanisms, techniques and subjectivities, and as such is a qualitative methodology.

The term qualitative study must be unpacked, for historically it has, and currently it can, refer to many types of study. As both a study of justice and with a commitment to justice and democracy, this project is part of what Denzin & Lincoln (2005, p. 3) label the "fractured future" and ninth moment in qualitative enquiry's history. This moment asks the social sciences to become deliberative sites, contesting notions of democracy and difference in the "struggle to connect qualitative research to the hopes, needs, goals and promises of a free democratic society" (Denzin & Lincoln 2005, p. 3). This position is taken with the knowledge that qualitative (and quantitative) research has a troubled history

as a complicit partner in the endeavour to construct, analyse and subjugate the colonial *other* (Neyland 2008; Borda 2006; Smith 1999). As a reaction against this oppressive history, from the 1970s onward, researchers began to respond and this coalesced around three themes (Borda 2006): epistemologically questioning what scientific knowledge could/should know, with more social constructivist accounts gaining ground under the “linguistic” turn, followed by an action/participatory turn, which investigates how to act in an “intelligent and informed” way in the world (Reason & Bradbury 2008, p. 5); deconstructing the binary of theory/practice with the latter elevated and a re-emphasis of practical knowledge to act on/improve the world (Reason & Bradbury 2008); and deconstructing the binary of subject/object to show it as a positivistic device that occluded the power plays between researcher/researched, with the implication that notions of objectivity and neutrality support the unjust status quo (Borda 2006).

As part of this “fractured future”, there are two concepts that must be explicitly addressed. The first is representation, or what is it that I can say about my interviewees/observed participants and what I should say. I cannot see through my participant’s eyes and as social meaning is time and place dependent it is not reproducible, which means that representations are co-produced (Sanchez-Jankowski 2002). Thus, I believe I can interpret the discourses that are employed/represented. The second connected issue concerns my role as a researcher and how I reflect on this influence and the co-construction of the data. I accept I have a position (and believe I have made this explicit) and this may influence/be influenced during this study’s interactions. Therefore, in the spirit of reflexivity I will subject my own views to governmentality analysis at the beginning of the primary research period and towards the end, with reflections and explanations regarding any revisions made (Appendix 2).

Thus, with these considerations, the qualitative enquiry in this project can be broadly defined as an enquiry that: locates the observer in the field of enquiry; employs a series of material and hermeneutical practices to understand the world; acknowledges that this endeavour is social, with co-produced knowledge, and both discovers and creates the world; and is motivated by a desire to act on and improve this world in terms of human well-being and the ecology of the planet we are part of and rely on (Reason & Bradbury 2008; Denzin & Lincoln 2005).

3.3.2: Multi-Case Study

A broad aim of this research is to explore the scope for local action to facilitate a more just energy transition in England. Thus, it requires analysis of multiple organisations that can be considered diverse enough to be representative of England through the use of categorical variables (Seawright & Gerring 2008; Gerring 2006; Yin 2009). The cases initially proposed consisted of community energy organisations in the South East of England with a spatial variety of: size town/city; demography and affluence; urban/rural location; local politics, and topography and natural resource potential. This part of England has a higher number of CREOs than some other areas of the England. Focusing on the South East was also a stipulation of this project's award. Figure 7 below, depicts the type of CREO with some overall details of the numbers of people involved, while Figure 8 depicts information on total energy generation of England's CREO sector and more particular data upon the type of renewable energy, location and amount of energy generated.

Figure 7: CREOs in the UK (CEE 2020, p. 11)

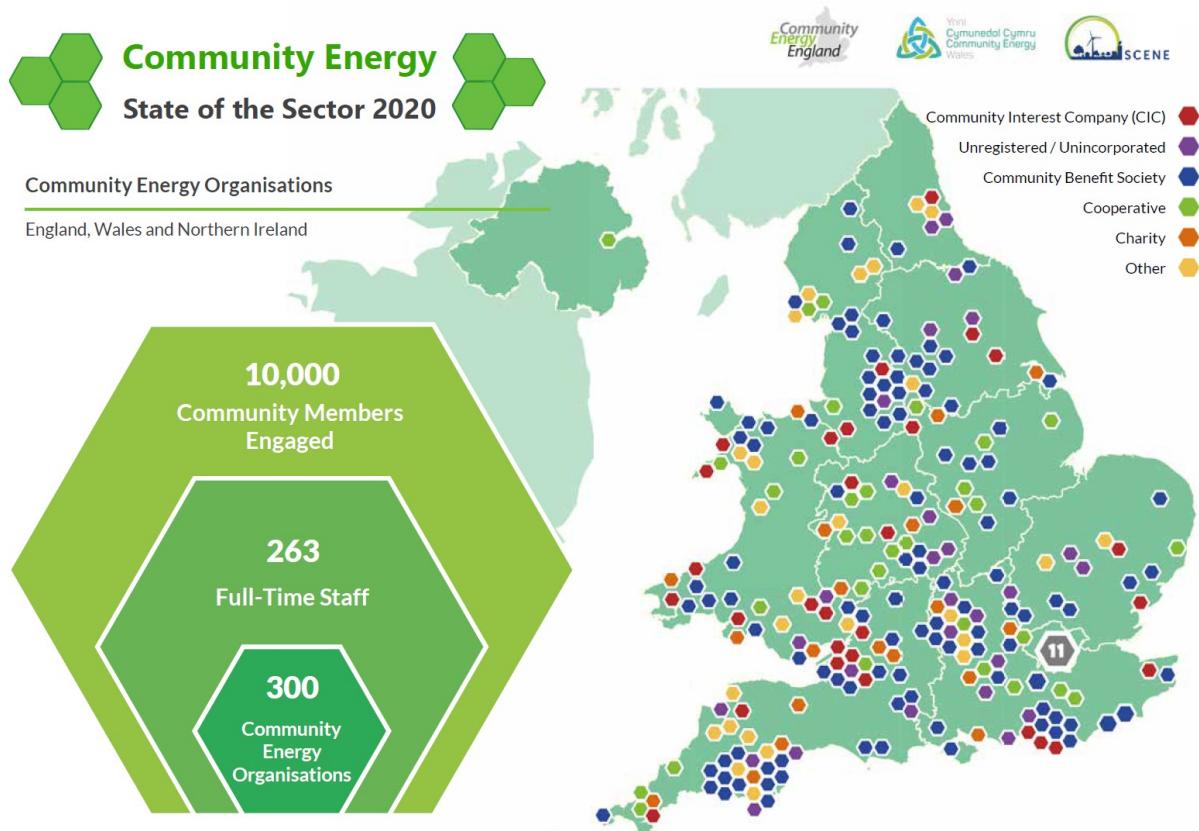


Figure 8: CREO electricity generation in the UK (CEE 2020, p. 14)

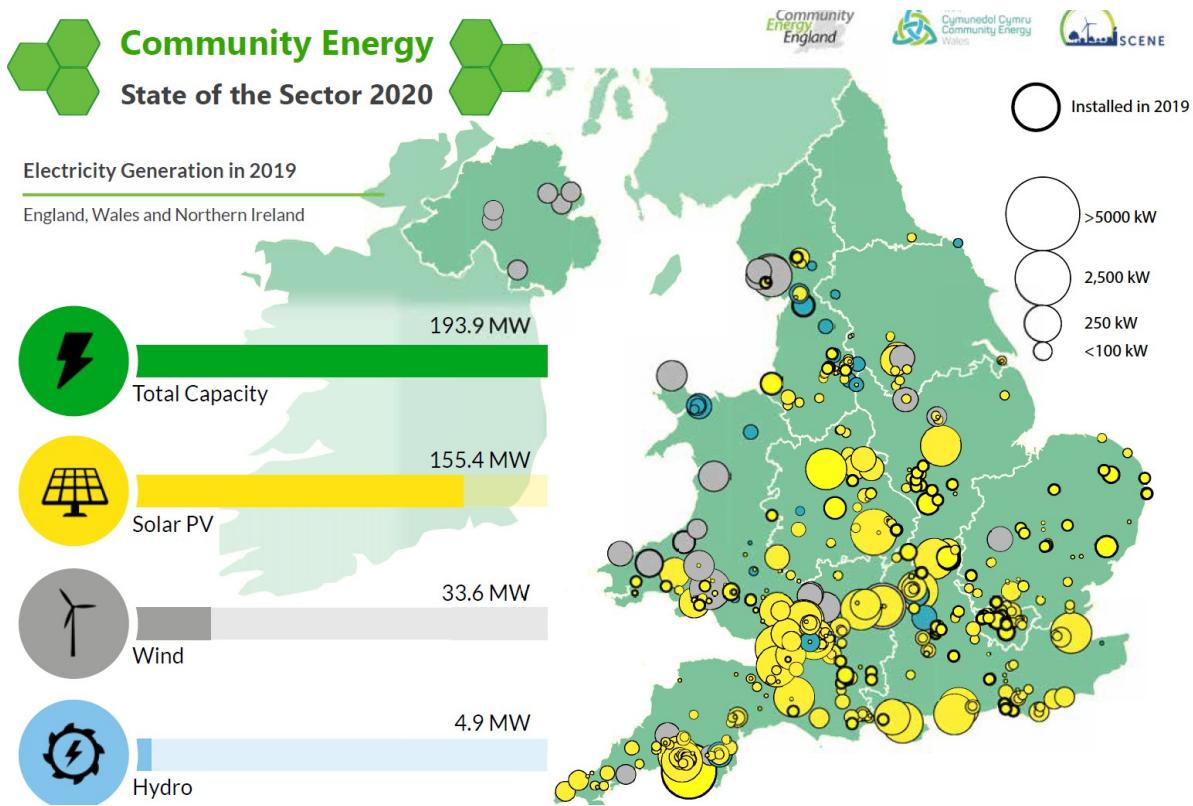


Figure 8 data points show individual CREOs which in this thesis are defined as cases and as such the main unit of analysis. A case study can be defined as an empirical inquiry into a contemporary problem in its natural setting and involves the gathering of a variety of data at least in part by personal observation (Scholz & Tietje 2002). A case can be considered the process of enquiry and the product; however, is not a methodological option but the focus of study (Stake 2005). A case study involves two elements, a unit or case (the CREO in this study) and a wider sample (the CREOs across England), and while there is no fixed number of multiple cases before a multi-case study becomes cross-case, there are trade-offs (an upper limit of 12 is offered by Gerring 2006). Studying one case in-depth provides rich multi-faceted information, but is less useful for generalisability, while the more cases add generalisability but lose resolution (Gerring 2006).

Case study methods aim to describe and understand (Woodside 2010) human activity which can be interpreted more effectively in the context, time and place it occurs (Gillham 2000), which corresponds with governmentality aims to observe and understand events/eventualisation (Ettlinger 2011). This action often involves blurred boundaries (Gillham 2000; Yin 2009) and this is certainly the

situation in the CREO sector, where individuals are often directors of multiple organisations and often two or three organisations work on the same project. However, we can consider the case as a system with features within, having boundaries and an outside, even if these distinctions are blurred (Stake 2005). Overall, the aim is to capture the complex meanings of a case in a narrative detailed enough to enable readers to both understand the case as presented, while also being able to draw their own conclusions (Stake 2005).

Scholz & Tietje (2002, table 7 below) offer a schema which further classifies case studies and this thesis applies this schema in the following way. It adopts an embedded/multi-case design as this will allow the more detailed representation, an action research/deliberative approach (Reason & Bradbury 2008) and the ability to generalise. It follows an instrumental motivation (while recognising the intrinsic value of each case) as the aim is to both push the EJ and ED agendas and elicit lessons for the CREO sector (Stake 2005). It adopts an exploratory/explanatory epistemic approach as the aim is to build/test theories, while the overall purpose is research for action on both the CC and justice (Reason & Bradbury 2008). The data collected/analysed will be qualitative and the format will be ground-breaking as both the overall approach and subject area are under-explored. Finally, the synthesis will be methodologically driven following a governmentality analysis (Scholz & Tietje 2002, p. 10; Stake 2005).

Table 7: Case dimensions and classifications (Adapted from: Scholz & Tietje 2002, p. 10)

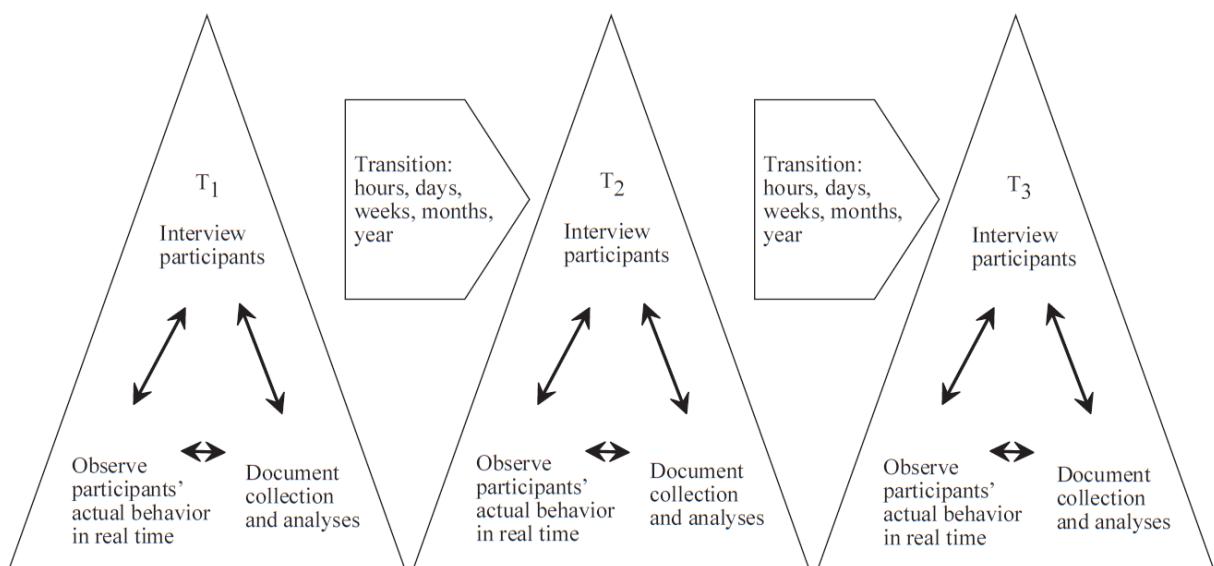
Dimensions	Classifications
Design	Holistic/ <i>embedded</i> Single/ <i>multi-case</i>
Motivation	Intrinsic/ <i>instrumental</i>
Epistemic status	<i>Exploratory</i> /descriptive/ <i>explanatory</i>
Purpose	<i>Research</i> /teaching/ <i>action</i>
Data	<i>Qualitative</i> /quantitative
Format	Structured/short vignettes/ <i>ground-breaking</i>
Synthesis	Informal/empathic/intuitive/formative/ method-driven

There are a number of advantages to this approach, including a deeper understanding of the case/issue in question and more deliberative accountable outcomes. A deeper cognizance is aided when a case study is conceptualised on three levels each with their own importance: the intuitive or holistic level involving an “encompassing and empathic understanding”; the conceptual or theoretical level of analysis where models are constructed that allow different types of knowledge to be

integrated; and an explanatory level where the primary and secondary data are gathered and analysed (Scholz & Tietje 2002, pp. 31-32).

The case study approach also allows for a process of triangulation, which involves the direct observation of the case environment, deliberation with participants for their perspective on events and analysis of written data and documents (Woodside 2010). This process continues iteratively over the time spent studying the case and allows access to presentational data (appearances and set answers) and to operational data (spontaneous conversations/activities) (Woodside 2010). However, it must be stressed this is not the search for unified truth but differing rationalities and discourses. This is because people have different positions (gender, sexuality, ethnicity, ability and class) and worldviews, so they experience reality differently, thus ethnographic “truth” is seen as a “thing of many parts” (Angrosino 2005, p. 731; Stake 2005). Even more positivist positions see triangulation as a way to gain more accurate accounts from different perspectives (Woodside 2010; Brewer 2000). However, more radical social science sees a “diversity of perception” reflecting the differing “realities people live in” (Stake 2005, p. 454), for instance seeing land as property and a resource versus seeing it in a relational field (Banejee 2021; Quijano 2010). Figure 9 below, depicts this ongoing process of triangulation.

Figure 9: Triangulation in case studies methods (Woodside 2010, p. 7).



The triangulation of case data is core to building resolution and a difficult but worthwhile way of making the process more democratic and collaborative. It can be defined as the process to incorporate many perspectives to clarify, verify and validate (Stake 2005). This is based on how the “linguistic turn” showed how our knowledge is socially constructed; however, it goes further in the action turn where we research in collaborative “intelligent and informed” ways in order to improve the world in the face of injustice and environmental crises set to exacerbate this (Reason & Bradbury 2008, p. 5). Triangulation in this project was ongoing in the embedded cases, dialogical interview technique and in follow-up interviews conducted.

Overall, this multilevel model of understanding cases can be associated with a philosophical strategy of holistic understanding, which is appropriate for the analysis of “complex relationships between natural systems and social or technical systems” (Scholz & Tietje 2002, p. 45), or the dialectic between the socio-environmental (Moore 2015). As such it corresponds with Habermas’ critique of instrumental reason and scientism’s myopic focus on its own methods and epistemology (Habermas 1972), by allowing the analysis to integrate a range of disciplinary, system, ethical perspectives and modes of thought. This includes: natural and social sciences and quantitative and qualitative data; the different systems within a case such as management/finance/equipment and the human factors associated; the different interests involved such as landowners, residents, government employees and statutory bodies; and the analytic, intuitive modes of thinking and tacit knowledge (Scholz & Tietje 2002). Overall, this approach allows a systemic viewpoint, supported by empirical data, pertaining to multiple modes of thought, discipline, and normative perspective. Therefore, it was chosen as the model for case analysis in this project as it is suited to the form of critical discursive analysis used in this thesis, which requires breaching the problematic and historically contingent barriers of various disciplines (Wallerstein 2006). It also serves the thesis aims – a more democratic and just approach to praxis and society.

Due to the time and resource limits of this study and the aim of adding lessons for the sector as a whole, it was decided five diverse/representative (Seawright & Gerring 2008) CREOs would offer the most satisfactory balance of CREO characteristics. These characteristics included the size of town/city, local economics, age and development of CREO, and type/business model of CREO. In terms of accessing cases Mason (2002a, p. 91) talks of the issues of “getting in and getting by”, or gaining access, exiting, managing group membership, relationships and the ethnographic self. Access to a number of organisations in this project was facilitated by a key informant who aided the recruitment of organisations and individual interviewees. Access to other organisations was conducted through a

template email (appendix 2) sent to CREOs within the region identified according to the diverse/representative typology identified above. Exiting a participant observation site of study can be tricky for a number of reasons (including becoming emotionally/ideologically committed), so this was negotiated at the beginning and managed, for instance by producing a report for the organisation toward the end of the study (Neyland 2008; Mason 2002a).

However, circumstances truncated these plans as the pandemic struck and lockdown was announced in mid-March 2020. As a result, the physical size and extent of these case studies was constricted. I completed one case study with ESC in Hastings, two weeks of a placement with BHESCo (this was prematurely ended by the pandemic) and completed a distance internship with CEE the national CREO body. Table 8 below, provides more information on the characteristics of the three cases examined in thesis with two local and one national organisation.

Table 8: Participant observation, case studies and research questions addressed

Institution	ESC	BHESCo	CEE
Type of institution	Energy Co-op	Energy Co-op	Advocacy/lobbying/research organisation
Level/size of town	Local/small town	Local/medium city	National
Local Economic Situation	Inclusive of some of the most deprived areas in England	Inclusive of some of the most deprived areas in England/University and London commuter city	N/A
Age of CREO	Founded in 2012	Founded in 2014	Founded in 2014
Funding Model	Partially grant funded/income from generation/payments for energy advice	Pay-as-you save model that targets homeowners to upgrade their energy efficiency/income from generation/payments for energy advice	Grant funded/membership payments
Headline Impacts	6 ongoing renewable projects/Raised £400,000 in community shares/£30408 of energy savings/87 tonnes of carbon saved per year/150 shareholders	52 completed renewable projects/raised over £1,500,000 investment /£242,684 of energy savings/469 tonnes of carbon saved per	lobbied Government to extend the Feed-in Tariff (FiT) 2019-2020/built a CREO impact database/publish annual state of sector reports

		year/ 375 shareholders	
Participant Observation time/type	3 months 2.5 days a week (onsite and in pop ups and foodbanks).	8 days (onsite)	3 months 4 days a week (remote)
Research questions addressed	1, 2, 3	1, 2, 3	1, 2, 3

Although the pandemic disrupted this research there remains sufficient variety across the cases to help address the thesis research questions and make useful comparisons. As can be seen above in the headline impacts and the funding models, ESC and BHESCo are at different stages/directions of development. Also, due to differing mission focuses connected to the respective demographics of Hastings and Brighton, ESC was arguably not in position to replicate the model employed by BHESCo. This is not to say they were completely different as both worked on energy advice and fuel poverty mitigation. However, ESC had more of a focus on energy advice and reducing the costs of energy, while BHESCo did more work on sharing the benefits of energy. These focuses can be seen as differing aspects of EJ that in turn impact the notion and construction of justice that is being practised. This contrast helped to address R1 and O1. In addition, the policy and regulatory challenges of these differing areas (energy advice/pay-as-you save) contrast and this helped to address R2 and O2. Finally, CEE as the nationally focused institution provided a case and empirical data that primarily addressed R2 and theoretical aspects of R1. All three case studies and 27 interviews contributed to addressing R3 and in positing subjectivities and environmentalities.

3.3.3: Action research/embedded researcher approach

The approach proposed in working with these CREOs is that of an embedded researcher volunteering within the group. As stated, my environmental values and justice approach precludes any notion of an external, disinterested researcher. Indeed, environmental enquiry has an inherently normative element (Scholz & Tietje 2002; O'Riordan 2000). The more specifically normative nature of transitions

research, which asks what the future *can*, *could* and *should* look like (Avelino & Grin 2017), means one takes a position even if this is unspoken. Initially a participatory action research methodology was adopted as this has a specific commitment to justice (Lacey-Barnacle & Bird 2018). However, this was not appropriate as the core participants could neither offer the time nor the effort involved in co-producing research aims and design, nor were these core participants overtly vulnerable/disadvantaged agents (Boog 2003). More ethnographically oriented methods were considered; however, such techniques were problematic in the context of this research design as they produced a tension between the time needed for an ethnographic study of an organisation (Neyland 2008), and this project's aim to study multiple cases so as to be able to draw out patterns in the sector.

Thus, embedded case study methods (ECSM) were adopted as these offer knowledge of local conditions for development of effective policy through empirical enquiry into a contemporary problem in context (Cheetham et al 2018; Scholz & Tietje 2002). These methods have been used in a public health context, where "tacit knowledge is embedded in programming planning and delivery" (Cheetham et al 2018, p. 65). Environmental practitioners and people more widely, hold tacit knowledge (Catney et al 2013); therefore, this thesis suggests standard interview practices would likely omit information that could be discovered through ECSM. As stated, these methods also allow the integration of intuitive and analytical modes of thought. Cheetham et al (2018, p. 65) see this as the integration of the *worldview* of the organisation, with the academic perspective of the researcher. Scholz & Tietje (2002) agree, claiming case members are effectively experts on their organisation from an intuitive perspective, while the researcher can add their more analytic approach to the study of the case. In this research design this approach helped to integrate ground-up practitioner EJ ideas and principles with, academically constructed notions of justice and, as called for in the literature (Lacey-Barnacle & Bird 2018) and fulfilling a central aim of this thesis.

3.3.4: Covid 19

The Covid 19 pandemic hit Britain in late January 2020 and the UK went into lockdown on the 16th of March. I had just started a three-month placement with BHESCo. I was subsequently told to continue work with them from home. I decided with my supervisor that this would not allow me to fulfil the stated aims of this research and so this fieldwork element was ended prematurely. Similar to many

other PGRs I was forced into conducting online interviews and a distance case study. This presented a series of challenges and advantages. Challenges included technical ones such as bandwidth problems which lead to a need to turn off the video. This exacerbated problems in communication with online interviews where we tend to miss non-verbal cues, which are difficult to follow on screen anyway. This might mean missing the signs of someone becoming stressed or unhappy with the process of the interview. Other problems included those of working from home and the mix of work with other household activities meaning there are interruptions or family exigencies that overtake the process. A more general problem was the heightened stress and illness of the pandemic leading to repeated postponement of interviews and a lack of availability. However, online interviews can be more convenient for both parties and so it extended the range of actors I could speak to, while saving time, money and carbon emissions from travel.

3.4: Data Collection Methods

The specific methods employed in this project included: participant observation including informal field interviews; semi-structured interviews; and documentary analysis. This section will explain the specific purpose and theoretical utility of each method for this project. It is worth noting here that all these methods have histories. These histories often involved oppressive use and related dichotomies of subject/object, subjective/objective and theory/practice that aided this oppressive use, and that this thesis rejects.

In denying the possibility of objectivity/ neutrality, reflexivity is crucial. This reflexivity calls for a critical attitude to location, sensitivity of topic, power relations and the nature of my interaction with my participants (Brewer 2000). I needed to question and be open about how I select issues and perspectives (Mason 2002a; Hertz 1997), or what I am looking for and how I find things relevant. This will be clearly guided by my research questions and aims/objectives and certain issues core to cases (Stake 2005) to be detailed below. However, this was not enough; I needed to write myself into my fieldnotes and reflect on my role in interviews, in order to help show myself and others how I came to certain judgements, conclusions and generalisations (Mason 2002a; Hertz 1997). There is a balance to achieve here somewhere between a lack of reflexivity and solipsism, which is an issue I grappled with over the course of my fieldwork (Reinharz 1997). Overall, I see reflexivity as a solution to the partiality inherent in rejecting objectivity, by making explicit my position and the contingency of my, and my

participant's representations, thus supporting the data legitimisation (Finlay 2002; Brewer 2000). Overall, the aim is to legitimate the data through reflective dialogue and endeavour to engage in the praxis of deliberative democracy. Table 9 below, details how each method addresses differing aspects of my research questions and aims.

Table 9: Methods chosen and how they address research questions (note the bold X denotes this method primarily addresses this question, x denotes secondarily addressing the question).

Method	R.1 How is justice constructed?	R.2 How does the regulatory/policy context impact justice/injustice?	R.3 What kind of subjectivities are posited by these notions of justice and what are the implications of this?
Participant observation/Case studies	X	x	X
Interviews	X	x	X
Documentary analysis/literature analysis	x	X	x

Thus, the two research methods and the broader primary/secondary document/literature analysis all contribute to address the research questions and related objectives of this thesis in comprehensive manner. The next section will elaborate on these specific methods, why they were chosen and how they were used.

3.4.1: Data Collection: Participant Observation

Participant observation can be defined in the following way: researcher immersion in the field for an extended period; the focus on particular sites; regular observation of behaviour on these sites; listening and interacting in conversations and activities; interviewing informants to expand on topics

or elaborate on issues difficult to observe; the collection of documents; gaining an understanding of group culture/behaviour in context; and producing a detailed report based on the above (Mason 2002a; Gerson & Horowitz 2002).

The justification for using participant observation in this project moves from the ontological, through the normative, to the practical. Ontologically, this project takes a worldview that sees social interaction as crucial to who we are and how we understand our world (Graeber & Wengrow 2021; Sioui 1999; Habermas 1984). This worldview implies epistemologically that knowledge is both discovered and created, and that this is a social endeavour that should be democratic (Quijano 2010; Haraway 1991; Habermas 1972). This means that arguably participant observation has the potential to produce better and fairer knowledge. It allows the combining of inductive (for example the natural expertise of the case worker) with analytical (academic expertise) perspectives (Cheetham et al 2018; Scholtz & Tietje 2002), while also combining local and lay with expert and global perspectives (Jasanoff & Martello 2004; Fischer 2000). Normatively, this combination of different perspectives has the potential to widen the energy, scientific and technical peer communities and democratise knowledge creation and control (Kothari 2020; Reason & Bradbury 2008; Fischer 2000).

Once within an organisation managing membership of a CREO became an issue. The choices researchers engaging in participant observation have in this context been characterised as peripheral, active or complete membership (Angrosino 2005). This can be seen as a continuum, from purely observational to wholly participating (Mason 2002a). After a few days in the field, it became clear that neither extreme was realistic or desirable (Mason 2002a; Angrosino 2005). The choices between being more actively involved and less had clear trade-offs particularly with respect to my ability to record and reflect on events. Therefore, it was better for me to maintain a reflective stance, considering my position on a day-by-day and week-by-week basis or to suit the situation (Mason 2002a). This situation changed during my internship, where, as more or less an employee, I had more tasks and duties than in previous placements. This meant I had less capacity to take fieldnotes as events were occurring and had much less time to reflect on events in the moment, as I was taking part more. Overall, this adaptive approach proved useful as insider/outsider status was advantageous in being able to ask certain questions and access certain events (Gerson & Horowitz 2002), board meetings or conferences, for instance.

While in these groups, relationships develop that can be emotionally, bodily and intellectually demanding, and there were instances where I was called to make on-the-spot ethical and moral calls

(Mason 2002a; Gerson & Horowitz 2002). Moreover, these relationships largely determined not just what/how/how much was shared, but also influenced my own interpretations and impressions (Finlay 2002). In order to manage these issues, I committed to regular checking-in with participants to clarify if issues are too sensitive or problematic. Finally, and perhaps most challengingly, I had to manage my ethnographic self (Mason 2002a; Reinhartz 1997), answering such questions as: What identities did I try to adopt? What impression did I aim to make? And how far could I control this? These were not questions that could be answered with any finality and were issues I had to reflect on throughout this fieldwork (Mason 2002a; Reinhartz 1997). For instance, during my time in the foodbanks I was highly conscious of my position as a relatively comfortable researcher, so endeavoured to adopt an unassuming air, non-descript clothing, and listen much more than I spoke. In contrast, when I presented at CEE's summer conference, I felt nervous, but also aware that I am an expert in my field and so acted like one.

During participant observation data collection fieldnotes should include anything of interest (if in doubt write it down), starting with who, what, where, when, why and how (Gillham 2000). This can lead to observing micro-patterns that can embody power dynamics, which is a crucial part of any ethnographic analysis, but more broadly show how national level policies are “translated, interpreted and implemented” (Gerson & Horowitz 2002, p. 220). This information is fundamental to transitions and EJ research as most renewable infrastructure is devolved and all energy infrastructure/policy has local impacts (Geels et al 2016; Lacey-Barnacle & Bird 2018). These fieldnotes took the form of mental, jotted and fully written notes, with mental and jotted notes written-up as soon as possible, including: description, impressions, reflections and feelings, as well as incipient links to theory and relevant literature (Mason 2002a). In analysing these fieldnotes, I read/reread with the aim to more tentatively link the data to patterns/categories, literature, wider theories and my research questions; however, this was not a one way process but a recursive one (Gerson & Horowitz 2002; Mason 2002a). For instance, in investigating the organisational structure of CREOs I compared this to Hicks & Ison's (2018) typology, then to deliberative democratic theories (Gutman & Thompson 2004; Dryzek 2000), then back again to the fieldnotes (Appendices 4, 5 & 7).

3.4.2: Data Collection: Dialogical Interviews

We have been labelled an “interview society” due to the ubiquity of interviews used in general society and in academia (Fontana & Frey 2005; Mason 2002b). Defining interviews academically range from structured, where question answers are limited and coded in order to make them quantifiable, to in-depth unstructured, where there is very limited guidance from the interviewer and the aim is to gain access to the interviewee’s perspective (Fontana & Frey 2005). The choice of the type of interview is linked to the theoretical position underpinning the project in question. For instance, the structured form in trying to obviate the influence of the interviewer by demanding fixed question orders/forms and limited answers, originates from a positivist tradition that believes there is an objective reality that one can describe and measure (Fontana & Frey 2005). The more unstructured formats are linked to social constructivist traditions, which focus on the interview as a site of co-construction of knowledge (Mason 2002b).

However, within this latter tradition there are quite contrasting positions. On the one hand, there is broad agreement that in less structured forms of interview the interviewee is the focus and the interviewer should be flexible in question order, follow-ups and have patience in letting interviewees answer (Fontana & Frey 2005; Mason 2002b; Gerson & Horowitz 2002). On the other hand, some theorists are firm that the interviewer should not answer questions on issues or make judgements that might influence the interviewee’s answers (Gerson & Horowitz 2002), while others argue this divorces subjects from their social context (Wilkinson 1998) or is a masculine paradigm, which is inimical to feminist research due to its one-way, non-reciprocal nature (Oakley 1981). Further, this more subtle attempt to remove the interviewer’s influence underplays the role of inherent co-construction that is the interview, which includes two subjects located historically and geographically, with (un)conscious motivations, desires, biases and emotions (Fontana & Frey 2005; Wilkinson 1998). An alternative is to be cognizant of hierarchies (ethnicity, gender, class, ableness and sexuality), of which the interview is part, thus focussing on the *how* as well as the *what*, and be reflexive and open about this (Fontana & Frey 2005; Kvale 2006; Hertz 1997). This feminist, dialogical method of interviews was adopted in this thesis with my position made clear and any questions posed to me answered as best and openly as possible.

A more troubling question regards the individualising nature of the interview itself. Mason (2002b, p. 235) asks, does this focus on the interview help to support the idea of the rational individual and their agency, in effect re-producing an “oversanitzied” and “overcoherent” story? Gubrium & Holstein (2001) answer yes, pointing out that this focus on the individual is highly contingent both geographically and historically. These researchers draw on the work of Foucault (1972, p. 12), who in

rejecting the rationality of connaissances (academic and applied disciplines) and universal rationality more generally, also rejected the notion of human rationality, the connaissances' subject, as "two sides of the same system of thought." Foucault (1972) argues that Marx and Nietzsche through their theories, psychology, ethnology and linguistics, all act to undermine the teleological tale of progressive human history leading to individuality and liberty, yet this tale is continuously revived in different guises. The interview society, homo economicus, and the more general focus on individuals rather than communities under neoliberal capitalisms, can be seen as part of this teleological, rationalist drive. Thus, qualitative research should move beyond individual perceptions and experiences and look more toward social organisation and action (Atkinson & Delamont 2005).

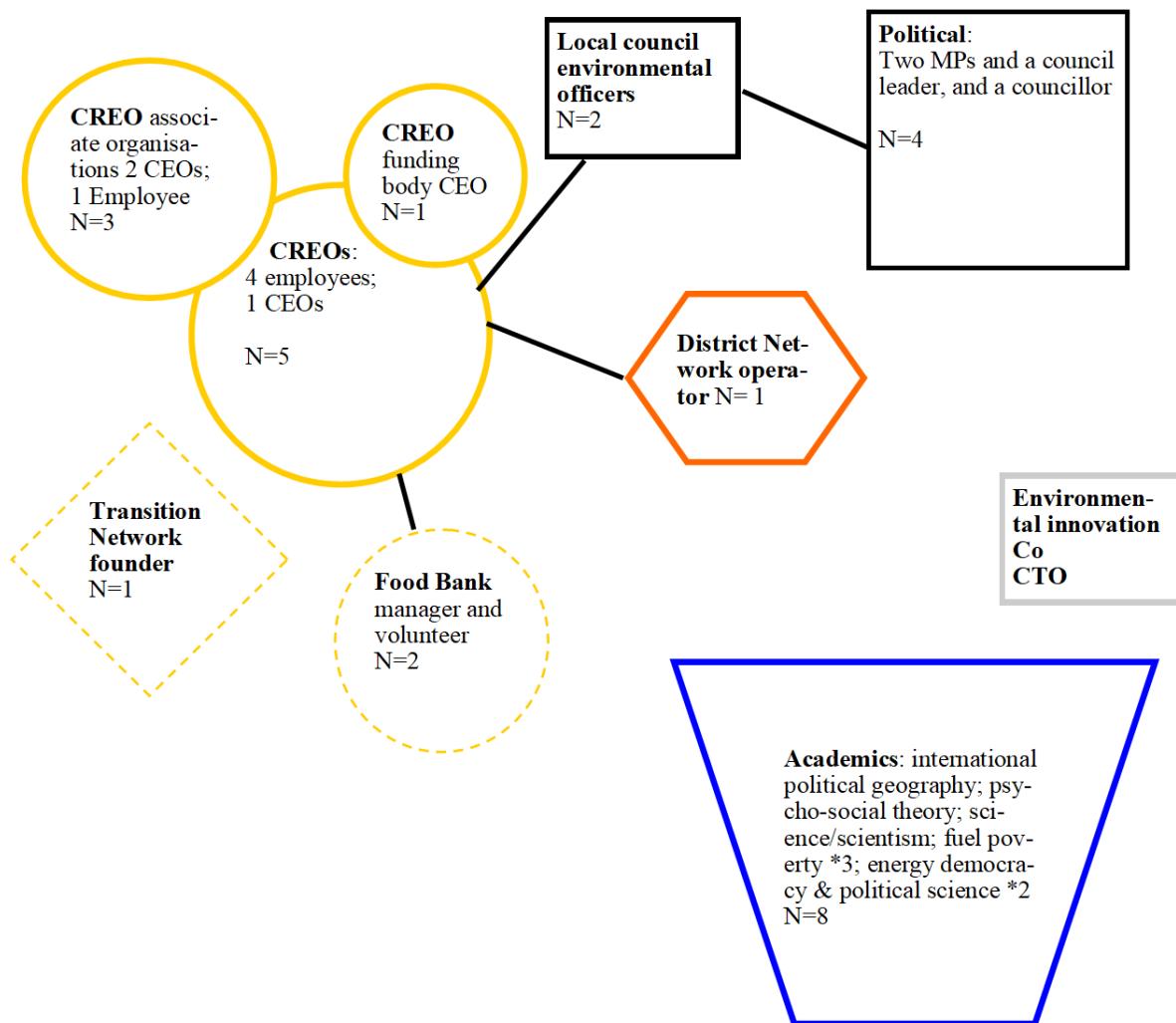
Therefore, interviews in this project are included as an adjunct to participant observation, with its inherently more dialogical and less individualising nature. This inclusion will reflect on the issues above and those that arise in the field. More practically, interviews will complement the data gathered from participant observation as interviews can be drawn from a wider area and more strategically (Gerson & Horowitz 2002) than the more serendipitous access to participant observation sites (Mason 2002a). These interviews will be semi-structured, as I already had guiding theories to be tested, meaning an interview schedule/guide was required.

The sampling process for the interviews was connected empirically and theoretically to the case study selection. As the aim of this project is to understand/promote EJ, and CREOs and understand the wider energy policies/markets/regulation role in EJ, the respondents were selected from this milieu, with the aim to achieve a relevant range of constituents, enabling me to make comparisons across contexts (Mason 2002b). This form of sampling has been variously described as instrumental (Reed et al 2009), generic purposive sampling, or strategic sampling (Mason 2002b). This sample is also linked to the wider theoretical positions of this thesis. In terms of governmentality, this sample aimed to incorporate constituents likely to employ a variety of rationalities, forms of knowledge, and views on the techniques/technologies of governance. Following Habermas' (1984) theory of communicative action, the sample sought to include various democratic practitioners and theorists. Thus, this sample included MPs, local government councillors and relevant employees, District Network Operators (DNO) employees, academics, local community energy activists, regulators and energy company representatives.

An email template was prepared (appendix 3) that would be sent with minor adaptations then work began on the semi-structured interview schedule. This was trialled firstly with a PGR colleague, then

with and through discussions during this project's period with ESC, in late 2019. Once a satisfactory interview schedule was completed (Appendix 10), speculative emails were sent. There were three main groups targeted beyond community energy activists/employees, which were: politicians at local and national levels; council employees with an environmental brief; academics with expertise on climate change, energy justice/democracy and science; business groups involved in environmental innovation and regulators or adjacent groups. The number of interviews envisioned was 15-20. It was also decided to use each interview to implicitly snowball onto other interviews, if a respondent mentioned someone of interest fitting into the above stakeholders, or even better explicitly, if they introduced this person. Time spent campaigning for a Labour candidate in the December 2019 election was also used get an interview with a council leader. Work with ESC in Hastings placed the writer twice a week in the local food bank. Through this two interviews were arranged with a volunteer and manager of the food bank. This was an emotionally moving experience and changed the direction of the project: it was at this point the structure of the project became clearer and that the first empirical chapter would be on fuel poverty/poverty, which connects to the decolonial position of beginning and focusing on the most impoverished and oppressed (Mignolo 2007). This in turn led to interviewing a number of academic experts on fuel poverty. The figure below depicts the number (N=27) and types of interviewees.

Figure 10: The Amount (N=27) and Type of Interviews (note that one actor was both an environmental officer and CREO employee).



The range of interviews depicted above demanded adaptations of the interview schedule to make to it correspond to each interviewee. This was because with different stakeholders there would be different knowledge and coverage. For each interview the broadest questions on governance and future imaginaries were retained in all interviews as these questions are core to the whole project – aimed at a just transition (also specifically to RQ.2 & RQ.3). After the pandemic hit, the first few questions would be based on this because it involved basic justice, as C19 affects those most vulnerable most severely. Also, the Government response, although hardly a pandemic blueprint, displayed that government could and would do things quickly and extensively (in contradiction to

neoliberal nostrums) and that society's behaviour and attitudes could change quickly. Therefore, the pandemic response concerned R.1, R.2 & R.3. Questions specific to particular actors would link to both their area of expertise/knowledge but also specific research questions. For instance, the two MPs and council leader were asked questions about local and national democracy and how far this was adequate, which addressed basic conceptions of justice and how governance arrangements impact this (R.1 & R2).

3.5: Data Analysis Strategy

In order to build knowledge, it is essential to use tools and methods that fit both the context of study and the overall ontology guiding the project (Sovacool & Hess 2017; Weiss & Wodek 2003). Above I have detailed these aspects with a governmentality framework exploring aspects of EJ and ED informed by world ecology and decolonial justice perspectives. These radical justice perspectives are justified by both the data gathered in this project and by the broader conditions of production. This section will outline how I will apply this framework and justice perspectives in the analysis of the project's data.

A first aspect of this is the anti-essentialism that is core to governmentality approaches (Wagenaar 2011). Categories such as money or energy are not fixed and objective categories but slippery and shifting concepts across time and space. Discursively, this results in certain categories/sub-categories being either organised into or out of certain discursive formations in what has been described as *homogenisation* or *heterogenisation* effects (Hajer 1995). An example dealt with in the previous chapter is how conflict, politics and morality are largely organised out of the mainstream concept of energy. Therefore, this project will interrogate categories specific to a just energy transition including energy, democracy, neoliberal capitalisms, money and debt, justice, community, technology and innovation, and finally the human subject. By opening up these categories it is argued we can find interesting and justice associated occlusions and elisions. For instance, technology is presented as valueless and neutral yet, as was argued above and will be throughout this project, technological choices and wider energy systems have values and politics embedded in them. A broad example of this is the neoliberal tech-fix approach that excludes socio-political solutions and often displaces problems through space and time (Moore 2015). For example, this approach was salient in analysis of the UK government's pandemic response in which a vaccine-centred strategy was decided on then not

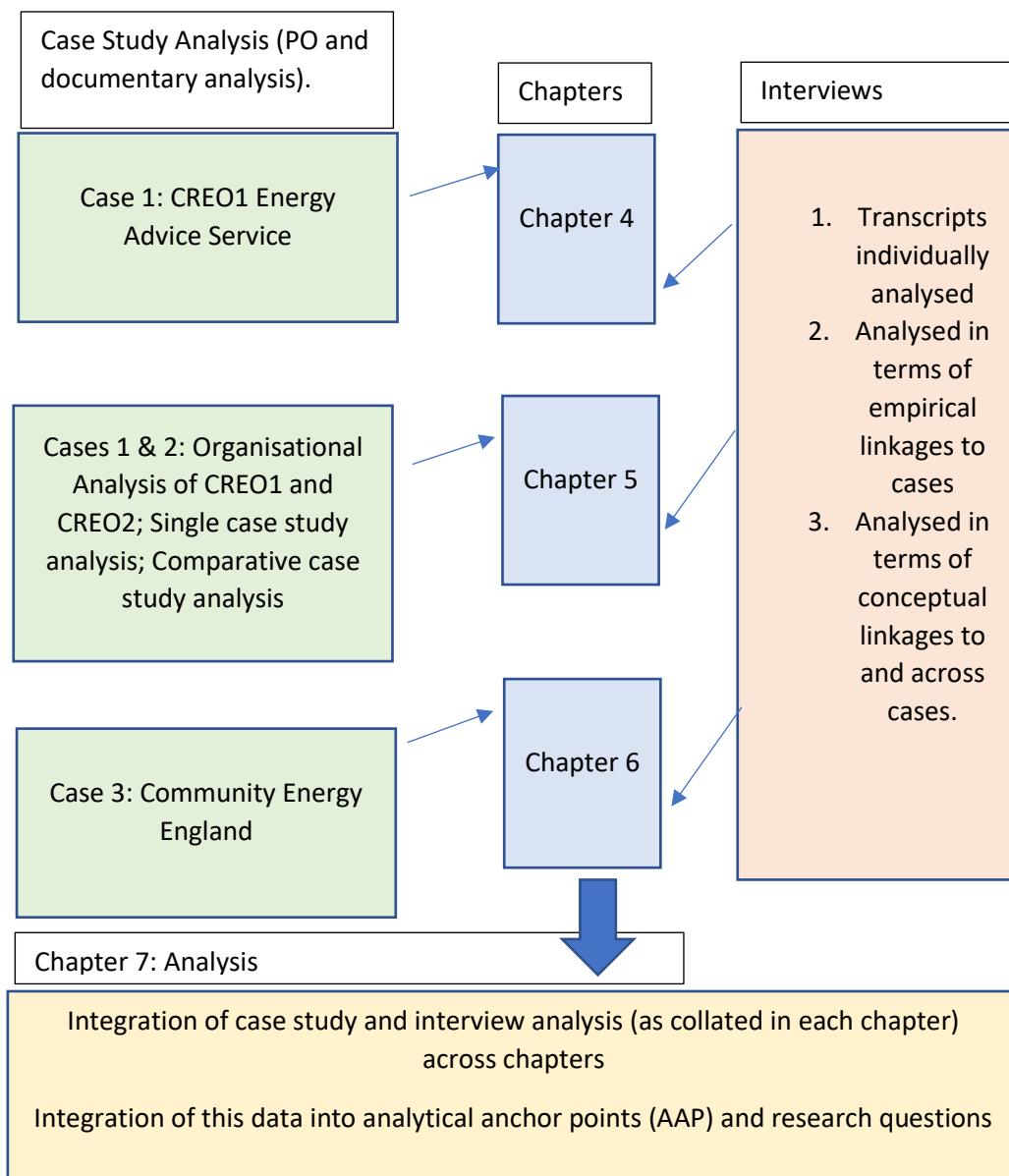
shared globally; therefore, allowing variants to emerge. In energy terms we see this approach in the mainstream and governmental approaches to mitigation which are largely lists of technologies that might work in the future and do not affect business as usual (HM Government 2020).

More specifically, the thesis will employ an amended version of Ettlinger's (2011) analytical anchor points (AAP) which are derived from governmentality principles. As Ettlinger (2011, p. 542) argues we are not just governed by institutions and ideologies but also entangled in quotidian regimes of practice with their own "specific regularities, logic, strategy" and rationalisations. The main aim of these AAPs is to cautiously connect these local regimes of practice to wider institutional and ideological dynamics from the bottom-up. This project will use six AAPs that begin with local practices then end with a consideration of guiding environmentalities. More specifically, these AAPs explore: regimes of practices that explore the local and contingent modes and regularities within food banks and CREOs; technologies/techniques of power/resistance and their specific scale; a history of CREOs to understand their conditions of possibility; rationalities of rule/resistance; an external analysis historicising the broader socio-economic conditions of possibility; and finally collating the subjectivities and environmentalities emerging from this data and the consideration of the implications of this (Ettlinger 2011).

This bottom-up approach fits with the radical ethos of this project while allowing for the fundamental contingency of life: however, it also sees how wider material and discursive aspects create conditions of possibility (Fraser 2021; Foucault 1982). It is this space of wider conditions of possibility where competing notions of justice and the human reside, with dominant discourse truncating and limiting these categories and thus human potential and flourishing. This project, in endeavouring if not achieving decoloniality, strives to explore the liberatory potential found in both indigenous practices (Paradies 2020; Sioui 1999) and leading situated science (Haraway 2016).

The specific analytical process of this thesis (figure 11 below) involved case study analysis based on participant observation data, cross-case analysis and the integration of analytical findings from the interview analysis. Throughout chapters 4, 5 and 6 the focus is on CREOs operating at different levels and across scales. However, in chapter 4 *the case* is a service, whereas in chapters 5 and 6 offer organisational case studies of the CREOs themselves and their regimes of practice.

Figure 11: Flow Chart of Analytical Process



The case study analysis of Chapter 4 anticipated focusing on a single organisation but the object of analysis shifted to a specific service provided by a CREO, namely the energy advice service. The case study of that service includes: the energy advice service itself and regimes of practice taking place at the food bank and immigration advice centre (Appendix 5) where this was provided. This was an iterative, concurrent process of collecting and analysing fieldwork notes using Ettlinger's (2011)

concepts of eventualisation and regimes of practice. For example, while the funding for energy advice is for this in isolation (see appendix 3), advisors often had to deal with water bills, general debt and tenancy disputes, or in other words intersecting aspects of impoverishment. In Chapter 5 the case analysis is on the organisations following the same iterative process described above. Firstly, the cases are analysed individually in terms of who they are run by and what for. This is followed by a comparative analysis of two organisations (ESC and BHESCo) exploring the commonalities and differences between eventualisations and regimes of practice. For instance, both organisation encountered similar bureaucratic difficulties with funding their activities (Appendix 7). In contrast, energy advice was a much more significant and daily concern for ESC, while this energy advice was much more peripheral to BHESCo. The case study of Chapter 6 focuses on CEE and involved a different regime of practice at a different geo-political level. Also, my practice changed with a shift from more quotidian observation to more of an employee role as the internship required. This resulting in less observation and more of a focus on activities. For example, synthesising and presenting policy documents or presentations for the CEO of this organisation was a regime of practice for CEE actors that I undertook. As such, these processes and document analyses became objects of analysis of this thesis (Appendix 4), for these often had material effects and implications for both CREOs and EJ/ED.

Interviews were conducted throughout the period of the above case studies. Initial interviews conducted were internal to the case with subsequent interviewees selected from external but connected institutions at different scales and levels. For example, CREO actors from within ESC were interviewed as was a CREO actor from another city on the south coast. Also, a local politician involved in decision making specific to ESC was interviewed, as was a national level CREO Financier. Interview transcripts were first analysed individually using the analytical categories from my conceptual framework (Introduction 1.3). Following this, individual interview analyses were related to each other to identify emergent cross-interview categories, for instance the category of values in chapter 6. Lastly, analytical findings from the interviews were related to the literatures from chapter two and to findings from the cases (Appendices 6, 8 & 9). Different strategies for generating conceptual linkages between findings from the interviews and findings from the case studies were tested. The strategy decided on and which is evident in chapters 4, 5 and 6 was firstly separating case and interviews then categorising them through the governmentality framework (Introduction 1.3), then through the key conceptual categories (Introduction 1.3). This enabled both a linking of data from the cases to the interviews but also a form of consolidation of ideas, from those found in regimes of practice to those in the wider discursive patterns of variously positioned interviewees. For example, Ofgem's evident obliviousness to community/CREOs in part two of Chapter 6 is echoed by statements from I25 & I26

in part three. Thus, each chapter is structured with a description of the case, an analysis of participant observation data followed by interview analysis findings selected according to their link to relevant conceptual categories and broader governmentality framework.

In chapter 7 the thesis returns explicitly to the research questions and associated analytical categories (Introduction 1.1, 1.3). I used Ettlinger's (2011) AAPs to identify salient quotes, examples and/or processes from the empirical chapters with the overall aim to trace the place-based regimes of practice to their guiding rationalities and the wider conditions of possibility of rule/resistance. As I do this, I relate these analytical anchor points to a discussion of the research questions that underpin this research.

3.6: Ethical Approval and Limitations

This research was considered to carry limited risks to participants and institutionally so it went to a Tier 1 university ethics committee of ethical consideration. Potential risks identified included:

- Disclosure of confidential records of personal or sensitive nature
- The disclosure of confidential information beyond the consent given

Participants would be over 18 and not recruited for any other specific/protected characteristic. They were however chosen for their positions. Informed, written consent was sought using a signed participant information sheet. For participant observation, provision was made for short, opportunistic interviews which could form part of more fluid interactions who were verbally informed of my status as a researcher and verbal consent sought.

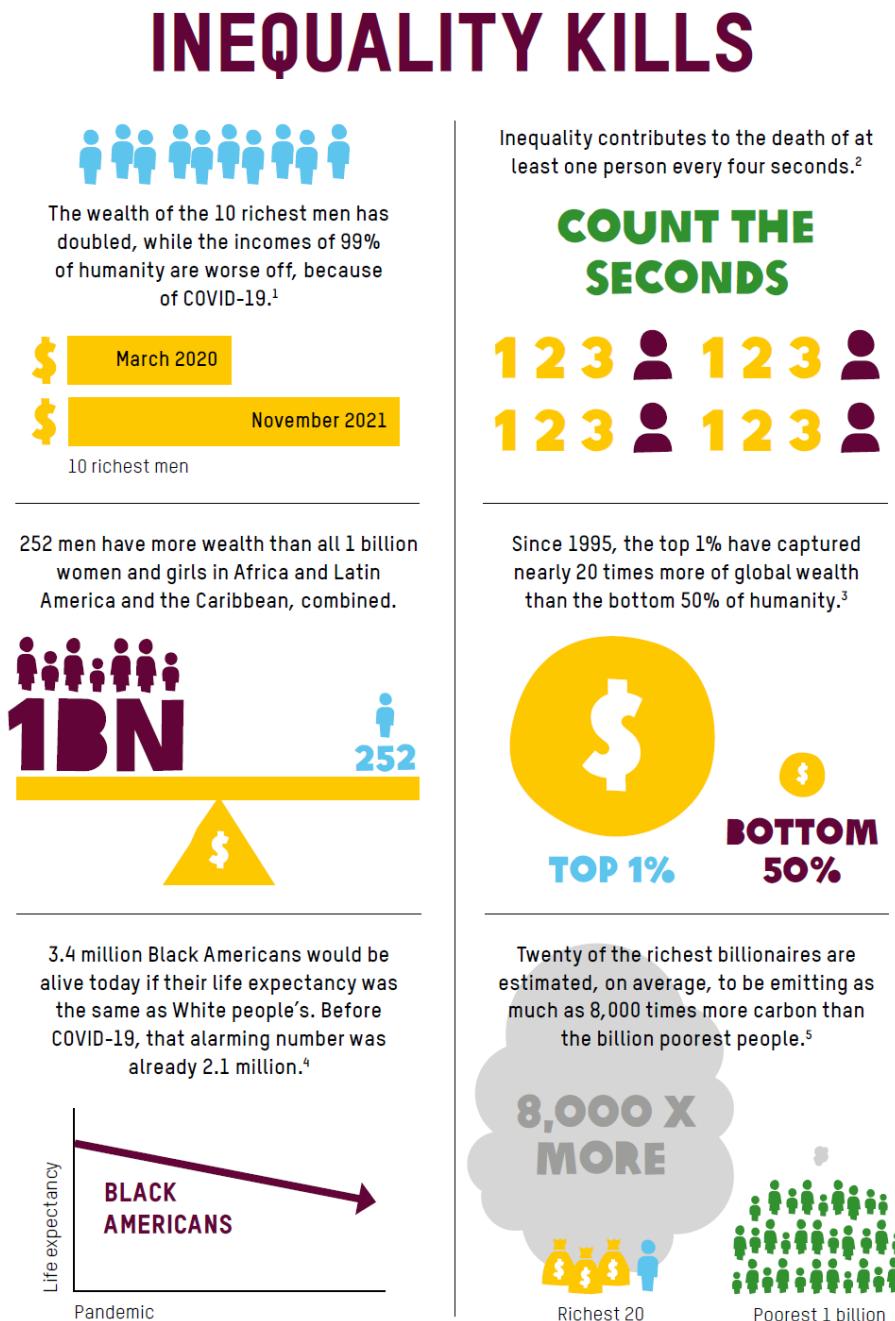
Obvious limits of this research were the time and researcher capacity to study and describe the complexity of the energy system as well as the injustices built into and emanating from it. Covid 19 also severely affected my ability to work in the field and observe *in situ* practices happening in different places. As stated above, my participants' time limitations also limited the scope for a more democratic practice or participatory practice within this thesis. A more fundamental limitation of this project was connected to the decision to position this study as ethically low risk. This meant that I could not interview anyone using the food bank or receiving energy advice as they could be considered

vulnerable. This results in a certain blindness in outlining the energy poor subject and a level of ventriloquism that undermines the ethos of this project. Therefore, this subjectivity was limited to the view of CREO actors, policy and documents and would require follow-up and dialogue with some of these groups in subsequent studies.

3.7: Conclusion

As argued above, the conditions of production and data gathered in this project demanded radical tools. This is why this project avoided the more neutral or limiting applications of governmentality and Foucault more generally (Dean & Zamora 2021), adding normative and justice-centred aspects. As Paradies (2020) details, the world is not improving and egregious injustices blight our society, while this society was historically founded on even worse injustices. Present injustices include (Paradies 2020): 60% of people globally living on less than \$5 a day while eight people have more wealth than half the world; 1.6 billion people living in substandard housing and $\frac{1}{4}$ of children suffer from malnutrition; world GDP has tripled since 1980 yet poverty continues to increase; war and dictatorships are a common feature beyond but abetted by the Global North (Mbembe 2019; Mitchell 2013); epidemics of loneliness blight society and both the US and UK have seen long-term declines in life expectancy (Paradies 2020, p. 438). These dynamics appear to be getting worse with the pandemic and the broader crises-prone capitalisms, as the graphic from Oxfam depicts below.

Figure 12: How the Pandemic has Exacerbated Injustices Globally (Oxfam 2022, p. 6).



These crises are complex but can be broadly connected to capitalisms' class structure, racial, ableist and gendered binaries. The solutions offered invariably make things worse. For instance, the general answer to poverty and inequality is economic growth, supposedly to share the collective *cake*, but really fuelling the upward extraction of wealth, all the while using more and more resources on a finite planet. More specifically, we are offered a tech-fix tendency that only seems able to push problems either aside geographically, as with the pandemic, or ahead temporally, as with the CC. Nick Estes (2019, p. 32) writes:

Capitalism arose under a racist European feudal system. It used 'race' as a form of rule - to subordinate, to kill, and to enslave others - and used that difference for profit making. Racial capitalism was exported as imperialism, including to North America in the form of settler colonialism. As a result, the colonised and the racialised poor are still burdened with the most harmful effects of capitalism and climate change, and this is why they are at the forefront of resistance.

Thus, indigenous groups and racialised poor have become leaders in a fight they did not pick, aiming to address a problem they have little responsibility for. However, it is from these groups and through engagement and dialogue we may find some solutions. This is why this project takes decoloniality seriously.

Chapter 4: Energy Poverty

4: Introduction

This chapter focuses on poverty and energy poverty (EP) in the UK and CREOs' work to mitigate these problems. It is made up of two sets of data:

- A participant observation account of work in a food bank in Hastings and an immigration advice centre in Eastbourne with ESC.
- A series of interviews with three CREO practitioners, a food bank employee and a food bank volunteer.

This data will be analysed using the governmentality framework described in the previous chapters along with the analysis of core categories of interest to this project (1.3). The field work of this project began in November and December of 2019, as participant observation with colleagues at ESC delivering energy advice (EA) in a food bank (FB) in Hastings and an Immigration advice centre in Eastbourne. ESC is a community benefit cooperative based in Hastings and has been working to reduce EP since 2012, while also working with local schools to install solar PV and working with other partners to reduce vulnerabilities (ESC will be profiled in more detail in the next chapter). The case study in this chapter focuses on the EA service itself which will be defined and explored below. The first section below will detail the participant observation of this EA. This will be followed analysis of the interviews of the key actors involved in this EA.

4.1: Participant Observation: Energy Advice Amidst an Extractive System

EA aimed at lower income groups is a core function of many CREOs and for many other organisations in deprived areas. This EA can be considered practical action that pertains to EJ principles 1-4: it tries to help people find more *affordable* energy costs and lower these through soft measures such as draft proofing; it works on *accessing* energy by advising and advocating people who have been cut off or

done this voluntarily or who have non-working goods; it works on *due process* by querying billing and decisions on energy for people who may not know how to or have the time to do so; and there is an element of *transparency/accountability* in the way EA aims to provide information on energy decisions. Less directly this EA also acts on the EJ principles of *sustainability, intergenerational and intragenerational equity* by reducing energy consumption and CO₂ emissions. This section will describe the participant observation in the FB/immigration advice centre and their geographical and socio-economic contexts.

4.1.1: Technical Aspects: Short-Changing and Price Gouging the Energy Poor

EA practice was informed by online training before delivering advice. This involved learning about the types of support offered for EP and people needing to improve the EE of their homes. The first (see table 10 below for summary) of these measures was the Warm Home Discount (WHD), £140 over the winter to core group on pension credit and wider group of people on benefits and with certain vulnerabilities. This is funded through the climate levy placed on bills (more on how this is regressive in part 2). The Winter Fuel Payment (WFP) is a universal benefit paid automatically to pensioners so was not dealt with by energy advisors (more on this in part 2). There was the option to switch suppliers, which did offer some savings but required details that the people often did not have with them and so required follow-up meetings: however, in the energy crisis of late 2021 this saving option was no longer available, which has very concerning implications for EJ principle of *affordable* energy. Water bills were not dealt with in the training but as one of many examples of how poverty intersects, EP advisors often have to deal with these. Finally, there was a scheme run through the local chapter of Citizen's Advice (CA) called the Warm Home Check (WHC), through which a home check could be arranged to give advice on draft proofing, checking windows and boilers. There seemed to be some talk of boiler replacement but this seemed like something that did not happen often.

Table 10: Energy advice interventions

Measure/Policy	Details/eligibility	Source of funding	Implementation
Warm Home Discount	£140 yearly credit/people on	Raised through climate levy a flat charge on energy bills	Through the energy companies

	benefits and, or with vulnerable resident	
Winter Fuel Payment	£100-300 yearly From central Direct payment amount depending on government and age and living general taxation. circumstance/ universal age > 65	
Warm Home Check	Visit to home by East Sussex County Via Citizen's Advice energy efficiency Council advisor for soft/hard measures/those in social housing not eligible	
Switching Supplier	To compare tariffs for N/A cheaper energy bills/some people have to pay exit fees and those with debts over £300 cannot switch	By the user or a third party.

Within this training, there was some vague and rather neoliberal inflected language: when it was discovered a house was dangerously cold it was “therefore important clients living in such properties are encouraged to carry out some form of home improvement...Insulation, or a new improved boiler, or both...Councils should actively try to make sure landlords are meeting minimum EE standards and use council trading standards for environmental health for enforcement” (BESN 2019). This shows both the individualising of a collective problem, to be expanded on below in the discussion of rationalities, and a weak grasp of the current crisis in funding and capacity of local authorities (Gray & Barford 2018).

As a form of calculation and measurement of these interventions, there was attendant bureaucratic documentation required by the funders. These documents (Appendix 3) required gathering personal details such as name, postcode and email address, but also the question - how much money had been saved by the behaviour change? This money *saved* was hard if not impossible to calculate with the single funded session, which reflects the wider emphasis from the funders on meeting targets set from above than responding to data gleaned from below. With this saved money not spent on energy, this could be roughly, and was by ESC (2020), converted into carbon emissions saved. As such, this could be part of what Paterson & Stripple (2013, p. 141) name the “conduct of carbon conduct”, and an incentivising/disciplining of the poor and their energy consumption. However, this seems somewhat misplaced as the richest 10% use more energy and produce more emissions than the poorest 50%

globally and this disparity looks set to exacerbate in the future (Chancel & Piketty 2015: Oswald et al 2020).

The actual implementation of perhaps the most significant of these benefits, the WHD, is highly problematic. The WHD is delegated to the energy companies, who having a fiduciary responsibility to make profit above all else, would likely have a conflict of interest here. This was born out in the participant observation: each company had specific criteria of exclusion and inclusion so this had to be checked online; some companies only allowed an online application thus excluding certain groups; one company Utilita, only allowed applications for one week in August, a clear gaming of this system; and one person reported that he had contacted EDF to claim his WHD and was told the fund had “run out”. This benefit is paid for by people in their energy bill, with the lowest income deciles paying up to five times more proportionally than the highest deciles (Owen & Barrett 2020). Thus, there are clear and egregious energy injustices in this form of implementation, involving all of the four most basic EJ principles recapitulated above. This can be seen as a form of corporate welfare, whereby corporations are given undue hand-outs and advantages (to be expanded below). It also resembles a form of semi-feudalism that Graeber (2018) describes, in which a large sum of money is set aside for a specific purpose – here the WHD – and the corporations overseeing the distribution construct systems of duplication and obfuscation through which they appropriate as much of the fund as possible.

The energy bill can be seen as technology of (mis)calculation and accumulation of debt, and as such in some cases as capture and control of subjects (Lazzarato 2012) through the installation of pre-payment meters (PPM). 14 years ago, Ofgem (2008) calculated that energy companies were extracting a £1 billion poverty premium from mainly vulnerable customers on standard tariffs, the most expensive. Many on this tariff would be on PPMs and so unable to change tariffs. Over the period 1996-2015 the proportion of customers with PPM rose from 7 to 16% (CMA 2016), resulting in Ofgem acting against this practice on the grounds that some of these installations were done against customer wishes and often “further exacerbating their debt” (Ofgem 2018, p. 34). Energy companies have also been found to frequently mischarge customers (Ofgem 2021). High energy bills, incorrectly calculated bills, debts, and widespread use of PPMs were evident in this participant observation and again are examples of breaches of the first four EJ principles.

At the immigration advice centre a man presented a bill which was estimated at £2000 per year of which he was paying £148 per month by direct debit. The energy advisors suspected that the man was paying part of a previous resident’s debt as there was a much higher than average charge in the first month of occupancy. One of the advisors had previously been sent a letter threatening debt recovery from EDF for electricity used by the previous resident and this was seen as a fairly common practice

by the more experienced advisor. This erroneous charge was an annoying but fairly straight-forward thing to solve for the advisor, but for someone with little English or understanding of their basic rights this was clearly not the case. As such, it is an example of mischarging and a racialised customer being exploited. Another example was of a woman who had moved and informed the energy company but was still being charged for her old address. PMMs were common with the users of the FB but one couple had a particularly complex and problematic case. They were using a key card for their meter and had switched supplier then changed their mind, a legitimate option. However, the meter stopped accepting credit but kept supplying energy which accumulated hundreds of pounds of debt, which they could not pay, but the company – Green Star – was demanding payment. Thus, to briefly characterise these injustices, there were many examples of high energy costs, which were connected to lack of access of high quality energy and/or entitled discounts for this energy. This lack of access was connected to a variety of problematic processes, which in turn were reflected by a highly unaccountable system of energy provision.

4.1.2: Visibilities: Intersecting Impoverishment

The problems made visible by this system of EA depends upon relative position. For instance, the training provided by the Big Energy Saving Network (BESN), which matches government documents on EP (BEIS 2019), renders visible individualised householders who need to be informed about what they can do solve their problems with EP and poor EE. Thus, the solution is to improve the EE in the housing through soft (draft proofing) and hard (cavity wall insulation or replacement boiler) measures (BEIS 2019). However, the energy advisors on the ground see a much broader picture and experience this support in a much less technical way. They also see exclusions from this support who are often the most in need.

Water bills are often dealt with by energy advisors as well as general debt, pension advice, tenancy disputes and various benefits problems. Thus, a more generalised problem of an extractive system of poverty premiums, insecure low-paid work, punitive benefit cuts/sanctions and a commodified housing market is rendered visible (Cribb et al 2021; Boardman 2010; Dwyer 2018). Also, those in temporary housing, who often appeared the most distressed, are excluded from any support, and those in this situation have increased since 2010 by 92% (98000 households at the end of 2020) with 62% of these including children (The Health Foundation 2021). This shows that poor EE is certainly a factor in this commodified housing market, and a properly funded national EE investment would be

welcomed. However, this would not solve the wider problem of poverty that blights this country and people would still struggle to pay energy and other bills, a dynamic only made worse since late 2021.

It is important to link what is rendered visible to wider forms of knowledge and rationalities, as what thoughts think thoughts (Haraway 2016) obviously shapes what is seen and how it is seen and thus problematised. Before moving on to that perhaps a word should be said about what has been called poverty pimping (Graeber 2018), or the poverty industry (Cruikshank 1999). Importantly, the experience of this writer was almost exclusively of compassionate people trying to help those less fortunate than themselves, embodying an ethic of care that can be seen as a form of resistance to a generally hostile system. However, the forms of funding and mechanisms of attaining that funding create competition between communities and layers of administration that are injurious to those that require support. Further, there is a pernicious victim blaming culture that emerges from this system that was evident in one situation in a related organisation, where a person delivering EA complained that people expected harder measures (a new boiler for instance) over advice. This idea of poor people trying to game the system comes from government (Woodcock 2021), the media (McArthur & Reeves 2019) and is core to the economic orthodoxy of neoliberalism.

4.1.3: Forms of Knowledge: Resisting Neoliberalism through an Ethisc of Care

It is important to say that neoliberal ideology is fairly dominant discursively and materially in the UK and as such can be seen in language choices and certain statements and institutional structures, as will be shown throughout this project. This is not to say it is a totalising system and that certain structures do not resist or exist partially outside this discourse and material space (Frazer 2021; Graeber 2018). As an example, in the FB the employees and volunteers referred to the users as “clients”, and talked of a professional and efficient service, all very neoliberal in tone. However, they also embodied and advocated an ethic of care which is alien to neoliberalism.

To recapitulate, neoliberalism is a form of capitalisms that essentialises the market as the centre of society to be expanded into all areas of life, with the state being there not to support people but the very market institutions and corporate powers the above essentialisation fronts and centres. As a form of knowledge neoliberalism works through neo-classical economics, including specifically cost-benefit-analysis (CBA) and risk assessment (Oels 2006). This can be discerned in the behaviour of the

energy companies and their gaming of the system. The targeting of vulnerable customers, erroneous billing and other malpractice detailed above is *punished* by Ofgem (2021), with around £26.6 million in fines and £44.7 million in redress or *voluntary* payment in 2020. However, this is almost certainly factored into this behaviour through these CBAs. Another core feature of neoliberal rationality is individualising collective problems. This is because it only tends to recognise individuals and selfish, calculative homo economicus at that (Dryzek 2013). This was evident in the Big Energy Saving Network training noted above but also in the whole focus of this institution as exemplified in Big Energy Saving Week. In Hastings and Eastbourne this involved handing a large amount of plastic and what could only be seen as unnecessary waste such as stickers, plastic key rings and other things that would quickly end up in landfill. More broadly, the whole focus on individuals saving energy (unless it was directed at the richest 10%) deflects from the structural conditions that locks us all into high carbon lifestyles (Unruh 2000).

However, neoliberal rationality does not completely dominate and two examples will show this. Multiple times members of ESC talked of a “broken” energy system that extracts wealth from the poorest. They identified the waste and pointlessness in the system through which the support for those subject to EP was so convoluted, complex and inconsistent it needed translation by energy advisors, with this advice itself not funded properly. This shows that CREO actors are working on these first four EJ principles in their daily praxis. These colleagues also evidenced an ethic of care and understanding of the victims of this system that was a form of resistance and suggests a rationality that sees humans as socially situated and interdependent. The FB employees and volunteers also were critical of the situation which created their role. One morning before the users arrived, an employee of the FB delivered a briefing to the volunteers on the recent publication of *The State of Hunger* (Sosenko et al 2019). This report detailed poverty and food insecurity in the UK, the employee said was shocking but largely reflected what they saw week in and out.

4.1.4: Formation of Identities: Homo Disobedient?

Again, there were differing presupposed subjectivities depending on the position and a suggestion of an actual resistant subjectivity. The BESN and government publications imagine generally an individual, homo economicus and a vulnerable subject. The energy advisors and FB see a more complex picture with humans as socially situated and motivated by many things including selfishness

and altruism. The energy poor are still framed however as subject to a system and largely passive. However, there was evidence of a resistant subjectivity that could recognise local to international dynamics of injustice.

The framing of the subject by BESN is informed by a version of the deficit model (Catney et al 2013; Wynne 2014), whereby the public is seen as an empty vessel to be filled, informed and encouraged through delivery of information it lacks. This deficit model was even more on display in the Big Energy Saving Week which imagines we can save energy through stickers and keyrings which extoll us to turn off lights and such. Those unfortunate to be in EP should be “encouraged” to switch supplier to a cheaper tariff (no longer an option), which they often could not do because of debt or lack of details, or directed to the other forms of support that might be available (BESN 2019). The framing here is of a passive subject that again needs to be educated about the support and options that could be available. What an advisor is supposed to say or do when nothing is available is not explained (BESN 2019).

In contrast, the energy advisors see a subject afflicted by multiple scarcities and thus not just in need of information but emotional and administrative support and solidarity. One energy advisor explained that in the energy caravan which delivers EA to a wider range of people they would endeavour to get the person they advised to do the applications with support – a learning-by-doing model. This they explained was not the approach in the FB where people seemed much less capable and motivated to do this and often did not have smart phones/internet required, so they would do the applications for the FB user. Both this presupposition and the BESN one above, see a passive subject. However, one clearly individualises the problem in a victim blaming mode, while the other sees the issue as external, a result of multiple imposed scarcities.

Democratic citizens are not born but made claims Cruikshank (1999), adding that the classic distinction between subject and citizen is much more fluid and blurred. This project concurs with both these points and while exploring the self-reported subjectivities and resistances was unfortunately beyond this project, there were glimpses of these. In the immigration advice centre a customer of EDF explained he was never happy with his bills. He then asked why the price of fuel was so high considering the UK went to war in Iraq to gain control of the oil there. This made the energy advisors burst out laughing and the young man grinned. One of the advisors said it was a great question but that he thought that although the war in Iraq was about control of oil, it was not so that this wealth could then be shared out in any fair way with the people in the UK. The man nodded and agreed oil wealth was not shared equally in his country but energy was at least much cheaper. This example resists the deficit model that government and energy companies purvey (Catney et al 2013) and shows

a knowledgeable subject that connects global energy politics in a similar way to academics (Sovacool & Dworkin 2015). In the FBs some of those who reported being on PPMs said this was their choice and was a way they could budget their energy. This is likely part of the complex interplay of power dynamics and subjectivity (Cruikshank 1999), where the power dynamic of capture and control from the energy companies is willingly accepted; however, this is not false consciousness, but an example of the productivity and complexity of power flows.

4.2: Interviews: Fighting Against the Tide

This section will present semi-structured interview data in three parts. The first section will detail how the interviewees constructed and connected the categories of poverty/EP, with these interviews not really seeing any real distinction. The second section will explore how these interviewees conceptualise democracy and its functioning, then it will move on to judgements of specific EP policies. The final section will explore the issue of justice, how this is constructed and why the UK system tends to reproduce and exacerbate injustice. The interviews analysed in this part include two food poverty actors and three CREO actors, one of whom is also a local council employee (see table 11 below for more detail). These interviews offer perspectives on EP/poverty from different but connected sectors of food banks and CREOs. It is important to note that all interviewees were interviewed before the pandemic, but there was a second interview with I3 in the Summer of 2021, at a time of high, local C19 infection rates. The differences between pre and during-pandemic data will be explored further in the next two chapters. Overall, it should be noted that the pandemic exacerbated inequalities in an already unequal country (Marmot et al 2020a), whilst at the same time radically transforming the role and potential role of government (Watkins 2021).

Table 11: EP Interviewee details

ID	Job	Activity
I1	Food Bank Employee	Poverty activist > 20 years

I2	Food Bank Volunteer	Fuel voucher clerk and general volunteer
I3	CREO Employee	Fundraising manager and the manager of EA provision.
I4	CREO Employee and Local Authority Officer	In charge of maintenance and operation of renewables for CREO and low-carbon city officer for LA.
I5	Co-founder of CREO	Managing CREO

4.2.1: Poverty, Democracy and Justice

In this sub-set of interviews poverty was talked about by interviewees both in a generalised sense and more specifically as EP. Experiences and definitions of energy poverty were therefore both separate to and overlapping with poverty itself. This corresponds with academic discussion of poverty in which some authors firmly differentiate poverty from EP (Boardman 2012) whilst others argue that categorical boundary drawing of this kind is problematic (Middlemiss 2016). Interviewees described democracy as linked to poverty and EP both implicitly, through discussion of various policies that have exacerbated poverty and EP, and more explicitly using the language of the democratic system. Interviewees also described justice as linked to poverty and democracy through their more general discussion of the human condition/liberal subject and in more detailed discussion of specific injustices experienced by specific social groups. In terms of governmentality, the broader analytical framework used to analyse this data, the following relationships and distinctions are made:

- poverty/EP viewed as techniques and technologies of rule/resistance;
- democracy (in its current, attenuated, neoliberal form) as the rationality of rule/resistance;

- justice as the category through which subjectivities are presupposed and resisted

Clearly, these distinctions become blurred at times. For instance, where interviewees discuss democratic policies, they appear more like technologies of rule/resistance than a form of rationality. However, as an heuristic method these relationships between technologies/techniques of rule and poverty, or between rationalities and democratic functions and functioning will make more sense as the analysis accumulates.

4.2.2: Maslow's Basic Needs Unmet

Two interesting metaphors emerged about poverty: I1 argued that it is a “trap” and that around poverty there is a “myth of the undeserving poor”. The first idea is interesting because it has a number of implications. First, a *trap* is set or placed intentionally by a third party with the aim to capture or injure somebody/something else. Second, while one may blunder carelessly into a trap that is the extent of the blame one may place on the victim, while often the victim is blameless. There is also a suggestion of devices or technologies involved (Eubanks 2018). Finally, to trap means to deceive somebody into doing something against their own interests. The *myth* of the underserving poor, which was specifically linked by I1 to “media portraying people ‘like us who need help, and then the scroungers and spongers who are getting free money’”, again has interesting connotations. In one sense a myth is a traditional story explaining natural or social things, while in second sense it can mean the misrepresentation of these natural or social phenomena. In a third sense it can be a widely held but false belief. Both the idea of the trap of poverty and media myths are discussed in the literature, involving the privatisation of basic public services, stagnant wages making living costs exceed many people's income, a punitive “digital poorhouse” profiling and categorising, and withholding resources from the poor, all in all approximating a trap (Bayliss et al 2020; Eubanks 2018; Dencik 2021). The UK's print media also has a long history of blaming and demonising the victims of poverty (McArthur & Reeves 2019), thus shaping and perpetuating a myth of the undeserving poor. As such poverty as a category acts at one level as a technology in the sense of a trap with the costs of social reproduction exceeding many people's incomes. At another level it acts as justification for this and a rationality of rule in that those in poverty are routinely blamed for their situation and poverty itself is framed as a

natural state of certain underserving groups (Dorling 2015). Finally, it serves as a dividing line of subjectification, with those above the line seen as active and having agency and those below seen as passive subjects to be either disciplined or helped (Wynter 2003).

Compared to the subject positions and rationalities surrounding poverty in its general sense, the idea of EP and responsibility for this poverty was described as being structural or more clearly a problem of technologies of government. EP was also directly connected to another prefixed poverty - food poverty. I3 said EP was a problem because:

There's just clearly structural issues in our energy system that are causing fuel poverty, and they are very difficult to address in this piecemeal way – put a bit of extra money here, a little bit of support with making your home more energy efficient. That also feels like it needs a more joined-up approach. What would be amazing would be a big retrofit push from the government, because the houses, especially those round here, there are lots of Victorian houses, which just aren't up to scratch. We won't be able to address the CC without improving them and people cannot afford it.

The structural issues here could be the privatised energy system, housing mentioned or regressive funding for climate mitigation, along with many other factors. The specific point being made is that this is externally imposed, and the “piecemeal” response of EA and inconsistent funding for EE improvements will not change this in any significant way. The more general point is then made that addressing the CC requires solving the emissions associated with housing and this will require coordinated policy. This is agreed upon in progressive literature and would be a fair and low-carbon response to the C19 economic crisis that would create many jobs (Brown et al 2020; Jung & Murphy 2020).

Similarly, EP and food poverty’s connection was “fairly logical really” for I2 “because if you can’t afford to feed yourself it quite likely you won’t have enough money for gas and electric.” Also, I2 added, these groups were often placed on PPMs which have generally higher tariffs. This specific issue of PPMs has been on the academic agenda for over ten years (Boardman 2010), and this dynamic of reinforcing poverty through the imposition of prepayment meters has been raised by Ofgem (2018).

On the relationship between EP and poverty, interviewees used the word “poor” to describe the subject position of those facing climate injustice. In this sense, climate injustice acted as a new set of rules through which people would be made poor(er) and disenfranchised. I4 argued it was a “key issue in terms of climate justice, making sure that poor are not left behind.” This phrase that people are not “left behind” during the transition reflects a problem that will emerge in this project: that of a

democratic deficit in the directionality of this transition. In this phrase the where and direction of travel is already decided, and the problem is to bring the less fortunate along for the ride. This broad democratic deficit is unfortunately reflected within CREO practices and institutions as will be explored in the next chapter. However, it must be stressed here people are being left behind and the numbers of these people are growing (Caddick et al 2022).

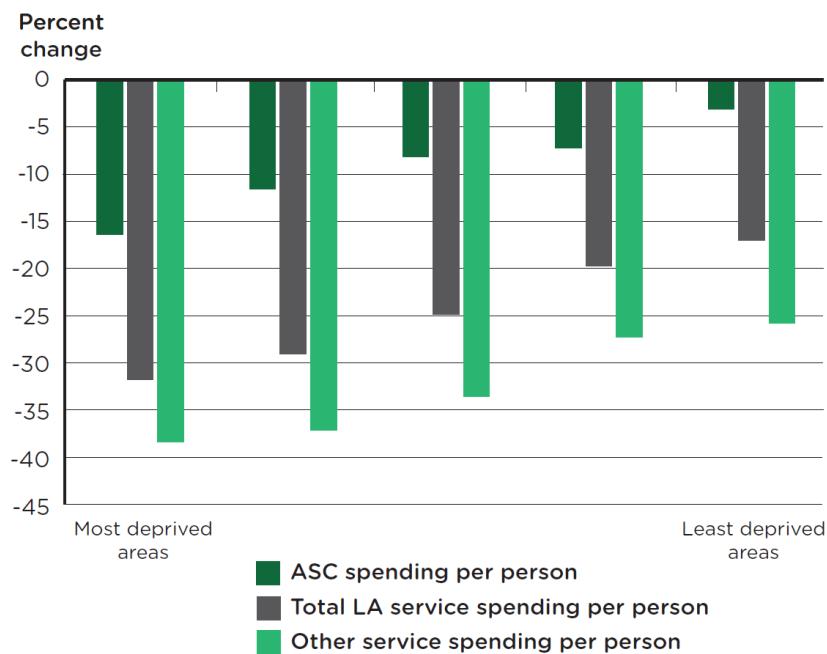
From the interview data on energy poverty, it became clear that interviewees saw energy poverty as forming part of a set of technologies (advice and benefits) and rationality that underpinned poverty in its general form. I5 explained:

After years of trying to address, trying to tackle fuel poverty with energy advice...we became more and more sucked into all kinds of other ways you could help people, you know benefits or pension advice, or debt advice, or water advice - we ended up pretty much covering the whole spectrum. And there are other agencies that do that and it became complicated because we started to see FP not as FP but just as poverty. And very often the victims were living in really poor housing.

This passage frames EP as both connected to and interacting with other forms of impoverishment and more general poverty, but also argues again this is imposed on “victims” of this state of existence.

During ESC’s early years (2012-2015), I5 said the delivering EA to people suffering EP became “all consuming” and slowed their plans to install renewable generation. This description of EA becoming much more than advising on energy and how this work began to dominate what ESC did can be linked to the disastrous imposition of austerity by the Coalition government and continued by the Conservative governments since. The effects of this policy, which was quite specifically directed to more deprived, urban areas, but reduced local government’s capacity more generally (Gray & Barford 2018, see figure 13 below), have been to see life expectancy stall in the UK for the first time since records began in the 1980s (ONS 2018). More broadly, the health and social inequalities exacerbated by austerity include: increased mortality, rising child poverty, job insecurity and zero hours contracts, a housing crisis and rising levels of homelessness, increased levels of household debt, and increased need and use of food banks (Marmot et al 2020b). Under this pressure, it’s not surprising ESC became “all consumed” by a general need to give what was effectively poverty support, advice and advocacy. This suggests EJ principles and their incremental nature require the more radical aspects of energy *democratisation* exemplified in incipient form in CREOs and theorised by academics and campaigned on by activists (Szulecki & Overland 2020; Sweeney 2013).

Figure 13: The reduction in council service spending per person from 2009/10 to 2017/18 (Marmot et al 2020b, p. 10)



As a rationality and broadly applied technology of governance, austerity can be seen to work in a number of ways. Firstly, with its targeted cuts, in both geographical and deprivation senses, aims to discipline communities into either voting in the *correct way* or removing voters through a general sense of hopelessness and fatalism that sees all politicians are the same and things cannot change. I3 below talks of this sense of democratic disillusionment. Secondly, austerity really reduces the power and capacity of local authorities (LA) – all interviewees in this section recognised this trend – while at the same time allowing the local state to be held responsible for this removed provision, with the effect of an increased central control and authority in an already highly centralised state (Cumbers 2012). Thirdly, austerity pushes markets and the charity sectors further into areas of former state provision, with the effect of forwarding neoliberal aims of placing everything into the market and reducing state responsibilities and costs. Of course, this never completely works but neoliberal states keep trying, and this in a sense is a general history of neoliberalisms of different geographical/temporal states and social contexts (Peck 2010). Markets in health/housing/education and care are created despite resistance to this and terrible human costs.

A final aspect of neoliberal imposed austerity is a form of depoliticised state rationing, which is justified by the assumed imperative of austerity and as such an apolitical necessity. In the EP context

this led to the abandonment of the aim to solve the problem of EP. This was replaced with an aim to manage it as a *complex* social problem that it was *unrealistic* to expect to be solved, and the creation of various definitions of EP that further frame it as a technical problem to be solved in a technical way through EE upgrades (DECC 2013). As governmentality studies make clear however, policy-makers' aims and dreams rarely if ever come to fruition and unexpected outcomes and failure are rife (Miller & Rose 2008). In the UK context, this austerity drive could be tentatively linked to Brexit, which the Conservative government of the time opposed but perhaps could not control due to the social problems austerity had contributed to. Less controversially, the disaster of C19 has been partly so devastating due to a weakened local state, that limits community engagement, essential in contagious disease control (Marmot et al 2020a; Davies et al 2022).

In summary, poverty and thus EP in these interviews are framed as contingent and intersecting traps, through which the capacity for social reproduction is undermined by various technologies and techniques of governance. This can be broadly in targeted austerity of social provision, or specifically in the inadequate EP support mechanisms. The question of justification or the rationalisation of this situation of injustice is the theme of the next section which examines notions and functions of democracy, which as Sen (2009) argues is integral to ideas of justice.

4.2.3: Performing Democracy (Badly)

Democracy and policy were talked about generally in the sense of the rationality guiding the system and its functioning. More specifically, an issue that emerged in three CREO interviews was how planning decisions at a local level failed to correspond with climate mitigation commitments and EP mitigation. Finally, the Green Deal policy and its effects were discussed by I5.

The system as a whole was described as having a “total lack of kindness” by I1, due to a rights and responsibility approach that ignored the innate value of each person. The strong pathos of this statement came from a person who had worked in poverty alleviation most of their adult life. This critique of rights and responsibility comes from a number of angles in social science, with the capability approach (Sen 2009; Nussbaum 2004) of interest to this project. Rights from this perspective, are too individualistic, negative, unrealisable and vague (Nussbaum 2004). Focusing on the C19 effect of highlighting and exacerbating inequalities (PHE 2020), I3 stated:

I think there is an appreciation for key workers that we didn't see as key workers before, the people in the supermarket, public transport, where you really realise, they are putting themselves at risk, but will it last? Don't know not sure, but what will last is flexibility in work, that 9-5 is probably gone so maybe an appreciation of the balance of childcare and work and the whole system is designed for when you've got one parent at home, the mum. And maybe people are realising it more where the dads have generally experienced it more. And it's just a realisation the system isn't working and hasn't been working and anyway hasn't been working for lots of people for quite some time.

Within this passage we have reference to two factors that are part of what Frazer (2014; 2021) calls the background conditions, or conditions of possibility of capitalisms. This is the whole host of fundamental functions of society conducted by low-paid, lower class and racialised people who are putting themselves at risk during this pandemic and are paying a disproportionate and tragic price for this (Davies et al 2022; PHE 2020; Marmot et al 2020a). The other factor is the gendered care work, or shadow work, which is unrecognised and largely unremunerated, yet fundamental to both the well-being and reproduction of this society (Frazer 2021; Graeber 2018). This is an example of the world-ecology insight of a fundamental contradiction of capitalisms: every bit of profit made relies not only on the *paid* labour but a rising proportion of *appropriated* human and environmental resources (Patel & Moore 2020). A final point regards the prediction that flexibility in work – meaning the ability to work from home – will last. While this is welcome and moves the previous one-way notion of flexibility of the worker to both the worker and the institution (in an admittedly very narrow sense), this is not going to be an option for the many key workers and will remain the preserve of certain sectors and the more privileged workers.

Democratic functioning was also discussed at the state level. I1 talked about voting systems expressing support for first-past-the-post (FPP) over proportional representation (PR) as it offered more stability. However, they added a large caveat:

Don't get me wrong democracy has worked for certain people and not for others, but it hasn't been half as democratic as made out. And we're to blame for the rise of populism because it has served people - but it has not been as democratic and as fair as it could have been.

Here we have the choice of a system of voting (FPP) despite a list of problems: it favours certain groups; it is not really democratic; and as undemocratic and discriminatory is responsible (as are we within this pseudo democracy) for the emergence of “populism”. In partial contrast, I3 expressed support for PR as a much more representative system but then expressed concern about how this can

lead to other problems such as stalemate and undue influence, then said she just felt “disconnected and disillusioned with politics in general.” These expressions of resignation with democracy can be linked to a current crisis in democracy related to neoliberalism (Mbembe 2019; Taylor 2019; Meadows 1999). This crisis relates to ongoing injustices referred to in the quotes above and the subject of this chapter, a reversal of democratic features, questions about what democracy actually is (Taylor 2019), and finally the scope and authenticity of democracy (Kothari 2020; Taylor 2019; Dryzek 2000).

At the local level, planning decisions were seen as conflicting with the democratic concerns associated with declarations of the climate emergency that many councils made during 2019. I3 stated:

The council itself declares a climate emergency but then you have separate department, planning which is constrained by planning rules and it's then up to those planning officers to make a judgement call on what is significant harm is, and they have to weigh the benefits against this. And this planning department has said this would cause significant harm - and as you can see - it's just a regular school on a regular St, with a regular roof.

These barriers and delays to ESC renewable generations plans ultimately limit their ability to do more EA outreach and mean ESC has to spend more time searching out and applying for funding. Further, as the FiT was due to effectively close after multiple short-term extensions in Spring 2021, the delays I3 and I5 encountered at local council and county council level risked making these fairly small, and in one case at a local church “symbolic”, projects unviable in financial terms. On planning at the national level onshore wind is still effectively banned, which I4 stated was a reason his organisation only installed solar PV. Thus, while Ofgem (2019a, p. 5) likes to talk of “least cost” options, onshore wind was the cheapest form of renewable energy until 2018 (BBC 2018; Garman & Aldridge 2015), and while solar PV is now cheaper, onshore wind is not far behind and more clearly suited to an Island more noted for its wind than sun. Therefore, at local, regional and national level, energy transitions mobilise contradictory rationalities of how to go forward. At the most general, the rationality of central government leads it to Big-E energy of centralised capital intensive solutions such as nuclear or hydrogen as seen in the Ten Point Plan and continued fossil fuel investment across the world (HM Government 2020; Clayton 2020). In contrast, the CREO actors favour more devolved, smaller scale and democratically controlled energy technologies. In this way CREO actors are mobilising the argument that some centralised technologies of energy are democratically problematic, a point supported in different literatures (Burke & Stephens 2018; Sen 2014; Winner 1980). Further, they frame decentralised renewable technologies as more conducive to democracy, a point supported in the ED literature (Szulecki & Overland 2020; Thombs 2019). More specifically, these CREO interviews highlight contradictions between the democratic statements of concern about the CC and the planning

processes and procedures that should allow mitigation options to proceed. This is a contradiction documented in the CREO/EJ literature (Haf et al 2018; Forman 2017) and undermines core principles of EJ – that processes and procedures should be fair and transparent.

4.2.4: The Green Deal 2012-2015: A Policy Disaster

A specific policy with significant indirect effects on the energy poor was the Green Deal. This was a governmental policy that ran from 2012 to 2015 and aimed to allow landlords and homeowners to pay through finance for EE and renewable upgrades to their properties. However, this policy – “a false dawn” – according to I5, had a number of serious flaws:

The government Green Deal funding promised masses of money via the energy companies coming into retrofit and install renewable energy, but the green deal was sort of fatally flawed in several ways...you had to have a Green Deal survey which would cost £200 pounds - some homes we knew had 3-4 EPCs done by different organisations in order to access this funding. You had different agencies involved and had to have an independent Green Deal assessor, who came and did the report, and that report often needed an EPC, and then you had the funder which would be the Green Deal manager who would come and then they would do their own report (EPC). They would demand to see the deeds of the house for say a woman in her 80s who just needed a £2000 replacement boiler. So, she would have to go to her solicitor and pay to have a copy of her deeds, it's quite scary as well. And then you would have the actual installer come in and potentially do an EPC before they installed because they'd got to prove what the carbon saving is.

The funding of this was also problematic, I5 pointed out, as it was a 25 year loan at 9% annual interest attached to the home, so if one wished to sell the buyer would have to agree with the work done (he compared this to 1% loans available for EE work in Germany). He also claimed there was £3 billion in funding made available to the energy companies, who then only focused on “all the easy stuff”, with little solid wall insulation as this is more challenging. More generally, I5 said that while some good work had been done there was a lack of “joined-up” thinking, with examples of loft insulation done while gaps and drafts from doors and windows were left undone. Finally, he identified fundamental a conflict of interest:

You've got this paradox - that the government expects the energy companies who sell energy to be responsible for making their customers use less and obviously that's quite challenging for them.

Following a consultation in 2012 of key stakeholders (including LAs, energy companies, installers) the government published its plans for the Green Deal, and in this document some flavour of the plan, policy design, aims and overall rationality can be gleaned. Firstly (DECC 2012, PP. 3-27), it had two objectives of reducing CO₂ emissions by 0.52Mt CO₂/yr and reducing estimated heating costs for low income and vulnerable householder by £3.4bn, by March 2015. This cost was set to spread over each year at £1.3 billion (this does not add up) and further split between £950 for Carbon Saving Obligation and £350 million for the Affordable Warmth Obligation. The former aimed at difficult properties, such as those with solid walls or nonstandard cavity walls, while the latter was aimed at low income, vulnerable groups with a focus on central heating, loft and cavity wall insulation. Energy companies with more than 250,000 customers would be responsible for delivery. There was £3.5 million set aside for training of "go-early" Green Deal Assessors and Green Deal insulation installers to ensure "quality and consistency". The was also to be a "golden rule" than any cost of the loan repayments via the energy bill should be lower than the cost of the work saved. Then we get an insight into how the system might/might not work:

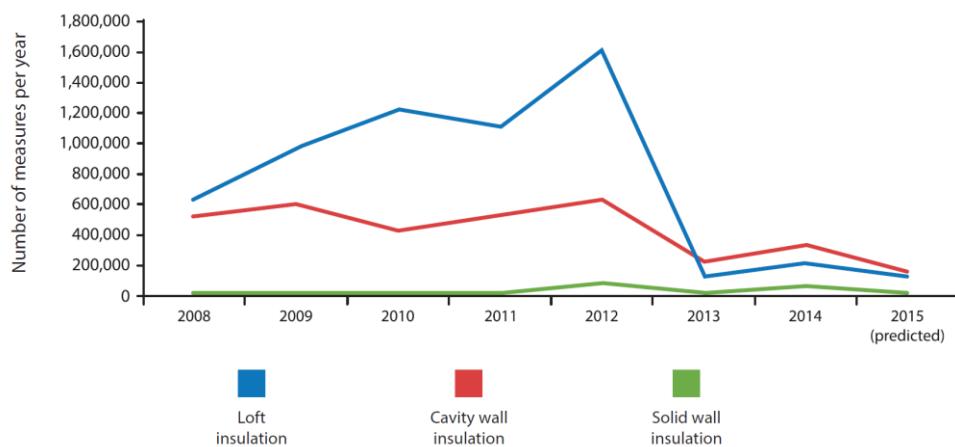
We proposed the introduction of a voluntary market-based brokerage mechanism to ensure that Green Deal Providers have fair and transparent access to ECO subsidy, and energy companies promote measures through the most cost-effective delivery routes. We proposed that this could be done via an online portal where ECO points could be traded for ECO subsidy. (DECC 2012, p. 27)

The plan was to reduce CO₂ and save money while stimulating the EE market, and to a much lesser degree renewables installations. There was a stated focus on those likely to be in EP but the whole design, as the above quote makes clear, was a market-based solution, the favoured mechanism of neoliberal rationality, where people are motivated by self-interest and price and it is the individual's responsibility to gain this advantage (Dryzek 2013). The fact that it was to be delivered via the energy companies is also an aspect of *governing at a distance* (Miller & Rose 2008), which was similarly present in the way the WHD is implemented. The abject failure of this policy, which was abandoned in 2015 with very little take-up, was largely down to false assumptions about people and faulty policy design.

Governmental agency and academic assessments of the Green Deal are not favourable. The National Audit Office (NAO) stated that the government's "£240 million expenditure on the Green Deal has not

generated additional energy savings" and "has therefore not been value for money" (NAO 2021). Agreeing but going further, Rosenow & Erye (2016, p. 144) claim this might be the greatest EE policy failure in UK history. Three reasons these researchers identify for this policy failure map onto I5's critique above: an "unattractive financial proposition" for households with the pay-as-you-save and a 9% interest rate; poor policy design which included a "golden rule" that meant EE work projected cost saving should exceed repayment costs of the loan, which had the effect of excluding much more complex work and led to the "easy" jobs I5 referred to; and a lack of real consumer engagement, with a narrow framing of consumer motivation on cost saving to the exclusion of comfort, well-being and health, with connected scams and bogus EPC work (Rosenow & Erye 2016). I5 referred to the rates of EE work reducing after this policy and again the evidence suggests he is correct: Rosenow & Sager (2015, p. 2) describe a collapse of the EE industry and installations, with loft insulation down 90%, solid wall insulation down 57% and cavity wall insulation down 62% on 2012 figures. This collapse in EE work is depicted in figure 14 below.

Figure 14: Energy Efficiency Measures Completed During the Green Deal (Rosenow & Sagar 2015, p. 4)



The Green Deal offered little to the energy poor despite its aim (DECC 2012), for many of these people are in rented accommodation and/or on low incomes, and so highly unlikely to be willing or able to take on a high interest loan. But this policy shows more about the rationality guiding the policy design and how this posits a subject and limits visibilities. Rosenow & Erye (2016) describe policy elites as only seeing rational self-interested actors who would see the savings and jump at the chance. This was despite much evidence to the contrary showing people have much more varied and nuanced concerns (Rosenow & Erye 2016). It is ironic that a neoliberal rationality that sees rational self-interest as what guides people in daily life yet does not seem to factor this into the conflict of interest I5 identified

energy companies would have in reducing their customers' bills, or the multiple EPC assessors I5 describes and the reported fraudsters (Rosenow & Eyre 2016). Further, this market fundamentalism fails to consider that just as pushing markets into global CC mitigation failed, arguably because it is markets and their constant expansion significantly contributing to the CC (Boyer 2014), pushing markets into dealing with the poor EE of UK building stock will not likely work as it is the marketized and commodified housing sector that are a significant cause of energy injustices. Finally, perhaps one of the main reasons this policy was so bad it was counter-productive, was it failed on its own terms in that even a self-interested rational actor might balk at such an unfavourable loan. This can be seen as instances of when Miller & Rose (2008) claim that governing is not the attainment of the policy-maker's dream as the world always resists this, and that how rationalities, technologies and forms of intervention feed into each other and reproduce (Bröckling et al 2011), often in unintended and unexpected ways (Ettlinger 2011).

4.2.5: The Warm Home Discount for Whom?

Within neoliberal forms of governance there is the notion that the state should shrink/move aside to let the market perform its magic. However, this in some ways misleading as what might be a better description is the state is reformed/repurposed to benefit large corporations, the military industrial complex and political and financial elites, at the expense of the wider population. This idea will be explored in later chapters but for now and in the context of EP a part of this repurposing has been described as corporate welfare. This has been described by Farnsworth (2015) as the institutional system that allows companies to benefit from education and training, infrastructure, grants, research and development, ministerial, royal and military support for exports, the NHS to keep workers productive, and in-work benefits to subsidise wages. This has the effect of socialising business risks while privatising profits (Farnsworth 2015; Mazzucato 2018). It also represents a beneficent welfare state for corporations and was intended as such to match that afforded to the public; however, the public provision has been largely removed with the those with the least wealth and income suffering the most (Marmot et al 2020a; Farnsworth 2015). This can be seen in both I1 and I2 statements that the largest increase in food poverty users was the working poor, positions supported in the report *The State of Hunger* (Sosenko et al 2019). This is why Galvin (2020e, p. 68) inveighs that when researching energy and energy access, we must place our analysis and findings against a "lopsided, billionaire serving social structure that characterises today's world." A striking example of this is that 27% of the world's current billionaires emerged during the C19 crisis (Therborn 2021; Sharma 2021), including a

record 24 new UK billionaires in 2021 (Davies et al 2022), showing that while the world suffers, economic elites profit from this crisis and suffering.

The idea of corporate welfare was alluded to tangentially through the way the energy companies in the UK administer the WHD and more generally. I2, most likely unaware that the WHD and other support is funded disproportionately through bills, praised these energy companies and said:

I always tell clients - talk to your company, if you're stuck and we can't help you talk to the supplier because sometimes they will help out. I'm not saying it's constant for everyone but they can sometimes be helpful to them. So, I always say your first port of call is your company. Also, some companies will offer £140 WHD, which will be put on their meters.

However, this was not the view of an experienced energy advisor (I5) who saw it as a great idea in principle but badly flawed in implementation:

The WHD, in theory a really good idea if you were vulnerable your energy company if it was big enough - more than 200000 - customers, would pay you £140 a year. In practice it was hugely complicated. Each company had its own criteria for assessing who was vulnerable so you had to know what your company's criteria was. So, in one case if you had a child under 5, in another it was if you had a child under 16, in one you had to be getting a disability, or in another just on Universal Credit. And then the companies had an allocation, so in some cases you could only apply online, so that excluded those without computers. One of the companies would target specifically people on prepayment meters and I think they would close their WHD within a week.

From the FB volunteer's perspective this was the largess of the energy companies, helping out those more vulnerable, while from the energy advisor's view these same companies were gaming this system. When one is aware that this WHD is self-funded by the energy poor (Owen & Barrett 2020) and so should be given automatically to clearly defined groups, this gaming seems even more problematic, if unsurprising if we return to I5's point about the Green Deal and energy companies' conflicts of interest. As was evident in the participant observation and in I5's description of the conditions of the WHD implementation - the less money handed out to people through various exclusionary tactics benefits a company that has a fiduciary responsibility to make as much money as possible. This is the problem with handing out policy delivery to private interests as was seen in the description of the Green Deal above, and is again at best a questionable blindness to neoliberal rationality that should expect such self-interest. A final point here is to contrast this inconsistent policy to the WFP, which is universal, automatically paid into an account by government to those over 67, and is funded via general taxation. The reasons for this contrast will be considered in the conclusion below.

To summarise, this subset of interviewees sees general and specific problems in UK society that can be categorised as a problem of a democratic deficit. This is both in how this society rationalises poverty as a given, and in how it refuses to recognise or reenumerate valuable social functions such as care. CREO Interviewees also saw this deficit in various policies aimed to mitigate EP and these policies' shortcomings. Finally, this deficit is also implied in the competing rationalities emerging under the pressure of an energy transition regarding both the renewable technologies and their scale and democratic implications, and in terms of the urgency and priorities of the CC. In contrast, Ofgem (2019a, pp. 4, 14) says the UK has decarbonised 40% since 1990, more than any other "advanced economy", and that going forward a challenge will be to make sure nobody "vulnerable" will be "left behind". However, the evidence above suggests the UK is failing in leaving no one behind and that this failure can be connected to political choices and programmes such as the Green Deal, a regressive energy levy and inconsistent and insufficient EP support. As such, Ofgem's boasts of *progress* occlude basic energy injustices of affordability, access, due process and accountability.

4.2.6: Justice for the Few

Any notion of justice must posit a subjectivity, be that equal or inferior, active or passive, and as such will be both a function of what is visible and how this object is rationalised. Thus, justice in this sense constitutes the treatment a subject receives when seen and interpreted by a given rationality. However, subjects resist and this is part of the productivity of power Foucault (1982) emphasised, and part of what Rose & Miller (2008, p. 61) see as the "constant identification of the difficulties and failures of government". More broadly, and as detailed in the previous chapter, justice is both linked to democracy and its scope, but also to worldviews including positions on the human subject. These interviews explored these ideas of the human subject but also more specific examples of injustices.

The modern human subject is the site of much discussion, for instance existing in nature (Patel & Moore 2020) or separate (Soper 2020; Malm 2018), or humans as individuals or self-interested homo economicus (Dryzek 2013), or as social interdependent beings (Adams 2016; Sioui 1999). This distinction between independent or interdependent humans was addressed by I1:

I'm healthy and so is my wife and our kids are too. We've done nothing to deserve that and yet what does equal opportunities mean? Equal opportunities must mean for the people in the other situation they are given a leg up, a head start. They must be, otherwise...the strong will always dominate...if you have to give up some of your own comfort, some of your own wealth, some of your hard fought stuff for someone else it makes you greater, because it turns you out rather than in...there's a human dignity and I think the more we look after the elderly, the children, the vulnerable the greater our society becomes.

This interviewee describes resisting dominant neoliberal rationality through a re-working of the notion of "equal opportunity". As a rationality, they describe how notions of equality create subjects who will always experience an inequality of opportunity unless technologies of government are created that "give them a head start". This actor's capacity to change the dominant rationality is limited but they practise resistance through the field of energy poverty and the practices of food poverty and associated support. The equal opportunity I1 critiques is the equality of *treatment* that ignores and occludes the contingent but extreme injustices of our societies. This quote above chimes with critiques of the administrative state and capabilities discourse (Graeber & Wengrow 2021; Sen 2009; Nussbaum 2004), which argue that we are socially dependent individuals deserving of dignity and fulfilment, and to achieve this dignity and fulfilment those with disadvantages need "a leg up, a head start" to achieve equal outcomes. This is equality of opportunity and outcome, or equity.

I1 also disliked the excessive individualism of the modern UK as over emphasising the individual's achievements while dismissing other's:

People say I've earnt this from the sweat on my brow as if they made themselves born healthy, as if they made themselves born with a mind that can cope, as if they made themselves born with the opportunities that presented themselves. They may have done really well with what they've been given but no one makes themselves born in the right place, right time, with the right skills and ability. It's, I would say a gift, others say random chance. For a start if you're white, born in the UK and then a male there's a whole heap of privilege there before you start. So, I think we need to stop this nonsense about it being the sweat of my brow that made me do good. There may be a well done with what you were given, well done with what you've overcome, but if you were born in Syria right now it won't be the sweat of your brow that sorts you out. We rate what we've done too highly often and we underrate what people can cope with and can give and need help.

This expression of resistance critiques the individualist position from a number of angles by listing and connecting various privileges of certain social groups: being born in the right place/time; being white; being British; being male, and being educated or trained. There is also understanding of how these various privileges (and by implication the absence of these) intersect and reinforce each other in the

statement “there’s a whole heap of privilege there”. This account of privilege connects to decolonial discourse which was summarised in the previous chapter. However, briefly this discourse posits, similarly to I1, that the world is ordered under a colour line of racial difference (Mignolo & Walsh 2018; Wynter 2003), and that to overcome this we need to understand we share a fundamental vulnerability as “without a reciprocal recognition of this vulnerability, there is no place for solicitude, and even less of one for care” (Mbembe 2019, P. 175).

The technologies and the techniques aimed at mitigating EP are characterised as complex and contradictory, undermining CREOs efforts. I3 stated:

Just the whole system - it just feels like such a waste of time to have all these companies set up where we have to shuffle around from 70 different companies, you get a good deal, next year it's not anymore. People are expected [to] know about this extra scrap of money they can get here, and the whole piecemeal, confusing system is not working in the average person's favour.

The point that the energy system, and specifically switching supplier, does not work for the average person, never mind victims of EP, was a point Boardman (2010, p. 84) made over ten years ago when she claimed switching was an ephemeral process that was an “absolute maze of shifting numbers.” The government’s market competition authority found this remained the case in 2016 with over 70% of consumers not changing to cheaper tariffs at a premium of at least £1.4 billion a year (CMA 2016, pp. 45-6) and the government itself (BEIS 2018, P. 15) admitted that:

It is often those who are the most vulnerable who are least likely to be on good deals and therefore pay the most. For example in the energy market, the consumers least likely to have switched in the past three years are consumers with one or more of the following characteristics: household incomes under £18,000 a year; living in rented social housing; without qualifications; aged 65 and over; with a disability; or on the Priority Services Register.

Government departments, practitioners in communities and researchers know this energy system is failing most people, but especially those with the least wealth and the most marginalised. I3 claimed the energy system “expected [people to] be some sort of agile consumers”, which connects to I1’s critique of who the system works for and who it does not, and this in turn links to the very notion of the liberal subject and wider critiques of this. Wynter (2003), and more recently Vergès (2020; Butler 2020), have critiqued this idea as an imagined breadwinning, healthy, adult, white male, an independent *Robinson Crusoe*, who however depends for cooking, cleaning etc, on a wider patriarchal and racialised social order. This figure, like the person claiming they did it “off the sweat on [their] brow”, denies the fundamental vulnerability of all humans and thus our interdependence on each

other and wider ecosystems. It also reinforces injustices through an imagined level playing field and a narrowed notion of equality of treatment (Butler 2020; Taylor 2019).

More specific to the EP subject, there are contrasting visions between this interviewee cohort and the target of EP policy. As I5 said, the EA they delivered was more like general poverty advice, with debt, benefits, pension, tenancy and water bill problems being advised on. More generally, I3 pointed to the “structural issues in our energy system that are causing fuel poverty” including housing, bills and debt. I4 also stressed that part of the EA process was building trust and relationships that government and energy companies could never hope to achieve, and that part of this work was explaining what was going on and why, rather than just telling people what was going to happen. Overall, this is more nuanced poor subject that has externally imposed poverty foisted upon them, and the CREO role is one of community engagement with this subject to alleviate their problems and make sure they are not “left behind” (I3 & I4). As stated in part one of this chapter, there is a democratic deficit here, one that both I3 and I5 recognised and saw as an issue to solve, but this will be discussed in the next chapter. However, in respect of EJ these CREO actors are showing an understanding of the justice principle of recognition by not ignoring/misrecognising certain groups and taking the time to consider how to deal with these groups (Jenkins et al 2016). Through EA they also work on EJ principles 1-4 directly and 5-7 indirectly (see 2.1.2 for details).

In contrast, government policy as seen in numerous documents on EP (DECC 2012; DECC 2013; HM Government 2015; BEIS 2021) sees the EP subject as one living in an energy inefficient home. While each of these publications will talk of the three drivers of EP, low income, high energy costs, and poor EE of the home, almost all policy is directed at EE (Middlemiss 2016). Indeed, the latest redefinition of EP has effectively excluded price and gone with two drivers – low income and lower than EPC band C – and four of five interventions regard the EE of the home (BEIS 2021). As a simple measure of how this subject is differed from the more general poverty afflicted subject above, the latest BEIS report says the word *poverty* 240 times but only three times is this without the prefix *fuel* and the three exceptions are *poverty line* which are used in the specific definitions of EP in footnotes (BEIS 2021). Thus, the EP subject, or at least some of them due to rationing under the logic of austerity (Middlemiss 2016), are offered support (which is self-funded through bills), but more importantly, they are distinguished from the more general poverty subject who is often blamed, misrecognised and maligned by government and the media (Dorling 2020; 2015; Wynter 2003).

4.3: Conclusion

This chapter used data from interviews of FB and CREO actors and a participant observation to explore EP in South East England. It mainly contributed to answering R1/O1 and R2/O2 with some data for R3 on the EP subject. Firstly, it found ESC and FB workers working practically to make energy more *affordable* and *accessible* in a variety of ways, while also contributing to fairer and more transparent processes through querying bills and explaining processes more generally. Through helping to reduce bills this might also reduce energy use, so they were also contributing to the EJ principle of *sustainability*. Perhaps most importantly, it found ESC and FB representatives offering an ethic of care so contributing to the principles of *respect* and *resistance*, for in a system that extracts wealth upward while actively mis-recognising and diminishing people's lives and experiences, treating people with humanity and respectfully becomes a radical act. Secondly, it found a system of relief for this EP to be inconsistent and inadequate – despite the fact that this relief is more than paid for by the energy poor in their disproportionate contribution through energy bills and specifically the regressive climate levy. More broadly, the whole system appears dysfunctional with the Green Deal being an abject policy failure, while since then the essential retrofit of all England's housing has been displaced by a series political crises. The WHD, perhaps the most valuable intervention for impoverished groups, was given to the energy companies to administer, resulting in gaming and further inconsistent support. When this policy is compared to the WFP which is paid direct by government, is universal and given to those over 67, this dysfunction can however be interpreted as intentional.

Thirdly, this interpretation links to the way EP is defined and understood, with the Government and its institutions heavily focusing on the technical aspect of thermal efficiency of the home. This technical framing helps to distinguish the EP from the broader category of poverty. However, the aim is not solving EP, in a similar way to mitigation of poverty more generally, as both groups still get rationed support aimed only at those deemed most needy and measures cost-effective. The crucial difference is that the EP subject is not maligned and misrecognised with this support like the more general poverty subject, as this is *technical not social* problem (Middlemiss 2016). This distinction of poverty and its prefixes makes little sense and was not seen by the practitioners in this chapter, but can be tentatively linked to this government and the neoliberal approach to the CC. Housing emissions are a problem in terms of the UK's climate commitments so reducing these is essential; however, this is not to be *confused* with other things like commodified housing, rising energy cost etc – the aim is to isolate issues and deal with them minimally and never allow systematic connections. More broadly,

this is the age old distinction of the worthy and unworthy poor, which can in turn be related to Wynter's (2003) coloniality distinction between those deemed economically worthy and those damned. However, here this distinction is retooled for modern British politics. This includes austerity (Marmot et al 2020b; Gray & Barford 2018) hitting more deprived urban communities more than wealthier rural ones, and EP benefits inconsistent but the Winter Fuel Payment to older people universal. These group getting better deals vote more and vote Tory more (House of Commons Library 2021), and thus this can be seen as electoral disciplining - to stop people voting or to vote the *right* way. This is why this thesis questions the nature of the UK's democracy and why this questioning will be explored in the subsequent chapters.

Chapter 5: Community Energy

5: Introduction

This chapter focuses on CREOs themselves and the context they operate in. This includes their interactions with surrounding communities, LAs, DNOs and other local organisations and businesses. The first section will describe the case studies histories', mission statements, business models and the locales in which they operate. The second section will present the participant observation, with again a focus on the techniques and technologies these organisations use and have used with/against them, the visibilities these organisations and their actors employ and the rationalities these views imply and are guided by. The third section will present the interview data relevant to this chapter with this organised around the broad governmentality framework and core concepts/categories presented in the introduction and the emergent categories of this data.

CREOs are a heterogenous group of organisations that, as argued in the literature review, can be broadly identified on the dimensions of who the organisation is run *by* and *for* (Walker & Devine-Wright 2008). Elaborating on the question: *what are CREOs purposes?* Creamer et al (2019) developed a 2*2 grid with process and outcome on one axis and local and distant on the other. These are useful metrics to characterise CREOs but they miss or fail to fully address a crucial factor: what conditions constrain or facilitate these organisations and at what scale these factors are located. Therefore, the first section will describe the two CREOs covered with the above dimensions as a broad framework. The second and third sections will employ the governmentality framework to elaborate on these conditions of possibility that shape CREOs and their actions.

5.1: What are CREOs and What are they For?

ESC

Energise Sussex Coast (ESC) is based in Hastings and was founded in 2012 with a mission to "act co-operatively to tackle the CC and energy injustice through community owned renewable power and

energy saving schemes” (ESC 2021a). The founder was Richard Watson OBE and all directors and staff are white, live locally and come from a variety of environmentally and socially focused NGOs and professional backgrounds. Thus, broadly this organisation can be said to be run and operated by a group of professional/activists with the double, and in their view, connected aims to mitigate the CC and social injustices. This focus on injustice is appropriate with Hastings being one of the most deprived places in England, with 29% of children living in low income households, lower than national average life expectancy, and poor performance on many public health indicators (PHE 2018a).

ESC is a community benefit cooperative that involves an energy advice (EA) service and a separate cooperative Energise South (ES) that raises money via a share offer to install solar PV on schools and local buildings. Therefore, in terms of process the EA is delivered by ESC employees and trained volunteers (see the previous chapter) giving advice one-to-one in a range of community settings. Since the pandemic struck, they have delivered EA via an online form and then a subsequent phone consultation. The separate cooperative ES and its share offer is conducted via a one-member-one vote system and thus a direct democratic model, although limited to those with the ability to pay for at least one share. Headline outcomes can be split between the EA and the renewable generation. For EA in the period October 2020 to March 2021 they: delivered 309 EA one-to-ones; gave £5776 in emergency fuel vouchers and payments; helped clients save £596,993 on energy bills or through access to benefits; and fitted 84 households with soft-measure energy saving equipment. Some figures on their client base include, 80% living on incomes below £16,167, 28% were ethnic minorities, 21% were older than 65, and 40% had children. In terms of energy generation ES raised £400,000, has eight solar PV sites, including five on local schools, one on a charity building, one on a church hall and one on a business centre. These sites generated 515,235 kWh and made savings of £23,000 for these institutions over the course of 2020 to 2021, with a projected 12.4 million kWhs generated, £731500 saved by the institutions and 2000 tonnes of CO₂ saved over the 25 year life of these projects (ESC 2021b). These outcomes in both EA and renewable generation are evidence again of a CREO working on the first four basic EJ principles concerning accessing affordable energy, and the next three of sustainability, intergenerational and intragenerational justice. This work with impoverished groups, as argued in the previous chapter, addresses both the broad idea of the justice of recognition but also the specific principle of respect.

BHESCo

BHESCo was founded in 2014 with its mission “to empower everyone in England to meet the cost of their energy needs with efficient buildings and clean, affordable, community-owned energy.” The

board and staff come from a range of financial, engineering and environmental NGO backgrounds, are white and mostly live in the Brighton area. The CEO of BHESCo, explains a little more about the aims of this organisation when she talks of her background in a Dutch EE and renewable consultancy. In this role she realised energy was treated as a “commodity instead of as a service...such as banking or retail.” This presented her with “a gap in the marketplace” to develop a business model of an energy service coop that would provide an ongoing energy service to customers by providing their energy needs in a low-carbon way. In doing this, BHESCo aims to make a profit but not at the expense of “our collective wellbeing” (BHESCo 2021a). Thus, again this CREO is run by a group of professional/activists, although here the emphasis is more on delivering this clean, ongoing energy service to *customers*. This reflects the more affluent nature of the Brighton and Hove area, which does have significantly deprived areas, but is overall a relatively prosperous area (PHE 2018b).

The main business model of BHESCo is a cooperative that delivers pay-as-you-save services to a range of individual, business, educational and charity organisations. This process involves a property survey with a resultant detailed report costing from £230 for a one bedroom, to £416 for a six bedroom property, with commercial building costing on request. Subsequently, the customer chooses what measures they wish to install and BHESCo manages this process through its partners at Retrofit Works – another coop. This is financed by BHESCo’s members and as the client saves, they pay back the cost of the work plus interest which goes to the shareholders. BHESCo also provides an EA service, works on innovative community heat projects in rural off gas grid locations, and is developing a food waste to biogas project with a partner (BHESCo 2021b).

In terms of process, the voting system involves one-member-one vote with every retrofit customer automatically enrolled as a member as well as shareholder, which again posits a direct democratic system but again one which to be a member one has to pay. Headline outcomes on generation include: 407 shareholders and over £1.5 million in finance raised; over 900 energy saving surveys; 57 community energy projects completed; with an estimated 400 tonnes of CO₂ saved per year. EA outcomes between October 2018 and March 2019 include: delivering advice to 520 local residents; £35,026 of savings on bills; 123 WHD applications made; 73 energy supplier switches and 166 volunteer energy advisors trained (BHESCo 2021b). Through these outcomes we can discern a different emphasis in EJ principles. Reflecting its more commercial focus and customers, its work concerns the principles of sustainability, intergenerational and intragenerational justice. While it does conduct EA, and thus work practically upon the first four basic EJ principles it does this to a lesser degree than ESC, as will be shown below.

5.2: Participant Observation: Contrasting CREOs

This participant observation involved working with these CREOs over a period of five months from November 2019 to March 2020. This work involved the EA documented in the previous chapter and attendance and contribution to a number of internal meetings, public meetings, workshops and a trip to Arnhem with members of ESC and Community Energy South (CES). The participant observation with BHESCo was much more limited as it was curtailed by the pandemic and the first national lockdown in March 2020. This involved two four-day weeks in the office in Brighton, followed by some limited work on a survey to potentially use with recipients of EA from BHESCo. Therefore, the bulk of this material comes from ESC, however the brief experience at BHESCo involved work that was highly relevant to this overall project so this will be included and explained below. As in the previous chapter, the governmentality framework detailed above will be used and a summary of this in this context is presented in table 12 below.

Table 12: Governmentality summary to two local CREOs

Analytical category	ESC	BHESCo
Technical Aspects	Funding streams/share offers/EA/community engagement/projects	Funding streams/Pay-as-you-save model/EA/share offers/non-disclosure agreements/projects
Fields of visibility	Broken market/inequality + climate crisis/poverty/	Gap in energy market/consumers/empowerment/techno-progress
Forms of Knowledge	Heterodox economics/neoliberalism	Evolutionary economics/neoliberalism
Formation of identities	Passive energy poor subject/community activist and facilitator	Passive energy poor subject/cooperative capitalists/community organisers/prosumer

5.2.1: Technical Aspects: The Search for Funds

This section will detail the techniques and technologies that CREOs employ and have employed against them. It will focus on the funding mechanisms as these were predictably core in shaping what these organisations could do and how they could do this. This includes the particular business models the CREOs employed, which in 2019 was in a state of flux due to the ending of the FiT.

Funding generally shapes behaviour and more broadly the field of possibility of individuals through to states in the modern world, and CREOs are no exception. Indeed, the emergence of community energy as a sector in the UK was contingent upon the FiT which created long-term sources of income (Nolan 2015). However, from its height of 41.16 pence p/kWh for 100 kW maximum capacity from its inception in April 2010, to its end in 2019 this was reduced significantly ending at 4.22 pence p/kWh for a maximum of 50kW (Ofgem 2019b). This meant that CREOs, like many charity or NGO type organisations, are in a continuous search for funding and at the time of this participant observation this was particularly acute (CEE 2019), due to the government ending the FiT. More specifically, the funding models of ESC and BHESCo contrast, reflecting both the conditions of the surrounding demographics but also the ethos of the particular organisations.

5.2.1.1: How Rationed Funding Effects CREO Activities

ESC funding included some limited funding from their community installed solar PV, EU funding for specific projects, and grants for EA work from BESN and UKPN. The latter two sources of funding were the bulk of ESC operating budget and therefore dictated largely what this organisation was to do. The EU funding was a problem for ESC as it was a highly bureaucratic process, with three forms to complete for very minor expenses, and yearly payments that created problems for a small organisation with a small budget. Regardless of these issues, this form of funding was precluded with the UK's leaving of the EU. The EA funding from the BESN was problematic as it was reduced year on year from supporting four advisors in 2017 to three in 2018 and one in 2019, with some late funding provided by UKPN to allow an additional advisor in 2019. An ESC employee pointed out, that this was despite EA becoming

a core function of this organisation, and that this instability of funding making it hard for the CREO to allocate staff and plan effectively. Toward the end of the participant observation in an away day event, ESC staff spent time discussing future options. In this meeting it was decided to change business models from a community interest company to a cooperative and pursue a funding drive to develop a shareholder cooperative model. It was also decided to try to develop EE consultancy for businesses and to emulate BHESCo's paid property energy audit service. Thus, BHESCo as a more financially developed organisation with more developed income streams was seen as a model to aspire to.

During the participant observation, ESC began an ultimately unsuccessful application for National Lottery funding. This process was instructive in both how and who ESC interacted with in the community and how government funding via institutions like the National Lottery work. There were two meetings the first of which was in ESC offices and involved a core group, the second in a hotel function room included a wider group of SME, charity workers, artists and activists from the community. Present in the first meeting were an engineer interested in conserving energy, a social enterprise consultant, two people from Extinction Rebellion (XR) - one a member of an art company aiming to get people "imagine of the possibilities" and the other a local leader of XR, and an environmental consultant "disillusioned" with the market logic of her world and the instigator and lead of this funding application. After a brief introduction, the environmental consultant presented the criteria and detail of the fund. There were three themes of criteria of a successful project: it was to be bold, imaginative and visionary; it was to be community-led and empowering; and it was to reduce CO₂ of the communities. There was an emphasis of partnerships and a wide range of people including those often not involved, who were supposed to work together on a shared vision. The funds available were £200,000 as a short-term planning/preparation fund or for smaller projects, and £2.5 million for implementation of larger projects. The engineer quipped that this was a call for imaginative and innovative solutions from a government that did not have any. The meeting subsequently moved into an initial discussion of options with a range of ideas proffered from a climate union, to a circular and sharing economy, to market solutions, in what could be seen as a move from the imaginative and innovative to the tried and tested. A key problem that was highlighted was how to arrive at a democratically "shared vision", with the recognition that this meeting only involved white middle-class people.

The second meeting in the hotel function room had around 25 people in it and included the core group and a range of SMEs representatives and actors from local charities. Again, the environmental consultant went through the criteria, this time emphasising that there was to be community involvement at all stages and evidence provided of partnerships. The projects were to be scalable "upward and outward" and long-lasting so as to be socially and financially sustainable. Finally, they

could not be capital spends. The subsequent discussion covered a range of issues: how to involve the LA but still be community-led; how to motivate people to get involved; how to monitor and track processes that were social rather than material, capital spends; how to make the most of the resources existing in the community; and the scale of the actual project itself in terms of the geographical area of the project.

Two observations emerge from this funding application that are highly relevant to this project. Firstly, community engagement is by very definition exclusionary and this tension was understood, discussed and visible in these meetings and implied by the very criteria of the lottery fund. Secondly, the logic of austerity permeates this form of funding mechanism in its drive for “cost-effective” solutions that have hard to achieve and involve conflicting criteria. For instance, a shared-vision is difficult to achieve between members of a community divided by income interests (Fraser 1990), which will be explored below in the context of EVs. Another aspect of austerity can be discerned in the rationing of funds by competitive application. This rationing undermines the criteria calling for partnership and collaboration, as this form of funding tends to pit communities against each other with rival bids.

BHESCo funding was in contrast to ESC more secure, with more community installed solar PV, its pay-as-you-save model and property energy audit service. Nevertheless, with the ending of the FiT BHESCo was in the process of organisational flux. This entailed moving further into its pay-as-you-save model, while also developing an innovative and explicitly confidential rural project in a local village to deliver a local heat network. More detail on how these activities and how BHESCo’s EA was funded was not revealed during this truncated participant observation. However, an application for redress funding from the BESN was conducted during this participant observation. Again, although this application was unsuccessful the details of this bid were instructive for this project.

The document that provides guidance on application gives direction on the type of initiatives the redress scheme funds. These include “engaging vulnerable customers” with energy issues, EA that does not duplicate existing services, installation of energy saving/renewables that cannot be funded elsewhere, safety advice/measures for household energy systems, and training/education on energy for vulnerable customers (Energy Saving Trust 2021). A theme of efficiency and cost-effective measures is prominent here. The author was tasked with re-drafting a prior unsuccessful application for resubmission. The application was for a total of £550,771.45 for an EA project that would work across the South-East region to fund, systematise, coordinate and monitor with the aim to share learning/expertise on the EA services that ESC, BHESCo and others had been delivering despite inconsistent and reducing funding. This application was subsequently rejected resulting in a conversation in which a manager complained about the amount of times this had happened and asked

for advice on how to approach this kind of application and if there was some kind of formula to a successful bid. This can be seen as part of a broader theme and context and what has been called the poverty industry.

Graeber (2018) details how people in this poverty industry have to become experts in a linguistic game of matching different funder criteria with buzz words and shibboleths that must be used to access funds. It is also an aspect of “cost-effective” rationing of funds that creates a patchwork of programmes and a postcode lottery of injustice. Finally, this is part of a theme of patrician discourse on vulnerability (Butler 2020) that will run through this chapter. It says, “leave no one behind”, while clearly doing just that with rising food bank demand across the country and similar egregious aspects of injustices widening internationally (Oxfam 2022). But more insidiously this discourse denies these people agency in this very statement, for “leaving no one behind” implies a democratic deficit, as participation in the discussion of the direction and aim of this journey is precluded.

5.2.2: Visibilities: Unpicking Just Transitions

An energy transition can be conceived in different ways, the dominant being merely changing the energy system, while the more radical being transforming the socio-politics as well (Burke & Stephens 2018). This distinction can be traced through how these CREO actors see the energy market, what community energy is for, and who is recognised in the community. This latter factor corresponds to the EJ justice tenet of recognition.

In a trip to Arnhem with ESC, a representative of RESCOOP, a European-wide group of coops, made some interesting points on the market, what this does and how this operates that are relevant to the UK. He pointed out that in Flanders the energy utilities had made deals with landowning farmers to place renewable energy on their land, crowding out more collective communal ownership options. To aid a more just transition or even transformation he said: “we need a plan, not a free market.” The notion and vision of the market was also present in ESC and BHESCo, with interesting differences between these reflecting differences between both the operations of these two organisations and their guiding missions and rationalities. ESC saw the energy market as inherently unfair and “broken” in such a way that it exacerbated EP, while creating structural asymmetry between both energy companies that tried to do things differently and CREOs themselves. This metaphor of “broken” is interesting here as it suggests something is not fit for purpose but leaves the reason or responsibility

for this in the air. In this way it is similar to the idea in economics of market failure, the most famous usage of this concept applied by Stern (2006) when he argues the CC is an example of the market failure of our capitalist system. In contrast, in a meeting with the CEO of BHESCo the energy market was described as inhabited by a “cut throat...big six”. Again, this is an interesting choice of metaphor suggesting violence, although it is often used as shorthand for extremely competitive behaviour. However, within this hyper competitive, if not violent, context there was a “gap” in the market for a new type of energy service purveyor that treats its customer more like financial or retail services do (Ente 2020a) Thus, there is quite a different emphasis on show here that will be elaborated in the interviews below. However, for now it is fair to say that while both frame the market as unfair to varying degrees, BHESCo seems much more focused on engaging in this market, which was reflected in its bigger budget and larger commercial activity.

As either part of or external to this market, the roles CREOs are seen to have also differed. This can be seen broadly in the mission statements above, with both institutions focused on mitigating the CC, but ESC specifically linking this to injustice, while BHESCo frames this more generally about “empowering everyone”. In ESC’s about page, it describes itself through three themes: local – through its one-to-one EA that offers time and support to “ease the burden of energy vulnerability and injustice”; pioneers – in testing innovative community energy projects; and ambitious – “transforming” energy generation and use and moving the national agenda to include communities in solving the “twin problems of energy injustice and climate change” (ESC 2021a). In contrast, BHESCo on their *what we do* page explain they “empower property owners in Sussex to meet their heat and power needs with efficient buildings and clean, affordable, community-owned energy”, then explain their pay-as-you-save model (BHESCo 2021b). While BHESCo does include renters on another page, there is little discussion of injustice. For instance, on the page that details its energy advice BHESCo says it is “shocking” that so many suffer from EP in a relatively rich country and that BHESCo is “proud to help alleviate” (BHESCo 2021b). These differing emphases were reflected in the daily practices on show within these organisations with much of ESC’s time and capacity taken up with EA to people struggling to pay not just energy but water, rent and other forms of debt, while in the BHESCo office one person, of five to seven people, devoted some of their time to a phone line dedicated to free EA. Overall, these visibilities are a partial function of what is in front and in plain view of these organisations with Brighton and Hove much closer to London and as such a commuter town of our unbalanced national economy. Hastings, in contrast, is harder to get to from London and more economically isolated and deprived. However, Brighton like any major city in the UK, has pockets and areas of poverty (PHE 2018b), an indicator of this being its three food banks. Therefore, there seems

no lack of injustice and poverty in Brighton, rather it is just perhaps a little harder to see, especially if not looked for or focused on.

5.2.3: Rationalities: Progressive Neoliberalism and its Contrarians

As argued above, rationalities involve moral and knowledge based claims through specific lexicons (Miller & Rose 2008). As shown in the previous chapter, CREOs exist in a capitalist neoliberal society and this is deeply ingrained in our language. However, how an organisation positions itself and makes moral judgments on aspects of this society show how far an organisation is aligned with the status quo. In turn assumptions made about natural relationships between members/non-members of communities, and people's motivations (Dryzek 2013) are the knowledge building blocks upon which *democratic* or other systems are built. The language through which these moral and epistemological claims are made via these two organisations can summarised as *(in)justice* versus *empowerment*, which as will be suggested below, reflects on these organisations adopting radical versus reformist environmentalities (Dryzek 2013). This is not a simple binary but more a spectrum upon which certain objects are morally inflected and epistemologically constructed. These objects include democracy, community and capitalisms.

Democracy is framed by these institutions in three interesting ways. Firstly, both ESC and BHESCo split their business and by implication the people who these organisations interact with, into those who can pay for services and thus given democratic rights within the organisation, and those who cannot pay and thus do not qualify for these democratic rights. Therefore, there is a divide created between social groups and the individuals in these groups that reflects/reinforces social injustice, and in the democratic sense, harks back to historical periods in the UK and elsewhere when democratic voting rights were denied those with lower incomes. Secondly, this form of democracy is direct in the sense of one-person-one vote but what these shareholders get to vote on is typical annual general meeting fare, with voting on board members, accepting budgets/accounts. This is in Kothari's (2020), and even Dryzek's (2000) sense, rather narrow in scope and precludes more ecological or deliberative democratic modes such as participatory budgeting. A final aspect of democratic framing is how these organisations interact with democratically elected local government (LAs). Both had problematic relations and experiences with LAs, with the CEO of BHESCo complaining Brighton council was "sidelining" her organisation, while ESC had a long and difficult history of interaction with Hastings council

which involved direct competition. ESC's interaction with its LA will be explored in the interview data below. However, what can be suggested here is that part of these difficulties arise from the notion of community and who and how this is represented and advocated.

ESC states that community is geographically based and those who share common values which map on to the ideas of community of *place* and *interest* (Energise South 2021). These common values are not static things – rather they can be developed through public engagement. ESC claims one of the best ways to involve people in a low-carbon transition is through ownership “where the benefits of development are received by both individuals and communities and are real and tangible” (Energise South 2021). This is conducted through a community benefit fund, educational outreach, and individual interest payments for shareholders. This idea that people will support a renewable energy transition if they are involved and they benefit is supported in a review of academic studies of CREOs in the UK (Berka & Creamer 2018). It is important to note that in a similar way to how democracy was constructed, community has this divide between the community (who benefit in a dispersed way) and the individual (who benefits directly). ESC also frames communities and people as motivated by a mixture of private and public interest, with the implication that by providing private benefits this can build up tangible public benefit and more support for public and communal values.

BHESCo in contrast describes the community as differing groups of “customers”. These include businesses, schools, SMEs and property owners. Within this community are the skills/abilities already there to make the change happen be they “an electrician, a trench digger, an IT specialist, an engineer or city planner”, and CREOs role is to convene this community into action by gathering a “community of interested participants” from among these professions (Ente 2020b). Thus, again community is constructed as both involving private and public interest; however, this time more detail of community is provided and this community, or at least the useful parts of this, reflect the professions of BHESCo’s board and management. Therefore, this detail of community also implies the democratic deficit and divide of those that count – the professionals or those with money – and those that are only recognised in the passive sense, there to receive EA and advice/disciplining on the energy behaviour.

In terms of capitalisms, both organisations are linguistically and materially entangled with this system (as are we all); however, the particular language and perspective on this system differs. BHESCo frames itself as, with some justification, as a leading force of creative destruction in the energy market, that sees the “gap” that energy as a commodity leaves for energy as a service. The aim here is to “empower” everyone, although in practice this *everyone* excludes those that cannot pay. Everyone is still framed as an energy “consumer” or at best a “prosumer”, while technological “progress” and by implication growth – core capitalist signs – are celebrated and vaunted (BHESCo 2021c; Curtis 2020).

Thus, BHESCo frames capitalisms as something to work with and improve, and the energy market as a place to compete. This also implies BHESCo will adopt some of the aspects of companies competing in a market, including more concrete hierarchies within the organisation, and confidential practices and technologies such as non-disclosure agreements (NDA).

In contrast, ESC frames its role as democratising an energy system that both alienates people from their energy use and engenders injustice. The ESC website and actors all used terms like innovation or client (an interesting comparison to consumer) and have a carbon calculator that have neoliberal implications like the tech-fix or individualisation of structural problems (this is also an invention of BP – see Solnit 2021). However, the twin emphases on energy injustice and energy democratisation as a way to alleviate this, implies more of a critique of the overall capitalist model. Therefore, BHESCo's approach could be framed in Drsyek's (2013, p. 16) environmentalities quadrants (see table 13 below) as reformist/imaginative, while ESC could be described as radical/prosaic. The subjectivities being shaped will be dealt with below at the end of the interview section to which we will now turn.

Table 13: Organisational Environmentalities (adapted from Dryzek 2013).

	Reformist (transition)	Radical (transformation)
Prosaic	The Green Party	ESC
Imaginative	BHESCo	XR

5.3: Interviews: Not Recognising Community

This section will present semi-structured interview data again using governmentality framework of technologies, visibilities, rationalities and subjectivities, but with these broad categories sub-divided

into the categories identified as relevant in the introduction and emergent categories that frequently arose among these interviews. Therefore, this framework will be organised as follows:

- Technologies/techniques of rule/resistance including: money and debt; technologies and innovation; and EE
- Visibilities of rule/resistance including: energy, community and C19 and CC crises (emergent)
- Rationalities of rule/resistance including: democracy; neoliberalism; and capitalisms
- Subjectivities of rule/resistance including: the investor/prosumer, the cooperative capitalist, the community activist/facilitator, and the vulnerable energy poor

The range of interviewees is broad (see table below for details) reflecting the fact that CREOs are entangled in communities politically, economically, socially and materially. Therefore, these interviews are drawn from political actors that have influence or act on similar issues to CREOs, economic and financial actors as funding shapes behaviour, infrastructural actors that influence the material connections of energy, and the CREO actors themselves as experts in their field. The social aspect applies to all interviews as all of these people were at the same time community members concerned with justice and the CC.

Table 14: CREO Interviewee details

ID	Job	Activity
I3	CREO Employee	Fundraising manager and the manager of EA provision.
I4	CREO Employee and Local Authority Officer	In charge of maintenance and operation of renewables for CREO and low-carbon city officer for LA.
I5	Co-founder of CREO	Managing CREO
I6	Council environmental officer	Energy planner with focus on EE and renewables.
I7	CREO Innovator	EE advisor to businesses, CREO

		consultant, system transformer.
I8	Local Government Councillor	Head of council.
I9	DNO employee	CREO and community strategy lead.
I10	Local Government Councillor	Former pensions actuary working in local government.
I11	CREO Financer	CEO of CREO financier that works with CREOs to produce long-term financial plans and credit.

In terms of the timing of these interviews and the pandemic, again these straddle the before and during. Interviews 9, 10 and 11 were conducted over the summer and autumn months of 2020 during the pandemic, while a follow up interview was conducted with CREO actor I3 in summer 2021. The rest of the interviews were conducted before the pandemic. This again produces an issue in that the pandemic increased injustices and the salience of these injustices (Davies et al 2022; Marmot et al 2020a), while at the same time expanding the role and scope of government and its potential (Watkins 2021). As this chapter has much more data on C19 than the single follow up interview in the last chapter, this is included in the visibility section and anywhere else of relevance.

5.3.1: Technical Aspects: Money and Debt, Misplaced and Misunderstood

Money and debt were discussed in a range of contexts from the funding of CREOs, and more generally an energy transition, to LA cuts, and taxes. While most interviewees did not question these categories in any way, I7 questioned both, while I5 began to question debt. This questioning of these categories directly touches on how these things known as money and debt are technologies of rule, and more specifically as Lazzarato (2012) argues, capture and control. However, as with any exercise of power, I7 and I5 also touched on how these things can be used as vehicles of resistance.

As presented above (5.2.1), CREOs finances are unstable and the sector was in flux due to the ending of the FiT. I5 gave more details on this and also explained about the specific financing of projects and how tight the margins of profits on these are. He also talked about the costs of EP on the NHS and how nonsensical this situation was. In terms of EU funding I5 referred both to the difficulties of this but also what ESC did for this money. A difficulty included the overall scope of the project which meant ESC was subcontracted as it could not fulfil the role of a full partner. This meant working directly with the LA and local housing association which “at times was very challenging”. However, ESC oversaw the project’s community engagement, EA sessions, organised festivals, and the installation of over 1000 solar panels on a local college. These actions show that the funding clearly drives and shapes not only an organisation’s activity but also who and how it works with other organisations. I5 gave specific details on the precarity of CREO finances:

There isn't a lot of margin installing solar, maintaining it for 25 years and selling it at a discounted price to the site. We've just been looking at that now and if we could actually survive if we did that for 25 years and we decided that we couldn't do it on our own. We'd need to be part of a network like Energy For All, who do the back end stuff, because generally the coops that I've been involved with like Schools Energy Coop or even OVESCO, they can only generate (all their directors are volunteers) sufficient surplus income to pay for one administration member of staff for two days per week. So, there isn't a full-time job out of putting solar on other people's buildings. And of course, nobody knows what is gonna happen to energy prices. They might go negative in a few years if there's more and more wind and other renewables, in which case everything changes.

This rather bleak view of ESC and more broadly CREO finances, is a result of the reduction and now ending of the FiT, but also a function of energy prices more generally which as he states are highly unstable. This financial pressure on CREOs is pushing some out of business, others to combine and still others to stall (CEE 2019; Mirzania et al 2019). It is also forcing groups to try to find innovative ways to create funding streams through new community energy services, which will be discussed in the next section. It will suffice to state here that this dynamic is a problem. This is because the valuable services and actions CREOs conduct are in many ways replacing local government services, but also providing new low-carbon services. If this is all based on volunteers providing their time, enthusiasm and expertise then there will inevitably be places and people that miss out on these services, creating a postcode lottery of injustice. This situation also bars many people from taking part, as many cannot afford to spend time volunteering. Unfortunately, in this way the sector is in danger of reinforcing certain injustices even as it endeavours to mitigate others.

Ofgem’s role was discussed in financial terms with its main role seen as keeping costs low for consumers. I4 saw the problem as decarbonising while maintaining supply at a reasonable cost. Thus, the challenge was to:

Decarbonise and how we do that while keeping the lights on without having to spend huge amounts of money on strengthening the grid, and from Ofgem's standpoint, is keeping the cost down to the final consumer as well.

This fixation on cost by I4 and Ofgem, assumes a public largely locked-in to a fossil fuel energy system (Unruh 2000) should pay to get out of this. I9 assumed the same, although showing concern for those that could not pay:

Ofgem is an economic regulator so its overriding priority is the cost of energy to the consumers. That's shifting a bit. They are bringing up in priority quite quickly decarbonisation but it can't increase the cost to customers as you will always have this class of customer that can't pay as they're vulnerable and in FP. So, they can't shoulder the investment that might benefit other customers.

This assumption that the costs of the energy transition be socialised, while the Government still subsidises the fossil fuel industry to approximately £11.6 billion a year, the highest level in Europe (Lydgate & Antony 2021), seems perverse. Also, if we look to the private sector, we see scores of UK stock market listed companies extracting energy and mineral resources across the African continent to the tune of \$1.01 trillion, including 6.6 billion barrels of oil (Curtis 2016, p. 3; Christophers 2020). When these present perversions are combined with a historical perspective that observes how the state in the UK and USA has colluded and aided the fossil fuel majors in price fixing, maintaining monopolies and neo-colonial practices of dispossession and appropriation (Malm & the Zetkin Collective 2021; Mitchell 2013; Huber 2013; Watts 2004), this assumption of who bears the costs of this transition seem even more problematic.

In contrast, I10 discussed how the taxation system was dysfunctional with implications for an energy transition. He argued that those who earned the most but also those who had the most wealth should pay more for this transition:

The point is the price of green stuff does need support. Now I'm a big believer in saying those at the top should pay the most tax, I've no qualms about that and I think we should charge those who earn the most, the most. But also I think you have to look at inheritance tax, the Tory mantra that says you shouldn't get something for nothing is a fib because you shouldn't get something for nothing unless you inherit it and then you should definitely get it for nothing.

He expanded arguing the state should increase taxation on those that earn the most and on assets, arguing specifically that dividend tax should be "equitable" to income tax. This was because the system incentivises tax avoidance:

I know people who run their own businesses and pay themselves an annual salary of £15000 so they pay no income tax on that, and then top that up with an annual or quarterly dividend. And I get why they do that but again you're sort of setting up a system that incentivises that behaviour in the UK.

This highlights a problem that CC researchers (Owen & Barrett 2020) and EP experts omit. While moving the climate levy from energy bills to general taxation would be less regressive, the tax system in the UK is still regressive and unfair. It has historically low top rates of income tax (Galvin 2020a), minimal taxes on wealth which are a major driver of inequality (Christophers 2020; Piketty 2014), and successive scandals such as the Panama Papers, Paradise Papers, and the Pandora Papers show tax evasion by the very wealthy and avoidance by UK Banks to be systematic (Christophers 2020). Questions of who pays for this transition are ongoing and complex; however, complexity does not justify the unjust, and that is what characterises both the funding of the UK's energy transition and its connected, wider taxation system.

This leads on to questions of what finance, money and debt actually are and what they are for. In many ways this is a hideously complex question that whole books have been written about (Ingram 2004). This complexity was acknowledged by I7, having worked with Government ministers on banking policy under New Labour. I7 experienced in community banking projects explained:

What we were trying to do was very organic, grown from below, what they were doing was trying to impose something new from above. and the guy I was working with an ex-director at RBS, said the problem is, they don't understand how banks work...We can all look at a system, whether energy, finance or farming and we can understand it at the general level, but to avoid unintended consequences and weird feedback loops we need to understand quite deeply what those systems are and how they work. and what [the ex-director] was saying was the Labour policy on finance didn't understand how finance worked.

The problem at the heart of this was money being in the wrong place:

It was only available for too short a time and it wanted too high a return...That's really critical because 50% of population has 1% of liquid capital, they can't do anything, can't buy an EV, can't even buy an e-bike probably, it's all beyond them, there's not enough cash flow in their lives to do a retrofit. Unless we figure out a way of financing their transition, we automatically exclude 50% of the population. So, a difficult one, which needs to be solved and solved fast.

Basically, I7 is saying money is complex and much of it is in the wrong place or inaccessible and that this is hampering an energy transition. Exploring this complexity, Ingram (2004, pp. 3-4) says money is a social "technology" akin to writing and numbers, with the familiar functions an economist would list: "medium of exchange, store of value, means of unilateral payment (settlement), and measure of value (unit of account)." However, alongside these socially useful powers, money also has an oppressive power in that it can be accumulated and appropriated, dual aspects Marx (1887) also highlighted. Moreover, in the very moment of production of money power is being exerted, and that is part of the problem I7 refers to above. When a bank decides whether to offer a loan it uses credit

ratings that exacerbate existing inequalities, either by refusing the said credit or increasing the interest rate dramatically, as with credit cards (Ingram 2004; Galvin 2020c).

Thus, money is at core a *social relation* (Ingram 2004) and in many senses one that will make or break a just transition (Galvin 2020c; Pettifor 2019). Firstly, this is because of the way banks operate in producing money out of nothing, independently of services and products, and in credit-debt relation (Galvin 2020c). This ultimately drives the compound growth function of our societies: “where the creation of more debt necessitates faster growth rates to serve this debt, which are achieved through more debt.” (Antoniades 2018, p. 8). Secondly, as I7 refers to above, in the UK and beyond, more and more people are finding their social reproduction costs to exceed their incomes and being forced into high interest debt (Frazer 2021; Lazzarato 2014; Soederberg 2014). This indebtedment is not limited to the individuals or even the poor, with states in the Global North and South affected in different ways. The Global North states have reduced taxes on wealthy individuals and corporations, meaning they must rely on debt financing like government backed bonds; however, this creates controls on their scope of action as these bonds carry interest and this means more growth to pay this interest and, in any crisis under threat of capital flight, the first things to go are public protections and labour rights (Hickel 2020). In the Global South this process is much more basic, reflecting what Fanon (1963) refers to when he compares the many ideological agents of conformity in the Global North to the rifle butt of the colony. As the growth of labour power and social protections contributed to the fall in profits in the global North, policy-makers and elites leveraged the IMF and WB to impose SAPs on many indebted countries in the Global South, tearing down employment laws, health care, and education funding – opening these countries up for corporate extraction (Hickel 2020, Federici 2019). Finally, many banks, financial institutions and pensions are still financing fossil fuel extraction with \$4.6 trillion in the last six years, with \$742 billion in 2021 alone (Banking on Climate Chaos 2022). In 2018 two thirds of international investment went to oil and gas compared to less than a third to wind and solar (Malm 2021). Therefore money, whatever it is, certainly does seem to be in the wrong place, as I7 argued, and considering most current fossil fuel on the industry’s books should remain in the ground (Trout et al 2022; Welsby et al 2021), I7 was right to emphasise that we need solutions fast.

5.3.1.1: The Politics of Technologies and Innovation

As argued above, neoliberalism's (and more broadly capitalisms') default answer to the problems that emerge from a global economy based on compound growth and structural inequality, is the tech-fix. We have seen this with C19 and the UK's abandonment of meaningful disease control in favour of the technology of a vaccine (Scally 2021). It is also on show in the Government's Ten Point Plan (HM Government 2020), which includes unproven big-E energy such as hydrogen in the home for heating and nuclear, and is questioned by energy experts from Sussex University as being uncoordinated, taking too long and being too expensive (Vowles 2020). This is not to say a just transition will not require technology and innovation, just that we need more assessment of what these technologies do, how they do it and who for/to (Mueller 2021). CREO actors and the connected stakeholders discussed a variety of technological innovations that CREOs could, or are, using. These actors also questioned how appropriate certain technologies were, while also questioning the broader framing of the CC as a technological rather than socio-political problem.

One particular innovation that CREOs are interested in is referred to as "going behind the meter". This involves solar PV, battery storage and an internal meter which together allow a property to fully exploit the generation of solar, only using external electricity when this internally generated and stored energy has run out. This is similar to a household that has solar PV and a battery system but becomes interesting, as I5 argues, when applied to apartment blocks and flats:

So, the social housing providers if you put in solar on all these south facing blocks of flats and you add batteries and then go behind the meter for the block, then sub-meter all the individual flats and charge people based on what they actually use, there's the potential to save 50% yearly for everyone. Then you've got the opportunity for social landlords to add a cost to the rent so there are no more energy bills and that would greatly reduce costs from when everyone is individually charged and metered, with all the errors that they make.

This innovative method of delivering energy to people in social housing does not require new technology and is already being applied in various CREO projects in the South-West. To scale this up would require finance from central government but also new ways of thinking about energy, perhaps more akin to BHESCo's idea of energy as a service rather than commodity. However, as I5 recognised, the energy companies would oppose this as it would certainly reduce their profits, while Ofgem has

argued against decentralised and distributed microgrids like this as it would remove the consumer's choice of energy provider and could negatively impact those not included in these schemes (Ofgem 2017). Dealing with these issues in turn, energy companies' profits cannot be placed in a higher priority than social and environmental justice (even though effectively they are), while Ofgem's emphasis on consumer choice has always been undermined by an uncompetitive market and a lack of consumer engagement with switching, especially those at more risk of EP (CMA 2016; BEIS 2018; Poudineh 2019). Moreover, since the energy crisis of late 2021 switching to save money is not a viable option. However, the issue of microgrids and other innovations that help some people but disadvantage others based on where they live is a more pressing concern, and links to the idea of postcode lotteries of injustice. As such this issue will be returned to in the section on democracy below.

A salient low-carbon technology that CREOs are interested in and are a core feature the UK's transport plans (HM Government 2020: Ofgem 2019a) are EVs. I6 explained that although EV numbers now were small, they are likely to rise dramatically, and getting the charging infrastructure in place was key to this growth. It is this charging infrastructure that CREOs like Brighton Energy Coop (BEC) and others are looking to develop. However, EVs can be seen as problematic for a number of reasons and as such a technology that could reinforce injustices. I11 warned that EV roll out could omit some people from the benefits:

What do we do about the people in poorer areas and in rural areas? What happens to them when we all go electric and there is no local garage? How will they power their cars as they would then need individual charging stations at each location? So, thinking about that is one of the challenges for the sector of CE. It is very easy to think about it in the context of urban not in the context of the 8 million who live rurally.

EVs were also, I11 pointed out, an individualised solution to a collective problem and not as low-carbon as presented. These concerns about the justice implications of EVs are documented with socio-environmental impacts: 40% of low-income groups have no access to cars and these same households more likely to live in dangerous and polluted areas and are subject to more traffic accidents (Lucas et al 2019); EVs embed on average twice as many carbon emissions as normal cars and their operational stage's green-house gases (GHG) emissions depend upon the upstream generational mix (Cerdas et al 2018); finally, the local pollution of vehicles is only a partial function of fossil fuel engines with more coming from tyres, meaning that the increased weight of EVs could result in higher levels of PM₁₀ and PM_{2.5} and a whole range of other pollutants from tyres (Carrington 2022; Beddows & Harrison 2021). Therefore, merely swapping EVs for fossil fuel cars, similarly, to merely changing energy generation from fossil fuels to renewables, is not going to achieve a just transition as they bake-in existing injustice and will likely lead to future injustices.

More generally, some interviewees questioned the whole tech-fix approach arguing that we already have the means to decarbonise and that it was the political will and ambition that was lacking. I7 was unequivocal arguing: "it's not a tech problem - yeah we could always do with better tech but we've got it." The problems are political and financial, for as I7 pointed out above, half the population have no money to invest in even simple and fairly cheap EE measures. I9 agreed, mocking the Government's hydrogen and offshore wind plans, and pointing out that we should start with the "Cinderella of it all": a massive building retrofit that would significantly reduce both the emissions from heat and EP rates. This would not require unproven or innovative technologies. Instead, it would require government finance, education and training and localised approach. The issue of EE will be turned to next.

5.3.1.2: Energy Efficiency or Sufficiency?

EE is predictably a core category of concern to all stakeholders in this section, and has long been a significant part of various government, academic and institutional responses to the CC and EP (Boardman 1991; 1993; Defra 2005; CCC 2015). In one sense this is because what is saved in terms of energy does not have to be generated, or significantly can be used elsewhere. This is where, as argued in the literature review, one of the problems with EE resides: Jevon's paradox whereby any energy saved through efficiency is rerouted into more use of energy and therefore ultimately adds to more cumulative emissions and other environmental impacts. Jevons originally modelled this on the steam engine and coal in 19th century Britain, but this has been observed in many other areas such as lighting (Fouquet & Pearson 2006) and vehicle use and household energy use (Sorrell et al 2009). This problem was discussed by this section's actors, as well as the more general need to radically reduce the UK's energy use and the ways to do this.

In terms of retrofitting homes there was broad agreement that this was a very basic first step to reducing EP and GHG emissions more generally. In a critique of the Government's latest failed EE policy (Rosenow and Sunderland 2021), I9 talked about how an effective retrofit policy might work:

I think it's a nice idea but the investment in housing retrofit needs to be long-term, it needs to be larger grants than that to homeowners, and it needs to include investment into the industry to develop the skills, products and services that are needed. And no company is going to develop an offering for a six month grant of £5000 per household... the money has to be spent by the end of March [2021]. So, unless you can find a qualified and

accredited contractor to deliver between now and the end of March, when you are working from home full time and might not want the disruption.

Here I9 is talking about what was referred to in the last chapter and will be in the next, a more joined-up and holistic policy. This, importantly, is one way of mitigating Jevon's paradox through a variety of policies such as shorter working hours/weeks (Stronge & Lewis 2021) or homeworking (assuming the home is suitable and energy efficient), and more localised economic activities. This is what I4 argued:

[Things] need to look much more local. There's a need I think for everything, like, much more working at home, to reduce on travel. And there is there's a huge need just to reduce, reduce, reduce in everything. Improved EE of housing, more public transport, it's ultra-low carbon. I think that level where you're just trying to reduce everything, keep things more local. So, you know, while we're talking about carbon reduction, there's also benefits the local economy, upskilling people for jobs, that kind of stuff. I think there's a whole industry around that. I think there will be lots of retrofitting of housing to make it more energy efficient.

This statement is significant in the repetition of "reduce" three times and the focus of this, on "everything". This needs to be a "holistic" drive, I4 argued, to include not just the home but working life and the way local economies work. This argument will be returned to in the section on rationalities.

Speaking more directly to Jevon's paradox there was recognition of this phenomenon but also more general questioning of this focus on EE. On the issue of retrofitting housing I6 claimed:

In energy terms this is a really interesting challenge because if you want to reduce carbon you tackle the big houses that are the big energy emitters, EP initiatives tends not to cut carbon. Because basically people typically take the comfort factor, rather than cutting energy use.

Although there are questions about the focus on those suffering from EP, as argued in the first section of this chapter, behaviour change is required across society to differing degrees. I6 recognised this and stated there were "demand management elements that are actually beneficial to individuals and the energy system as a whole." This technical term, demand management, is an area of environmental research that shifts the technical focus on things to social behaviours, such as transport behaviour and eating habits (Ivanova et al 2020). This research although not using the term, can be linked to the idea of thinking more about *sufficiency* over *efficiency* (Alcott 2015). This notion of sufficiency was approached by I10 who had the *benefit* of the pandemic perspective, who argued:

In terms of the energy stuff, you can make changes when you need to and so if you look at the amount of car use for example has gone down drastically, and even when we're out of lockdown it's still 30% lower in Leeds than it had been. So, I think there's a real case to say we can do more to reduce our travel and reduce the number of trips we make and I think too often, so, I think when you talk about the CC there's different boxes aren't there, there's the box that is individual choices, and there's the box that is structural changes and you need both.

This quote and I4's above, touch on both the need to reduce environmentally problematic behaviour such as driving and how much of this behaviour was unnecessary, thus implying sufficiency over efficiency. It is of note that I4, interviewed before the pandemic, saw this need for a much less energy intensive lifestyle, while I10 uses the experience of the pandemic and the forced lifestyle changes to reflect upon this need. Also, I10 crucially talks of the structural barriers, or conditions of possibility, that really shape the choices people can reasonably make, placing agency and structure in a dialectic. Lennon et al (2019) agree, arguing that local action can affect national policy and structures, but that dominant framing of people as *consumers* over citizens is stymying local efforts. Ways of creating new behaviours, alternative lifestyles and more broadly a just society, arguably require new ways of seeing (visibilities) and thinking (rationalising) about things such as energy, and community. These visibilities are what this chapter will turn to next.

5.3.2: Visibilities: Views Through the Pandemic

This section will present what objects and processes these interviewees could see and how they saw them. These visibilities include energy, community and CREOs, and the C19 (emergent) and CC crises. As stated above, what is not visible cannot be thought about, and this is particularly important in terms of the pandemic's photosynthetic effect (Davies et al 2022) in highlighting, while at the same time expanding, the vast injustices of our society that makes these harder to ignore, not for want of strategic attempts to do so (McGoey 2019). It also resulted in new actions and powers of government, previously considered unthinkable (Davies et al 2022; Gerbaudo 2021). Thus, the pandemic served to uncover, (re)focus and show issues in different lights and against different backgrounds, a process that will be explored below.

5.3.2.1: What is Energy?

Energy was discussed in two main senses by this interview cohort. Firstly, it was discussed as both a basic need but also something we as a society were too removed from or abstracted from, which

meant we did not deal with it in a responsible way. A solution to this was more communal ownership and ED so that people develop into environmentally benign/aware subjects. Secondly, energy was discussed as energopower, which although not named as such was inferred. This was evident in collective discussions of energy, but specifically nuclear energy, which ranged from outright rejection to acceptance as a necessary evil. This speaks of something beyond the human and biopolitical that is driving our politics.

Energy as central to our lives was commonly accepted but this meant different things to different interviewees. I9 understood this in a particular service inflected way:

We don't define what energy is, we don't talk about electricity necessarily we talk about the fact that we keep people's lives running...we've picked up on the fact that it's more important now than it used to be...people's expectations that the TVs always there and you can stream, and everything else, and if people move to EVs then you need it for pretty much for everything that you want to do.

This statement is interesting on two levels. First, the centrality of energy to enabling modern life is affirmed, despite that fact many in the Global South have no electricity or intermittent supply (Van De Graaf & Sovacool 2020), while many in the Global North (see the previous chapter) cannot adequately heat and power their homes. Second, this phrase “keep people’s lives running” suggests what has been described by Daggert (2019) as a western bias of movement over stasis and connected to the wider western notions of progress and growth. When this keeping lives running is then connected to the idea of TVs, streaming and then in the near future EVs, this becomes connected to a wider western ontological and epistemological trap of trajectorism that Appadurai (2013, p. 223) describes as the assumption that humanity is moving from “here to there” or “now to then” in some kind of cosmic teleological design. One of the many problems with this trajectorism is more energy use involved in this temporal and spatial *journey* is going to lead to more and more resource use with embodied emissions and thus more environmental crises (Hickel & Kallis 2019), not to speak of the above mentioned injustices of actual energy access.

A solution to this was mentioned above – to reduce, reduce, reduce, and this idea was elaborated upon by I3. She argued that increased awareness and connection to energy generation through collective ownership would help to reduce our use of energy:

We are trying to change ideas on ownership. And this just has a whole different implication if you are part of a coop that produces energy - how you then use that energy - there's a bit more of direct connection between you and energy. So, say for energy conservation - if you know you produce x amount of energy on a school roof.

I3 went on to argue that currently we use energy and get bills and “everything that goes on in-between you don’t know or think about.” This “in-between” evokes the notion of energopower, “an analytic

method that looks in the walls to find the wiring and ducts and insulation, that listens to the streets to hear the murmur of pipes and sewage..." (Boyer 2014, p. 325). It also suggests, with our current fossil fuel reliance, our "energy unconscious" the hidden infrastructure that is designed to be ignored (Yager 2011, p. 309). The alternative offered, is of the collective ownership of energy and a more material understanding of both the benefit and costs of its use. As such this implies a radical new visibility and a radical new way of rationalising our relationship to energy as both a basic need and a social relation (Kinder 2016). As such this alternative goes beyond an EJ perspective to a more radical ED one, as CREOs as communally owned organisations do by implication.

An antithesis to this idea of local democratic ownership of energy is nuclear energy. Two broad positions emerge from the wider group of interview stakeholders and can be summarised by two interviewees from this section. I10 was quite categorical arguing that nuclear power and its costs spoke of a poverty of imagination:

We're not being creative enough in how we generate it, so this idea that we need nuclear for example. When actually there are really viable alternatives out there if we want to do it...I've read that the amount we're subsidising nuclear energy is just bonkers...this idea of this base level energy, there's other ways of doing it, you could use an estuary or tidal, you could get regular baseline energy of an alternative form and it's hard to believe it would cost more given how much nuclear is costing.

In contrast, I11 was more measured if unenthusiastic stating: "I don't want us to be using nuclear but I recognise that there will probably be some limits to what we achieve. You know wind would be a better solution." These two broad positions are interesting and point toward a number of issues about nuclear power (in both senses). Firstly, the ultimate cost to energy users would be comparatively high because of the complex finances including insurance needed against serious disasters, consistent over run of these big projects (Flyvbjerg 2009), waste disposal issues, and security concerns (Sovacool et al 2020b). This last issue of security is why Winner (1980) frames nuclear power as a fundamentally political and undemocratic in that it requires centralised authoritarian control. As such, it seems incompatible with the above notion of collective ownership of energy or ED. Further, nuclear as a form of energy has always been associated with weapons of mass destruction (as a core constituent of these) and catastrophic risk (Winner 1980). These elements of risk and weapons of mass destruction, the authoritarian control of nuclear, all make this a quintessential form of energopower, which Daggert (2019, p. 111) claims "helps to explain how the governance of populations could be directed toward the project of productive work, not only at the expense of the bodies expelled as wasteful, but even at the expense of the life of the population itself." This form of energopower is beyond life and biopower and in many ways more like Mbembe's (2019) necropolitics, a rationality not concerned with or motivated by life at all.

5.3.2.2: What is Community and What is its Role in a Just Transition?

Community is an amorphous term and as such can be seen in many different ways and in connection to different factors. The focus in this section is on how interviewees defined community, what role they saw for community and CREOs in an energy transition, including what scale this should and can be realised at. Broadly, this project agrees with Anderson (2006) that all communities are in a very real sense imagined, but that this does not make them false or immaterial; rather, it is the modes that these communities are imagined that is important. Community was seen by nearly all respondents as based around geographical place and interest, which matches the CREO literature (Seyfang et al 2013; Creamer et al 2019), while CREO's and the broader community's role was mainly seen as making an energy transition fairer and more democratic.

Community was most strongly associated with place by the CREO actors and this is reflected in the names their respective organisations are given. However, this notion of community of place came with differing emphasis and stress. I4 talked of place but also an idea of emotional and material buy-in:

Places are part of it. But communities also about that sort of emotional buy-in to something as well as people really believe in renewable energy and community energy...So, we'll be much more place focused, local people, people can almost see, touch these installations and see the benefits that they bring to community.

I7 elaborated with a notion of “geographical community, and normally within that there will be the community energy enthusiasts in that community.” This idea of communities within communities leads onto the notion of communities of interest. These were generally those with active interest or the people who get involved in CREO activities, explained I7:

Normally 5-10 at the heart of it then around 50-100 volunteers, then another 500 on the mailing list, that's typical, I think. Things that they have done, they have gone out and helped people with energy saving, or helped people do retrofits on their houses or helped schools install solar, or do community energy projects.

The other broad community of interest were investors in the various share offers or groups that CREOs working with such as schools, or farmers. Regarding investors, I4 made an interesting distinction which perhaps can be seen as a broad test of how communal an organisation is: “we're not set up for shareholders. Well, we have shareholders, but the community comes first in our governance structure.” This distinction was also posited by I7 more explicitly:

Community energy is quite a good vehicle to solve energy justice and inequality because it's quite close to people in the community and has access to this community, it doesn't have a primary commercial imperative.

This is part of a broader binary between the corporate rent-seeking and marketised world and the socio-environmental, local and reciprocal relations grassroots innovations engender (Seyfang et al 2014). Of course, as argued in the literature review, simplistic binaries can and should be complicated to a series of spectrums or indicators, such as local/distant control, participation, sharing of profits, scale of the technology and voting rights (Lennon et al 2019; Hicks and Ison 2018). A final but interesting twist on the notion of community of interest might be termed communities of need. I10 argued:

We need to be working together to try and get to a more carbon free place. It's clearly in all our interests to reduce toxic gas in the air for example emitted by cars and lorries and aeroplanes and whatever else goes through our cities. So, I think in terms of the community it's one of those things where we all have the same need - we all breathe air and therefore we'll all be better off as a community if we have cleaner air.

This idea of shared communal needs over interests is perhaps a more just way to imagine/envision a community.

The role of communities and specifically CREOs was broadly to make things fairer but also to drive a process that was going too slowly. I4 was clear arguing the “role of community is to keep it fair. So, I don't think that's always done higher up.” This again links to the binary above, corporate/communal, although here government is grouped with this corporate side of the binary. This notion that communities can lead to more just outcome was also implied by I9:

I think people and communities need to be put more at the heart of energy policy. Policy made by BEIS tends to be large scale. There doesn't seem to be the imagination or the ability to think about how communities and people can club together and to contribute to the change.

This statement argues that the government favours Big-E energy and seems to lack *visibility* of communities and what communal organisations can do. If this is true, it could be a consequence of a highly centralised state that has actively defunded local authorities under the logic of austerity (Gray & Barford 2018). Regardless, I9 is clearly arguing that communities and CREOs are being marginalised by government policy. This marginalisation was a reason for the slow pace or even stalemate of current environmental policy for I3, who stridently argued the “important point is that it just won't happen without community involvement - because that is what has happened so far with so little progress.” These interviewee perspectives show understanding of EJ principles of due process and transparency; however, they again go further advocating more collective and communal control of energy infrastructure.

There is theoretical and empirical support for these twin arguments, that community involvement makes things fairer and could speed up the transition. Burke & Stephens (2018) using a energopolitics/politics lens consider how the scale and type of technology used has inherent political implications that enable or limit democratic functioning. They argue (following Winner 1980 who would add nuclear as argued above) that fossil fuels and large renewable infrastructure, such as offshore wind, lead to centralised and concentrated forms of power, while local scale renewables allow more democratic and defuse power relations (Burke & Stephens 2018; Winner 1980). Empirically, a review of evidence from the CREO sector found strong evidence that communal involvement, both in the process and outcome, increased societal acceptance of renewable infrastructure (Berka & Creamer 2018), which could imply more speed in an energy transition.

5.3.2.3: The Contrasts and Connections of Covid 19 and Climate Crises

The visibilities concerning these twin crises included seeing how these crises were different but also comparable, had similar effects on certain groups, and more general despair or guarded optimism on mitigation of the CC. These visibilities are complicated by some of this cohort being interviewed before the C19 crisis and others during this crisis. However, nobody in this cohort was particularly sanguine about future prospects (the only interviewees with optimism were *elites* a dynamic which will be discussed in the next chapter). This perhaps reflects the lack of progress I3 referred to above, and the greater awareness of the dangers of the CC people have who work in and around the CREO sector.

Prior to the pandemic and with surprising prescience, I6 talked of how the CC, which was particularly salient in 2019, due largely to XR and the school strikes, could easily be displaced as a governance priority:

A year is an awful long time in politics, and I do anticipate this by next year there will be other things coming to the fore by which carbon neutrality sort of goes down the priority list.

While this statement does not prefigure what subsequently happened, it does highlight a form of governance that reacts to events. This is a form of attenuated governance that does not really forward plan or work on contingencies, but rather as in the case with pandemic responsiveness, actively degrades capacity under the logic of neoliberalism (Mellish et al 2020). This tendency to react over being proactive was identified as deeply concerning in regard of the CC by many interviewees.

In comparing the CC and C19 there was the idea that C19 was more immediate and thus governments in their reactive mode could act. I9 argued the crises were “diametrically opposed” with C19 “here and now and the CC is still in the future to people”, with the relative truth of this opposition irrelevant. Similarly, I11 argued:

The big differentiator is that people will act when the crisis is immediate and it affects them and that is the big challenge facing us, if it is, still for most governments and many people, something that doesn't directly affect them. And where they get hit by floods etc. that sort of becomes about the weather event rather than the climate.

This opposition can be seen as acute versus chronic. However, in its reactive mode, neoliberal governance cannot deal with long-term problems, or even when it does, as Harvey (2007) and Moore (2015) show, the solutions are spatial or techno fixes that displace the issue geographically or temporally. However, there is something more suggested here about how the CC is darkly elusive, almost like a nightmare one cannot remember, and this brings to mind Morton's (2013) hyperobjects. Morton describes at length how the rain one feels in an unseasonal downpour, or casual use of energy, or reports of distant disasters, all act like something on the edge of consciousness, something that can never be wholly grasped as it spans unimaginable geographical and temporal scales, but that nevertheless acts on us literally bending the space/time around us (Morton 2013).

Finally, specific to the CC there were expressions of impending doom and guarded and conditional optimism. Reflecting on multiple and compounding environmental crises, I8 stated:

There is part of me that just thinks we've left it too late, that all you're gonna see over the next 20-30 years is increased flooding, CO₂ levels going above 450 ppm and past the point of no return, and we're all just screwed anyway.

This perspective was not widespread among the interviewees, although I6 did say that they vacillated between optimism and despair on an almost daily basis. More common was a circumspect viewpoint summarised by I7:

I think we're in deep trouble, and this is not based on my knowledge but on the thousands of conversations I've had. We've got the technology we need to rapidly decarbonise...we could do it over the next 15 years, if we could be arsed.

This statement from I7 envisions the clear and present danger of the CC that can be garnered if one does the work to, in Morton's (2013) terms, see the signs and portents of the hyperobject of the CC. It also sees and argues that we have the collective technological capacity to deal with this problem, while allowing for serendipitous technological aids but not relying on these as the UK Government's

plan does (HM Government 2020). Finally, it frames the problem as motivational, and a core part of what we are motivated to do is our rationalities to which this chapter will now turn.

5.3.3: Rationalities: Thinking Inside and Outside of Neoliberalism

As argued throughout, we live in a world governed by a neoliberal capitalist system that is in many ways internalised by us, its collective subjects. However, as Estes (2019) and Patel & Moore (2020) have documented, this is no unconditional hegemony but sites of constant resistance to the discursive and material oppression/disciplining processes. In this thesis and at this local level, this entailed a hostile energy environment within which CREOs have to operate and the institutional arrangements and rationalities underpinning these, from defunded LAs, Ofgem and privatised energy network distributors and generation/suppliers. It also includes the ways CREO actors themselves express certain ideas and positions that are staples of neoliberal rationality. However, there was evidence of resistance to this, in the actions of CREOs, their business models and the ideas and aims espoused by CREO actors, including ideas regarding ED. A key tension emerges here between LA actors and their democratic ideals, and the CREO actors and theirs, a tension exacerbated by the logic and context of austerity.

Therefore, CREOs can be viewed as sites of both accommodation with the status quo and of productive resistance and alternatives to this status quo. This resistance can be seen as an example of the EJ principle of active/deliberate resistance to injustice, but also more productive in the ED sense of reclaiming and restructuring the energy system (Sweeney 2013). This section will detail how neoliberal and capitalist institutional arrangement and their underlying rationality shape and limit the CREO sector and how the CREO actors themselves reproduce elements of this discourse. It will then detail how CREO and associated actors resist this rationality through ideas and actions aimed at democratising of our governing institutions but especially our energy system.

5.3.3.1: The Art of Neoliberal Governance

As stated above, I3 and I5 both CREO actors, framed the energy market as “broken” and reproducing the very inequality they were endeavouring to reduce. This includes the *Big Six* who operate in an

oligarchic manner through long term confidential contracts and insider dealing to reinforce their market position (Thomas 2019), but also the regulatory framework which hampers CREOs in a number of crucial ways.

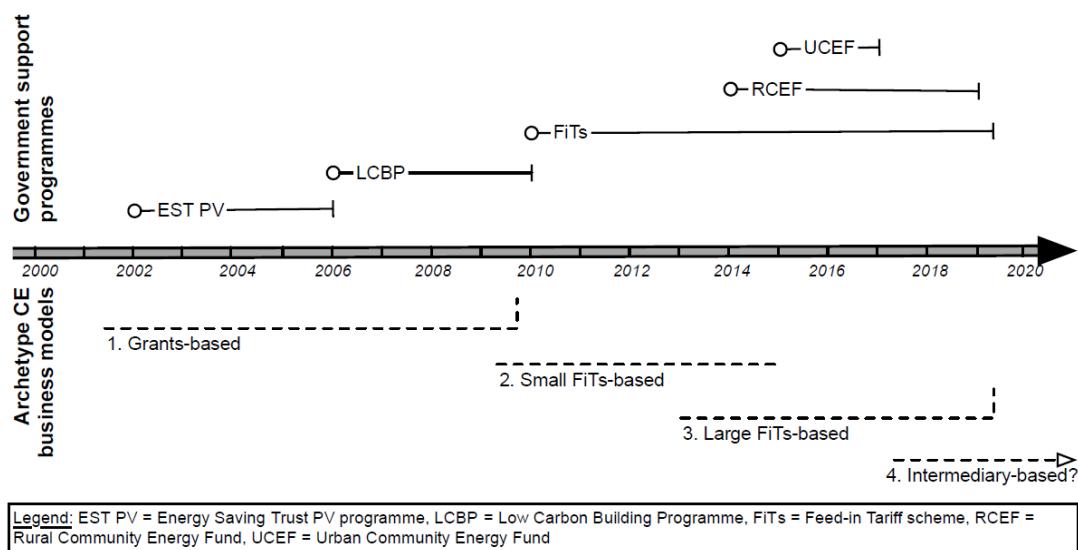
A first and foremost issue, is the very structure of the energy market that does indeed seem *broken*. Renewable generation costs have plummeted over the past decade (IRENA 2020) and are predicted to do so into the future by the Government (BEIS 2020). These low generation costs are reflected in the last Government fixed price contract for renewables being 5p per kWh (Evans 2019) around a quarter of the cost per unit households pay. The problem here is how the wholesale cost of electricity is made. Grubb (2022) argues the design of this system is an anachronism suited to and serving fossil fuel power generation. This is because renewables and nuclear produce power when they can so gas is currently the base power running all the time and *sets the price*, despite only generating around 40% of UK electricity. Gas power stations will only operate at a high price to cover their operating costs and CO₂ taxes. Grubb compares this to always having to pay peak price for every train journey one takes and says this has under the energy crisis become “unconscionable” (Grubb 2022). Thus, despite all the talk of *efficiency* from Ofgem (2019a), the energy market is an inefficient anachronism, clearly not fit for the purpose of decarbonising and this dysfunction having more specific impacts on CREOs.

This includes not allowing CREOs to sell energy direct to communities and undervaluing the outcomes of CREO work. I9 explained that a simple change of law and regulation could allow CREOs to double profit margins by selling direct to users and that there was a private members bill *The Local Electricity Bill* trying to change this. I11 detailed how CREOs they financed had specific outcomes that produced savings and employment opportunities in partner organisations within communities, amounting to what are called economic multiplier effects.

These multiplier effects have been quantified by Power for People (2022) and amount to 12 to 13 times that of commercial projects. However, successive governments and their regulator do not take these effects into account, for while rhetorically the Community Energy Strategy (DECC 2014, p.7) accepted community energy could “have wider benefits such as building stronger communities, creating local jobs, improving health and supporting local economic growth”, government actions do not support these words. This action can be seen in the figure below depicting the rather haphazard government support for CREOs in England, characterised by lack of coordination, poor design, hurried administration, oversubscription leading to rationing, and early closure of schemes (Nolden et al 2020). The removal of government support has pushed CREOs into similar space of operation as commercial suppliers, which corresponds to the national approach to an energy transition

characterising technology substitution (Nolden et al 2020), not any wider social change. This narrow focus of an energy transition is part of, and reflects the neoliberal capitalist rationality that can most clearly be depicted in the regulator Ofgem.

Figure 15: The Inconsistent Policy Support for CREOs (Nolden et al 2020, p. 4.)



Ofgem as the energy regulator was criticised by interviewees in terms of how they operate and who runs it, both of which can be connected to its guiding rationality. A first issue raised was its independence from the industry it regulates raising the spectre of regulatory capture, whereby the regulated hold far too much power over their own regulation (Thomas 2019). I9 as a representative of a private and profit driven enterprise, questioned how Ofgem managed DNOs:

It's weird relationship - so they Ofgem decide whether we have a licence to operate or not, but they do a lot of their work in consultation with us.

That there might be a conflict of interest here was made more explicit when I9 explained that their DNO (and presumably this is wider practice in other DNOs and the energy suppliers) performed CBAs on whether to conduct work to avoid being fined by Ofgem. This suggests a far too cosy relationship between the regulator and regulated that results in both the energy suppliers and the DNOs extracting excessive profits. The Competition and Markets Authority (CMA 2016) calculates that energy suppliers were extracting an excess of £1.4 billion per year from customers on the highest tariffs, which over 70% remained on. Simultaneously, DNOs were making “eyewatering” profits of 25-39% PA, or £10 billion over six years (ECIU 2017, p. 3; Helm 2017), which CA claimed was down to Ofgem being too complacent in its dealings with these companies (Wild 2017). This form of *soft* regulation is a fundamental part of neoliberal rationality that stipulates the market must be unhindered by such concerns as justice or inequality. As will be shown below, this rationality was partly reproduced by CREO actors. However, before moving onto how these actors have internalised parts of this discourse in what Fraser (2017) might term progressive neoliberalism, a further consideration of who and what Ofgem is will help outline neoliberal rationality.

Ofgem was founded in 2000 by joining the older gas and electricity regulators, which were privatised respectively in 1986 and 1990. Its role was to make the energy system efficient (a key neoliberal term), which included “facilitating improved competition between energy suppliers, and leading to consumer price reductions.” (SDC 2007, p. 6). In this quote of inbuilt aims, we can discern a rationality that governs what and how Ofgem envisions the energy system and its subjects. These visibilities are based on a neoliberal rationality that recognises energy suppliers, competition, customers, and costs of energy. Underpinning (Foucault 2008, p. 131) this is perhaps the essence of neoliberalism – not to place a market over the social, but rather to imbue governing institutions with neoliberal market principles and “projecting them on to a general art of government”. This can be discerned in the above reported closeness in working and thinking of Ofgem to commercial organisations and in the actual people working for Ofgem. For example, I7 explained in meeting Ofgem in 2015 they presented a sole focus on cost per kWh for consumers. I7 asked about sustainability and they replied this was not part of their remit. From this I7 developed a broader critique of Ofgem including who they were, what and why they did what they did:

The thing that was really noticeable when I met with them a few times...they'd got rid of all their engineers, and replaced them with accountants and economists...so they saw the system in a certain way, for if you're an engineer you'll see the system in a very different way to if you're an accountant or economist. They're a ridiculous organisation and the remit is wrong and the underpinning thinking, a neoliberal market-based fantasy, sorry not a fantasy but a very narrow way of looking at the system.

These observations are supported by publicly available data on Ofgem and other utility regulators with the boards heavily populated by both economists and industry executives, as can be seen in table 15 below.

Table 15: Make up of boards of regulators. (Thomas 2019, p. 225).

	Ofgem	OFWAT	ORR
CEO salary (£)	190,000 (2016–2017)	160,000 (2016–2017)	160,000 (2017–2018)
Board	1 exec, 6 non-exec ^a	4 exec, 7 non-exec	3 exec, 8 non-exec
Gender balance	4 males, 3 females	6 males, 5 females	9 males, 2 females
Ethnic diversity	None	None	None
Background			
Industry	2	6	5
Regulation	2	1	2
Civil service	0	2	2
Academic	3 (economics training)	1 (economics training)	2 (economics training)
Consumer work	0	0	0

This white, economist or accountant type subjectivity of the boards results in a certain myopia, as I7 suggested. As privatisation became increasingly unpopular and perceived as transferring public goods into private hands, competitiveness was seen a solution to this unpopularity (Thomas 2019). This was framed in 2002 as a duty to protect customers through increased competition; however, this competition was never really realised (Thomas 2019). This duty became completely untenable with the energy crisis in the Autumn of 2021 as poorly regulated energy suppliers went out of business and energy prices soared (Ambrose 2021a). More problematic (Bayliss et al 2020), are the long-term effects of the narrow neoliberal focus of Ofgem, with powerful energy suppliers opposing regulation through strong lobbying, a revolving door between government, industry and regulator creating shared concerns and framing (Thomas 2019), low tax revenue for investment, and cost increases often with the poorest paying the most and rising levels of debt and inequality (Bayliss et al 2020). These arguments all connect to I7's point above about the neoliberal rationality only seeing part of a system. This connects to the broader critique of neoliberal governance, its valorisation of the market, its commitment to privatisation, and the effects of these encroachments into the social with rising levels of inequality, debt and poverty (Fraser 2021; Lazzarato 2012; Harvey 2007). How far this neoliberal discourse has been internalised by CREO actors will be examined next.

5.3.3.2: Internalised Neoliberalism

Two particular issues were salient in the CREO actors' discourses that were distinctly neoliberal in tone. These were the views on regulation of the energy industry and views on nationalisation versus privatisation. On regulation I4 said:

I have to say I'm hesitant to say there should be more regulation in that it has to be very, very carefully worded and not block the industry from doing good things...depending on what technologies come forward for batteries and things like that [regulation must have] as low impact as possible. And so, whether that's done maybe through incentives rather than regulation.

This use of the word incentive is a classic neoliberal term and tactic identified by Foucault (2008, pp. 270) whereby homo economicus is "eminently governable" by manipulation of environmental variables. Similarly, I5 seemed wary of regulation arguing:

I mean I don't think what they should be doing is rigging the market because the market is always smarter than the regulators, and I just don't think excessive regulation is gonna work because it's always watered down.

This statement is interesting as it uses the idea of "rigging" or fixing the market, it also personifies the market as intelligent, and finally undermines the idea of this "smart" market as its restrictions that it outsmarts are always "watered down", or perhaps the market itself does this watering down as it is so smart. Firstly, we are in a world in which we have seen QE – where central banks pay out on government debt and corporate bonds which are largely held by pension and equity firms – enriching the wealthiest in the aftermath of 2008 and C19 (Davies et al 2022; Stevenson 2020). As a result, there were a record 24 new UK billionaires in 2021 (Davies et al 2022) with similar dynamics internationally (Sharma 2021); therefore, it seems the market is already rigged (Galvin 2020e). Secondly, this personification is connected to and part of the fetishization of the market, ascribing it almost animate and lifelike qualities (Warf 2021; Graeber 2001). Finally, the watering down of regulation is part and parcel of the neoliberal project as conducted through lobbying and elite access powerful energy suppliers and insiders command (Bayliss et al 2020; Geels 2014; Winters 2014).

On privatisation or nationalisation these two CREO actors and other interviewees had ambivalent positions. This is of interest as nationalisation is broadly popular with the wider public (YouGov 2017) despite neoliberalism having privatisation as a core aim (Lazzarato 2012; Harvey 2007). On energy nationalisation I5 said:

Pragmatically, when Labour talked about renationalising energy, the engineers I spoke to said well, it's just gone so far, it's just changed so much, you know it's a bit like network rail and the rail companies and the whole grid infrastructure.

This seems to argue that it would be a nice idea but it is too complicated and it uses the key word *pragmatically*, which serves to encode a political argument as practical and realistic. This suggests another key technique of neoliberal governance – depoliticization. In climate and energy politics depoliticization is the categorisation of some socio-environmental issues as beyond political debate and purview (Methmann et al 2013). Depoliticization can be connected to technocratic governance and the way the economy is binarily split from the political (Mitchell 2013). Large sections of energy research and discourse use this technocratic and depoliticising tone (Sovacool & Dworkin 2015). However, EJ and ED perspectives would argue that how our collective energy system is run, controlled, who benefits and who pays, are quintessential political questions that should not be suppressed on the grounds of practicality, realism or complexity. I7 was similarly ambivalent but made the point that one gets good private and public firms and bad ones:

My personal view is ownership isn't that important, it's vision, governance and management. And I think you can have amazing private sector organisations that do incredible work and you can have rubbish public ones. Do I think in theory nationalising water and the grid is a good idea? Yeah I do I think it makes a lot of sense. The networks on which we depend as a civilisation are best optimised by one guiding mind, the problem is for me - what is the vision of the guiding mind and how competent is it? Historically, I am told by my grandparents and parents that the nationalised industries weren't very good. So, whether we can do better second time round I don't know.

This more sophisticated argument brings in a number of crucial points in the debate about the control of crucial utilities and industries. Firstly, and of core import when facing a challenge such as the CC is this “guiding mind” and its “vision, governance and management”. This leads to the question of how suitable private organisations are for this task, while having an overriding fiduciary responsibility to their shareholders and working on very short timescales (by implication the general five year timescale of politics in the UK is problematic as I4 pointed out). Secondly, it points out how we depend on certain things like water and energy. This phrase “depend as a civilisation” is telling in that it frames these things as basic building blocks of this society and as such basic needs that perhaps should not be commodified. Finally, it refers to the historical nationalisations in the post WW2 era, suggesting these were substandard. While a comparison between the quality of these nationally controlled industries and today's privatised ones is beyond this thesis's scope, what is relevant is how these industries were nationalised and the democratic implications of this process. Cumbers (2012) shows how these nationalisations served on one level to centralise this country towards London. On another level the

control of these industries was anything but democratic, often including boards and senior staff of these industries left in post. As Albert (2003) argues, simply taking over an institution without reworking and flattening the internal hierarchies and ensuring economic democracy, leads to problems regardless of nominal ownership. It is how this democratising of the system might work and the tensions within the interviewees' positions that this chapter now turns.

5.3.3.3: Democratic Contradictions

This section will cover how the interviewees considered the object of democracy in ways that counter and resist the governing neoliberal rationality. As many theorists have argued, capitalisms and more acutely neoliberalism, are antidemocratic systems of governance. This can be seen in the ways they privatise and remove essential services from public control, the ways they depoliticise vast arenas of public life such as the economy, and in the ways they narrow and twist ideas of democracy (Taylor 2019; Mitchell 2013; Dryzek 2000; Methmann et al 2013). As such, any theories and actions that deepen and widen democratic processes can be seen as resistance to these antidemocratic forces and processes. But the question is where and how we do this democracy, for as Dryzek (2013) argues, much of the job is one of communication and deliberation, indeed exercising what has become an atrophied social capability, that can and should be conducted outside the narrow and traditional area of formal liberal *democracies*. However, the scale and the urgency of the job of mitigating the CC, and doing it fairly, requires the use of the state (Thombs 2019). This is the dilemma and tension covered here, which is present between CREO actors striving towards a notion of ED and LA actors with a democratic mandate. A final part of resistance covered here, is the discourse which sees the contradictions of capitalist neoliberal positions and offers alternatives, specifically ones that escape the trap of trajectory (Appadurai 2013), the onward march in time and space, for a more local and modest lifestyle of sufficiency (Soper 2020).

ESC's stated aim on its website and through I3's statement (above 5.3.2.1), is to democratise the energy system. This would be done through community shares on a one-member-one-vote system. I3 explained more about the first ESC share offer:

ESC's background was in fuel poverty and it made more sense launch a new clean cooperative, so that the finances were very separate. So, we launched Energise South (ES) and our aim was to raise £400000 and that is to install solar on five schools in Hastings - all University of Brighton academy trusts. So yes, we've reached it! It's closed now but we're gonna reopen it because of wrangling with the LA.

This statement is important as it touches on the democratic tensions this section will explore – the relative democratic credentials of the CREOs versus the LA and the relations between these institutions.

Firstly, this split between ESC and the “clean” cooperative of ES marks a democratic divide between those who can pay and therefore are allowed to vote on the governance of the cooperative, and those who cannot pay and thus are excluded from this democratic process. Both I3 and I5 understood this tension but offered different solutions. I3 argued for leaving “no one behind”, but this sounded more than rhetoric:

We do have a deep connection to some of the most deprived areas, and a lot of places where we give energy advice it means we hear issues of people affected by the worst issues. So, we just have to do whatever we can do with the people we have ready, making sure that we do not leave vulnerable people behind and that the stuff that we are trying to do and shape in this transition benefits everybody and does not keep that existing power structure.

In addition, to *leaving no one behind* and sharing benefits, we have the argument concerning changing existing power structures, which rarely follows this *leave no one behind* discourse. I5 explained how the transferring of wealth and assets and debt relief might help in this regard:

It's about transferring the assets somehow back to people who aren't well off. So, this idea of guerrilla solarising is that you get solar on as many low income households as you can and you transfer the assets to allow them to take back ownership of those assets...most low income families or a lot of them never pay a water bill because it the one bill they don't have to pay - and you know these debts are sold there could be £1000-4000 they're sold to debt collectors for a penny in the pound, at about 1, 2 or 3%. So, for £30 you can buy a £1000 debt.

Together these two statements show an understanding of the implications of the direction of travel of ESC and its trade-offs. To survive CREOs have had to move into more commercial space (Nolden et al 2020) and as they do this, a democratic deficit emerges between the energy poor and those that can pay. These democratic tensions within ESC were accompanied by a dispute with the LA on which was the more appropriate democratic deliverer of ED and EJ.

Local authorities have been severely affected by austerity (Marmott et al 2020b) and this has arguably affected their relations with community organisations and general capacity and operations. In terms of the impact on Hastings, I8 was clear:

Our net budget is £15 million we reckon it's a total of about £60 million we've lost. Some of that we've had to replace with income generation, hence the property buying. Of course, the council can borrow fairly cheaply - so you can borrow to buy property and then pay off the loans with the rents and have some surplus. Some

councils have done huge amounts like that - borrowed over £1 billion, Spelthorne in Surrey has borrowed around £1.5 billion and that's only a little district council, to generate income and it's worked, but it is risky.

I8 specified councils were not allowed to borrow to run deficits only to buy things. This leads to the spectacle of LAs with deficits borrowing to become landlords to extract rents to pay their deficits. For ESC, this led to forms of competition with the council with both I3 and I5 reporting conflict and "wrangling" with the LA over renewable assets. I3 explained one particular episode with a specific officer:

The interesting thing with this officer and the tension within Hastings Council - he could understand the difference between the council doing the solar project and us doing it. But it was interesting in that he couldn't see that there is something in the democracy of having lots of members in the cooperative who participate in this, in contrast to the structure of a council, in which you vote in your councillor, to him this was the same. If the council take it on it would have the same feeling as if a company did it, because of the detachment. Even though I understand what the officer was saying - there is more democracy with the council. However, the way it's run and our connection to it is too distant and not as direct as community energy.

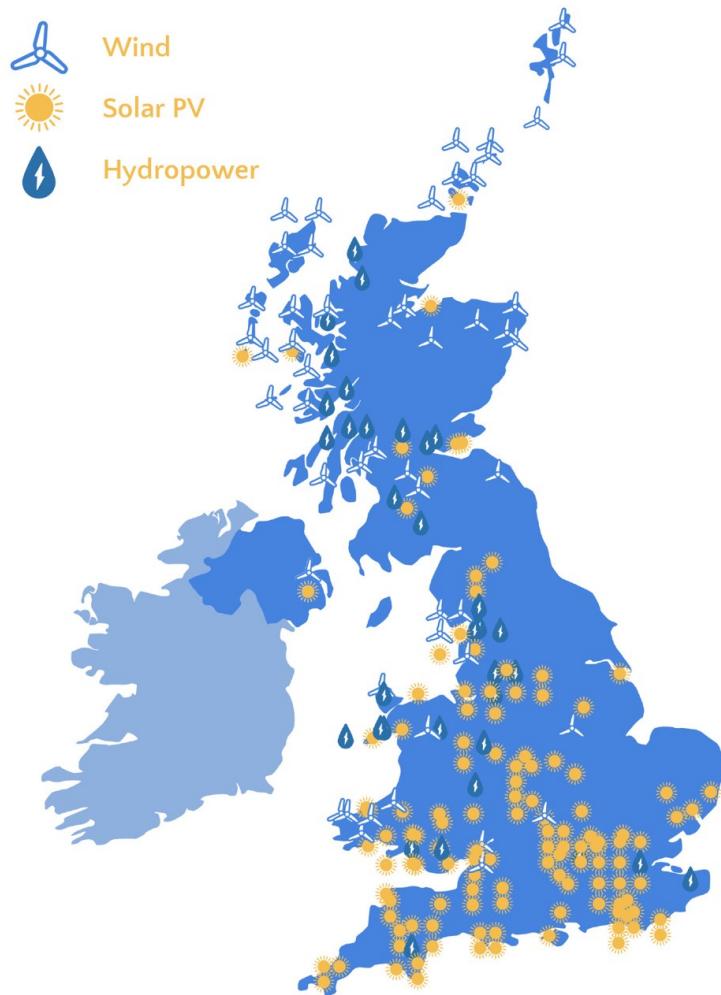
I3 and I5 accepted austerity had limited and changed what LAs could do and that CREOs were now fulfilling former LA roles such as EA. However, I3 pointed out that energy generation and specifically renewable generation had never been part of LA's purview. Thus, ESC was able to work with the local community in decarbonising and doing this in a more *direct* democratic way than any council has ever worked in the UK. However, the problem with this vision is *who* is omitted.

Arguing in favour of renationalisation of all energy assets, I8 pointed out one of the major problems with I3's argument for ED – those left out and behind. I8 said:

To emerge from the community, it will only emerge in those places where people have the skills and the time to develop those things. And that won't necessarily be those that would benefit from it the most, the kind of poor areas. I suppose there is space for the commons but the trouble with that is too dependent on those community energy organisations coming into being, and people benefiting in those areas where they exist and not where they don't.

Looking at a map of where CREOs are placed in the country we can see how this argument is valid (figure 16). This is perhaps why Ofgem is wary of microgrids initiatives that will allow some to benefit from renewables and bypass network and climate levy costs, leaving those not covered by CREOs or other local schemes not benefiting and paying more (Ofgem 2020; Parag & Sovacool 2016).

Figure 16: Sites of CREO renewable assets (CEE 2021a, p. 12).



Overall, there is no simple alternative here and the CREOs' search for funding in many ways matches the LAs' in how it shapes their activities and priorities. This is how over ten years of austerity has affected our polity, with CREOs filling in where LAs can no longer, due to severe and in many ways targeted cuts (Marmott et al 2020b; Gray & Barford 2018). The question which is the more democratic institution is also unclear, with CREOs' democratic deficit matched by the thin democracy on offer from the UK state, with over 60% of people not engaging in local democratic exercises (Electoral Commission 2021). An initial conclusion here, which will be explored in more depth in subsequent chapters, is that we live in a deeply undemocratic country with large sections of the population not engaging or really served by the political economy of this country. As such, perhaps it is too much to ask small CREOs to push against this alienating and debilitating tide, and yet they do.

The dominant vision of an energy transition in the UK involves changing energy sources and the delivery system but leaving all other social and political arrangements more or less as they are (HM

Government 2020; Grubb 2019). I4 offered something very different arguing modern life with advertising and greenwashing sent people all the wrong signals and encouraged an environmentally damaging form of consumption. He linked this to people effectively locked-in to high carbon lifestyles with, for instance, commutes they had little agency to change. I4 offered an alternative vision to these dynamics that are hardwired into capitalisms in its need for compound growth (Hickel 2020). I4 explained:

I mean strangely, it's almost like we are going to need to go back in time. You know, settlements and stuff were originally decided upon for their geography – for their water the source or whatever it might be. It's kind of going back and looking at our geography and seeing how we can utilise it. So, to give an example of [town] having a river, we can have marine heat pumps – high ground around it – wind, that sort of thing.

This fairly simple and in many ways logical response to the CC contains a fundamental challenge both to capitalisms and the broader ideas of trajectoryism and social evolution. Firstly, this idea of going back in time is a challenge to capitalisms' one directional path of progress, which as Foucault (1972) points out has been continuously demolished by various theorists, fields (and it could be added events) only to be rebuilt. This teleological path of history that cannot go backward/divert (Carr 1961) is dialectically connected to capitalisms' myth of the human subject and its associated rationality ever going onward and upward (Malm 2016a; Foucault 1972). Also, this idea of localising our energy systems to match the natural resources and contours of regions and areas was, in the 19th century, a hard limit on capitalist expansion that fossil fuels enabled an escape from (Malm 2016a). This is why these visions of localised democratically controlled energy – whether by CREOs or LAs – for I11 require:

A different type of capitalism...we just can't continue with this capitalist model that we have. And I kind of hesitate to say this, but the capitalist model, you know this is a kind of Marxist approach to this, but part of the reason we are where we are, is not government but the capitalist structures that we live in.

In moving finally to the subjectivities that are imagined and constructed by these actions and narratives, the tensions described above are formative. The way CREOs either accept or partially reject the status quo shapes the subjects they are and interact with. Equally, the democratic tensions between CREOs and LAs inform these CREO subjectivities and the populations they see they are interacting with. This will be presented in the final section of this chapter.

5.3.4: Subjectivities: Green Entrepreneurs and Community Activists

The subjectivities that emerge from the CREO discourse and materiality are not discrete and single individuals express multiple aspects. Despite this complexity that is humanity, it is useful to sketch provisionally the types of people being constructed (Hacking 2002), the relative empowerment or disempowerment of these positions, and the differing perspectives these positions might take as a result. The subjectivities within CREOs are further complicated by the employee/volunteer binary; however, this project only focuses on the leaders and thus usually employees of these CREOs.

A privileged and techno-utopian subjectivity imagined here and discussed in energy transitions literature is the prosumer. This figure was alluded to by I9 above when discussing energy demand and how this needed to be constant and would be affected and changed by EVs. I9 describes a future scenario in which rises in electricity demand are largely driven by the take-up of EV and heat pumps but that this demand can be managed by moving it around in time. The subject on the end of this moving of demand is the prosumer on a time-of-use tariff that gets paid for charging their EV on a Sunday night while demand is low. This is the kernel of this figure – they have the technologies, the EV, solar PV, battery storage, and the internet of things home appliances, with which they can exploit and benefit from the peaks and troughs of energy demand and thus price. This Panglossian future and figure was enthusiastically outlined by BHESCo (Curtis 2020; also see Sandys & Pownall N/D):

These technologies will give consumers more control over the way that they engage with their energy supplier, by giving them access to the energy market. No longer will they simply consume energy, they can produce and trade it through microgrids, leading some industry experts to refer to the emergence of a new kind of actor in the energy market – the ‘prosumer’. So that energy users can plan for the days and weeks ahead, we can expect to see an increasing use of big data analysis coupled with weather forecasting to accurately predict times of electricity scarcity and abundance. This will give energy consumers the confidence to decide when the most cost-effective time to use, store, purchase, or sell electricity.

This figure links to Foucault’s (2008, p. 226) “entrepreneur of himself”, who is their own capital/investor/producer and source of earning. Huber (2013, p. 19) develops this figure in what he describes as the real subsumption of life under capital, where life lived “through a home, a car, and a family – is seen as an individualized product of hard work, investment, competitive tenacity, and entrepreneurial” life choices. In this sense the prosumer extends this technical, material and individualised life into the low-carbon future. Where the millions of people fit in, who suffer from EP and many more in rental accommodation and thus have little agency over any of these technologies, is unclear and unstated. This suggests that this figure is merely an heir and continuity of the nimble and affluent consumer, who has been benefiting from UK energy policy for over 30 years (Boardman 1991; 2010).

Connected and perhaps a crossover with the prosumer, is the green investor. This subject is relatively affluent, likely a local homeowner (BEC claims 70% of their investors are local) and concerned about the CC, so ready to put their wealth to use to mitigate this for a small return in interest. This entrepreneur of the self marketises their concern for the environment, while also being likely recipients of the benefits that accrue to the nimble prosumer described above.

The cooperative capitalist is a second subjectivity that emerges and is embodied in the more commercially advanced CREO's leaders. BHESCo's CEO, as shown above, is happy to engage in the wider energy market but sees the gap of treating energy as a service rather than commodity – like a bank or retailer, which it is argued is different to the incumbents' model. Similarly, BEC is a cooperative but one of the main ways it differs itself from commercial renewable projects is as a "crowdfunded" model involving less wealthy but more investors (BEC 2021). Both organisations offer shareholders interest but at a lower rate than their commercial counterparts. Thus, the business models and people leading these models differ in degree rather than kind to their commercial energy providers. Both organisations speak enthusiastically about progress, innovation and technologies with a complete lack of critical awareness of problems with these concepts and technologies, again matching commercial actors. This figure also suggests Foucault's (2008) entrepreneur of the self, but in contrast to Huber's (2013) US version of a white, suburban, SUV driving, Republican, cooperative capitalists ride bicycles or drive EVs and likely vote the Green Party. They accept capitalisms should change, as engendered by the cooperative model, and hold the belief they can be a vehicle of change within this system (BHESCo 2021a; BEC 2021).

The community activist/facilitator subjectivity is engendered by those organisation like ESC that have focused much of their resources on the poverty in their local communities. These subjects see the energy market as a source of EP/poverty and thus malfunctioning or "broken". These subject see the CC and its mitigation as both a cause of poverty and a consequence that in the future will exacerbate this poverty, and as such the solutions to the CC must dovetail with solutions reducing injustice. While these actors engage in share offers and thus the energy market, they are much less enthusiastic about this as they recognise the problems with moving into this space, such as the vanishingly small surpluses projects offer and the democratic deficit this move implies.

The final subject is the EP victim described in the previous chapter. Again, this is mainly a passive subject that is advised, listened to and empathised with. However, there is now the insertion of a question over this figure, in the way Hacking (2002) describes, as some people working in this area see that poverty is imposed and a blockage to a just transition. Therefore, this figure is still passive but there is the suggestion of financial empowerment through either debt cancellation of some kind of

transfer of assets. There is growing evidence from the universal basic income (UBI) research and advocates that this could actually work (Give Directly 2021; Haushofer & Shapiro 2016; Bregman 2016).

5.4: Conclusion

This chapter used two participant observations, interviews from CREO actors/associated actors and local democratic actors to explore what CREOs are, what they do and how this is shaped and constrained by external factors. This chapter helped contribute to all three research questions and aims 1 and 2. Firstly, it found both CREOs working practically on issues that would address EJ principles but there was a difference in emphasis reflecting both the areas these organisations are in but also their guiding missions. ESC was mainly contributing to the first four principles of basic EJ, with some renewable generation contributing to principles of *sustainability*, *inter* and *intragenerational* justice. In contrast, BHESCo focused more on renewable generation thus contributing more to *sustainability*, *inter* and *intragenerational* justice, while still doing but to a lesser degree the work on the first four basic EJ principles. Secondly, it finds CREOs working in a hostile funding environment pushing these organisations into more commercial spaces. This hostile environment often includes LAs who due to austerity are also forced into searches for income generation that can result in competition with CREOs. More broadly, this includes a regulator and energy market not suited for a renewable energy system, never mind a just transition.

Thirdly, the two CREOs surveyed and interviewees seem to employ differing rationalities. The first is more suited to and comfortable within neoliberal capitalisms. The second with its twin mission of mitigating the CC and reducing injustice begins to question capitalisms specifically or through a focus on a *broken* market that reproduce injustice. More broadly, this dynamic is played out in a system that is marginalising communities and not doing the basic work that must be done – fix the thermal inefficiency of UK housing and go some way to addressing EP. This can be connected to how austerity has severely limited the scope of LAs; however, retrofitting is a fundamentally local issue that requires local solutions and an empowered and active LA. This leads again to fundamental questions about the UK's democracy, of who is involved and how. These themes will be developed in the next chapter which will detail a participant observation at Community Energy England and interviews with national stakeholders, including two MPs.

Chapter 6: Community Energy England

6: Introduction

This chapter will focus on the national level detailing the participant observation with Community Energy England (CEE) the organisation that represents CREOs, lobbies government and conducts research on CREOs. It will also deal with the national level interviews divided into three groups, elites, CREO actors and associates, and academics. This chapter will develop the democratic deficit argument in this context with CEE fighting a rear-guard action to limit the damage to CREOs from the withdrawal of government support. It will also examine how this government and its regulator are much more connected to and focused on big-E energy such as nuclear, off-shore wind and fossil fuels and the justice implications of this. Following the format of the last, this chapter will firstly look at what CEE is and what it does, then it will document the participant observation in this organisation, finally it will present the national level interview data.

6.1: What is CEE and What does it do?

CEE (CEE 2021b) is based in Sheffield and describes itself as the “voice” of the community energy sector. It is governed by a board of volunteer directors – five men and five women nine of whom are white from a range of professional backgrounds within the CREO, wider energy and NGO sectors – and run by CEO Emma Bridge and her team. It is a company limited by guarantee, is not-for-profit and uses all funding for activities representing the sector. It was founded by CREO practitioners in 2014 with a vision of facilitating a “thriving community energy sector integrated into and truly powering a fair, zero-carbon energy system”, and a mission to help the sector establish new innovative projects and expand. This organisation operates on a membership basis with CREOs (in their many varied organisational forms) themselves offered tiered fees, from free for those turning over less than £20,000 annually, up to £2000 annually for those turning over more than £10 million. It also has corporate, local authority, public and charity, and individual forms of membership at various rates annually. Specific activities include lobbying national and local politicians, network operators and regulators on the benefits, needs and opportunities associated with CREOs. It also acts as a

coordinator of CREO best practice and learning through a variety of mediums including conferences (CEE 2021b).

Specific to policy lobbying, CEE was key to negotiating an extension to the period of CREO registration for the FiT before its closure in 2019. Since then, CEE has been lobbying for a suite of CREO favourable policy and regulatory changes, for instance the right to direct supply of energy to the communities CREOs are based in. This has led to the Environmental Audit Committee (EAC) holding a community energy session with CREO and regional energy actors. This Committee subsequently wrote to the Secretary of State in support of many of these regulatory and policy changes called for by the CREO sector and CEE (EAC 2021). In terms of learning and sharing best practice CEE produces a yearly state of the sector report, which analyses trends, cases, business models and innovative projects. It also had (this seems to be offline currently) a social impact tool which members input data in order to build an evidence base upon which to build the case for the benefits, needs and opportunities of the sector (CEE 2021b).

6.2: Participant Observation: A Sector Searching Solutions and Support

This participant observation involved a three-month internship with CEE conducted remotely as this was during the summer of 2020. The work involved a range of activities including attending webinars, editing reports, analysing policy documents, stakeholder mapping, organising online conferences and presenting at one of these, drafting a statement responding to the BLM protests, and regular meetings and correspondence with the employees of CEE. The following will explore through the governmentality framework the context CEE operates in at this national level. CEE here can be seen as broadly an informational/communicational conduit of CREOs and the national and regional level energy institutions that in various ways inhibit and/or facilitate these CREOs. The internship at CEE provided a national perspective on broad trends within the sector with indicative cases and issues highlighted, analysed and discussed. This national perspective of trends and issues will be the focus of this chapter to act as counterpoint to the specific cases of the previous chapter and to endeavour to adumbrate and trace the connections between the specific place-based practices with the broader governing schemas and technologies of control/resistance (Ettlinger 2011).

6.2.1: Technical Aspects: Ofgem as Blind to CREOs and their Benefits

Ofgem as the ostensibly independent energy regulator, oversees the UK energy system including the monitoring and disciplining of energy suppliers and the regional network operators. However, this is in the administrative sense, with its policy suite/direction coming from BEIS and the Government. Nevertheless, as argued in the previous chapter, the relations of Ofgem with powerful interests in the energy sector and their shared backgrounds and economicistic outlook tend toward regulatory capture (Thomas 2019). As such, the CREO sector suffers from being ignored due to its relatively small scale, and its social impacts discounted through a myopic and narrow neoliberal focus on market share/scale. This was evident in the writer's analysis of Ofgem's Decarbonisation Action Plan (DAP) (Ofgem 2019a) and attendance as a CEE actor of a webinar with Ofgem, Government representatives and other stakeholders. These will be summarised in turn and the implications for CREOs outlined.

As a rather crude measure of this narrow neoliberal focus in the DAP various key words/phrases can be counted. *Community energy* is absent and *communities* occurs twice, while *lowest cost* occurs 17 times and *consumer/s* occur 142 times (Ofgem 2019a). In the executive summary the document makes the claim that the UK has made "significant progress in decarbonising the economy" with emissions falling by 40% since 1990 (Ofgem 2019a, p. 4). This achievement, which is lauded by the elite's discourse detailed below in the interview section, rests on the questionable political economy of production over consumption emission counting (see literature review). This political economy also occludes the role of the UK Government and its financial institutions in funding fossil fuel infrastructure around the world (Clayton 2020), which will be returned to later in this chapter. The DAP goes on to claim that it is imperative that required new investment in technology, use of data and artificial intelligence be as "efficient as possible" (Ofgem 2019a. P. 4). Efficient here is suggestive of the rationing of funds that was explored in previous chapters, and is a key concept of neoliberal discourse. A focus on efficiency is a curious way to approach the biggest societal challenge perhaps to ever face humanity. Tellingly, efficient use of funds is rarely mentioned regarding military spending and activity, where energy "exuberance" and associated costs appear "intrinsic" and highly damaging to the environment (Bonneuil & Fressoz 2017, p. 123). Efficient for whom, is also a question of an anachronistic (Grubb 2022) and extractive (ECIU 2017) energy market and system.

The DAP claims the benefits and costs of this transition should be shared equally and that all consumers must be engaged in this process. This is an odd claim as presently these costs and benefits fall far from equitably. These injustices include the poorest paying up to five times more proportionately via the climate levy than the richest despite using approximately half as much gas and electricity than these affluent groups, who also benefit more from policies such as the FiT (Owen & Barrett 2020; Garman & Aldridge 2015). Also, engaging the public is best done by community based actors such as CREOs (EAC 2021), making community energy's omission in this document more problematic. Finally, while paying lip service to the discourse of leaving no one behind and protecting those deemed *vulnerable*, of nine actions Ofgem commits to conducting up to 2050, two concern EVs, one offshore wind, one a fund for *innovative solutions* and the others concern network operators and incumbent energy suppliers (Ofgem 2019a). How these actions/processes will protect those deemed *vulnerable* is unclear as they imply a continuity of an energy transition that favours those with income and wealth over those without (Boardman 2010), while also favouring Big-E capital intensive infrastructure that CREOs are not suited for.

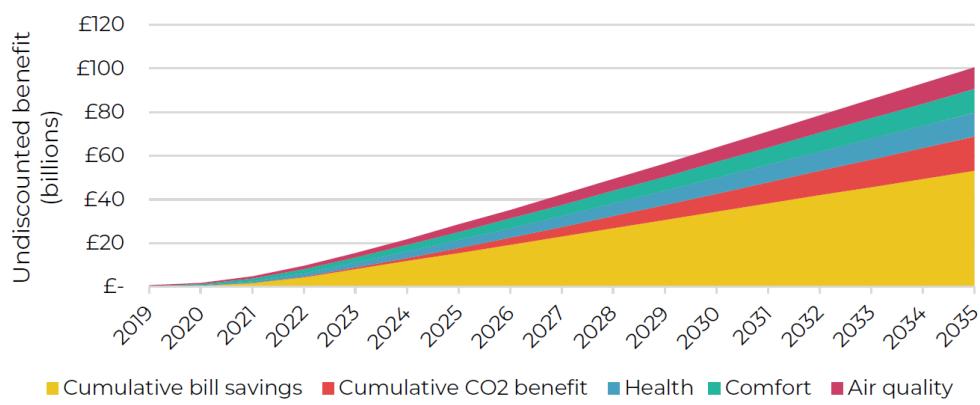
The webinar from the Parliamentary Renewable and Sustainable Energy Group Involved the head of Ofgem Jonathon Brearley, Liberal Democrat Peer Jonathon Oates, Darren Jones MP and other members of Ofgem and PRASEG. The themes of this meeting were driving an economic recovery from the pandemic, reducing GHG emissions, and protecting customers. The main announcement was the network price controls. These are effectively five-year plans that Ofgem sets out certain objectives to meet, the network operators then develop the plans, which Ofgem subsequently assesses. Ofgem's assessment ostensibly scrutinises and challenges these plans, although it may be recalled the DNO representative in the previous chapter framed this interaction as more collaborative.

Similar to the DAP, this webinar raised more questions and contradictions than answers. First, Ofgem announced reducing the network operators' ROI by approximately half, which would mean £2.3 billion would not be going to shareholders and could be redirected to reduce costs for consumers. Ofgem claimed *their* analysis had found these organisations were natural monopolies and as such were stable, low risk investments and thus investors would likely accept this renegotiation of terms. The question why the UK has privatised network operators with monopoly power profiting from a system paid for by taxpayers was clearly off the table in this meeting, but this claim that Ofgem's analysis showed the above is an elision. It was campaigning work from Citizen's Advice and others, who argued that these monopolies were misrepresenting their risks/rewards and as such were making "eye watering" rates of profit of an average 19% on base revenue (compared to energy suppliers average of 4%), amounting to £25 billion of which £7.5 billion cannot be justified (Wild 2017, p. 6; ECIU 2017; Christophers 2020). Therefore, this can be seen as Ofgem mitigating a dysfunction of a system to make

it better match its rhetoric of fairness, rather than some form of progress in the energy transition as it was implicitly framed. However, this limiting of profits was offset by an announcement of a £10 billion low-carbon fund which these companies could apply for up to 2026; this seems to give with one hand while taking away with the other. Even partially correcting this injustice of “eye watering” profits during societal austerity was too much for Lord Oates, who worried this might dissuade investors from funding projects in the future. This highlights the priorities of our governing elite – looking after corporate interests and the fetishized markets – that will be explored later in this chapter.

Second, the funds made available for groups deemed vulnerable was set at £132 million. This represents the rationing of support discussed in previous chapters. In contrast, independent assessments of national retrofit programmes, which would both reduce EP and stimulate local economies (which were Ofgem’s stated aims) and which CREOs could help administer, would amount to £100.15 billion up to 2023 but would pay this back in various ways (see Figure 17) by 2035 (Brown et al 2020, p. 27; Jung & Murphy 2020). Rather than fund this required national retrofit the Government offered a very short-term EE programme that followed the counter-productive trend of its previous attempts (Rosenow & Eyre 2016). This failure which combined with the collapse of Ofgem’s main method of keeping prices low – the ability to switch supplier – under the pressure of the winter/spring 2021/2022 energy crisis, could push 23.4 million people into a cost of living crisis including an estimated 50% of all children (Caddick et al 2022).

Figure 17: The Undiscounted Benefits of a National Deep Retrofit (Brown et al 2020, p. 27).



Thus, generally we have false economies in which investing now in the building fabric of our aging housing to reduce EP, mitigate emissions and reduce the economic effects of the pandemic is ignored as an option or done at best in a haphazard and wholly inadequate way. Concurrently, large amounts

of money are set aside for private businesses that have been extracting unjustified profit throughout a period of imposed austerity.

A final issue emerging from this meeting was Ofgem's attitude toward CREOs. The writer posed a question to the panel asking why Ofgem did not promote a model of community energy ownership to give consumers more stake in the system. Brearley and Jones claimed they "loved" community energy with the latter praising and pointing out that CREOs add more value socially than more commercial organisations. However, Brearley gave no information of how Ofgem might support these organisations and more communal ownership of energy and swiftly moved on. This incident is indicative of Ofgem and Governmental perspectives: CREOs are interesting and as community bodies to be rhetorically supported but in the *real* world too small in scale to be relevant. While this attitude might have some empirical basis with CREOs being a very small proportion of energy provision in the UK, this ignores the fact that the sector's size is a function of Government policy with its growth rapidly curtailed in 2017 by this policy (EAC 2021; CEE 2019). Generally, this webinar and the DAP presents CREOs with a regulator and government that effectively ignores them and/or discounts their impacts, while at the same time eliding the Government and Ofgem's role in limiting these very impacts, issues which will be elaborated in the third section of this chapter.

6.2.2: Visibilities & Rationalities: Innovate to Survive in the Post-Subsidy Landscape

Attending and aiding in the delivery of a series of CREO conferences with an ongoing theme of innovating in a post subsidy environment gave insight into the visibilities of CREO actors and their associated rationalities. Therefore, this section will examine this looking specifically at CREO actions in response to the pandemic and planning of various innovative projects and business models. These will show how CREOs are providing aid to communities that Government policy under a logic of austerity have in many senses abandoned. More broadly, CREOs are dividing into two broad pathways in response to the removal of policy support with these pathways implying certain framings/visibilities and rationalities of these organisations.

At the end of May 2020, CES and CEE held a joint all-day online conference and this displayed how and why CREOs innovate and what this shows about the visibilities and guiding rationalities of these organisations. One aspect of this was certain CREOs responding to the pandemic with Ferry Farm Community Solar (FFCS), in Selsey, West Sussex being a leading example. FFCS provided £40,000,

which was used as a mutual aid fund for families who ran out of money, to support the local foodbank, to buy 40 laptops for local children to use for home schooling, and to support an online library for students working from home. Many other CREOs replicated in varying degrees these actions of mutual aid, showing highly adaptive organisations able to move quickly and respond to adverse situations. These actions also show organisations committed to an ethic of care in the community and tying the CC to action on injustice. This seems part of the growing climate justice movement which calls for systemic social change during an energy transition (Sultana 2021). In contrast, it also shows the many sides and consequences of the Government's abdication of responsibility of care for its own subjects (Chatzidakis et al 2020), from the quotidian existence and expansion of foodbanks across the country to the lack of resources in schools to deal with learning during the lockdown. This CREO action and the Government's absence/inaction offer an insight into what is made visible and the rationalities guiding these opposing visibilities.

The broader focus on innovation of this conference and the subsequent summer conferences offered a glimpse of the variety of CREOs active in the UK and their different strategies in the post-subsidy environment. This in turn offered an implied set of visibilities and ways of thinking, with two contrasting organisational models corresponding to two broad paths CREOs have taken since the end of the FiT. Egni Co-operative is a CREO based in Wales that installs roof-top solar mainly on schools and had recently completed a wind farm, which dealt with the closure of the FiT with a £1.8 million share offer paying out a 4% rate of interest, and loans from the Development Bank of Wales. This organisation's core focus was its work in installing renewables in schools and educational outreach to schools to build environmental awareness and understanding of the co-operative model. In contrast, was BEC which has a portfolio of successful renewable projects. However, in this conference they wanted to share information about their latest project on how CREOs could engage in the EV charging market. The presenter explained BEC was exploring business models and sites with researchers from a South Coast university, and that this situation with an estimated growth of 50% electricity demand, largely down to EV and heat pump use, was like the "early dot.com era" with many opportunities some of which would work and other that would not. Most simply these two directions can be seen as continuing doing what CREOs do but at a larger scale, or driving innovation in both technology and service delivery.

In terms of visibilities and underlying rationalities there is also a contrast in the implicit framing of the market, with Egni educating about the co-operative model a rather heterodox economic form in neoliberal capitalisms. However, BEC frames this market as one of opportunities in which CREOs should engage. Educating on the co-operative model can be seen as an implicit challenge to neoliberal capitalist rationality of individualist competition. In contrast, a focus on the opportunities of EVs does

not challenge this individualist status quo, instead reinforcing it in many ways, as the expansion of EVs is likely to exacerbate injustices locally and globally (Sovacool et al 2022). This is not to say CREOs can be reduced to this broad binary as there are many nuances and local particulars; however, this broad difference can be connected to and seen in the contrast between ESC and BHESCo discussed in the previous chapter and interviewee responses to be moved onto next.

6.3: Interviews: Energy In/Justice in England

The relevant stakeholders interviewed in this chapter can be split into three broad categories, although there are quite different focuses and positions within these categories the discursive patterns and positions that emerged did warrant this grouping as an heuristic. These categories are elites, academics, and national CREO and associated actors – table 16 – gives more detailed information.

Table 16: National Level Interviewee details

ID	Job	Activity
I12	Liberal Democrat MP South-East	MP with track record of promoting solar PV on social housing.
I13	CEO of CREO associated body.	Head of an organisation aimed at scaling up community energy nationally.
I14	Social psychology expert	Academic with published books on psychological aspects of CC.
I15	A Founder of the Transitions Network	Working in the community space and involved in many early CREO activities as well as public speaker on municipal level transitions.
I16	International human geography expert	Academic who works on numerous renewable projects in the Global South.
I17	STS expert	Academic with books on the CC and STS

I18	Chief Technology Officer (CTO) of innovative low-carbon technology company	Industry expert looking into extracting hydrogen from renewables.
I19	Expert on EP and consumption	Academic with a number of EP publications.
I20	Expert on EP	Academic with a number of EP publications.
I21	Expert on EP	Academic with number of EP publications.
I22	Labour MP in Yorkshire	Former Government Minister
I23	Expert on ED	US academic writing and publishing of justice and ED.
I24	Senior economist at rating agency	Focusing on compliance in the financial sector.
I25	National CREO actor	Working to represent the sector and promote a just transition.
I26	National CREO actors	Working to represent the sector and promote a just transition.
I27	Expert in political science and ED	European Academic publishing about ED and EJ.

First a clarification on the usage of the term elite: this is used in both a political and economic sense and involves an economic position that is likely well renumerating and relatively high status such as MP or CTO; politically it involves either an explicit or implicit identification with the neoliberal capitalist status quo. In contrast, academics and CREO and associated actor discourse implies the need for systemic change. The patterns of these three groups' discourse can be connected loosely to the binary already identified within CREOs between those happier with the current economic system with some tinkering, and those seeing this status quo as reproducing injustices and thus requiring systemic change. There are many nuances and caveats within these groups as will be shown. However, it will be argued that this broad division is a consequence of Galvin's (2020e) lopsided, billionaire serving system, which was exacerbated by the pandemic (Davies et al 2022; Oxfam 2022), and is losing its legitimacy except among those still directly benefiting and well positioned in this stratified system. Thus, this section will take the form of a dialogue going through the governmentality framework and relevant and emergent categories. This will outline the positions and discourses of those defending and supportive of the current state of the UK's energy transition, and those seeing this wanting, in both reproducing injustices today and creating new future forms of injustice.

The framework and categories will be arranged as follows:

- Technologies of rule and resistance: EP and poverty
- Visibilities of rule and resistance: energy, CREOs and technology
- Rationalities of rule and resistance: neoliberal capitalism, democracy and (emergent) values
- Subjectivities: elite, academic and CREO

6.3.1: Technical Aspects: EP and Poverty as not/Connected to the Energy Transition

This section will firstly explore how to varying degrees elite actors attempt to decouple EP and more general poverty from the CC and its mitigation. This cordoning of issues is a feature of neoliberal governance and goes to the absurd extreme, as will be shown, of politicians actively trying to depoliticise what they say and do and frame this as practical/pragmatic. In contrast, academic and CREO actors argue the CC and injustice exist in a dialectic relationship with present injustices, as CC and related impacts damage more extremely the lives and livelihoods of those least responsible for this crisis. In addition, some interviewees alluded to the colonial roots of this crisis and how the present crises exacerbate these injustices.

The best statement summarising the objective cordoning off questions of injustice and framing poverty as a constant came from I13. He argued that injustices of EP would always be with us as “facts of life” barring a “completely centralised control economy”, which he added might be undesirable depending on one’s politics. These statements are interesting because they contradict one another, at first reifying injustice/poverty then undermining this by suggesting this is contingent on the type of socioeconomic system a society chooses. In a similar way, I18 argued that although an energy transition should not “penalise or disadvantage” anyone especially those already disadvantaged, anything more radically redistributive “may be too socialist”. In contrast, EP researchers and CREO actors interrogated these categories of EP and poverty and directly connected mitigation of the CC to alleviating EP and wider poverty and even question this very distinction.

6.3.1.1: Energy Poverty Experts Defining EP

All three EP researchers make clear the connection between EP/poverty and the CC in their publications and in their responses. For example, I20 argued that with both the pandemic and the CC:

At the fundamental level there are deep injustices in society that are being amplified or reinforced by both crises.

On the various definitions of EP there were general points about how definitions are socially constructed and thus subjective and open to question and deliberation. There was also critique of the redefinition of EP under the LIHC measure introduced in 2012 after the Hills Review. On social policy definitions in general I20 said:

it's just another definition you know and this is the thing, whenever with all these definitions, because poverty is always a matter of the social contract and subjective judgement, what you put in is what you get out of it. The assumption's that you start with are the results that you get. And what I've always really said in all of my work, I've tried to make clear, is that what we need to make clear is the assumptions and the implications of those assumptions, when we formulate these definitions and then promote them to the public. Which is not often the case - they are dressed up in some sort of expert authority and then used as a obfuscatory tool more than anything.

Here we have an explicit point that “all these definitions” are socially constructed and should therefore be transparent with assumptions made clear. Then there is the claim that this often does not happen and that these definitions are often used to obscure an issue or confuse people. Added to this is the metaphor of dressing up with “expert authority”. There is also the positing of a certain circularity of these social definitions in that what goes in reflects what come out in terms of assumptions and how these go on to shape the outcomes or results. This aligns with social scientific warnings on the unreflective use of social categories (Gillespie et al 2012; Hacking 2002) and more broadly with Foucault's (1982) ideas of disciplinary shaping of the subject, although both he and Hacking would add and be interested in how the subject resists and reshapes these categories. This circularity could also be linked to the governmentality framework: a neoliberal guiding rationality conceives of poverty as natural and divides people into deserving/undeserving depending on gender/ethnicity and social status, it visualises the problem of EP as a technical problem to be addressed as such, it devises a technology/technique to define EP as a technical issue. It can be seen how there is a tenuous circle between what a guiding rationality can think, can see and what it then does see, although it must be stressed there are disconnects, ruptures and cuts along the way as people resist categories, pandemics force ideologies and institutions to bend and more generally government programmes come under attack from the multiple contingencies of life. In this sense, I20 is perhaps echoing Strathern (1988)

and Haraway (2016) who warn it matters what thoughts think thoughts and what concepts think concepts.

The LIHC redefinition of EP was strongly critiqued for a specific injustice but also its general effects. Specifically, I21 argued it was egregious that disability benefits were not excluded from income in this definition. If we take an equity position as this thesis does, disabled benefits cannot be counted as income as these are supposed to provide the extra resources individuals need to achieve equal outcomes from different starting points (Sen 2009). More generally, the two major problems with the LIHC were how it so rapidly changed the numbers of the EP and how it allowed a differentiation between EP and wider issues of poverty. I19 said:

The biggest problem, although there everything wrong with it basically. It's a really unsatisfactory way of measuring things. I suppose the biggest thing is a combination of the 10% reduction in numbers of EP, so, when you measure by the 10% measure it's roughly a 1/5 of the population and when you use the LIHC it's roughly 1/10...poverty was completely side-lined by the LIHC, in the sense that if you have a population that has sort of had a lot of resources taken out of their lives through austerity, and people living in abject poverty - it doesn't matter how energy efficient their house is, they are going to be cold and not be able to afford to heat to the standard they need.

These statements exemplify I20's concern about the use/abuse of social definitions, question the categorical distinction between poverty/EP and consolidate the more general points of poverty being a trap (chapter 4). Firstly, any measure of a problem that immediately halves the numbers, especially when the government benefits from this but claims its aim is not to "move the goalposts" (DECC 2013, p. 70), should be viewed with suspicion. Secondly, this idea of side-lining EP from poverty connects to I20's idea that what you put into a model reflects what you get out, and as such, is an heterogenization act of organising poverty out the EP category (Hajer 1996). Boardman (1991; 2010) was one of the earliest to argue that EP and poverty were connected but could be separated as the former could be solved by capital spend on the home. This position has been taken to extremes by governments that deal with EP and poverty by separate departments – BEIS for EP and DWP for poverty – or as technical versus social problems (Middlemiss 2016). However, as the CREO actors providing EA showed in chapter 4, and I19 argues here, this distinction makes little sense in system that is actively impoverishing people in multiple ways.

The above distinctions of either 10% or 20% the population in EP can be compared to the minimum income standard (MIS). This is used to calculate the lowest income different types of household would need for a socially acceptable standard of living (Loughborough University 2022). In Spring 2022, using the MIS it was estimated that 50% of children and a third of adults were thrust into a cost of living crisis (Caddick et al 2022). Therefore, as I19 argued in early 2020 but more so now and largely

independent of the EP/poverty definition used, a comprehensive programme of EE retrofit, which the government still refuses to commit to, would still leave millions of people with energy and other bills they could not afford. This is at the same time as we have unprecedented numbers new of billionaires and their wealth share increase (Davies et al 2022; Sharma 2021). Thus, a just transition implies a fundamental transformation of society not mere tweaking of one or two isolated aspects of our lives.

6.3.1.2: Practitioners and a Just Transition

CREO actors were also more inclined to connect issues of injustice with the CC with a variety of positions expressed. I15 firstly argued that a focus on including those in poverty, in the sense of leaving no one behind, elided another group that was largely overlooked with equally negative consequences:

No one ever asks me how successful transition has been in engaging the very wealthy and actually given that 50% of carbon emissions are caused by the wealthiest people, the wealthiest 10%, it also feels like a really important question.

This connects to the EJ principles of sustainability, inter and intragenerational justice in a way that is taboo and not just for Ofgem and Government; however, as Galvin (2020d) argues, engaging/taxing the rich is essential to reduce injustice and lower excessive emissions. I15 goes on to discuss how various forms of scarcity and the volunteer-based nature of the Transition Network (TN) and CREO sectors exclude certain groups creating a norm of white, middle class actors:

When you have a movement that is largely driven by volunteers then you tend to end up with white middle class people, it's sort of runs across many things and I've argued for a long time that if transition is to really break out of that then it needs to be creating jobs for people...when people are in states of anxiety and stress and trauma and overwhelmed, the kind of imaginative *what if* thinking that drives transition is really, really tough. When your basic needs on Maslow's hierarchy of needs are not met, the idea that you might get together with other people and ask what if, and reimagine your community is really tough.

The other CREO actors concurred with the point about scarcity with I26 arguing that people due to a variety of life pressures lacked the “bandwidth” to engage with the processes of the transition and that the Government had in any case made it extremely hard to actually do anything anyway even if people had the required time, wealth and education.

Therefore, two broad positions on EP/poverty in an energy transition emerge here. The elite group with some caveats in terms of not making things worse for those deemed vulnerable, see the main task as purely an energy transition not to be confused with a wider societal re-ordering in terms of wealth and injustices. In contrast, the academics and CREO actors see issues of injustice and the CC as two sides of a coin and thus dialectically connected and mutually constituting. This latter position is a staple of various academic critiques from the historical (Federici 2004; Moore 2015) to the ethical (Shue 2014). However, as will be shown below, the dominant approach in the UK is to cordon off issues of injustice from the energy transition (Lennon et al 2019), although this does not exclude rhetorical appeals – like Brearley above – but concrete support and social provision. The next section will explore what and how different actors see/acknowledge various categories and how these visibilities allow or impede a more just transition.

6.3.2: Visibilities: Thinking the Unthinkable – Pandemic Thinking on the Climate Crisis

As argued in the last chapter, the pandemic among its many impacts has deepened structural injustices within our society with the extremely affluent rapidly expanding their wealth (Davies et al 2022; Harvey 2021). Meanwhile, the Trussell Trust's foodbank demand, which can be considered a proxy of poverty, rose 2020-2021 by 14% with 2.1 million food parcels provided, with much of this increase among families with children (Trussell Trust 2022). At the same time, the salience of these injustices has risen with a Financial Times editorial (2020) talking of "redistribution" and "wealth taxes" and valuing public services as investment rather liabilities, back on the "agenda" in April 2020. In this thesis almost all of those interviewed during the pandemic agreed with this dynamic – the widening of social stratification and the increasing visibility of this. This would suggest the pandemic has acted as what Unruh (2002) called a *focusing event* that could allow more effective and consistent climate action. The question remains open as to the impacts of this focusing event and the likely future events that will come from the failures the IPCC and Conference of the Parties (COP) processes to achieve the GHG reductions required (IPCC 2022). However, the portents so far are not promising with far-right forces allied with fossil fuel capital adept at taking advantage of crises (Malm & the Zetkin Collective, 2021).

More broadly, objects and processes can only be interpreted and rationalised when they have been seen or made legible. Therefore, this section will detail what/how these interviewees recognise the objects of and within the categories of energy, community and CREOs, and technology. These visibilities will be presented in turn with their implications for a just transition explored in this and the next section on rationalities.

6.3.2.1: Energy as a Thing or a Relation? Countering Necropolitics

This section will explore what the interviewees understood by the term energy, which types of energy infrastructure they supported in the future and the implications of these understandings and positions. Again, a difference emerges between the elite group who both laud the progress made by the UK in decarbonising and tend to support nuclear power, and the academics and CREO actors who do not talk of UK progress, instead focusing on democratic deficits in the processes of the UK's/wider world's decarbonisation and inherent in the actual technologies themselves.

Energy itself was again defined by many of the interviewees as central to all we do and are in a modern society, notwithstanding the acknowledgement that many in the Global South lack electricity or stable supply of this. For instance, I23 argued:

We need to connect rather than isolate and separate things. [Energy is] about jobs, economic justice, health and food, housing...I mention that because energy is fundamental to everything and I think that we don't want to isolate energy policy as this separates things that only some people worry about and some people affect other people, because I think we need to integrate energy policy into housing, transport, economic development and jobs and even health policy.

Similarly, I25 claimed energy was “a system of flows and that is fundamental to everyone's life because it fits into everything. Transport, food - energy is needed for everything...” Thus, in contrast to elite discourse shown in the last section of cordoning and isolating poverty/injustice from the energy transition, I23 and I25 are explicitly rejecting this discursive move. Instead, they use energy as fundamental to life as the connector to these other basic needs of health, housing, work, and transport, and the injustices growing in these sectors through neoliberal processes such as privatisation (Bayliss et al 2020).

The way humans relate to energy ideationally and materially was linked to the imagination and implicitly the unconscious. I19 argued that “energy seems to be something that captures the imagination of communities” and that it is at the community scale that energy can be made more tangible to people. I26 agreed, adding that community energy created more than the “the sum of its parts, it's not just a conversion of primary energy to kilowatt hours down a wire and there's a kind of a bit of white magic in there really, sort of alchemy.” Here they are likely referring to a visible wind turbine or solar array and one of these pieces of infrastructure that the community is involved in via process and/or outcome. Indeed, early evidence in the UK of community energy shows that early and inclusive participation and discernible community benefits from community energy is the best way to increase local support for renewable infrastructure (Berka & Creamer 2018). This in turn leads to what is not seen or hidden, with I20 referring to “interdependencies [that] are gigantic and not well understood and also often rather hidden” between the EU and UK. He also talked of hidden levers of knowledge/power. Aside from a very Foucauldian framing, this also suggests what Yaeger (2011, p. 309) calls our “energy unconscious”, the underground pipes and pieces of fossil fuel infrastructure that we all rely on but are occluded, subterranean or placed on the frontiers of city/region/state where lives and laws matter less (Patel & Moore 2020; Mbembe 2019).

This leads to the concept of energopower of which I23 gave a theoretical explanation to be dealt with here and examples to be dealt with below in the section on democracy. She argued any energy infrastructure both reflects the power structures of its time and acts to reinforce these power dynamics due to the long 40-50 year amortisation and lives of these infrastructure. This is a point made by Malm (2016a) and Mitchell (2013) when they argue we need to see that power works in this dual sense – the material electrical/fossil fuel kind supporting and consolidating the human domineering kind. This brings into question how and with which technologies the UK is decarbonising and who and which power structures this supports and reinforces.

The elites did not explore these questions instead celebrating uncritically the UK’s achievement since 1990. I13 stated “we are at a point where we are regularly consuming and producing in excess of 50% of our energy from low-carbon sources.” Similarly, 122 stated “it is energy generation where we have seen the biggest progress, a 39% reduction in CO₂ emissions in the UK since 1990, is quite astonishing.” It was only the CTO (I18) who acknowledged this *progress* was largely down to Germany’s, then more so, China’s investment that lowered the costs of renewable technologies to allow this mitigation. However, taking another more international but still optimistic perspective, I18 pointed toward countries across the world developing green energy investment strategies and many of the stock

markets themselves have a carbon intensity metric (CO₂/revenue to give kilos of carbon to profits). I18 argued those with lower carbon intensity were recovering from the pandemic's economic effects more quickly. This elite discourse could be summarised by the terminology of I12, I13, and I22, who all argued we should be looking to the *opportunities* of the CC rather than the "hair-shirt" approach which frames the CC as requiring abstinence or slowing down.

In contrast, CREO actors and academics were not happy with how these reductions have been achieved and who they benefit. I26, complained the UK government was only interested in "big dick energy solutions", rather colourfully referring to Big-E solutions Lennon (2017; Lohman 2013) describes and the Government's Ten Point Plan (HM Government 2020) envisions. This use of the male genitals descriptor is also redolent of Haraway's (2016) carbon emitting *man*. One of these Big-E solutions, nuclear power, explicitly supported by I13 and I22, was opposed by all the academics and CREO actors interviewed. I16 objected to nuclear power on a number of levels, from it being too expensive at a guaranteed price per-unit per-hour than renewables, a "silver bullet" that allowed the illusion that "consumer capitalism can carry on", and was "the ultimate in centralisation" and as such an inherently undemocratic technology. These anti-nuclear arguments are supported in EJ and technology literatures (Sovacool et al 2020b; Winner 1980).

Overall, while all interviewees accepted energy as central to our modern lives, only the academics and CREO actors interrogated the what, who and how questions of energy, and approached the understanding that energy technologies are not neutral but in fact have political implications built in. These political implications vary across technologies and are not determining in many cases. For instance, renewable technologies such as solar PV and wind turbines while being conducive to distributed democratic ownership can be deployed in ways counter to this, as the CREO actors and academics understood. It is an open question whether elites interviewed understood this dynamic of energy as at root a social and power relation, but if they did, they did not speak of this. However, for I16 "how you manage and use energy is a metaphor for democracy and the state of developed democracy in a country." This theme will be explored further in the section on rationalities but first this chapter will explore the category of community energy.

6.3.2.2: Community Empowered or Marginalised?

Elite visions of community and its place in an energy transition ranged from the ambiguous musing of different cultural/class approaches/understandings to an implied replication of binary of active middle class and passive poor people. This discourse also had a certain amount of complacency which would correspond with elites' views on the energy transition in the UK. In contrast, both the academic and CREO actors talked more about how communities and associated institutions had been damaged over time and how CREOs themselves had been severely limited by policy, so much that doing community energy had become extremely difficult. This academic/CREO discourse much closer fits with the democratic deficits that characterise the previous chapters and arguably the UK's energy transition overall.

I12 talked of community maintaining an "area's integrity" then talked of how low-income, immigrant communities were part of a "different cultural" approach he directly connected to littering. He also referred a number of times to how everybody did not read *The Guardian* and that an energy transition had to show what was in it for the "blue collar" workers. This micro focus on littering and questionable notion of "area's integrity" aside, I12 does touch on the problem of the current approach to the CC the UK government takes. This approach includes: the FiT, disproportionately paid for by low-income households benefiting the middle classes with solar PV (Owen & Barrett 2020); high interest loans over grants or very limited grant schemes in keeping with the rationing of funds/postcode lotteries of injustice; and an overall neoliberal individualisation of the structural problem of the CC. This overall individualising of the problem can be seen in the rarely questioned assumption that we, the community, collectively locked-in to a fossil fuel economy that has enriched a tiny elite (Aranoff 2021), have to pay to get out of this.

Another MP framed community in a number of ways but spoke most enthusiastically about a housing development situated on the edge of Leeds city centre. Explaining how the LA was involved in an urban heating project, I22 claimed "the future is being built now in the centre of Leeds." He was referring to CITU a sustainable property developer that has developed a "climate innovation district" in Leeds with cutting edge "Scandinavian design" and the latest sustainable technology and retails at over £400,000 for a four bedroom house (CITU 2021). So, while accepting that many in his constituency "struggle to pay their energy bills", and objecting to the existence and injustice of PPMs, pointing to this development as *the future* fits into this system where only middle classes and the privileged can do and benefit from many sustainable options. This corresponds to the binary of the active investor/passive EP subjectivities discussed in the previous chapter, but moreover links to neoliberal approach of individualising problems/solutions and how this cannot work as the CC is a collective

structural problem. This means there are no conceivable solutions through the good will of individuals as over 50% simply lack the means do anything. At the same time, wealthier individuals also correlate with climate scepticism (Pearson et al 2021; Clayton et al 2015), suggesting many who can pay will not anyway.

Finally, came another version of complacency both in terms of how much influence CREOs have in the energy transition and the issue of asset ownership. I13 claimed that communal ownership of energy was the “direction of travel”:

The model we are developing...can deliver unsubsidised low-carbon energy and it can do that around a community model. And I think that that reflects a direction of travel in society more generally. It's a sort of not so much revolutionary, more evolutionary it's an evolution of a capitalist model, not just changing ownership.

He went on to say ownership was the “easy” bit and that behind this was the commercial model and how the community took the liabilities of this. The idea that ownership, and by implication private property, it “easy” is interesting coming from a person who described themselves as an unreconstructed capitalist. As discussed in chapter two, private property was a tool and technique of violent dispossession of common land both in Europe but all the more in the colony (Federici 2004; Estes 2019). Making commonly held land private property is referred to as rationalisation by certain economists and is an ongoing struggle in various places and so an ongoing issue of coloniality (Paradies 2020; Federici 2019). Ownership and private property versus commons also connects to the materiality of energy in the distinction between the stock and the flow, with coal/oil/gas easily quantifiable and tradable, while sun, wind and water are much less amenable to this form of property categorisation. As such, ownership, private property and commons are not “easy” but crucial questions of justice that will significantly shape an energy transition (Graeber & Wengrow 2021; Malm 2021; Estes 2019). We can consider CREOs as closer to common ownership but with some issues of democratic exclusion as discussed in the previous chapters. However, it was this idea of I13’s that communal control is the direction of travel that was questioned by both academic and CREO actors.

Most broadly, academics discussed how socio-political communities had been damaged by various processes. I14 argued that community was in some sense political in terms of how they are represented and that some of these political communities in the UK had been damaged by “privatism and a kind of retreat from the public sphere and the growth of media conglomerates and consumerism and the broader decimation of the unions as well.” Similarly, considering community’s role in a transition I17 argued that local democratic community action on such things as housing, while not

perfect, was by far the best way to arrange things and had been why such places as Denmark had decarbonised more effectively than the UK. However, I17 explained:

Continental Europe haven't broken their localism structures, whereas I think we did. Through deliberate actions I'd say Tory action in the 1980s really trashed local communities and you destroy local government and here we are 40 years on.

This damage to urban and less privileged local communities and authorities during the periods of austerity and deindustrialisation has been clearly documented (Marmott et al 2020b; Gray & Barford 2018; Beatty & Fothergill 2016). The direction of travel toward communities was questioned more specifically in relation to CREOs.

CREO actors described both the recent history of government interaction with CREOs and the situation in Autumn 2021, with neither seeming to show devolved communal control/ownership as a direction of travel. I15 explained that communal ownership of energy was a key strand of TN thinking and that his organisation worked with the government on a CREO strategy and how this could be scaled up. However, "the FiT changes killed about 90% of it stone dead and it really felt like snatching defeat from the jaws of victory." These reductions in the FiT and the effects on CREOs can be seen in the figures 18 & 19 below.

Figure 18: Renewable Subsidy Rates and Removal (From CEE 2020b, p. 7).

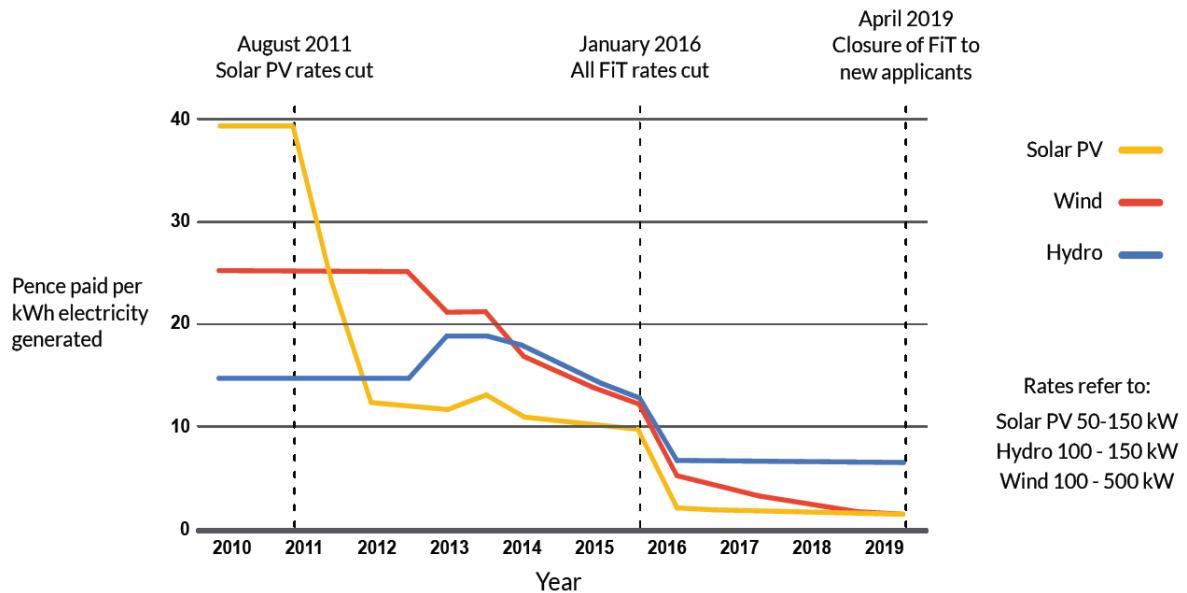
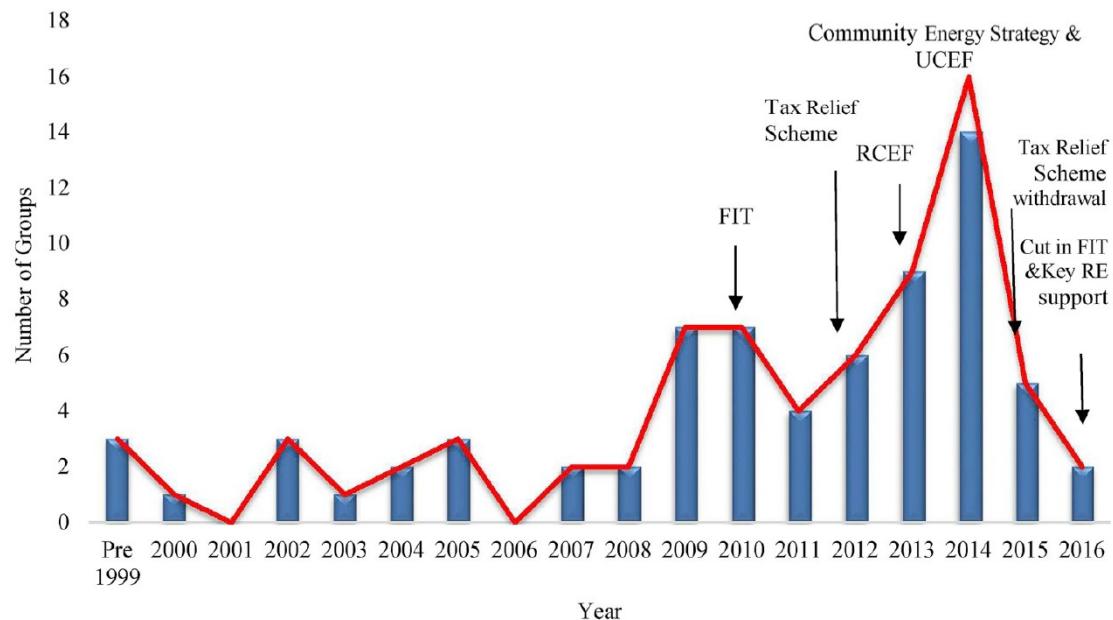


Figure 19: CREO Groups Numbers 1999-2016 and Policy Changes (From Mirzania et al 2019, p. 1285).



These policy changes and impacts depicted above and current Government focus are making operations and growth of the CREO sector extremely difficult, rather than the direction of travel. This is at a time where more and more people are becoming interested. I25 described how the removal of Government support has impacted the sector with the emergence three types of CREO: older, more established CREOs with many projects but now focusing on innovation (BHESCo/BEC); more “traditional grass-roots” CREOs focused on continuity of usually installing solar PV but at a larger scale (Egni Coop); and “new members that are just interested but have no idea where to start, I think there are a lot of people talking about community energy rather than actually doing it.” I26 was more explicit and stated that they had observed Government actions in Autumn 2020:

[With] increasing dismay as we realised, yes the Tories despite all their quack about you know resilience and community and levelling up and no one left behind, are actually really only interested in throwing big checks at big business to do big centralised solutions.

This involved a “deep fatal inconsistency” in being a “top-down” approach that is not geared to engage “support” or “real activity among people and society”. That this engagement of the public is necessary is the position of the statutory CC advisor to the Government (CCC 2019) yet does not seem to part of the overall Government strategy. For insight into that it will be helpful to explore the rationalities behind top-down and bottom-up approaches.

6.3.3: Rationalities: Upward Extraction or Redistribution?

In an examination of the extensive links and synergy between fossil fuel capital and the far-right, Malm and the Zetkin Collective (2021, p. 35) argue we should “never underestimate the tendency to overestimate the rationality of bourgeois civilisation.” Although this project does not believe in a *correct* rationality, this does not mean certain ways of thinking and then acting can seem in many ways dangerous and absurd. A salient example was the stock market throughout the pandemic – as people and industry were demobilised and the *real* economy shrank as people were told to stay at home or lost jobs, the biggest corporations on the global stock markets soared (a partial result of QE) to vertiginous heights – with some commentators concerned about this unmooring of the stocks from the actual economy (Trivedi 2021; Williams 2020). Similarly, political discourse in the UK has become increasingly dislocated from what might actually be occurring, with the Tory claims to *level up* being made to look ludicrous with an estimated half of UK families £110 worse off since December 2019 and the top five percent £3,300 better off (Caddick & Stirling 2021). Moving up the income/wealth scale and panning out internationally we see the 0.1% and billionaires benefiting even more (Harvey 2021). Therefore, the pandemic can be seen to have speeded the upward extraction of wealth, from those with the least to those with the most. However, this extraction is a dynamic characteristic of both the last ten years of imposed austerity (Davies et al 2022; Dorling 2015; Marmott et al 2020b), the longer period of neoliberalism (Galvin 2020a), and the history of colonisation and ongoing coloniality (Táiwò 2022; Quijano 2010).

This section will explore how the three interview groups rationalise three objects of neoliberal capitalisms, democracy, and value/s. As Rose & Miller (2008) argue, a political rationality includes a lexicon – to outline an object – knowledge claims – to provide details, contour, and colour to this outline – and moral inflection – to pass an implied moral judgement of the specified object. Thus, this section will explore what these three interview groups name under the above categories, how they interpret these broad and sub-objects, and how they judge these three broad categories and sub-objects. It will then argue that again there exists a divide with elite actors interpreting and judging objects such as human nature in ways that favour the status quo while, the other groups tend to challenge this. Importantly, this is not to claim a fixed binary or class divide between these groups as many of the CREO actors or academics had been/were of similar professional/class status to elites. Rather it suggests that those better placed and served by a system will tend to see its benefits as they are receiving them and can remain wilfully (or not) ignorant of the inherent injustices of the UK and

beyond (McGoey 2019). In contrast, the CREO actors who are being defunded and prevented from expanding, or academics who study poverty and/or the CC will tend to see these clear injustices and link them to structural causes.

6.3.3.1: Neoliberal Capitalism: There is no/an Alternative

Most broadly, there was a divide between those that identified as capitalists and those that critiqued capitalism as an inherently unjust system. Support of neoliberal capitalism was either explicit or implied amongst the five elite actors, with I13 stating he came from an “entirely commercial” and “unreformed capitalist background”. The implied support ranged from talking about how capital markets are effectively dealing with the CC (I18) to trenchant defence of the market from the political (I24). Interestingly, the elites did not deny injustices when these were pointed out by the author, but responses to this suggested these were “facts of life”, unless we changed system – the crucial contradiction pointed out in the section on poverty above. The most neoliberal capitalist response came from I24, an interviewee in the heart of UK capital, so this will be explored in more depth. Second, the academic positions, which were explicit in their objections to neoliberal capitalism, will be outlined.

In three key areas of care, markets and debt, I24 revealed core insights to neoliberal capitalist rationality. On *care*, when asked if the pandemic could lead to key workers being better renumerated I24 focused on the figure of the nurse. She argued that there would not be higher wages as the nurse was not a “rent generator” but a “service provider” and as such was seen as a “bleed on society’s resources.” I24 elaborated saying for the nurse in particular “there's very little profit generated in that.” These statements reveal what world-ecology and decolonial feminist researchers have long argued: that capitalisms devalue or simply appropriate the core and fundamental human faculty of care and that as this is mainly done by women it is also deeply patriarchal (Patel & Moore 2020; Vergès 2019; Lugones 2010; Federici 2004). Indeed, some argue that women and caring functions cannot be incorporated into capitalist rationality as women and care are on the wrong side of the binary of society/nature, or that these caring functions are part of the background conditions of possibility that are essential to capitalisms – either way capitalist rationality cannot countenance paying for this as there is no *monetary* return (Davies et al 2022; Moore 2015; Mellor 1997; Fraser 2014; von Werlhof 1988).

Regarding *markets* I24 made it explicit a number of times that they were the most important institutions in society and that socio-political concerns were subject to these markets. She argued there was “not a money tree – we are answerable to the capital markets” and that we collectively “had the responsibility to keep those capital markets flowing” regardless of social consequence. This discussion was in turn related to the UK’s pandemic induced debt. Adam Tooze (2020) has argued the pandemic debt among those countries with stable currencies and wide established tax bases, could be managed by their central banks buying this debt, with the effect that the public *owes this debt to itself*. This argument connects to Pettifor’s (2019) general point that finance is a social institution that should be repurposed to serve social ends such as dealing with the CC. I24 rejected these arguments insisting that if this debt was not paid there was a “moral hazard...capital markets will breakdown, liquidity will stop, maybe not overnight but it will thin if we don’t have major sovereign states honour their debts.” This evasion – it does not deal with Tooze’s argument – led to a consideration of debts paid or unpaid during the subprime crisis of 2008, with I24 insisting that bankers were paying back as “first class travel”, “seven star hotels” were no longer the rule and “structure of pay” and “bonuses” had been “affected for years after.” This contradiction between debts that must be paid and those result in a temporary removal of bankers’ benefits, suggest debt is a technology of control and capture, and debt is about power, in that those with resources can choose to pay/impose/forgive/abolish debts (Davies et al 2022; Lazzarato 2012; Graeber 2011). One step further or sideways and perhaps with more justice, is to frame money/debt as promises and responsibilities and these are not limited and can be made and met endlessly (Davies et al 2022), as they have been through the long period of human history – and in many societies in a much fairer and more just way than ours (Graeber & Wengrow 2021; Graeber 2011).

Rather than defending this system, I20 defined capitalisms as a system that creates and relies on crisis and inequality, ideas that are a staple of radical critique (Fraser 2021; Moore 2015; Bell 2015). This argument was made in the context of the C19 crisis as one of these creations. The economic and social system of capitalisms was framed by I20 as prone to recurrent crises and a producer of inequality. He argued:

One feature of capitalism is that it constantly generates crises and relies on crises, so the fact that it actually is a system that creates/destroys one crisis in order to create a new one. So, I think the idea that crisis is somehow divorced from capitalism is its essence is problematic. For as long as I've lived there has been some kind of crisis and capitalism has sailed through it and generated a new one.

This passage succinctly describes what Harvey (2007) and Moore (2015) have called capitalist *fixes* that lead to more profits but then cause a crisis further on in time and space. This can be seen in how the global order, especially the US and UK, responded to the 2008 subprime and C19 crises: to pump money into banks and multinationals while actually taking away resources from the most impoverished in society (Davies et al 2022). As argued by I19, the last ten years of austerity have really entrenched poverty and EP in this country. A salient signifier of this is the widespread existence of food banks in the UK (Loopstra et al 2015). I20 added:

At the fundamental level there are deep injustices in society that are being amplified or reinforced by both [C19 and the CC] crises. But what I can see is that this is fundamentally happening in a globalised capitalist system, so of course it can be traced back to that, and the other thing I can say is that there are huge injustices that are overlapping in both cases and are always going to be the product of these systems.

This idea of capitalisms' amplification and reinforcement of inequalities through recurrent crises, paints a rather bleak picture, which I16 elaborated upon in the present and with an eye to future crises. He argued that Nigeria was a "dumping ground" for the world's batteries which were recycled in highly dangerous ways and that with the massive expansion of EVs etc, this country would struggle to cope with these waste streams. He also described biofuels as a "crime against humanity" for the effects these had on basic food prices. Both of these issues were part of extractive neo-colonial relations that implied:

Our love of the car economy is far more important than the lives of poor farmers in the Global South, so they need to turn over their living patches of ground to grow soya and palm oil and stuff like that that can provide us just so we can claim that our petrol is clean and green. Bullshit all of it.

Looking to the future, I16 argued, the current power of "rentier capitalists" was pushing against dealing with the CC and that it would take an extremely serious disaster "to actually stop the movement in the wrong direction." These arguments do have empirical evidence at both global and lower scales. Sovacool et al (2020b) detail these neo-colonial and extractive relations with the mining and waste streams of low carbon products focusing on Africa, concurring with I16 on the damaging impacts now and projected rapid expansion of these processes and injustices under poor environmental governance. Oswald et al (2020) conduct an analysis of inequalities of energy use globally, finding cumulatively that lowest income 50% use less energy and less carbon intensive energy than the top 5%, an inequality that will exacerbate without significant change. Bell (2015) interviewing civil society, policy-makers and officials from a range of countries and types or levels of "marketisation", finds that all these capitalisms increase environmental problems and inequalities.

More locally, the Marmot Reviews (2020a; 2020b) detail how health inequalities have been exacerbated by austerity and C19, with regional differences in these inequalities and an overall stall in life expectancy not seen since 1900. The EP literature explore these health problems, detailing these as immediate cardiovascular, respiratory and immune issues (Poortinga 2019), with recursive mental health (Mohan 2022) and societal stigma effects (Middlemiss & Gillard 2015).

These are all problems that I20 was sure would exacerbate with the C19 crisis and this prediction appears correct. The pandemic has seen injustices multiply and expand in terms of the demography of pandemic cases/deaths (Davies et al 2022; PHE 2020), and in job losses and pay cuts for the vast majority, compared to wealth and income increases for those in the top 5% of income and upward (Anderson & Pizzigati 2020; Harvey 2021; Caddick & Stirling 2021). Simultaneously, the UK and other states are still planning fossil fuel expansion that will far exceed 1.5 degrees of warming (UNEP 2021). This suggests that a global pandemic with an estimate of over 6.27 million deaths and over 520 million cases (WHO 2022 – May 19) with unpredictable long-term effects, is not enough of a crisis to change the direction of neoliberal capitalisms in any fundamental way. This is arguably a testament to a fundamental immorality (Galvin 2020f) and necropolitics driving this system (Mbembe 2019).

The object of the human was talked about in many ways in this project, but I12 perhaps explained the positive spin on this object from the neoliberal perspective. He stated he was a “liberal capitalist” who was “centre-right economically” and expected from people aspiration and wanted “individuals to have the self-respect to have ownership of their career, their jobs, their education, it's about individual respect...” This is akin to both Foucault’s (2008, p. 226) “entrepreneur of himself, being for himself his own capital, being for himself his own producer...” and Huber’s (2013, p. 18-19) idea that this is the “real subsumption of life under capital”, where living labour “appears as capital itself” making investment decisions about education, career or even relationships. Huber (2013) points out this process of subsumption was highly exclusionary being based on home and automobile ownership in white, patriarchal, middle class suburbs. The argument of this project that the energy transition in the UK is exclusionary and largely benefiting a subjectivity sharing many of these privileged features. More broadly, neo-colonial upstream/downstream injustices, such as mining and waste toxicity flows, are likely to rapidly increase under this transition (Gelderloos 2022).

Contrary to the individual independence presented above and inherent in this neoliberal figure of homo economicus, both academics and CREO actors tended toward relational and interdependent humans. Concerning the pandemic response and what this implied I17 argued:

It's ok you're all individuals and we going to treat you as being/having a particular set of vested interests that we can nudge you towards or away from by using these not particularly well-coded messages...which is of course the core message of neoliberalism - you are on your own and we will not help you.

This neoliberal interpellation of the human as an individual for I17, denies both our collectivity and how problems such as the pandemic and the CC demand collective socio-political solutions. Envisioning a more just future I14 elaborated upon how our human/more-than-human collectivity might work. It would be a break from neoliberalism's individualism, but also mainstream science which is dialectically connected to the longer historical arch of capitalisms and has through Cartesian dualisms contributed to injustices and oppression (Santos et al 2008). Therefore, placing science as a partial and situated praxis in Kimmerer's (2013) or Haraway's (2016) sense might:

Allow[s] other cultural understandings of change and crisis to come into play which is more about representations of other groups who've often been neglected, not least indigenous and colonised communities and cultures, in which science can contribute and play a part alongside other narratives and understandings... [also] the newer science and discoveries around multi-species becoming and interdependence, you could say are a better fit with a climate justice movement and a recognition of interdependence.

While the new human subject:

[W]ill be relational, the relational person. We talked about autonomy before and it's something really valuable but I think I'd value relational autonomy, so autonomy but always in relation and responsibility to others. So, it would be more of a focus on our connections to others and responsibilities to them, including more-than-human others. And how they define us and who we are. As well as the jobs we do, you know that's part of it but not all of it.

Thus, there exists a clear divide here between how the human is seen between these groups and this maps onto Dryzek's (2013) environmentalities of economic rationalism (neoliberalism) and green radicalism's view of the human. These distinctions will also be apparent in following objects along with some complications because people are complicated.

6.3.3.2: The Fading Illusion of Democracy

Kim Stanley Robinson (2020, p. 106) argues: “[t]he whole field and discipline of economics, by which we plan and justify what we do as a society, is simply riddled with absences, contradictions, logical flaws, and most important of all, false axioms and false goals.” This statement describes a current democratic malaise that has been a long time in development. Mitchell (2013) details how the materiality of energy is connected to the modern notion of democracy (as implied by I16 above), with the allied industrial might of coal miners, rail haulers and dockers and their ability to bring early industrial society to a standstill being crucial to the democratic reforms of the late 19th and early 20th century. However, elites such as Churchill and the post WW2 planners behind the Marshall Plan, saw this industrial power as a threat and saw how oil could neutralise this, as it is both capital intensive and less materially amenable to industrial action. As argued in the literature review, oil was rarely cheaper than coal during the key period of transition in-between WW1 and shortly after WW2 and so this can be seen as more about imposing social control (Bonneuil & Fressoz 2017), in a similar way to factory innovations Malm (2016a) explores in the 19th century UK. Crucially, it is during the Keynesian economics of this period where economics and the *economy* become objects of concern and the *national* economy is invented, (after the breakdown of empires) separated and insulated from the democratic and political sphere (Mitchell 2013). This insulation of the economy from democratic purview has only been increased under neoliberalism (Dean & Zamora 2021), with many other aspects of social life being privatised and depoliticised (Bayliss et al 2020; Methman et al 2013).

This project has outlined what might be described as an illusion of democracy through which we go through certain processes that might appear democratic but do not work or people do not engage. This section will show again broad differences in perspective, firstly with the elite actors split. This division involves the MPs seeming to see no problem, while the CTO and CEO appear aware that something is wrong with the UK’s democracy. However, perhaps the most powerful actor (I24) dismissed any concerns arguing instead that we must serve the markets, period. In contrast the CREO actors all critiqued the UK system as highly undemocratic as did the academics. The nuance among these groups concerned potential solutions and their relative optimism about future solutions. Thus, across all groups there was awareness of problems with our democracy, apart from the with the MPs/financial actor ensconced in this system. Thus, this section will first turn to the democratic actors then it will outline the other elite concerns, ending with the academic and CREO critique.

A first point to make here is that both MPs made multiple statements that could be seen as depoliticising in the sense of being *practical* men and only interested in what works. This position also displays an instrumental approach to democracy more generally. For instance, I12 after admitting/boasting he was a liberal not a socialist said “unlike colleagues to my I left I’m interested in outcome. I’m purely outcome. I travel light ideologically.” This statement depoliticises and instrumentalises democracy concisely. In a similar vein, I22 used the word *practical* eight times in order to object to things like a wealth tax or universal basic income. This managerial language is neoliberal politics hiding under the cover of *pragmatism* and is part of the discursive move of depoliticization (Methman et al 2013). Paradoxically, both MPs were keen to talk about their democratic prowess, with I22 expressing the most strident defence of the status quo. He argued:

It's not true to say that the operation of our democracy means that nothing ever changes. It's actually nonsense, absolute nonsense, why do we have a health service? Because of democracy. Why do we have a national minimum wage? How did we end up with equal marriage? I could spend the next hour going through all the things it has achieved, but I understand completely that many people if you said to them do you feel you have any control, which goes to the last theme, over what happens to yourself, your life, your community. Then quite a few people would probably say no I don't.

Here we are presented with a list of *past* achievements of democracy, but crucially it also shows an instrumental approach in it being a list of *outcomes*. This statement also goes back to the introductory argument above – if our jobs and essential services upon which we depend are removed from democratic purview then people will feel this lack of autonomy and control of their lives; therefore, the historical achievements of democracy will seem hollow. When asked about ways of improving our democratic institutions I22 objected to wealth taxes, referendums, proportional representation, and most signally citizen juries and assemblies, arguing that is “what parliament is... I've been a member of a citizen's assembly for the past 21 years...and I think we should make our parliament work for the purpose of which it was established.” Thus, while disclosing that many feel disenfranchised by the current system I22 offered no solutions to this beyond some kind of belief in parliament as a font of democracy. Many historical readings of how parliament in the UK developed would correct this idea that it was formed to practise democracy. Indeed, it seems designed to do quite the opposite – *to limit popular power*, and this can be seen in historical literature (Thompson 1968), studies of democracy (Taylor 2019) and energy studies (Malm 2016a; Mitchell 2013). Therefore, I22’s objections to wealth transfers and more deliberative forms of democracy can be placed in this *un/anti-democratic*

tradition. This tradition, its energy aspects and effects will be explored in more detail in the next chapter.

In contrast to I22, both I13 and I18 expressed concern both with national and local processes of democracy. I13 argued there was a “bigger issue of social justice”:

I think there is a general perception that there is an inequality between corporate power, not necessarily commercial, I mean some of the things local authorities get up can be pretty reprehensible, so corporate power and individual power.

This imbalance needed to be addressed according to I13, but getting to a place of equity, transparency and the sharing of benefits would be a “rough ride but hey, you know that’s life.” Taking a more local political perspective I18 was dismissive of his local authority’s action on climate, claiming that for a “liberal and left-leaning” area its poor record on low-carbon solutions and recycling meant local government action was “pretty inconsistent.” This mild unease expressed by these two elite actors was much more pronounced amongst both academics and CREO actors.

The academic interviewees can be sub-grouped into those that commented on the general democratic deficit and energy researchers who focused on the ED deficit. As presented in the section on CREOs above, both I14 and I17 argued that communities had been deliberately disenfranchised through various means including privatisation, consumerism, union decimation. The bind paradoxically for I17 was that the top governing institutions were so compromised that only local solutions remained:

The problem here is that even if you elect far left socialist, even if you elect a bunch of nice people, you have an entire system that is set up over a 40 year period to not do that. It's just not geared that way. No matter how much you say let's try to be kind and not be so ruthless and rapacious and all the rest of it, you can't turn the super tanker round because it's sort of stuck in this system. Which is why we're back to this idea of localism and local democratic control. The only way to start changing this is at the local level in small institutions, as up there you can't do that. Maybe the advice you could give is that you have to give local control of energy and other vital resources to local communities and thus empowering these small local collectives to do these sorts of things. And then you might get a sort of trickle up effect.

In terms of ED, I27 claimed that he liked to talk about a process of *democratisation* as at the moment there was so little ED. He argued that the current *progress* of individual households and those with resources becoming prosumers was only the first step:

Energy democratisation is really the expansion of inclusion, participation, and scope of democratic governance, within the energy sector. I feel we're doing some progress there compared to the purely expert system that we had up until the 1990s, but still, there's a long way to go and we're still back in the 19th century of ED at the moment.

This idea of being back in the 19th century is important as it depicts our current lack of ED and arguably wider democratic authenticity. It also implies the conflicts and lack of linear *progress* otherwise I27 would not have to spend part of his life arguing against the top-down solutions on offer such as nuclear and hydrogen. Regarding these conflicts, the other ED specialist had crucial and concerning statements that partially explain why CC solutions have been left so late and seem so ineffective. I23 described how in the US fossil fuel and elite interests had mounted a sophisticated and long-term campaign to undermine democracy and serve their interests:

The fossil fuel interests have really had a decades long strategic campaign to undermine democracy, though they weren't at the beginning that sophisticated to think that's what they were doing. They thought they were just resisting and sustaining their profits and concentration of wealth and power that they were getting from the fossil fuel profits and to sustain that. As the details of the CC and how fossil fuels and our energy systems was contributing to that got clearer, they doubled down their strategic efforts to squash and resist a transformation away from fossil fuels towards more renewables basic future.

I23 suggested that while this was not unique to the USA, it was more "acute" there and involved general lobbying of very wealthy fossil fuel actors and shareholders "leveraging their financial power into political power". More specifically, this involved the American Legislative Exchange Council (ALEC) who worked at the local and regional level to create and hand over legislative packages to politicians with "all kinds of anti-government positions on public investments in public transit, renewables and support for fossil fuel infrastructure" in a highly coordinated way. A final concern I23 talked of was the cultural impact of ALEC and other fossil fuel advocates, in that the discourse among some social groups was part of a culture that dismissed the CC and saw fossil fuels as an intrinsic part of their lives.

Researchers have documented the cultural aspects of fossil fuels both in terms of how it forms the "lifeblood" of US social and economic life (Huber 2013), but also how the far right have ensconced themselves in a form of petro-masculinity (Daggert 2018). More specifically, coordinated and anti-democratic action from the fossil fuel interests is documented in multiple literatures (Aronoff 2021; Mitchell 2013; Bonneuil & Frezzoz 2017). However, most recently and of concern is the extensive links uncovered by Malm and the Zetkin Collective (2021) between the far-right and what they call primitive

fossil capital. What they label ideological state apparatus, is an international form of highly coordinated and financed action that has moved through distinct stages – denying the problem exists (1970s and 80s), greenwashing and acting as part of the solution while maintaining business as usual (1990s – 2010s), to presently a mixture of the two with the re-emergence of the far-right and their political representation for the fossil fuel interests.

This (Malm and the Zetkin Collective 2021) unholy alliance of fossil capital and fascism is evident in the US, Brazil and across Europe. In the UK, leading Brexit figures such as Farage, Rees-Mogg or Johnson easily moved between CC denial and openly racist tropes, with the thinking behind this and policy papers emanating from the Global Warming Policy Foundation. This organisation is based at 55 Tufton St, very close to Whitehall, and hosts key figures like Matthew Elliot and Lord Lawson connecting both the lobbying access to the UK government with the Kock brothers, long-term partisans of primitive fossil capital (Malm & the Zetkin Collective 2021). Therefore, I23 seems correct in arguing this coordinated action is more widespread if less developed outside the US. An international example is the ECT established in the 1990s, which allows investors to sue states for *potential* loss of profits, and is being used by fossil fuel interests to sue governments that try to decarbonise (Olivet & Barcena 2021; Friends of the Earth 2021). Again, from the local to the international level there seems a deep energopower and necropolitics driving a system that cares little for life or democracy or EJ principles. Perhaps the hollow, instrumental democracy, characterised by Graeber & Wengrow (2021) as an elite popularity contest excluding most people, is degrading under the pressure of the CC into something even uglier.

The CREO actors for their part continued to work and try to build collective solutions in the face of this top-down and undemocratic context. Similar to I17 these actors favoured local democratic solutions that benefit and empower local people. I15 perhaps stated this the most detail:

The Preston Model is the start of showing what that would look like – that you have a city council whose model is to make sure money circulates as many times as it can, through the use of anchor institutions, through bringing pension funds and so on back to the city to enable an economic reimaging of the city. But then you combine that with the kind of neighbourhood democracy that you see in Barcelona and the kind of civic imagination office that they are doing in Bologna.

Fundamental to this process I15 argued, was some form of economic redistribution through a universal basic income (UBI) and/or services, for widespread injustice and poverty was debilitating to collective and democratic reimaging of our society.

The other CREO actors (I25 & I26) also reflected on how dysfunctional our democracy was while also reflecting on the specific difficulties of democracy within the CREO sector. I25 talked about the UK being a “leading democracy” but that this was in the process of being “taken sneakily away from us in such a way that most people don't realise because it's just little, by little, by little.” This involved a whole system of political exclusion where “so many people are blocked out of it that would probably be excellent to get involved but because either they're not remunerated, or this is skewed towards a boys club.” Similarly, I26 talked of an “atrophied” UK democracy that needed more “exercise”, however current UK policy was not conducive toward this as:

The party that's in power is taking yet more, and more, and more control by talking big about the will and the power of the people but when it comes to people self-facilitating democracy that's not cool, top-down democracy is what they're interested in.

In order to leverage influence and access with policy-makers I26 said they used the discourse of innovation to speak the “language of the people in charge.” However, this was not just language with a number of important trials that had been run with Ofgem's oversight. I26 said:

Great, well we've done this innovation trial and we've done this and integrated this and this and this, and that's worked so now we're gonna offer it as a service or we're going to start rolling it out.

The problem was these trials were “far from profitable in any way” and without a significant change in Government policy, such as bringing back the FiT in some form, the “viability and predictability of income isn't there.” This resulted in circular discussions in CREO forums of viable business model, or a kind of innovation limbo where the added social value CREO activities is never counted because of the myopia/strategic ignorance of policy-makers.

In respect of their own democratic potential these CREO actors talked of the difficulties of recruiting and maintaining peoples' participation, with I25 partially connecting this to the injustice of poverty which creates “indirect barriers”. Similarly, I26 pointed out there was a general “lack of bandwidth” due to life pressures including but not reducible to injustice and poverty. CREOs have responded with a variety of engagement methods such as nominal/low share offers for people within a five-mile radius, or the position of energy champions often taken up by people in EP that were advised and inspired by former energy champions. The overall aim for I26 was “a virtuous circle of increasing effectiveness and increasing democratisation” in addressing local/global collective problems. In

contrast, I26 also pointed out the democratic governance structures of CREOs while direct democracy, were generally restricted to annual general meeting fair, again suggesting a long way to go to approach the kind of ecological democracy Kothari (2020) envisions. Nevertheless, this is still in contrast to the two MPs above, in treating democracy as something with a value in itself in allowing more autonomous people. These ideas align with many CREO actors from the previous chapter, who while doing the incremental justice work on affordability, access and due processes, desired systemic change like these national level actors. A core part of this system change is a democratised and devolved energy system, which again shows CREOs as straddling the reformist EJ principles and the radical ED aims. Also, similar to I27's idea of ED being in the 19th Century, CREOs are dealing with an emergent but by no means inevitable process of energy democratisation, and in doing so have at least started to address the difficult democratic problems that emerge when democracy is taken seriously (Taylor 2019). One aspect of this process is understanding what, why and how we value things.

6.3.3.3: Value/s: People Versus Profits

The late David Graeber (2011, p. 25) said: "For a very long time the intellectual consensus has been that we can no longer ask great questions, but increasingly it looks like we have no other choice." This sentiment is echoed by Galvin (2020f, p.1) when he asks, "where are the sociologists?" and why researchers on energy work "around the edges of the gigantic crisis unfolding before us." The multiple crises that face us demand big questions such as what we value and why? This section will outline how some of the interviewees framed these questions and answers and the implications of this. To varying degrees the elite interviewees framed value much more toward exchange over use (Marx 1887) in what could be seen as a spectrum. The academics and CREO actors both tended toward use value but also expanded this notion beyond this binary to *values*, or the intangible things that make life worth living and that are the bedrock of society (Graeber 2011). Indeed, the modern era's attempt to squeeze these intangible *values* into capitalist exchange value could be part of our collective problems (Graeber 2018).

The most extreme of the elites was again I24 who insisted there would be no re-evaluation of work remuneration or even working patterns. She argued, "I don't think that due to this pandemic, society is suddenly going to invert the valuing of services that should be valued and should be paid well." When asked about the possibility for more working from home she accepted this might happen at the

“margins” but claimed the big financial firms needed to prevent an “erosion of corporate culture” and expected to get their “pound of flesh” for the relatively high wages they paid. This is clearly on the edge of this spectrum of exchange value, assuming both that society has made some kind of collective decision on issues like EP or executive pay, and that this will not and should not change. The CTO and CEO were less strident and each had particular positions on re-evaluating things but again this was fixed toward exchange value. I18 retold an anecdote of a panel he had sat on in which he presented his green technology against a fossil fuel representative. The latter claimed whatever happened the fossil fuels technology would always be cheaper. I18 responded with a list of impacts from flooded cities, pollution impacting production, to wars to protect supply lines and said, “when you start to add these indirect externalities to the cost the playing field gets levelled somewhat.” This is classical environmental economic theory and has been an idea doing the rounds since the 1960s if not earlier (Coase 1960). The question is how far one takes it, for as pointed out above, the whole edifice of the capitalist system rests upon the underpayment and/or appropriation of human labour and environmental resources (Patel & Moore 2020; Federici 2019). The bill of care alone could come to between 16 to 43% of GDP or tens of trillions of \$ per year (Lowrey 2018). This is why Patel & Moore (2020) argue that capitalisms depend upon this undervaluing/appropriation, and that a real equitable sharing and remuneration of care would be one of the nails in the coffin of capitalisms.

I13 made similar points about internalising wider costs as a way of dealing with injustices in society. This included externalities when he claimed we put a price on electricity but not the “cost of electricity”, meaning the carbon emissions and various other factors not factored into the price per unit. But he went further arguing:

Then you've got what I would say are intangibles which are all of these things that we value greatly but we don't value. So, that's my point about monetarisation – it's about putting money on things we value, simple as that.

So, here I13 goes beyond externalities such as quantification of the costs of pollution, to putting a price on everything from a river to knowledge. In a sense we are already well on our way to this and the history of the different forms (time/place) of neoliberalism is this – the increasing incursion of exchange valuation into the social – what Peck (2010, p. 6) calls “neoliberalization...as an open-ended and contradictory process of politically assisted market rule...”, from the commodification/privatisation of basic services/needs to a multi-billion \$ wellness industry as a way to value mental health. However, placing prices on the intangible, or quantifying the unquantifiable raises the question of who sets the price and how. Moreover, if we frame as capitalisms generally do, *value* as what is done in the factories/offices and *values* as what are acted on in the home, universities

(minds), and hospitals (bodies), the attempt to further quantify the intangible would exacerbate the already damaging overload of administration of the paid jobs in these sectors (Graeber 2018). It also seems a kind of Taylorism aimed at quantifying and controlling the local knowledge that Scott (1999) argues allows the governing schemes of large institutions to actually work. This local knowledge, like EA delivery, tends to revolve around caring and human facing functions that lose the caring and human quality when quantified (Graeber 2018). One cannot or perhaps should not do care faster or more efficiently (Davies et al 2022). Finally, in terms of human reproduction, the likelihood of capital meeting these costs in anyway appropriately, is shown by I24 dismissal of fair treatment of even paid carers.

As stated above, the academic actors repeatedly emphasised the value of communal and local organisations, while I14 in talking about relational autonomy extended this to the more-than-human and rewilding initiatives:

I think that's throwing up all sorts of interesting debates and narrative around who we live with and how we live with them and what our responsibilities are and what our priorities are and bringing different groups into contact often intentionally.

For him this area offered “some kind of hope” of an “appealing narrative”. This is the theme of Haraway’s (2016) *sympoiesis* – collective productive systems with porous spatial/temporal boundaries, or more simply, we are com-post.

Of the CREO actors I15 perhaps had the most to say on value/s. He talked about a project called Transition Streets in which households would join groups of 7-10 on a street to talk about energy, food, water and housing. This saved a quantifiable amount of carbon but that was not what the people surveyed afterward talked about or valued – “they just talked about how they knew their neighbours better and felt part of the community.” He also talked about the valuing of imagination with an emphasis on reforming education:

We would have schools as kind of living breathing example of what a low energy transition future would look like, they would be democratic, they would be prioritising the imagination, cultivating the imagination of young people, and of course funded properly.

Finally, he emphasised a valuing of imaginative optimism in order to create “memories of the future” and avoid defeatism and the “deep adaptation narrative...” that risks creating “one of the first social

movements in history that designs the fact it's going to fail into its DNA..." This argument is crucial and connects to Malm's (2021) critique of privileged white people like Paul Kingsnorth founder of the *Dark Mountain Project*, who have basically given up to what will come, while Kingsnorth himself has taken to peddling petty nationalism and poorly disguised racist tropes (Malm and the Zetkin Collective 2021). Indigenous scholars such as Kyle Powys Whyte (2017), have argued that for his society reacting to anthropogenic environmental change is not new and that many indigenous societies in North America had a seasonal round with cultural and political institutions adapting to seasonal and yearly changes. This is to be differentiated from the more regional and planetary scale environmental change *imposed* upon these societies by settler colonial states such as the US (Whyte 2017). In this sense, anthropogenic environmental change and degradation has been imposed upon those colonised since 1492 (Mignolio 2015; Blaut et al 1992), and as such white privileged people have no right to give up on problems they have materially contributed to and benefitted from.

Thus, there emerges a final divide between cohorts, with the elite groups tending to favour quantifying externalities or social impacts, while perhaps not really ready to follow these through to their potential end points. In contrast, the academics and CREO actors tend to value the communal and relational, with I15 emphasis upon the imagination as perhaps the ultimate in the intangible, but core to what makes us human. This imaginative faculty and in particular with respect to how we arrange society, is something which Graeber & Wengrow (2021) argue is being squashed by a system that has little interest in the communal, never mind the imaginative and liberatory.

6.3.4: Subjectivities: Is the Cage Inevitable?

The three subjectivities that emerge from this analysis speak of the stratification of the world and the UK's system. Perhaps predictably those closer and better served by this system feel more sympathetic to it but even among the elite group there were significant misgivings. Again, it must be emphasised that these subjectivities are broad brush and speculative as one person thinking about others and grouping them must always be.

The elite subjectivity tended to buy in to what Dorling (2015) calls the myths of injustice. These include the ideas that poverty is inevitable and wholly or partly down to the individual, as is wealth and elitism which is equally natural and deserved (Dorling 2015). The exception here was interestingly a controlled, socialist economy but this is framed as undesirable for unspecified reasons. The extreme edge of this subjectivity will not even countenance this choice, as for I24 there is literally, *no*

alternative. Another feature of this subjectivity is a certain optimism aided by a national/global but selective lens that, for instance, focuses on the UK's surface level but considerable mitigation of *production* emissions, but occludes *consumption* emissions and the UK Government's and financial sector's funding of international fossil fuel infrastructure. Thus, there is a certain level of strategic ignorance (McGoey 2019) being deployed that allows the ignorance of inconvenient information but also support of capitalisms as a kind of *end and best we can manage* point in human organisation. This is argued with the cognizance that the human condition is one of ignorance, cognitive biases and such limits to reason, but it is to point out that these particular forms of ignorance seem to support both these actors' positions and arguments.

The academic subjectivities were much more centred on justice and framed poverty as a result of either capitalisms or more specifically neoliberalism. There is a distinct mistrust of the state coming from a number of these interviews, which is perhaps a recognition that the state and capitalisms are two sides of a coin and have developed dialectically and both take a top-down imperialist perspective, which ignores/attacks local knowledge/practice (Estes 2019; Scott 1999). This leads to conviction that more just solutions must come from local and democratically organised institutions, with these solutions then "trickling up". This subjectivity also implies a more relational subject grounded in and interdependent on the local environment and community, as opposed to the individualised *homo economicus*. Those actors interviewed during the pandemic saw this as worrying but paradoxically instructive prelude to the ongoing CC. While these actors will obviously share biases and forms of ignorance it must be pointed out that established academics lead fairly comfortable lives and thus their justice concerns are not directly supporting their positions.

The last group of national CREO actors was similarly focused on justice and saw poverty as partly a result of the system but were less explicit in naming capitalisms and neoliberalism. This is perhaps a result of these actors having to engage with policy-makers as part of their practice, which could act as an influence on their discourse. However, none of these actors spoke enthusiastically about these interactions and were uniformly dismissive of the current UK government. As community activists they also believed mitigation solutions begin locally and all expressed belief in the need for just and democratic solutions. These actors all expressed deep concern for the dwindling aspects on the UK's democratic pretensions, perhaps an implicit recognition of how capitalisms, and more so, neoliberal capitalisms are inimical to democracy (Dean & Zamora 2021; Taylor 2019; Mitchell 2013). Finally, these subjectivities again surely share biases and forms of ignorance and the local justice arguments would clearly benefit the organisations they represent; however, this appears a more relational and

communal form of benefit that takes a *levelling up* much more seriously than the elites or our system do.

6.4: Conclusion

This chapter used data from a range of national level stakeholder interviews and a participant observation with CEE the national CREO body based in Sheffield. It contributed to answering all three research questions. Firstly, it finds CEE and the CREOs it represents conducting valuable work on pandemic relief which would help address the first four basic principles of EJ but more generally the principles of *respect* and *resistance*, for again in a system where “carelessness reigns” (Chatzidakis et al 2020, p. 1) simple and good faith acts of solidarity are acts of radical disobedience (Mignolo 2007). However, the broad division of CREOs seen in the last chapter was also evident in this chapter, with some CREO focusing on innovation, while other retained focus on what they had always done but were endeavouring to scale up. These differences are not so clear as a binary split; nevertheless, the more commercial emphasis of the innovation pathway could be seen to limit work on basic aspects of justice and be a little too close to a capitalistic model that this thesis and many theorists see as inimical to basic conceptions of justice.

Secondly, this chapter also shows the UK energy and broader economic systems as being hostile, or perhaps oblivious to CREOs, and even basic justice concerns. This can be seen in how the Government, Ofgem and political and economic elites are much more focused on corporate and Big-E energy solutions, rather than social welfare. This then can be fairly described as a billionaire serving system (Galvin 2020e). Even more concerning is the evidence of the influence of fossil fuel capital undermining our ostensibly democratic institutions, which this thesis frames as a toxic mixture of energopower and necropolitics.

Thirdly, the three broad subjectivities that emerge from this chapter can be place on a spectrum with the elites much more supporting of our extractive system and believing that the Big-E solutions are acceptable. In contrast, the CREO actors/associates while not naming capitalisms are not at all satisfied with the UK’s CC mitigation and favour much more localised and people-focused solutions. Finally, the academic groups were much more explicit in identifying capitalisms as the problem, arguing this system emerged from and constantly reproduced injustice, and again favoured more local and people focused solutions. The following discussion chapter will draw on these subjectivities and the previous chapters’ to build the environmentalities that emerge from this thesis.

Chapter 7: Discussion

7: Introduction

Methodologically and conceptually this project has endeavoured to connect academic writing on EJ to CREO practitioner's ideas of justice. In doing so it has sought to answer the research question: how do community energy sector actors conceive of justice? It also seeks to understand the context of CREO practice and how this is supported at a sectoral level by answering the research question: what are the key characteristics of the policy and regulatory environment in the UK in which community-led energy generation and distribution schemes operate? In the previous 3 chapters, empirical data collected with local and national CREOs was analysed using a governmentality framework (Ettlinger 2011; Oels 2006) alongside data collected from expert/practitioner interviews. This chapter synthesises findings from that analysis into a discussion that aims to answer the third research question, which is: what kind of environmentalities and subjectivities are posited by these notions of justice and what are the implications of this?

In chapter 4 it was found that a porous border exists between poverty and EP in the practices of CREOs. In chapter 5 CREOs were found to be working in a hostile environment, often including conflict with local authorities, over who remains the key deliverer of services and democracy under the financial and political economising brought about by austerity. In chapter 6 it was found that, in a national energy context, despite community energy being widely supported and advocated for, it is nonetheless forced to find alternative modes through which to sustain its work. In this chapter it is argued that these findings indicate democratic deficits at multiple junctures and scales and that these deficits are entangled with the materiality of energy, its scale and the continued influence of fossil fuel interests.

The conceptual framing and overall argument presented in the literature review and its treatment of EJ and ED is that democratic praxis benefits from a plurality of voices and positions. *Together* these construct contested concepts such as justice (Schlosberg 2004), more fairly and democratically than the presence of a singular voice pronouncing universal meaning; or as Estes (2019, p. 16) argues "knowledge alone has never ended imperialism". Moreover, this project has argued EJ and its principles can be seen as incremental change, for instance by arguing energy access and affordability should be universal, while ED can be seen as a more radical justice framework calling for the

democratic ownership and participation of/in the energy system. CREOs can be framed as the material space that connects and bridges these incremental and radical aspects of justice and as such a space in which radical environmentalities can develop. Table 17 below, summarises the six anchor points that this chapter will use as its focus and structure, with the analysis starting from below and moving upward and outward.

Table 17: Analytical anchor points of thesis (adapted from Ettlinger 2011)

Analytical Anchor Points	Governmentality Aspects/Explanation	Examples
1) CREO Regimes of practice – two pathways	Subjectivities & technologies/techniques of power	<ul style="list-style-type: none"> • ESC – Ethic of care/ poverty pimping • BHESCo – Commercial confidential practices/ Innovation imagined/real/ • CEE lobbying/stakeholder mapping of powerful stakeholders who do not listen
2) Money, Debt and funding: Democratic Deficits and Technologies of Control	Technologies/techniques of power	<ul style="list-style-type: none"> • Bureaucracy as form of carbon conduct and poverty industry • Funding of CREOs regressive ‘unfair’ playing field (government) productive (Leapfrog) • Defunded LAs become problem rather than an essential part of solution • Ofgem’s narrow focus on cost/who pays • Taxation as not fit for purpose • Money/debt in wrong places/purposes for just transition
3) Genealogy of CREOs and their contingency	Historical contextualisation to highlight contingent and broader social dynamics and patterns.	<ul style="list-style-type: none"> • China/German state action lowers cost of renewables • UK’s inconsistent and dysfunctional funding of the transition – the FIT – fossil fuel subsidies • CREOs a contingent and contradictory emergence in system more geared to energopower and Big E energy
4) Rationalities of Power: a Regressing Neoliberalism Versus Radical Ecological Democracy	Rationalities rule/resistance	<ul style="list-style-type: none"> • Capitalisms – what they are and what underpins them • Energy Democracy/democratisation as radical green rationality • How CREOs are a space where these rationalities are competing

			and how government policy aids the capitalistic path through a commercialisation of CREOs
5)	Energy and Democracy Through Time and Space	Link genealogy to broader socio-economic factors	<ul style="list-style-type: none"> • CREOs in UK trying to democratise energy in highly undemocratic/centralised system • Link to longer history of demos through undemocratic neoliberalism/capitalism and energopower • The reformer environmentality working with the confines of capitalistic framework and limits; the radical environmentality that imagines alternatives opens the space for local democracy and difference.
6)	Environmentality, the Past, the Future and Freedom	An examination of the CREO pathways and wider data and how it this implies two broad environmentalities.	

Thus, two primary aims of this project are to create dialogue between academic and practitioner conceptions of justice and understand the features and possibilities of the environmentalities implied by these conceptions. This has involved tracing the place-based contingent practices of CREOs, to broader guiding rationalities, on to a wider analysis of discursive-material conditions of possibility for, in this case, CREOs and energy justice and furthering democracy England. In this way, the historicised analysis developed over the course of the literature review and throughout chapters 4 to 6 is extended in this chapter to produce a reimagining of how energy, CREOs and social relations engendered in this space, can help in reimagining the human subject. This reimagining can be framed as a new/old subjectivity, an autonomous but relational human that sees the fundamental connections and responsibilities we have to each other and our world, and the vista of possibility this new/old human opens.

7.1: CREO Regimes of Practice – Two Pathways

ESC

The first four principles of EJ involve the simplest and least controversial aspects of justice (Sovacool & Dworkin 2015). These principles namely involve energy being affordable and accessible, while the processes around this are fair and transparent. However, in chapter four we saw evidence of incorrect billing that required the intervention of an advisor and a second meeting which funding did not provide for. This incorrect billing and the need for advice and advocacy for remediation suggests that

the UK is failing to achieve even these basic, widely accepted aspects of just energy provision. The Ofgem (2021) website details the fines and voluntary fees energy companies pay for infractions with many of these concerning erroneous billing. In chapter five it was suggested that DNOs make common practice of conducting CBAs on whether to act to avoid Ofgem fines, and it would be fair to suspect that energy providers conduct similar analyses. This dysfunction of the energy system was not lost on ESC advisors who understood their relative impotence and lack of resources in connection to these in many cases multinational corporations. Thus, members of this organisation characterise this system as *broken* and the EA they were providing as ineffective but something they continued providing despite this futility.

This extractive nature of the energy system connects to the finding that there was a porous border between EP and general poverty. While EJ principles focus on energy related issues, CREO energy advisors were often called to query water bills, tenancy agreements and other forms of debt. Thus, practitioners are faced with Galvin's (2020e) lopsided, billionaire-serving system that upwardly extracts wealth. It is this complex and interconnected system of energy, housing, employment and social support, which is actively undermining people's livelihoods, that EJ discourse simplifies with its focus on energy. EJ academics have done this intentionally in order to make EJ tenets and principles more achievable (Jenkins 2018). However, the problems with this discursive organising in/out (Hajer 1996) are threefold. Firstly, it implicitly supports the Government's tech-fix approach in the way it treats EP as mainly a thermal efficiency problem, while leaving this largely down to individuals to solve after "cutting the green crap" (Webber 2022). Secondly, it implicitly supports two-tier systems of poverty management with those, or some of those, in EP *deserving* of support, while those in food, water, or general poverty are excluded from this or *undeserving*. Thus, practitioners teach the academy the messy and complex practicality of improving justice outcomes and how in practice energy injustice cannot be separated from the privatised and predatory system of basic services more generally. Finally, it has the effect of disassociating social welfare and the energy industry from their common roots in colonialism whereby racialised, gendered, classist and ableist stereotypes are embedded in welfare rules and regulations that are established alongside systems focused on extracting environmental resources and capital (Engle et al 2022; Abramovitz 2018).

BHESCo

The EJ principles of *accountability* and *respect* argue that all should have access to high quality transparent information about energy and that different knowledge and epistemic systems should be recognised in decision-making (Delina & Sovacool 2019). In connecting this basic EJ principle to a more controversial and complex one in *respect*, the EJ framework can be connected to decolonial and indigenous critiques. Colonisation as a process is as much about the control of knowledge as it is about bodies and resources and this is evident in the foundational but ongoing act of the occlusion and denial of colonised societies' histories and epistemologies (Santos et al 2007; Mignolo 2007; Sioui 1999). Thus, this control of information is a core aspect of power in Foucault's power/knowledge dialectic (Wagenaar 2011), with bureaucratic forms of knowledge control in both commercial and public worlds a crucial aspect of oppressive power in modern societies (Graeber & Wengrow 2021; Eubanks 2018).

Unfortunately, BHESCo as the most commercially minded and developed of the three cases, displayed elements of this control of information in both requiring a signed NDA and then excluding this researcher and other part-time or voluntary employees from staff meetings. This acts as evidence to the more pronounced hierarchies, proprietary control of knowledge and commercial elements of BHESCo. Moreover, it is evidence of this organisation's alignment with a capitalistic framework, which this thesis has argued is antithetical to basic justice principles and even more to substantive democratic ones. This commercial drive for confidentiality can also be connected to economicistic ideas which emphasise competition over collaboration and individuals over communities. Finally, it connects to mainstream economics which can be seen as both elite knowledge and a master discourse of society that epistemically crowds out other ways of thinking and being (Robinson 2021; Sahlins 2017).

CEE

Much of CEE's work is as a conduit between CREOs and regional and national level energy institutions and policy-makers. Ofgem as the energy regulator is a crucial institution at the national level for it administers government policy especially with regard to DNOs and energy providers including CREOs. As such, CEE often consults Ofgem while also communicating implications of its regulation to local CREOs. As shown in chapter 6, analysis of Ofgem's (2019a) decarbonisation plan and attendance of a webinar as a representative of CEE, provided further evidence of the extractive and dysfunctional

nature of the UK's energy system. Also, evident was how this system is neither democratic nor conducive to even the more basic EJ principles. The extractive nature of this system was evident in Ofgem's admission that DNOs had been extracting inappropriate profits (an average estimate being 19% - Wild 2017), *throughout the years of imposed austerity*. Ofgem's idea was to cut these profits by 50% which could mean 9.5% profits which can be compared to a Big Six energy company average of 4% (Wild 2017, p. 6). A final aspect of this upward extractive nature was the mismatch between funding made available for DNO's and the energy transition in the next price control period - £10 billion – and that made available for “vulnerable” consumers - £132 million (Ofgem 2020). If we privatise profits, we should privatise costs/risks. However, with the climate levy, DNO profits and energy policy and anachronistic market in general loading the costs on the energy bill and taxpayer, this form of corporate welfare seems to be fairly common in the UK's energy system. Of broader concern, is the suggestion that this form of de-risking investment, or socialising costs/risks while privatising profits, is being applied by equity and institutional investors to low-carbon investment in the Global South (Dafermos et al 2021), in what could be viewed as financialised colonialism.

The way this dysfunctional system impedes justice can be seen on many levels. Firstly, while having an almost obsessive and myopic focus on keeping costs low to the expense of investing in things like climate mitigation/adaptation, Ofgem and UK's energy policy have failed spectacularly in achieving this on their own terms. In Early 2022 analysts predict average energy bills could reach £3000 p/a (Brignall & Selby 2022). This will be simply *unaffordable* for many millions and so EP/poverty rates look set to soar. Caddick et al (2022) model some potential impacts of this social crisis, suggesting that by April 2022, 23.4 million or 34.2% of the population and 48% of children will have lower incomes than necessary to meet their basic needs. This will lead to choices – the heat or eat *choice* – or more specifically may lead to people either self-disconnecting or rationing energy use, which calls into question adequate energy *access*. *Due process* and *accountability* seem distant prospects as the energy crisis forces the Government into choices, with policy-makers favouring expansion of North Sea oil/gas (Pickard et al 2022) over a more sustainable and cheaper option of onshore wind (Plimmer 2022). What can likely be relied upon is no public consultation on these choices for, as will be shown in part 7.5 below, oil and gas companies get the political access and decisions they pay for in the UK. Finally, this lack of basic EJ in the UK severely limits achieving the more controversial principles of EJ. For in Galvin's (2020b) terms, if the UK cannot do the *thin* ethics of looking after people *here* how could it do the *thick* ethics of showing *respect* and *responsibility* to people and places around the world?

Overall, this section shows how CREOs are practically working on the first four basic principles of EJ of *affordability, accessibility, due process and transparency*. However, in this practical work they also

show that separation of EJ from other aspects imposed poverty and injustice does not work and can support regressive and unjust government policy. This section also presented how CREOs taking more commercial paths might begin to contravene certain EJ principles such as *transparency* and *respect*. This dynamic was seen in chapters 5 and 6 with CREOs aiming to support the roll out of EVs, which will likely contravene *affordability*, *access*, *sustainability* and *intragenerational* justice principles (Sovacool et al 2022). Finally, this problem with CREOs becoming more commercial connects to the broader extractive dynamics of the UK energy system and wider economy. This can be seen as corporate welfare where DNOs are allowed lavish profiteering while austerity is imposed upon society, or the costs of the transition are loaded onto the people locked into the system through the climate levy, rather than through taxes on those companies and individuals who have built financial empires upon the CC. As Lazzarato (2014, p. 14) argues, the “indebted [subject], at once guilty and responsible for [their] lot, must take on [themselves] the economic, social, and political failures of the neoliberal power bloc, exactly those failures externalized by the State and business onto society.” Thus, an environmentality that accepts not just the first four basic EJ principles but also the other six more controversial and difficult principles, would likely see capitalisms as beyond reform, something we can and must surpass.

7.2: Money, Debt and Funding: Democratic Deficits and Technologies of Control

Regarding technologies of control, a significant finding of this project was how bureaucracy and administration of EA and its funding were both rationed and subject to forms of quantification that were highly problematic. This has deeply negative impacts on the four basic principles of EJ and the ability of CREOs to help people. Firstly, there was the reduction year on year of EA funding while the paperwork remained, claiming to want to use the data to “provide advice and guidance...and auditing purposes” (Appendix 3). This situation continues, with ESC announcing the Silver Lady Fund provided last minute funding in January 2022 enabling the organisation to continue providing EA services (ESC 2022). Crucially, this is when EP rates will almost certainly soar considering the energy crisis and more general high levels of inflation, which will impact impoverished people more. This is because they have less resources and inflation may be rising more steeply with lower value products (Thomas 2022). At the other end of this EA provision, we see competitively allocated funding from BESN and the National Lottery, that not only places communities in competition with each other, but also takes time,

expertise, and money to complete. This form of rationing of funds to CREOs that help ease energy *affordability* and *due processes* is striking in its contrast to the much more generous treatment of the other end of the income/wealth scale.

Another institution rationed of funds under austerity are LAs, resulting in a number of problematic impacts for CREOs. Firstly, was the democratic tussle found in chapter five where the LA and ESC were in competition over who would be the better provider of renewables. Both had solid cases, which perhaps is a testament to the problematic either/or logic that austerity and more broadly one of the *great thought processes* of Cartesian reasoning (Moore 2016). A much better system would be CREOs working with *and* through LAs – as they do in some places as I4 exemplified. Another issue that emerged was the extent of the cuts to LA budgets, which can be connected to the way ESC's EA became “all encompassing” and really much more than EA and dealing with poverty more generally. This is problematic for many reasons but mainly because very small organisations could never adequately fill the void left by the retreating local state. It also placed mainly volunteers in trying and complex situations that were in no way covered by the online training provided by BESN. Finally, the essential national deep retrofit that I9 described and successive governments have failed to do, requires an active and empowered LA – this is how successful programmes have been done in the past and how many experts think it should happen in the future (Webber 2022; Brown et al 2020).

A further factor was the more general CREO funding and how the closure of the FiT and other forms of government support has shaped CREO activity. This has had the effect of squeezing CREO margins and pushing them into both more commercial and upscaled energy generation. These effects have been quite beneficial and have potential in the way I11 described her organisation's funding model, or with the way CES is trying to partner with utilities and national infrastructure such as rail to produce and supply community energy (CES 2022). I11's funding model secured a CREO's financial future but also stipulated a tangible benefit, such as heating a building for disabled groups. Riding Sunbeams aims to use community energy to supply energy to UK rail providers, which secures revenue for CREOs and savings in CO₂ and money for UK rail (CES 2022; Riding Sunbeams 2022). However, as I26 pointed out, many innovative trials have been done across the country but as many did not show a clear way to make profit Ofgem seems uninterested or has gone quiet. Thus, the sector in general appears in an innovative limbo, seeking and speaking a language of innovation but not being given the space and finance to actually do this innovation, or at least build on it.

This connects to the more general point that I25 made about a “fair playing field” over a level one. This means in some way factoring in the social benefits of CREOs rather than just counting how much profit they turnover and how much energy they generate. The social multiplier effects of CREOs are

hard to quantify and there are always problems and assumptions with doing this; however, this does not mean we can compare CREOs that conduct EA work and educational outreach to schools and many other things, to commercial suppliers that are motivated by fiduciary responsibility. This idea of a fair playing field connects more broadly to the community wealth building movement (CLES 2022: 2020), that aims to make local economies work locally. This is achieved through varying ownership models, less extractive financial institutions such as credit unions or community banking, and leveraging big anchor institutional employers like hospitals and universities and councils to both spend locally and push just practices down their supply lines (CLES 2022: 2020). This broader context where everything is not reduced to a fetishized price that hides much more than it reveals, would enable CREOs to engage with community banking, anchor institutions and LAs in a much more constructive ways.

Another issue with finance emerged from Ofgem's (2019a) obsessive focus on *least cost pathways*. This assumed that consumers should pay, and the poor disproportionately through their energy bills, for the energy transition, despite being locked into high carbon lifestyles (Unruh 2000; 2002). Further, this idea of *least cost pathways* becomes suspect when considering what this includes/occludes: an anachronistic energy market built for fossil fuels and thus much more expensive than necessary (Grubb 2022); excessive profits being made by monopolistic DNOs (Christophers 2020; Wild 2017) and energy suppliers (CMA 2016); and the fossil fuel industry's exemptions from taxes (Christophers 2020) enabling record profits (Ambrose & Kollewe 2022) while millions face a cost of living crisis (Caddick et al 2022). Academics (Owen & Barrett 2020) and an EP expert interviewed, advocated moving the climate levy to general taxation. However, this ignores the wider issues above of generally dysfunctional and extractive energy market, but was also identified as problematic.

As I10 explained, the tax system is not fair and does not make those with wealth pay their fair share. Indeed, with a historically low top-rate of tax (Galvin 2020a), no real wealth taxes (Piketty 2015), and a sophisticated wealth defence industry of lawyers, lobbyists and other intellectual/professionals (Winters 2014), our system of financial and monetary governance seems designed to maintain and build the wealth of the highest income deciles (Davies et al 2022; Christophers 2020; Galvin 2020c; Caddick & Stirling 2021). This tax system also has aspects of coloniality with non-domicile status being a way colonial administrators/businesses protected wealth extracted from colonies (Duncan 2022), while tax havens arguably emerged as formal colonies were defeated, but the colonisers stole then concealed as much capital as possible as they exited (Táíwò 2022). Around half of these tax havens are directly related to the UK (Overseas Territories, Crown Dependencies or the Commonwealth), and through these UK finance is global leader in tax avoidance, responsible for an over a third of this internationally (Christophers 2020). These dynamics have only increased/exacerbated due to the

pandemic with the grotesque effects of 700 new billionaires emerging during this crisis (to make 2700), largely down to QE and government support (Sharma 2021; Stevenson 2020).

A final issue illuminated was the dual function of money/debt as both a store of value and medium of exchange, but also a form of power and control. This is seen in how those investors in CREOs get democratic rights that are denied members of the community that cannot pay. It was also evident in the use of PPMs and their use with impoverished groups as an explicit technology of capture and control (Lazzarato 2012). However, as I7 pointed out not many people understand this complexity of money and finance, while at the same time vast sums of capital are in the wrong place. Two brief examples will show this: between 2016-2021 global financial institutions and pension funds invested \$4.6 trillion in fossil fuels (Banking on Climate Chaos 2022); in 2018 two thirds of investment on new energy infrastructure went to fossil fuels compared to one third to renewables (IEA 2019). Thus, as Pettifor (2019) argues, without reclaiming finance as a public and democratically controlled resource, there will likely be no energy transition and certainly not a just transition.

7.3: A Brief History of CREOs and Their Contingency

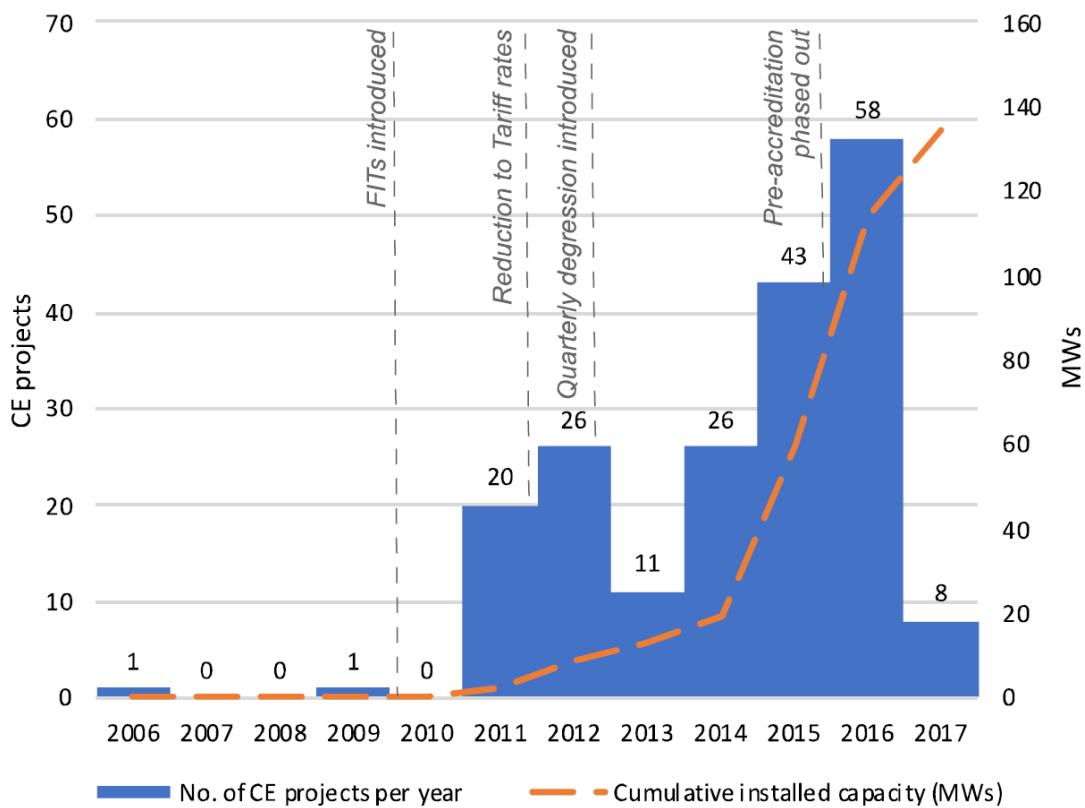
This section will explore the brief history of CREOs in the UK in order to gain an understanding of *how* they emerged. This will again be an example of the deep contingency that could be linked to the many contradictions of capitalism, as discussed in the literature review and methodology chapters, but also arguably a feature of life itself. This deep sense of contingency, while perhaps unsettling, is an antidote to the teleological trajectoryism that posits one path for the individual and wider society (Appadurai 2013; Foucault 1972). Understanding and accepting stochastic contingency, as both individuals and society, allows a humility in our relation to each other and the world but also opens up fields of possibility. It does this by seeing what *is* as contingent and allowing us to consider what *could* (logically) and *should* (normatively) be (Avelino & Grin 2017). Any systematic transition of both energy and social relations, as this project and many of its participants advocate, will require imaginative and novel social formations grounded in normative basic justice principles. More materially, understanding how a sector/organisation developed can add information to how priorities and perspectives are shaped and under what conditions. This will add to the previous sections in gaining greater understanding of CREOs and their broader context.

As I18 suggested, the *progress* made in the UK's CC mitigation can be quite clearly linked to state action in Germany and China. Between 2013-18 approximately a third of overall renewable

investment came from China (IRENA 2020, p. 9), while Gallagher (2013) details how Germany, Denmark and China are states that led the early energy transition. They did this through a combination of sophisticated and consistent policy frameworks, but also resource endowment and supportive cultural conditions (Gallagher 2013). This state action had two important effects in relation to the UK. First, it massively reduced the average price of utility scale solar PV and wind (onshore and offshore) technologies 81% and approximately 50% respectively between 2010 and 2020 (IRENA 2021). The other effect is companies from these countries become the suppliers of the technologies and gain the economic benefits of this (Mazzucato 2018). This effect can be seen by the dominance of Danish, German and Norwegian firms in supplying most of the UK's offshore wind capacity (Whitmarsh et al 2019). It also means more complex and opaque supply chains, with documented injustices embedded in these technologies' mining for raw materials, manufacture and disposal (Sovacool et al 2020; Brock et al 2021). These background processes allow but also underline the UK's inconsistent and uncoordinated action on mitigation.

The inconsistent support for CREOs and local renewable diffusion more broadly need to be separated. This is because the FiT, which was the main form of finance that allowed CREOs to move from fairly niche isolated organisations to a small but fairly organised sector (Nolden et al 2020), was never designed for CREOs. Introduced in 2010, its original objectives were more general: to stimulate small-scale renewable diffusion (<5MW); to "empower people", "communities" and "energy professionals" directly involve them in the energy transition; to facilitate public take-up of mitigation measures (Nolden 2015, p.8). Despite it being a regressive tax, and transferring wealth from the lower income deciles to the middle and higher (Owen & Barrett 2020), it suffered from its own success in terms of take-up and installed capacity. This led the government to making multiple cuts to this FiT to control what it perceived as excessive costs of the FiT related to the falling costs of particularly solar PV (House of Commons Library 2012). By the time CREOs really emerge as a sector their main source of funding is already well on its way to being removed (see figure 21 below). Therefore, the FiT can be broadly interpreted in two ways: a regressive tax that placed the burden of decarbonisation onto the general population despite general lock-in, massive discrepancies in per-capita carbon emissions relative to income, but that despite these issues achieved many positive things; as a policy hangover from the last Labour government, that the coalition, and more so the subsequent Conservative administrations, aimed to remove under the logic of austerity and focus on large centralised energy infrastructure.

Figure 20: Number of CREO Projects Over Time, Cumulative Capacity and Policy Change (Nolden et al 2020, p. 2)



Thus, CREOs' rapid growth from 2010 then plateau after 2017 must be seen under the rubric of austerity, which it should be emphasised is a contingent and deeply political choice and project of the right. This meant CREOs were developing *at the same time as* the health, employment and child poverty impacts of austerity were unfolding with local government being defunded and this defunding

appearing to target urban and more deprived areas (Marmott et al 2020b; Gray & Barford 2018). As ESC representatives claimed the EA became “all encompassing” and was much more than advice about energy use. While this project was limited to two local organisations and one of those very briefly, this point about more deprived areas being worse affected was evident in what these two CREOs did and in their general directions and perspectives. BHESCo aims to “empower everyone” and change the game within a neoliberal framework, while ESC saw the energy system as “broken” and part of the structural injustices that pervade our society (Galvin 2020e). This brings us back to the questions of what CREOs are *for*, and to *how* and *whether* they can achieve their aims. If part of their job is to relieve poverty in the UK, while many will not abandon this task, it is doomed to fail. This is because, as I8 pointed out, there are many places with no CREOs in the UK, while many CREOs like ESC struggle to maintain their EA services year-to-year through *rationed* funding. This at the time of writing, is as energy prices, inflation and the general costs of living are soaring, implying EP/poverty rates will also. This means CREOs trying to mitigate poverty are struggling against much broader social dynamics that while contingent, are too powerful for relatively small, poorly financed organisations. Another broad aim of CREOs is democratising energy control. To evaluate this, it will be instructive to explore the underlying rationalities of capitalisms and their resistant counterpart in of green radicalism found in this project.

7.4: Rationalities of Power: a Regressing Neoliberalism Versus Radical Ecological Democracy

As presented in the Methodology chapter, the long and contingent histories of capitalisms are all fundamentally founded upon a series of damaging Cartesian binaries (Patel & Moore 2020). This thesis saw how supporters of the status quo leant into these binaries to varying degrees, while those opposing this system sought to varying degrees to break these binaries down through discursive connection and relation. However, breaking down binaries such as woman/man or black/white is not to say we are all the same and all share (in some crude Marxist analysis) in the same forms of oppression or domination. Rather it is to allow for and celebrate human complexity and difference, while affirming that we share a fundamental humanity and vulnerability and recognition of this is the best chance for a more caring and thus just society (Mbembe 2019. Kimmerer 2013; Young 1990).

As perhaps the most connected to neoliberal rationality and its foundational binaries, I24 explained how this worked at the broadest levels. The economy and more specifically the fetishized market is

both separate to and superior to the socio-political, indeed this latter realm is there to serve this market. As such, environmental action to mitigate the CC could only proceed if it was profitable. Considering how the energy transition is *proceeding*, with fossil fuel representatives the largest cohort at COP 26, this does not seem an isolated position among policy-makers. We can also infer the man/woman and the black/white binaries in I24's dismissal of carework as a "bleed on societies resources", as much of this work paid and unpaid is conducted by white and racialised women (Vergès 2019; Patel and Moore 2020; Federici 2019). Another crucial binary, which the MP elites were keen guardians of, was that of process and outcome, with both MPs favouring the latter. This simplification occludes how many processes, such as democratic participation, can also be seen as desired outcomes (Szulecki & Overland 2020). Moreover, it implies the *ends* justify the *means*. Historically, this thinking has supported extreme injustices (Estes 2019; Scott 1999), and could under the pressure of the CC lead to even worse processes/outcomes.

The other major binary supported by those in favour of the status quo was that of nature/society and by implication the economy. Both I13 and I18 saw the CC mitigation as separate to social justice and thus reproduced the social/environmental binary and the notion that one can be acted on in isolation from the other. This simplification does not work on a number of levels. Firstly, as I7 pointed out, a vast proportion of our UK society (and the vast majority of rest of the world) lack the funds or agency to decarbonise. However, as shown above, UK government aid when it is forthcoming, conveniently misses these people. Secondly, environmental and social problems interact dialectically (Moore 2015), reinforcing social stratification and injustices, as the pandemic has clearly shown. Finally, the old, reductionist science that separated, isolated, and performed the "god trick" of objectivity in the study of *nature* (Haraway 1988, p. 581), is as I14 argued, being questioned. The latest in situated, ecological, evolutionary and biological sciences see our bodies, societies and ecosystems as *com-post*, a complex mix of symbiosis, parasitism and interdependence (Haraway 2016; Kimmerer 2013; Quijano 2010). This does not mean we cannot distinguish between social and environmental processes just that we need a more "dialectical, more historical, more relational way of making these distinctions." (Moore 2015, p. 293)

Those that in this project opposed this form of separating and isolating of things were many, but here it will be useful to focus on three particular connections participants made. Firstly, was the connection between the environmental aim of mitigating the CC and solving social injustices. A second connection made was between energy and democracy in both productive and oppressive senses. The final connection was between justice and the idea of the human subject. These connections and their implications amount to a radical environmentality that the concluding part of this chapter will build on.

ESC states the connection of social justice and the CC explicitly in its mission statement and many of the interview cohort reiterated this. I20 and I23 both described how the pandemic and CC reinforce and amplify injustice, while I14 and I16 alluded to how neo/colonialism was/is generative of the present predicament. The evidence for these positions – that the CC and other capitalist crises compound existing injustices is strong and can be seen on multiple levels and scales. For instance, using an EJ principle of intragenerational injustice we see injustices related to EP reported in this project at the local level, are set to seriously exacerbate due to the energy crisis (Thomas & Sheppard 2022; Caddick et al 2022). Internationally, we have the situation where around a billion people have no electricity supply while many more have poor/intermittent supply (Van de Graaf & Sovacool 2020). At the same time the Global North, in a quintessential act of neo-colonialism, is colonising the biosphere with its high proportion of GHG emissions (Hickel 2020), thus removing space for development of impoverished communities (O’Neil et al 2018; Shue 2014). This then bleeds into EJ principle of intergenerational justice as loading the biosphere with cumulative GHG emissions now, endangers and limits resources and options for future generations, in what has been called the *tragedy of the time horizon* (Robinson 2021). Thus, on two interacting geographical and temporal scales, we see benefits accruing to the powerful and costs being loaded onto less powerful groups. This often takes the form of luxury, high per-capita emissions from the powerful, versus subsistence, minimal per-capita emissions of the least powerful (Oswald et al 2020). Finally, mitigation policy in the UK tends to reinforce these injustices (Owen & Barrett 2020; Boardman 2010).

Again, ESC connects energy to democracy quite explicitly in its call to address the CC through the community and cooperatively, as CREOs more generally do. Academics also directly connected the two, with one describing energy and its control as a “metaphor” for the state of democracy in a country, and another saying that the level of energy *democratization* was similar to the general level of democracy in the 19th century. More concerning still, were the claims that fossil fuel and associated interests were deliberately undermining democratic processes in the US and beyond. In the UK, the national level CREO actors expressed deep concern for the relative health of our democracy, with one pithily, arguing our democratic muscle (in the sense of how we *do* democracy) needed some “exercise”. These claims made by various participants in this thesis touch upon two connected literatures – the ED and the energopower.

Advocates and researchers of ED have argued for more local, democratic control of renewable energy as a good in itself in allowing more engaged, trusting communities, but also potentially as a way to devolve power, in both senses, to these communities (Lennon et al 2019; Burke & Stephens 2018). In contrast, the claims that fossil fuel actors are undermining democracy now (Malm & the Zetkin Collective 2021), are matched by much longer-term anti-democratic and imperial dynamics, linking to

the materiality of fossil fuels (Mitchell 2013), and the way we scientifically define energy itself (Daggert 2019). Thus, it seems CREO actors' and certain interviewees' intuitive connection of energy to democracy is eminently justified.

Finally, respondents of this project connected the notion of justice to the human subject in a number of ways counter to neoliberalism's individualism. There was food bank manager who derided the idea of the privileged individual doing things off the "sweat of their brow". This fiction, he argued, occluded how we are fundamentally interdependent and that all people, regardless of what they contribute, have *intrinsic* worth and humanity. In imagining a more just future, an academic talked of a relational but autonomous subject that recognised its interdependence and responsibly toward not just other humans but also the more-than-human. These ideas connect to radical ideas of humans as fundamentally social creatures (Graeber & Wengrow 2021; Adams 2016), but also social justice activists and academics like Dorling (2015), who show how poverty is imposed and consolidated under the guise of these very discourses of the self-made rich and the feckless poor. Lastly, they point beyond the human and decentre our anthropocentric gaze to see our connection to and interdependence with the world around us. This dispute on what it is to be human can be linked to decolonial arguments such as Kimmerer's (2013), Wynter's (2003) or Mignolo's (2007). The broad argument being that colonial history and ongoing coloniality projects the current dominant ethno-class of white Europeans' image/description of *man* onto the general canvas that is the *human*. Or put differently, the powerful in the world define the hu/man and its relationality to their purpose and advantage. As some respondents in this project understood, this is not a good description/definition and needs re-opening.

Therefore, through these three discursive connections, the CC to social justice, energy to democracy, and justice to the human subject, there emerges a tenuous but radical environmentality. Dryzek's (2013) study of environmental discourses identifies under *green radicalism* commitments to human equality and justice, and cognizance of complex interconnections between humans and their environment. Further, the connecting of energy to democracy and framing this as local and deliberative, as many in this project did, touches on the idea of ecological democracy a form of environmentally focused deliberative democracy (Kothari 2020; Dryzek 2013). This approach in doing the communicative over the electoral work has seven distinct advantages: it is good for integration of diverse positions (expert, activist and local knowledges) on complex issues; it is good for generation and assimilation of feedback of various natural systems and this involves an emphasis on speaking and listening; it posits that communal/shared interests under open deliberation will prevail over self-interest; it helps people to think beyond their own view points to people not present, such as future generations; it can lead to creative shared solutions and shared compromise; it allows the translation

of principles like climate justice to specific examples or cases; finally, it encourages self-critical aspects and awareness a key factor in learning (Dryzek 2013).

However, as useful/valuable as this communicative action is, it can and will be undermined if policy-makers do not act on outcomes of these processes (Meadowcroft 2004). Therefore, in a place like the UK perhaps the best option (as I17 argued) is the local authority/area, applying community wealth building ideas discussed above. This requires either committed local politicians or their replacement as in the Flatpack Democracy projects (Macfadyen 2022). With local and democratic control there would be greater chance of exploration of the radical ecological democracy ideas of Kothari (2020), who pushes the communicative aspect above, to material power of economic democracy and the knowledge commons. Thus, these three core aspects of radical green politics and environmentality offer an alternative and escape from the cage of capitalisms' -isms and climate breakdown. However, before plotting this potential escape we must delve further into the history of the UK's sclerotic and attenuated democracy.

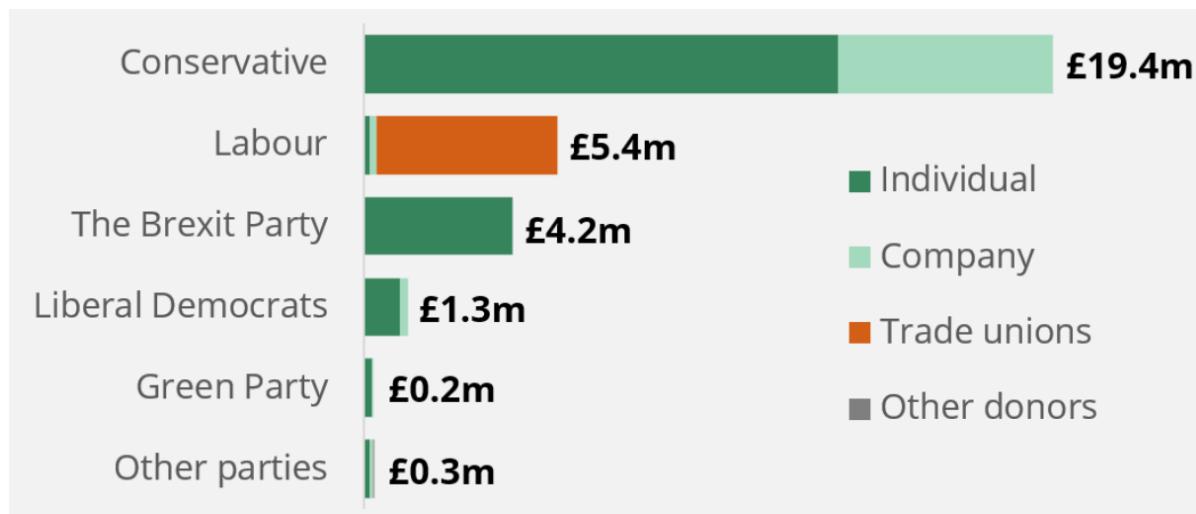
7.5: Energopower Through Space and Time

As argued in the Methodology chapter, justice is entangled with democracy, and a connection implicitly understood by both ED theory and CREO praxis. However, if we use the measure of ED as a metaphor for the health of the democracy in a place, then the thin slice of CREO generated energy (0.1%<) does not speak well of our wider polity. Also, if we judged the UK democracy on Dryzek's (2000) three aspects of participation, scope and authenticity of control, it would not do well. This seemed to be implicitly understood by most participants, who were asked to do the same, but it will be useful to briefly go through the score card.

On participation, perhaps the most basic aspect, the UK does terribly on local elections (chapter 5), which was likely part of the reason I3 saw CREOs as a more direct and relatable aspect of democracy than local government. Nationally, the FPP system makes many voters vote against rather than for someone in national elections, which again have poor turnout (an average of around 73% since 1945 - author's calculation from UK Political Info 2022). This problem with FPP was implied by I1 when he said he supported this system but then said it "wasn't half as democratic as made out." These democratic deficits appear to be getting worse with the Tory Party attempting to introduce voter ID,

a cynical move which will likely further disenfranchise racialised and impoverished voters (Ayodele & Parizotto 2021). Also, the Government is trying to criminalise peaceful forms of protest (Monbiot 2022) and has formalised the powers of the state to spy on and commit criminal actions against groups targeted by the state (Chakrabarti 2020). These moves can be connected to overall regression of liberal democracies identified in previous chapters. On scope the UK does even worse. We get to vote once every five years for a government, unless an early election is called, while most other council elections are every four years, except for metropolitan councils which are yearly. This is the extent of democratic scope in the UK. This brings us to authenticity of control, which again the UK does very poorly on. Geels (2014) details how elites in the energy industry have close lobbying ties with government and these lucrative relationships are a feature of all sectors of our economy. Vast sums are paid by the rich to the Conservative Party, with the Tory registered donations from wealthy individuals and organisations in the 2019 election more than all other parties put together (see figure 21 below). This money is being given for a reason and this reason is not to strengthen our *democracy* but rather short circuit it. Just like money is used to shape the actions and priorities of CREOs, so it is used here, and one of the first steps towards a renewed and revitalised democracy is getting money out of it (Taylor 2019). In summary, these problems with the UK's democracy were implicitly understood by participants in this project who, barring the elite group, almost all favoured a revitalised local democracy in a state that is moving in the opposite direction.

Figure 21: Registered donations to political parties in the 2019 elections (House of Commons Library 2022).



In terms of EJ, ED and energopower, it is the origin of this money that is most concerning. A major UK newspaper reported that £400,000 was donated to the Conservatives by representatives of the oil and gas industry shortly before the decision to open a joint public/private £16 billion investment in new North Sea oil and gas fields (Harvey 2021; Ambrose 2021). Moreover, Geoghegan et al (2019)

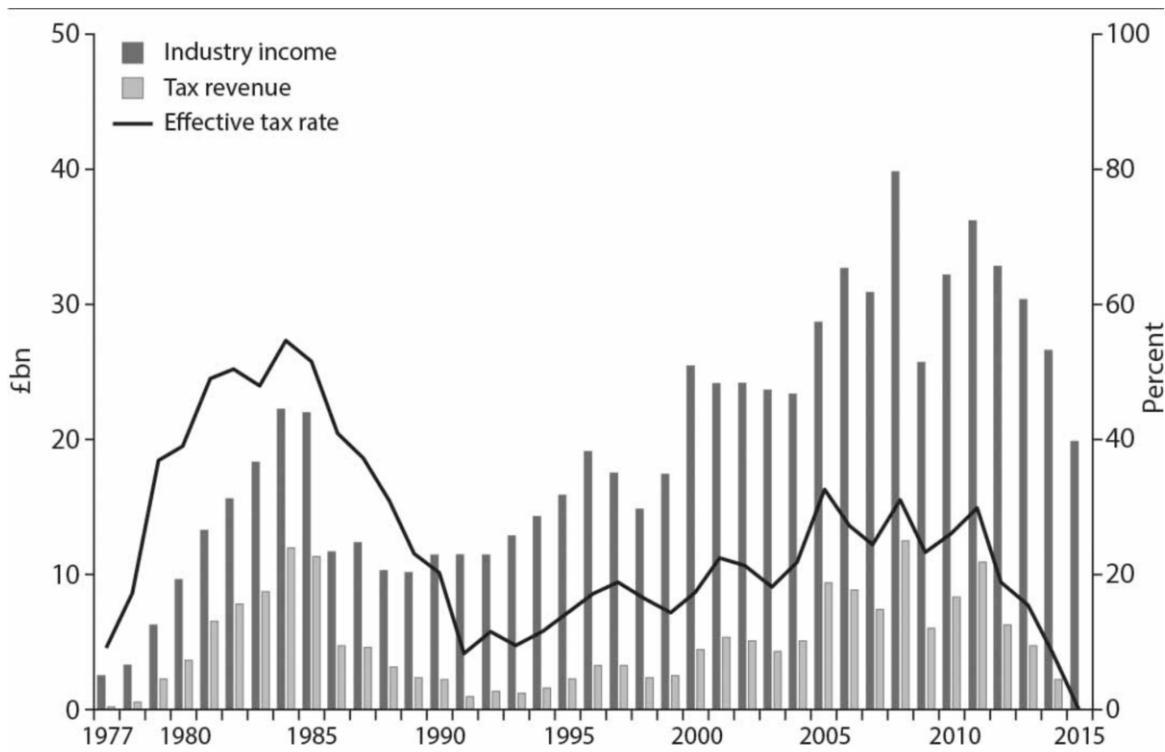
report on an “elite Tory dining club” that has given over £130 million to the party since 2010 and includes a number of *beneficent* oil industry actors.

Overall, this suggests the UK’s democracy is generally unfit for purpose, while taking money from fossil fuel interests then giving services in kind makes a mockery of the Government’s low-carbon plans (HM Government 2020). Further, opening new oil and gas fields and financing this is incompatible with the Government’s own climate and international commitments, as the UN has calculated. In these calculations the UN notes the UK government’s 2017 claim that it would “extract every drop of oil and gas that it is economic to extract” (UNEP 2021, p. 51). These aspects of finance and governance are violations of EJ principles of *due process, sustainability, intragenerational* and *intergenerational* justice as it seems clear most of this oil/gas should stay where it is (Trout et al 2022). A brief consideration of energopower and the UK’s history may give some understanding of why we are where we are.

The UK has a long energopower history touched upon in chapter two as a challenge to conventional energy histories. However, here we will deal with the 20th century as it largely shapes where we are, concerning the above governmental statement and recent practices. The imperial dimension of these relations is documented by Mitchell (2013) when he describes the growth and profiles of the oil industry and its operations in the Middle East. He first describes three misconceptions about this story: the overarching aim was not to produce more oil but to limit its supply/delay development and thus inflate its price; that the heroic stories told about oil men obscure the more complex story of the oil itself and the oil firm, which can be better seen as a parasite feeding off and adapting to the energy flows and becoming huge, vertically integrated enterprises that are anti-union and ethno-class organised; and that these firms were never powerful enough to control these flows and needed the financial and military aid of the state, which they often gained by framing oil as a strategic resource of empire. A particular example of this is instructive. Churchill was the head of the Home Office during part of the “great unrest” of strike action among coal and rail workers from 1910-1914. He oversaw brutal militarised policing of these events, but as Europe moved toward war, Churchill transferred to the Admiralty. Churchill then bypassed parliament and engineered an energy transition for the navy from coal, from the troublesome Welsh coalfields to oil from Anglo-Persian (now BP). This began the UK’s movement from coal to oil and “provided imperialists like Churchill with the means of evading...democratic demands” (Mitchell 2013, p. 61). Fast forward to the 1970s, we can see more clearly why Mitchell (2013, p. 8) claims, political possibilities are “opened up or narrowed down by the different ways of organising the flow and concentration of energy”, which are “enhanced or limited by arrangements of people, finance, expertise and violence” in energy assemblages.

The UK's fiscal regime that governed the North Sea oil and gas extraction was/is extremely generous by historical, industry and world comparison (Rutledge & Wright 1998; Christophers 2020). These fiscal regimes generally include royalties per unit, income taxes (with relief on capital expenditure), and special mineral taxes, and are usually top of companies' risk analysis; however, the UK's was so "accommodating and business-friendly" that even at its height it only reached 50% in the early 1980's and has been much lower ever since (Christophers 2020, p. 117; see figure 22 below). Between 2018-2020, BP and Shell paid zero in taxes, claimed £400 million in tax relief, and paid out £44 billion in shareholder dividends (Ungoed-Thomas 2021), making the North Sea one of the world's most profitable areas to practice ecocide. The question here is why UK governments have been so friendly to the oil/gas industry as to turn the proprietary relationship on its head – akin to a landlord basing their rent upon the renter's circumstances (Wright & Boue 2018), with the said renter lying about their income/wealth (Mitchell 2013; Christophers 2020).

Figure 22: Oil & Gas industry effective tax rate, income and government tax revenue (Christophers 2020, p. 117)



This situation could be akin to Ofgem, with the revolving door between government and these companies making them hard to distinguish. This does seem to be the case with policy made often confidentially with the industry and their lawyers, excluding other stakeholders (Muttitt et al 2019). However, this seems more than ordinary regulatory capture. Mommer (2001, p. 31) argues the UK fiscal regime emerged in the "shadow of the OPEC revolution" with an idea to create a "radical liberal

fiscal regime” that would produce oil/gas as quickly and copiously as possible. This was certainly how it was presented in classic supply-side “win-win” for both “government and companies” as more production equals more taxation (Boue 2016). However, as the tax take was low (compared to Norway for instance) the general interpretation of this North Sea oil/gas story is of mis-management amounting to vast amounts of lost potential state income (one estimate puts this at £111 billion between 2002-2012 – Boue 2016, p. 248-9) and dysfunctional regional development (Boue 2016; Cumbers 1995). However, when applying an energopower lens a more interesting interpretation of changes to the UK’s political economy after 1980 emerges.

Instead of seeing this as poor governance, the UK’s gas/oil generous fiscal regime can be interpreted as intentional. The transfer of the risk of commercial development from industry to government/taxpayer through 100% capital expenditure relief (Boue 2016; Christophers 2021), or allowing the oil/gas industry after 1993 to pay a similar proportion of tax to a “bakery or bike shop” (Boue 2016, p. 242), was perhaps the point. This is because privatising profits while socialising costs/risks is a core feature of neoliberalism (Mazzucato 2018; Lazzarato 2014). However, the tax revenue the UK government did receive from the industry was not inconsiderable, and it is what these funds and the development of North Sea oil/gas allowed or made politically possible that is important. Christophers (2020) argues that as 10-20% of UK industrial investment went to the North Sea during the 1980s, that this has to be linked to deindustrialisation and subsequent unemployment on land, which taxes from the North Sea were used to cover along with a significant tax cut for middle England. It is no secret the Conservatives saw a threat in the industrial action/strength of the 1970s, especially the miners, and intended to do something about it (Rawsthorne 2018). Thus, North Sea oil/gas became problem/solution to industrial decline, although solution is surely overstating this. A crucial aspect of this deindustrialisation was the closure of the mines and attacks upon the miners – Thatcher’s and Churchill’s *enemies within*. Thus, North Sea gas and oil allowed the end of Britain’s reliance on coal and its troubling association with trade unionism and their democratic demands. Therefore, we could say Thatcher finished what Churchill started and allowed a new political economy Christophers (2020) labels *carbon neoliberalism*. To echo Marx in an energopower mode: coal gives us industrialisation, miners, solidarity and industrial action and democracy; oil gives us the oil firm, the automobile, individualism, mass consumption and neoliberalism. From this reading, the energopower of North Sea oil/gas was the opening salvo in the *neoliberalisation* of the UK, and worked as a model and facilitator for further sectorial restructuring (Christophers 2020).

Thus, it is no surprise that CREO actors expressed concern for the state of our democracy, or that they identified that top-down governance and big-E energy solutions were part of this problem. A final point to note here are the issues with some of the big-E renewable solutions and how they reflect

what Gelderloo's (2022) calls green capitalism and coloniality more generally. Part of the problem is the scale with large solar farms and offshore wind being fairly damaging in terms of resource mining, installation, and decommissioning, often amounting for Dunlap & Arce (2021) to ecocide. Also, as Gelderloo's (2022, p. 56) argues, half "of any technology is deployment, how a specific artifact is integrated and mobilised throughout society in conjunction with other technologies and organizational techniques." Thus, the large scale solutions the UK government is choosing to use marginalise more community scale and controlled solutions, while also supporting neo-colonial, technocratic and extractive business models and interests.

These dynamics can be illustrated through a number of examples. In a study of how the German government allowed its solar industry to collapse under Chinese competition, Brock et al (2021) argue that industrial scale renewable interests appear to follow and exemplify many of the same extractive and neo-colonial practices of the fossil fuel majors. They also show how the failure of this industry based in a deindustrialised Eastern part of Germany has contributed to further alienation and a resurgence of the far-right in a former leftist heartland. It has also led to a decrease in solar PV sustainability standards, such as mandatory producer recycling programmes (Brock et al 2021). In Mexico, Dunlap & Arce (2021) detail a massive wind turbine project on indigenous land featuring; dispossession, sham consultation, drug cartel assassinations, violence and intimidation and more generally a social war employing counter-insurgency tactics and methods. Another example (WSRW 2021) includes a UK based company Windhoist's plans to install wind turbines in the Moroccan occupied West Sahara, which has been described as Africa's last colony. The European Court of Justice has deemed these actions illegal; however, a whole range of large scale renewable projects seem to be going ahead. This exemplifies a possible future of green colonialism, with Morocco using this resource rich *occupied* land to supply renewable electricity and other resources to Europe and the UK (WSRW 2021). Finally, the biggest EV company Tesla is mired in class action lawsuits for what appears to be systematic racial segregation and abuse in its Fremont factory (Roosevelt & Mitchell 2022). As such, Dunlap & Arce (2021) label these racialised, exploitative and extractive practices on behalf of industrial renewable interests *fossil/fuel +*. These examples of green capitalism show how in rationality and their techniques, they have more in common with the coloniality of the fossil fuel majors, than any justice-focused transformative agenda. They also show how scale matters in resource use terms, but also in the sense that concentration of energy in scale implies concentration of social power (Burke & Stephens 2018; Winner 1980).

7.6: Environmentality, the Past, the Future and Freedom

From this thesis two connected but opposing environmentalities can be constructed. These can be discerned from CREO actors' contradictory discourses, the broad two paths taken by CREOs, and the divisions between the elite groups and other groups dealt with in chapter six. These environmentalities will be labelled *reformer* and *radical* respectively. As Fletcher (2017) argues, environmentalities involve overlapping ideas and mixing of sovereign, disciplinary, neoliberal, but also the possibility of more liberatory elements. This thesis saw similar dynamics with CREO and associated stakeholders and institutions employing a range of sometimes contradictory knowledges and approaches. This section will outline these two environmentalities focusing on four connected themes through the governmentality categories and their implications for EJ and ED aims and principles. These will include: perspectives/visibilities of the state and wider capitalisms; the techniques and technologies applied including treatment of knowledge and business models; rationalities employed focusing on a tendencies to separate or connect; and the human subject these environmentalities posit and allow for.

On the state, the *reformer* environmentality tends to see this as legitimate and as the natural unit of reference, while the *radical* environmentality is much more sceptical seeing the state as part of the problem and advocating much more devolved governance. This comfort with the state of the *reformer* implies belief and confidence in the UK state's decarbonisation progress as shown by 113, and capitalisms more generally as shown by 124. In contrast, the *radical* environmentality sees the state as not meeting its responsibilities regarding the CC and being too centralised resulting in local communities being marginalised, while also being either anti-capitalist or highly sceptical of this system. There is also a difference of perspectives on technology. The *reformer's* confidence in the state and capitalisms implies a technocratic approach perhaps quintessentially symbolised by nuclear power, which was a legitimate solution for this environmentality along with other future tech-fixes. The *radical* environmentality sees people and communities and the already existing renewable technologies that can be locally deployed and controlled as the solutions. Finally, there is a further contrast that emerged from perspectives of the object of the market. For the *reformer*, the market is seen as a separate and almost sentient fetishized object which is the organising and dominant institution of society, while the *radical* sees this as *broken* with respect to the energy system and thus by implication as a social institution that is one sphere of human interaction among many. As argued throughout this thesis, achieving even the lower EJ principles has eluded the UK's current extractive state and capitalist system; therefore, it would be fair to say the *reformer* environmentality offers little

in terms of basic justice as was seen through the contrasting practices of ESC and BHESCo in chapter four. Further, as capitalisms are predicated upon economic growth that has never been decoupled from environmental impacts (Hickel & Kallis 2019), it seems difficult to understand how any of the higher principles such as inter and *intragenerational* justice or *responsibility* could ever be achieved under this system. Thus, the visibilities of the second environmentality seem much more open to achieving basic but also the more complex aspect of EJ.

The techniques and technologies mobilised by these two environmentalities also differed with regard to treatment of knowledge, and to a lesser degree business models and practices. The contrast between ESC and BHESCo's treatment of knowledge was clear with the former sharing information and best practice freely and openly, while the latter used the specific technology of the NDA and confidential practices more generally. This treatment of knowledge as a commodity ties into both capitalisms and commercial practices but also issues of epistemic justice and coloniality. This is because knowledge/power are entwined and the act of knowledge enclosure is and has been long connected to both capitalisms and coloniality and goes hand in hand with geographic and material enclosures (Gelderloos 2022; Santos et al 2007; Mignolo 2007). In contrast, the free sharing of information can be connected to the notion of commoning, a praxis of communal ownership and control that continues in indigenous groups despite long genocidal wars against these groups (Engle et al 2022; Estes 2019; Kimmerer 2013), and seemed at least a partial norm over the long history of human society (Gelderloos 2022; Graeber & Wengrow 2021).

Business models and practices were more alike with the share offer and coop business model common between the cases analysed and CREOs more generally. However, as seen in chapter six there is also a different emphasis here with the *reformer* environmentality following an innovator pathway that involves the control of information referred to above but also a focus on tech-fixes such as EVs that are part of capitalisms' *solutions* to the CC that reproduce old injustices and create new forms of injustice (Sovacool et al 2022; Gelderloos 2022). The *radical* environmentality focuses instead on the mature technologies of wind and solar, but also education not only about renewables but also more communal ways of living. Thus, it seems clear that the *reformer* techniques of governance maintain current unjust and undemocratic aspects similar to commercial practices, while the links to commoning and sharing information and practices of the *radical* correspond with ED principles more and offer greater scope for advancing these in the future.

The *reformer* and *radical* environmentalities can also be contrasted in terms of the rationalities operating and how this leads to tendencies to either separate and isolate issues or to connect and relate. This in turn impacts the broader forms of power relations and their valence whether this be for

instance, disciplinarily or neoliberalistically inflected. Firstly, supporting the status quo implicitly aligns the *reformer* environmentality with all the damaging binaries of modernity including man/woman, white/black, society/nature, civilised/savage, and indeed actors such as I24 and I14 explicitly supported various of these founding binaries. This acceptance is ethically problematic for what it allows and accepts historically, contemporaneously and in the future. Historically, as shown in the literature review, Europe's emergence depended upon the poorly named processes of primitive accumulation (Táiwò 2022; Moore 2015; Federici 2004). This involved internal enclosures and genocides and slavery in the colonies, processes that are either occluded or passed off as some unfortunate but necessary stage in human social evolution (Paradies 2020; Estes 2019; Federici 2004; Sioui 1999). Contemporaneously, accepting these binaries supports ongoing coloniality seen in settler colonial states and energy conflicts therein (Táiwò 2022; Dunlap & Arce 2022; Estes 2019), but also in the broader injustices between the Global North and South (Táiwò 2022; Hickel 2020; Sovacool 2019). These binaries also support injustice within the Global North, where the economically damned and impoverished have been framed as the modern heir of the colonial subject (Federici 2019; Wynter 2003). Finally, ongoing support for binaries that justified genocide in the past and ongoing coloniality cannot be part of any just future for the pressures of the CC are already showing worrying signs of the future of climate migration (Gelderloos 2022; Malm & the Zetkin Collective 2021).

In contrast, the *radical* environmentality connects issues such as injustice to the CC, energy to democracy and humans to each other and our wider environment. As such, this environmentality connects to more liberatory ideas including: Dorling's (2015) argument which shows how ideas like the feckless poor or the deserving rich are myths that are intended to exacerbate injustice; energopower framing which argues the energy type, flows, organisation, scale and technologies used open and close social and democratic possibilities (Daggert 2019; Burke & Stephens 2018; Mitchell 2013); and indigenous perspectives and situated science that see humans as fundamentally social creatures among a wider web of beings that should be honoured and cared for (Engle et al 2022; Paradies 2020; Estes 2019; Kimmerer 2013; Sioui 1999).

Thus, the *reformer* environmentality employs neoliberal valances of power as seen in its interpellation of the prosumer, the individualised energy user/producer that turns energy into a form of enterprise. In contrast, while the *radical* environmentality was complicit in treating the EP subject as passive, it did imagine a way out of this via UBIs, wealth transfers and lower payments for locals to access share offers. Thus, this latter environmentality leaves possible more liberatory valance of power.

Finally, this thesis can now outline what subjectivities these environmentalities posit and allow space for, with the *reformer* offering a largely similar neoliberal subject position of homo economicus while

the *radical* subject is a much more open position of possibility. The *reformer* with its statist and capitalistic visibilities, tools and techniques and underlying binary riddled rationality, is fundamentally part of and subject to Mignolo's (2007) Eurocentric Totality paradigm. This Totality includes the package of progress, democracy, modernity, and modernisation, which are supported and constituted by the occluded aspects of the colony/coloniality. This Totality "negates, exclude, occlude the difference and the possibilities of other totalities" through "silenced histories, repressed subjectivities, subalternised knowledges and language" (Mignolo 2007, p. 451). Within this patriarchally and racially ordered paradigm this subjectivity is destined to be individualised, racialised, ableised, and gendered and more generally subject to the dictates of the market/state and their extractive and frankly necropolitical/suicidal ends (Gelderloos 2022; Mbembe 2019). The succour proffered to this subjectivity both specifically during this energy crisis and more generally facing the CC, is tweaking at best, and places the responsibility upon the individual for structural problems (Lazzarato 2014). This is because the *reformer* environmentality follows the neoliberal dictate that we can only deal with symptoms of injustice not causes, or absolute poverty not relative, for doing more would be bad for the fetishized markets and economy (Dean & Zamora 2021).

By moving beyond the progressive and reactionary variants of neoliberal capitalism (Fraser 2017), the *radical* environmentality offers much more space for a relational autonomous subjectivity. Firstly, seeing humans as interrelated and having intrinsic worth as I14 and I1 did, posits a space in which a subjectivity not relying on aspects of privilege can flourish while being cognizant of the interdependence upon other humans and the wider world of beings. This form of relationality is arguably a much better fit with situated biological and ecological science (Haraway 2016; Kimmerer 2013), while also corresponding with indigenous circle societies ways of being (Estes 2019; Whyte 2017; Sioui 1999). This fundamental relationality is arguably more suited to climate justice (as I14 suggested) and a just transition for it enables the move from *thin* ethical care for those within our close relations to a *thick* morality for broader communities (Galvin 2020b) and forms of life (Gelderloos 2022). This is perhaps why the IPCC (2022) calls for recognition and use of indigenous forms of praxis now and in the future.

Also, by framing democracy as both a verb, or something that we do, and integrally related to energy forms, technologies and processes, the *radical* environmentality provides space for local democratic action. While this democratic space is still limited and exclusionary as I27 suggested, it is at least moving in a progressive direction with CREO actors like I25 and I26 trying to work on building this democratic space, which is more than can be said for our wider regressing polity. Within this space this subjectivity can do democracy, learn and work through the difficult issues that would be faced in a more democratic world (Taylor 2019). One such issue is the balance between individual autonomy

and wider societal functioning worked through so well in Le Guin's *The Dispossessed* (1974). Finally, through an understanding that process and outcome are inseparable and that technology is not neutral, this subjectivity we be able to see through the lies and illusions of greenwash or green capitalist solutions. These solutions may use water, wind or solar, but as discussed above and understood by CREO actors in this thesis, due to excessive scale and the same old exploitative processes these solutions do not merit the label *green*.

7.8: Conclusion

This chapter analysed this thesis's data as a whole tracing the place/time based eventualisations and regimes of practice of CREOs, through their local to national contexts, then posited the broad environmentalities that emerged. Using the governmentality framework, retooled for socio-environmental justice concerns via world-ecology and decolonial thinking, it aimed to open EJ academic concerns on justice to CREO practitioners and associated actors, who work through the quotidian but egregious injustices that blight England and by implication the world today.

This thesis finds CREOs working on the basic aspects of EJ and EP muddying these frameworks' distinctions. This is because in the UK while this data was gathered in 2019/2020, EP and wider poverty were very difficult to distinguish in practice, with housing, food, welfare and employment all contributing to what was framed as the *trap of poverty*. It also finds CREOs fighting for funds and their continued existence, which has stymied the sector's development and is limiting the opportunities of communities eager to become involved. These difficulties are due to Government policy, its inconsistency and bias for big-E energy solutions. This pressure on CREOs, combined with founding ideas and local demographic factors, has produced two pathways among CREOs with one type pursuing innovation and more comfortable in capitalistic modes, while the other follows a more community action path. Locally, part of the problem is defunded LAs that make CREOs' job so much harder by limiting mitigation options and EP/poverty solutions. At the national level, the issue is a government, following its predecessors if going further, in achieving limited decarbonisation but favouring fossil fuel + options like offshore wind or nuclear, while continuing to fund and be funded by the fossil fuel majors. Overall, these factors represent serious blockages to decarbonisation and democratic deficits that deny basic aspects of justice.

Finally, this chapter used the data overall to posit two emergent environmentalities that can be connected to the two pathways of the CREO organisations and the participants' statements analysed. The first is labelled the *reformer* which could be connected to Mignolo's (2007) idea of *emancipation*, and which realises things need to change but either cannot imagine a better, more just world, or fears this. Regardless, this environmentality is limited to dealing with symptoms over causes by its capitalistic framework. This will likely fail in achieving even the narrow energy transition, for economic growth is hardwired into capitalisms and has never been uncoupled from environmental impacts, nor has anyone explained how infinite growth fits into a finite planet. Similarly, as long as capitalisms, and broader modernity, deny their past/ongoing genocides and ecocides, as Akala says (2013), this means it will likely happen again. In contrast, the *radical* environmentality can be connected to Mignolo's (2007) idea of *liberation*, or Fletcher's (2017) *liberation ecology*. As such, it does not separate the fight against injustice from the CC seeing these as two sides of a coin. Further, this environmentality connects energy to democracy, sees humans as relational and thus, overall, offers a way forward, daring to imagine an alternative to the necropolitical system that endangers us all. In doing this it offers an escape from the fallacy of modernity's *progress*, the teleological journey to utopia that looks ever more like dystopia, instead allowing many local ways of living, caring and becoming.

Chapter 8: Conclusion

8: Overview

This thesis questioned how local action via CREOs can improve EJ and ED outcomes and processes during the UK's transition to a low-carbon economy. EJ discourse argues that the benefits and costs of energy could and should be shared more equally, while ED argues the ownership and control of energy more locally can make these processes and outcomes fairer and also re-democratise our wider societies. This thesis framed CREOs as places where these discursive and material practices meet for they aim to place the ownership and control of energy in local communities, with many CREOs also endeavouring to mitigate against the broader energy injustices that are endemic in our society/societies. Theoretically, and epistemologically, it used the governmentality framework: however, it infused this with world-ecology and decolonial perspectives in order to advocate that a justice-focused critique must extend its historical and spatial framing in order to address the colonialist and extractivist principles on which our energy and social systems are founded. These are all anti-essentialist approaches, a requirement in a world in which the socioeconomic givens are leading toward disaster. As bodies of research and analytic modes, each focuses attention on particular *but dialectically connected* areas; governmentality is attuned to the political and rationalities; world-ecology is attuned to the environmental and how society/capitalism moves through/interacts with this; and decoloniality is attuned to the ongoing racialised underpinnings of the above and shines an essential light on the fundamentally Eurocentric nature of the global system.

Chapter four found FB and ESC actors working practically in difficult conditions on the first four basic aspects of EJ. This was also framed as practical examples of the broader tenet of the justice of recognition and the principles of *respect* and *resistance*, via an ethic of care. In contrast, it found the policies and support coming from government as inadequate and insufficient, despite this being more than paid for by those in EP via the regressive climate levy attached to bills. Finally, it found the technical framing of EP as limited to thermal efficiency of the home not making sense to practitioners dealing more with more general multidimensional impoverishment. Further, this tech-fix approach to EP can be connected to wider neoliberal approaches to mitigating the CC – to separate issues and sanitise them through a technical framing that occludes the socio-political aspects. Overall, this treatment of those suffering from EP and how this has been exacerbated by the pandemic and energy crisis, speaks of a system of carelessness posing questions of this country's democratic functioning.

Chapter five found CREOs working in trying circumstances to improve EJ outcomes/processes but this being stymied by various institutional and funding factors, including a defunded local state. However, in practice and in discourse the two local cases studies were working on different aspects of justice. ESC located in one of the most deprived areas in the UK was mainly focused on the first four basic elements of EJ – *affordability, access, due process* and *transparency*. BHESCo in a more affluent area focused more on *sustainability, intra* and *intergenerational* issues. These differing focuses can be connected to broader organisational pathways. One pathway focused on innovation and engaged in energy markets framing itself as a disruptor. The other pathway focused more on community action and recognised the energy market as a producer of injustice. Nevertheless, both pathways were poorly served by the broader dynamics of the system suggesting democratic deficits at this level and above.

Chapter six found CREOs in various places providing pandemic relief and mutual aid, which again shows action on the first four basic aspects of EJ, but again giving example of the justice of recognition, *respect* and *resistance*. It also found that the division between BHESCo and ESC seen in the previous chapter was evident across the CREO sector more broadly. Further, it found elements of the regulatory and broader energy system to be *broken*, or not fit for purpose, if they are intended to decarbonise and do this fairly. Finally, it found a broad division between the interviewees that can be connected to that found in the CREO sector above. The CREO and academic actors largely saw capitalisms or neoliberalism as the problem and favoured much more localised and community controlled/owned solutions, whereas the economic and political elites were much more favourable to both the UK system and capitalisms more generally.

8.1: Contribution

This section will summarise the contribution to energy research this thesis has made. It will firstly outline the methodological contribution including case study/embedded researcher and the advantages and challenges of this approach while also reflecting on how this methodological journey adapted to circumstance and used the tools and approaches that fit the circumstance and context, including the pandemic. Then it will move onto the theoretical contribution, which includes a governmentality approach but supplemented by world-ecology and decolonial perspectives. This results in a socio-environmental justice framework that not only analyses and deconstructs but offers alternative models with the proviso these must be locally suited and deliberatively decided. Finally, this section summarises the broad findings of this project, including a hostile environment for local

and CREO action in the UK at multiple levels, which has contributed to a bifurcation in pathways. However, with a government more focused on upward extraction of profits and continued extraction of fossil fuels in UK territory and internationally, neither pathway offers much scope for the needed change.

8.1.1: Methodological Contribution

Tools and techniques should be suited to the task, an idea our policy-makers might apply to the energy markets if they intended both to decarbonise quickly and do this justly (Grubb 2022; Weber 2022). This thesis applied this notion of using the correct tools for the job broadly, both in the initial methodological choices made but also in the adaptation of these tools and techniques in highly challenging circumstances.

Historicization is an essential tool in gaining perspective on the deep contingency of ideas and practices, and while this is perhaps not new to energy studies the scope and method of this thesis's historical approach is. In terms of scope the historical analysis should stretch as far as feasible, and fitting to the topic as it need be. For instance, most energy histories begin with the industrial revolution; however, if we accept that slavery prefigured and allowed for this process, starting with the industrial revolution occludes an important and foundational process with ongoing relevance today. In terms of method, this historical analysis is anti-essentialist, which avoids the problematic projection of modern neoliberal ideas backwards. Also, this method attempts to be decolonial in that it looks beyond European writers, histories and worldviews. It is at the borders of these histories and worldviews (Graeber & Wengrow 2021; Mignolo 2007), and through border thinking that we may find histories, stories and ways of living that offer escape from climate breakdown and the rampant injustice of this.

As a study of how local action could produce more just energy outcomes/processes with a focus on CREOs, the case study approach provided an effective and adaptive tool for understanding phenomena in context in detailed but also holistic ways. Originally, the research design sought to supplement this approach with PAR to reflect the democratic and justice commitments of the author, but it became necessary to change this design choice due to time constraints experienced by CREO actors. Embedded researcher methods were chosen as an alternative which fulfilled the ethical commitments of the author to mutuality, but demanded less of participants' time. Within these

methods there was examination of the ethnographic self and how this is a shifting subject depending on who was being communicated with and in what particular context. More broadly, the methodological choices and shifts reflected events and processes and the deep contingency of life that our system overall tries to suppress.

The first embedded research placement was where this thesis was shaped and the writer's ethical commitments and understandings were reformulated and renewed. The emotive and difficult journey through food banks and the immigration advice centre provided experiential knowledge of the deep injustices that pervade this country. Where *local action* had previously been understood as the action taken by actors in the CREO sector directed at achieving a just energy transition, this experience introduced a focus on EJ as care and redress for those experiencing EP/poverty. An empirical focus on frontline support and advice provided by CREOs emerged, as did a focus on how business models and the two pathways of CREOs impacted this work. Overall, this demanded a bottom-up perspective and structure of the thesis.

The second placement was interrupted by the pandemic which posed again practical and ethical problems. The second placement with BHESCo ended with the first lockdown in March 2020 after just two weeks, followed by some remote working but this did not suffice so the case study was truncated. The subsequent case with CEE beginning at the end of May 2020 allowed both the author and the organisation to adapt to digital methods of working. These digital methods offer some wider options while restricting or closing down others. For instance, due to the researcher's ethical commitments to deliberative processes, focus groups were the preferred methodological choice but this became too difficult to do digitally, so interview-based fieldwork was expanded and a more explicitly dialogical interview style adopted.

8.1.2: Theoretical Contribution

This thesis contributes a governmentality model fit for socio-environmental analysis with ethical commitments and insights from world-ecology and decolonial theory. All three approaches commit to forms of genealogical analysis, which can be considered histories of the present in the way they highlight how things were different in the past, implying the present is fundamentally contingent and can be changed. However, each approach offers differing perspectives that can be seen as complementary. Governmentality has its general anti-essentialism and four-part heuristic of analysis

that is useful for investigating systems and power relations from bottom-up. World-ecology develops this anti-essentialism through its anti-Cartesian insights allowing fruitful analyses of the human/environmental dialectic that much modern thinking including environmental analysis obscures. It also connects scales from the temporal to the evolutionary, again allowing more nuanced analysis. Decolonisation perspectives and associated indigenous work highlight current injustices, their historical roots in the colony and slavery, and how these injustices connect to energy. Similarly, this perspective emphasises the racist, patriarchal and class based forms of governance the vast majority of the world is still subject to. Finally, these perspectives question this governance Totality via historical analyses of alterity and difference and through current forms of resistance and praxis. This thesis contends that finding solutions to the CC demand relational understandings of power, deeper and better historical analysis, and cognition of our place in the relational field of this world. This retooled governmentality framework allows this.

More specifically, this framework offers EJ/ED theory a number of opportunities. It historicises energy and shows this both as a slippery concept but also as presently both narrowly defined but also operating through energopower in highly damaging and dangerous ways. In this context, it is useful to use Lohman et al's (2013) ideas of Big-E and little-e energies as a framework that can distinguish between types of energy including more problematic renewables options. It also highlights certain indigenous energy struggles, but also how these societies, as Fanon's (1967) damned, are an integral part of just solutions because they are being re-colonised now by both fossil fuel and *fossil fuel +* interests. It also considers the more-than-human and how humans cannot be abstracted from the environment and neither can justice. In these two ways, this framework helps answer Sovacool et al's (2017) call to include non-western and non-anthropocentric ideas of justice. This framework also opens up categories like money or debt showing how these are not self-evident but have histories and complexities that have justice implications. Lastly, through connecting energy, energopower and democracy it shows that EJ and ED frameworks are part of a complex spectrum moving from basic to complex and comprehensive forms of justice.

Finally, for CREO literature it offers a systemic and multiscale perspective. This is essential if we are to *think globally, act locally*. Justice cannot be achieved in one place at the expense of another or it becomes meaningless. Similarly, the CC cannot be solved in one country or region. Also, through its anti-essentialism, this framework asks CREOs and the literature to delve deeper into the concept of democracy for all too often this is offered up as a given, which seems dangerous in such times as these. Much better to see it as a thing we *do*, can do differently, and indeed must.

8.2: Analytical Findings

Part one explored the two local CREO's regimes of practice or what Ettlinger (2011) calls eventualisation. These are the contingent, place-based practices that can be related to wider programmes and discourses but have their own peculiarity. ESC in its work on the basic aspects of EJ highlights two important issues: firstly, that the regulator, energy market and wider economic system are extracting wealth from those with the least to those with the most, with this system being framed as *broken*; however, this depends upon what we think the system is *designed to do*; thus, the second issue showed that separating EP from poverty was not possible in practice and doing so aids a Government with a specific aim of doing this form of separation. In a privatised and predatory system, we require systematic focus that can see the common roots the energy industry and social welfare in colonial racialised, classist, ableist and gendered stereotypes. In contrast, BHESCo following a more capitalistic commercial path, displayed a commitment to confidentiality and knowledge control. These aspects create tensions with EJ notions of *accountability* and *respect*, principles which argue energy decisions and information should be transparent and different knowledge and epistemic systems should be respected in these decisions. This tension can be connected to Foucault's insight that power/knowledge work dialectically but also decolonial critiques that see knowledge control and occlusion as epistemic injustices. It can also be connected to critiques of bureaucracy as key forms of modern oppressive knowledge/power.

The next part examined the role of the technology of money/debt and funding and how this impacts justice and democratic outcomes. The rationing of funds was seen at multiple levels under the logic of austerity with three main results; first, was the difficulty with maintaining the basic EA while EP rates were rising consistently under the pandemic but then soaring under the energy crisis; second there was the democratic tension between the LA and CREOs over who would provide low carbon energy to communities; third, was the CREO response to this removal/rationing of funds which saw a scaling up via regional utility monopolies, and/or various forms of innovation that only seem to be judged as successful if they make money. Overall, this was seen as marginalising and not valuing CREOs on a *fair playing field* because their community work and support is not financially valued. This rationing of funds and devaluing of CREOs appears even more egregious when it is seen that this rationing and devaluing is not applied to those extracting funds from above. This dynamic was evident with Ofgem's talk of "least cost pathways" while allowing DNO monopolies to make "eye watering"

profits until 2019 and then only cutting these in half, or in the anachronistic energy market that benefits the fossil fuels giants. A final example of this extraction was a taxation system that seems designed by those with, and interested in, defending their wealth.

The next section examines the broader history surrounding the emergence of the CREO sector. This involves the rapid fall in the costs of wind and solar technologies due to first German, then more so, Chinese state support. This has the effect of making these products more affordable but also places the UK as an importer and at a certain disadvantage comparatively. It also occludes certain aspects of manufacture and resource extraction with EJ and coloniality implications. More specifically, the main policy measure that allowed the growth of the CREO sector – the FiT – was not aimed at CREOs but more generally at a largely individualised public by the last Labour government. Thus, when used by the social/communal institution that is CREOs and the wider public *too much*, the subsequent Coalition the Tory governments rapidly reduced then cancelled this policy, all the while, plunging the whole country into austerity with all the social damage this caused. This is the broader condition of CREOs existence, a serendipitous emergence that aimed to address locally/democratically the CC, and for many CREOs the connected and growing social injustices, which just as it began to develop as sector had its funding cut off under the hypocritical and inconsistently applied logic of austerity.

The next section evaluates the UK's democracy using Drysek's three themes of participation, scope and authenticity finding this system wanting. It then adds a 20th century energopower history to that of the second chapter in order to show how the materiality of fossil fuels, and specifically the move to oil is connecting to the thinning of our democracy during the neoliberal era.

The analysis then focuses on the guiding rationalities that emerge from the overall data that can be considered neoliberal and ecological democracy respectively. CREOs and the surrounding context are framed as the material space in which these rationalities compete. This analysis focuses on the Cartesian binaries that underpin capitalist and neoliberal rationality, and how the people and institutions surveyed either reproduced or broke down these binaries, or separated and isolated things or connected things systematically. The more neolibetally minded institutions and interviewees maintained explicitly or implicitly a series of binaries including nature/society, man/woman, black/white, economy/politics, process/outcome. Overall, this form of separating severely limits certain options of EJ, with at least two elite actors specifically separating dealing with injustice and the CC, a position implied by the CREOs following the capitalistic pathway. Contrastingly, through mission statements and actions of certain CREOs and numerous interviewee statements injustice and the CC were dialectically entwined and to be solved in tandem. This rationality also connected energy to democracy as a measure of the health/extent of democracy in a country, but also as a way to re-

democratise a country or locale. This thinking also highlighted how powerful fossil fuel interests were subverting democratic processes globally. Finally, this rationality broke down many of these founding Cartesian binaries through the connecting of the human subject to justice in interesting ways. This included framing humans as interdependent, having intrinsic worth, and being part of a wider chain of being. In sweeping aside the facile notion of homo economicus this also implicitly undermines the gendered, ableist, classist and racist binaries. Moreover, it questions the fundamental binary of society/nature from which the other binaries flow. Thus, this ecological democracy rationality is seen as pointing towards a radical environmentality.

Finally, from the whole data two broad environmentalities are developed. The first, the *reformer* works within capitalisms aiming to disrupt the energy markets and incrementally reform this system to mostly decarbonise it but also to relieve some of the symptoms of injustice. However, this environmentality will struggle to do the former as the compound growth function core to capitalisms has never been uncoupled from the damage this causes, nor has anyone explained how something can grow infinitely in a finite space. Further, in not recognising capitalisms past/ongoing injustices or framing these as *facts of life* this environmentality seems destined to reproduce injustices, and indeed certain CREOs are in specific ways (chapters five and six). The second, radical environmentality by either questioning capitalisms or rejecting this and by connecting various issues such as social justice to the CC, or energy to democracy, show there are alternatives. This environmentality does this through the practical and quotidian acts of care and kindness but also through exercising their faculties of imagination. In working towards and imagining a fairer future, this environmentality offers better ways of living and being that sees the fundamental relationality of humans and the wider web of life.

8.3: Limitations of Thesis

A major limitation of the thesis was the lack of direct, recorded dialogue with the users of FB and the energy poor more generally. This was partly down to naivety of the author in designing the research process and perhaps an eagerness to get past the ethical review and begin the empirical research. As a result, the tier 1 ethical status dictated there could be no direct interviews or quotes of those deemed *vulnerable*. Upon entering the FBs and immigration advice centre this quickly became evident as a limit, which was partly why the first empirical chapter took the shape it did and the wider structure aims to take this EP/poverty as the basic and unconscionable injustice as the starting point of redress.

This position has been vindicated by events such as the pandemic and the energy crisis that have only served to deepen and widen these EP/poverty injustices. This is at the same time as the very richest continue to extract ever more unimaginable amounts of wealth more while causing most of the environmental damage. However, this design and approach does not obviate the need to listen to – indeed allow input in design and theoretical assumptions – those most affected by injustices. This is not easily achieved and perhaps why the ethical review is shaped this way, but this does not remove this limitation from this thesis.

Another limitation was related to the pandemic. This ended prematurely one case study and narrowed the number of cases to be studied more broadly. The period when a third local CREO could have been studied remotely was precisely the time many people were adapting systems to remote working; therefore, people were much too busy to involve researchers in their work. Less tangibly but no less importantly, while remote working as conducted with CEE enables many things such as attending event anywhere in the world, this comes at a cost. This cost is the human interaction and sociability as well as de-materialising aspects of this thesis. Thus, this thesis perhaps loses an element of case resolution as well as comparability, with a physical study completed then one curtailed and a more intensive but remote study completed.

Another limitation relates to the nature of a PhD process especially one focusing on energy and the CC. Events and processes move quickly requiring a constant changing and updating that must end arbitrarily somewhere. One example was how the energy crisis made one of the main aspects of EA completely untenable – switching supplier to lower energy costs. This thesis has attempted to consider the energy crisis but the research was conducted before this so there is a temporal tension here. Another example is the war in the Ukraine and the role of fossil capital and energopower in this conflict; however, this was beyond the scope of this study for as stated an artificial end point of the thesis had to be made.

Finally, is the limitation of the position, subjectivity and mistakes of the author. In rejecting the god trick of objectivity, or the position from nowhere, there is a need to be clear about one's own positions and fallibility. This thesis was clear in stating its justice, anti-racist and anti-capitalist position and then endeavoured to support the case and arguments discursively and empirically. Where it failed to do so effectively is the failing and limitation of one writer who makes no claim to stating objective facts but tries to construct an argument that has some correspondence with our social world. Overall, this will inevitably mean there were some oversights, misunderstandings and errors but these, as far as the writer is concerned, were made in good faith with the overriding aim to make the world a better place.

8.4: Future Research

In connection to the above major limitation of this thesis a future avenue of research would be to work with those people who have received energy advice from CREOs. This could take the form of further elaborating the research questions this thesis aimed to answer. Firstly, how do those in EP, and those not who also interact with CREOs, construct the concept of justice and is this changed in anyway before and after EA/retrofit interventions and what other factors influence this understanding? Secondly, how do those in/not in EP understand the energy market, Ofgem, and the government action on mitigation/adaptation and the justice implications of this system more generally? Finally, considering the two broad environmentalities and subjectivities drawn out of this thesis, do these groups correspond in any way, and what effects do EA/retrofit interventions have on people in terms of their environmental outlook?

An avenue beyond these questions of importance could be examples of good practice in local governance and synergies between local institutions. The Centre for Local Economic Strategies (CLES) and the community wealth building model aims to achieve this and it would be interesting to explore cases where this has potential or is happening. This project saw how LAs were defunded, forced into debt financing and sometimes competition with CREOs. At the same time, the withdrawal of support from the local state under the logic of austerity made the role of those CREOs committed to social justice that much harder. What could CREOs offer in a community wealth building context where people and wellbeing was the focus, where the aim was to care, build spaces and institutions that foster this, rather than extract wealth to those causing the most environmental damage? These were the questions this project aimed to answer before it became aware of the glaring and exacerbating injustices that would be unconscionable to ignore or downplay. However, in deconstructing and highlighting these injustices it is important to construct positive alternatives people will support.

Finally, touched on tangentially in this thesis are the international aspects of injustice and what has been called the decarbonisation divide (Sovacool et al 2019). This could follow a number of angles. From the local to the international, it would be important to trace the solar PV used by CREOs through their manufacture, resources mining and ultimately waste streams, exploring the in/justice aspects of this. As mentioned above, current practices have a distinct coloniality to them that undermine the green credentials of these products. Moving up a level, it would be interesting to focus on CREOs

interactions with the rail companies (through Riding Sunbeams), privatised water monopolies and the DNOs. These regional institutions/monopolies play a key role in CREOs' ongoing and future operations. They are also core deliverers of basic services that interact with mitigation/adaptation to the CC. How far can we rely on organisations often controlled by international financial actors and institutions more focused on de-risking/sheltering their investment than decarbonising? For instance, Northern PowerGrid, is owned by Berkshire Hathaway, Warren Buffett's company (ECIU 2017) – a man who admitted there was class war and that the rich are winning it (Stein 2006). At the national level it would be important to explore how fossil capital lobbies and influences government – what are the channels, processes and impacts involved and how do these contravene both EJ principles, while also manifesting energopower and forms of necropolitics? Also, what is the role of UK based finance who/how/what are they funding in regards of mitigation/adaptation/maladaptation and what are the justice/energopower/necropolitics implications of this? Lastly, opening up the *Net* in Net Zero and exploring how far this is/in what ways a path to forms of green colonialism? These would all be a key avenues of decoloniality inflected EJ research.

In a world as unjust as this there are many places to explore, or to quote Mariame Kaba (Denver 2022); “when everything’s got to change this can seem daunting, but it also means there are many places to start.”

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Appendices

Appendix 1: Definitions of Key Terms and Concepts

Energy must be defined first of all, for this seldom is in EJ or ED literature, yet lies at the heart of this thesis and the CC. We can offer a technical definition, or the ability to do *work*, or from Smil (2008): $W = S/j$. Here j is joule, s is seconds and W is Watt, the unit of power. However, energy is something more as it “is central to almost all areas of modern human activity...[it]... profoundly shapes our wider societies, economies and politics – and has done so throughout history...” and in short, is core to the ethical and political choices about the kind of society we want to be (Van de Graaff & Sovacool 2020, p. 1). Therefore, energy is as much a *social relation* as a thing to traded, quantified, or dug up. A growing body of work from disparate fields, such as the social sciences, humanities, energy history

and activism (Sorman et al 2020; Kinder 2016; Malm 2016a; Platform 2014), have begun to frame energy this way, and this thesis aims to show why we should. It will do this by showing in the next chapter how energy was always, as implied above, a social relation and often an exploitative one, and how future choices of energy arrangements will shape much more than price or access.

EJ aims to illuminate ethical questions concerning energy consumption/supply and redress associated injustices (Jenkins et al 2014). It has been defined as a “global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making” (Sovacool & Dworkin 2015, p. 436). So, while the scientific question might be posed – what *can* we do about the CC? EJ adds the essential normative scientific question – what *should* we do? These normative questions are arguably behind and prior to any scientific questions of *what* and *how*. Therefore, this project concurs with Habermas (1992) when he claims that the scientistic approaches that deny and occlude these ethical and philosophical questions are part of the problem. These normative questions are crucial in dealing with something as transformative as the CC, which will change all of our lives. This in turn suggests the need for deliberative engagement with communities impacted.

Answering this call for deliberative engagement, **ED** can be considered a sister discourse to EJ but on a more grassroots, activist level. It began life propounded by trade union activists in the US (Sweeny 2013) and more community energy activists in Europe. Therefore, defining it precisely is tricky and beside the point, as it is a moving target and being developed and constructed in different places/times and under different conditions. For instance, Szulecki & Overland (2020) point out that in the US, ED has developed in a historical context of grassroots organisations such as the anti-nuclear, environmental justice and climate justice movements (these justice movements will be dealt with in the literature review), while in the European historical context we have institutionalised green parties and Eastern European states with nationally controlled energy infrastructure. However, at core ED can be defined as a social movement which aims to democratise energy/energy infrastructure round three themes: popular sovereignty; civic ownership, and participatory governance (Szulecki 2018).

Community energy has been defined as citizen-controlled initiatives that advocate collective, local solutions to the development of renewable energy technologies and practices (Bauwens 2016). Although community renewable energy organisations (CREOs) have multiple motivating factors (Hicks & Ison 2018), a common theme is mitigating the CC. CREOs have various organisational shapes and types and part of this project will be to evaluate how organisational type impacts the CREO’s activities in terms of justice. In this thesis CREOs are considered the material space where EJ and ED discourses meet.

However, using two different environmental **discourses** requires some form of mediation. Discourses (Hajer & Versteeg 2005; Oels 2006) are here defined as groups of related statements, concepts or categories that give meaning to the social and physical world, and are re-produced through practices that can be traced and analysed. They are not homogenous and are mobile and mutable over time (Oels 2006). More specifically to this thesis, discourse includes EJ academic work, ED academic work and activism, CREO actors' statements, publications and activism, food bank activist/volunteer/employees' statements and publications, and the broader energy and democratic stakeholder statements and publications. This is why discourses are so fluid and heterogeneous because akin to power (in the energy and social senses) as they flow through social but in particularly ways and modalities.

Governmentality, which Foucault (1997) used to analyse the growth of the state in the modern era, has been described as effective in the analysis of environmental discourses (Darier 1999). This approach has been used to study practices of government but in a polymorphous and diverse sense and for a wide range of goals (Dean 1999). This perspective focuses on technologies and rationalities of self/government and as such is practical knowledge and a particular focus is how these practices are co-constituted (Brockling et al 2011). Governmentalities have fields of visibility that constitute what these forms of rationality can recognise, problematise and attempt to solve. Rationality here can be defined as any form of discourse with the aim to govern people's conduct (Dean 1999). Therefore, governmentality will be used as a framework to mediate between the EJ and ED to gain the most effective insights from both discourses. In his studies of the development of the life sciences Foucault (1978, p. 139) developed the concept of **biopower**. This can be said to first work at the level of the body, framed as a machine with the aim being to discipline, optimise, work, make useful or dismiss as useless, whilst overall integrating it into "efficient and economic" systems of control. At the macro level biopower focuses on the species or demographic features, regulating aggregate births, mortality, health and longevity and the aspects seen to affect these variables (Foucault 1978).

More relevant to this thesis, are two related concepts developed by theorists working on Foucauldian concepts. The first is **energopower/politics** (Boyer 2014), a concept that sees the biopower concept lacking in explanatory power as from school to hospital all these biopower elements are literally being enabled by wider infrastructures of energy and electricity, meaning biopower is *plugged in*. Thus, energopower is a genealogy of modern power that "rethinks political power through the twin analytics of electricity and fuel" (Boyer 2014, p. 325). Part of this rethinking is seeing how energy installations

are acts of power, be that of community or multinationals, but also reinforce this power over the life of the installation. As such, there is a need to distinguish between certain types of large-scale renewables and associated practices – labelled by Dunlap & Arce (2021) as *fossil fuel +* for their colonial-type practices – and more democratically controlled small-scale renewables.

Necropolitics/power was developed by Mbembe (2019; 2003), and again questions the explanatory power of biopower. In doing this, necropolitics shows how liberal democracies have always existed as the relational mirror of the murderous brutality of the colony, and with formal decolonisation these liberal states are being pushed into states of exception, seeking to “exercise dictatorship over themselves and against their enemies” through the sacrament of war (Mbembe 2019, p. 2). Thus, necropolitics focuses on a form of contemporary governmentality that instrumentalises human existence and materially destroys human bodies and populations, or put differently, a sovereignty that subjugates life under the power of death on racialised, gendered, ableist and class based differences (Mbembe 2003). Taken together energopower and necropolitics help explain the multiple pathological contradictions of the socio-ecological crises. Combined these contradictions seem like some energy driven suicide pact, but with those most eagerly signing up, with luxury emissions, deferring their suicide through position/privilege.

World-ecology is an approach that has two broad stands. The first is rejecting the series of Cartesian binaries, which have long histories if we focus on the society/environment division that can be traced back to the Old Testament (Hickel 2020). However, this binary and many others such as civilised/savage, man/woman, mind/body, black/white, were only really socialised and spread beyond reading elites from the 15th century onwards with the early development of capitalism and colonialism (Moore 2015; Federici 2004; Merchant 1989). In connection, and as a way of undoing these damaging binaries, a second strand of this world-ecology sees the social and the environmental as dialectically connected, the social-in-environment and the environment-in-social and capitalism-in-environment and environment-in-capitalism (Patel & Moore 2020; Moore 2015). A salient example of this is Covid 19. Covid 19 is a zoonotic disease that has arguably spread to humans through our endless expansion into animal habitats because hardwired into capitalism is the compound growth fetish; once spread to humans it has varied and adapted naturally entangled with modern capitalism’s transport networks but also a more general focus on economics and profits over people and care.

Decolonisation is a praxis that recognises that racialised groups and whole nations are exploited by capitalisms’ dominant white ethno-class (Wynter 2003). Further, it argues that knowledge itself is compromised in its production and epistemology because it is still controlled by this same dominant ethno-class and is based on a number Cartesian binaries that undermine justice and damage the

environment (Patel & Moore 2020). As such, this knowledge is a Eurocentric Totality presenting democracy and autonomy but including/occluding a sediment of violence, prison, colony, racialised, gendered, ableist and class oppression, while also suppressing alternative ontologies (Mignolo 2007; Estes 2019). **Coloniality** is a related concept that emphasises the present and ongoing “systemic, structural, physical, epistemic and ontological violence” continuing “to oppress, assimilate and eradicate Indigenous peoples” (Paradies 2020, p. 438).

At the international level recent EJ research has highlighted a **decarbonisation divide** (Sovacool et al 2019). This divide can be seen as part of Táíwò’s (2022) global racial empire, where benefits in low carbon technologies flow to the Global North, while toxicity and waste flow to the Global South. However, EJ literature does not place this in the historical context of capitalistic development, through which various places become sacrifice zones to the core (Moore 2016; Wallerstein 2006). This thesis will look at the history of this development and argue that CREOs must ethically source their materials or be complicit in a form of environmental/green colonialism.

Justice is a contested concept that has been the subject of debate for millennia. Early religious traditions wrestled with the concept and its implications (Graeber 2011) and subsequent enlightenment thinkers framed it in transcendental terms, suggesting some timeless human moral codes or laws existed. This project follows Rorty (2000) and Foucault (1972) in rejecting this, but follows those who argue that this does not make justice a useless concept, but one that needs to be found and debated in more democratic practices and societies (Galvin 2020b; Sen 2009; Rorty 2000; Young 1990). Most broadly, the conception of justice would have minimum and maximum levels of resources and essential services, as they imply each other. It also focuses on human flourishing in social contexts without harming others.

We are told we live in a **democracy** yet a look at a map throughout the 20th century and a little knowledge of international politics, would show anyone how loosely this term is used and abused. Framing the UK as a democracy is problematic for practical/material reasons and more theoretical ones. Firstly, the first-past-the-post system creates highly distorted outcomes and majorities with sometimes less than 40% of the vote. Also, the centralised nature of the UK system means economically and politically all roads lead to and through London (Cumbers 2012). Finally, a free press is generally seen as the guardian of democracy (Sen 2009; Habermas 1996); however, in the UK the dominant media now appears compromised through systematic personal attacks (rather than evaluation of position/policy) of the former Labour leader and much more receptive to right-wing parties/positions (Dorling 2020; Cammaerts et al 2016). Historically, there is a pattern of Malthusian arguments used by the print media against subaltern classes during economic downturns throughout

the 20th century (McArthur & Reeves 2019). Thus, the dominant media in the UK acts more generally as a gatekeeper of politically *feasible* ideas, not coincidentally framing the *feasible* as neoliberal economics and the only option, while at the same time clinging to a tired notion of journalistic objectivity.

Theoretically, the attenuation of the idea of democracy to elections and parliaments gives the notion of democracy a false Eurocentric origin, which has racist and geopolitical implications (Graeber & Wengrow 2021; Sen 2009). It also narrows the scope and promise of a more just and collaborative society. Therefore, this thesis follows Dryzek (2000) in his call for democracy to be extended and deepened; in franchise, or amount of the people involved in decisions that affect them; in scope, or in terms of the policies and problems placed under democratic purview; and in increasing the authenticity of this democratic control. It then pushes this further taking Kothari's (2020) radical ecological deliberative democracy principles of a decolonised form of deliberative democracy. This involves devolving decisions locally to the people whose lives are affected by them, democratising the economy and means of production, and finally epistemic justice in a socialised knowledge commons (Kothari 2020).

Capitalism must be seen as **capitalisms** for it has never been purely an economic system but a more general system of environment-in-capitalism and capitalism-in-environment (Moore 2015). Moreover, it has never been the same over time or space, with different forms in the centre and periphery (Wallerstein 1983), within settler colonial states (Estes 2019; Kimmerer 2013), between men and women (Federici 2004; Mellor 1997), and between the white dominant ethno-class and racialised groups more generally (Mignolo 2007; Wynter 2003). Capitalisms have also always been entangled with the state (Davies et al 2022; Graeber 2011), while there have been certain stages in its development and crisis/fix cycles (Fraser 2021; Moore 2015). Thus, this project uses the term capitalisms as a connected series of socio-political-environmental systems all based on racialised, gendered, ableist and class-based oppression and an endless growth drive.

Neoliberalism is a form of capitalisms and capitalist rationality that has come to dominate the world over the last 50 years. At its core is a practice of economics that claims human fulfilment and freedom is best served by freeing the entrepreneur/human to profit within an institutional set up of free trade, free markets and strong property rights (Harvey 2007). This includes monetary policy focused overall on preventing inflation even at the cost of unemployment (partly as this could devalue assets over time and thus reduce the wealth of asset owners), and an idolisation of deregulation as this it is claimed is the main thing holding back investment (Harvey 2007). However, neoliberalism as practices of economics/governance is different over time and space, meaning that the neoliberalism of

Pinochet's Chile is very different to the UK, as they started from different positions and institutional traditions (Peck et al 2009). Lastly, one should always treat political programmes by what they do and not what they say. Neoliberalism talks of small government and centrality of free markets, which to its credit it has tried to open in many aspects of life we might not want markets in – think health or education. However, what neoliberal governments all tend to do, which does not fit the invisible hand of the market notion, is plan economies but for certain ends and for certain groups' benefit. They also tend to have big government in certain sectors such as the military, again to certain actors' and groups' benefit, and our collective peril.

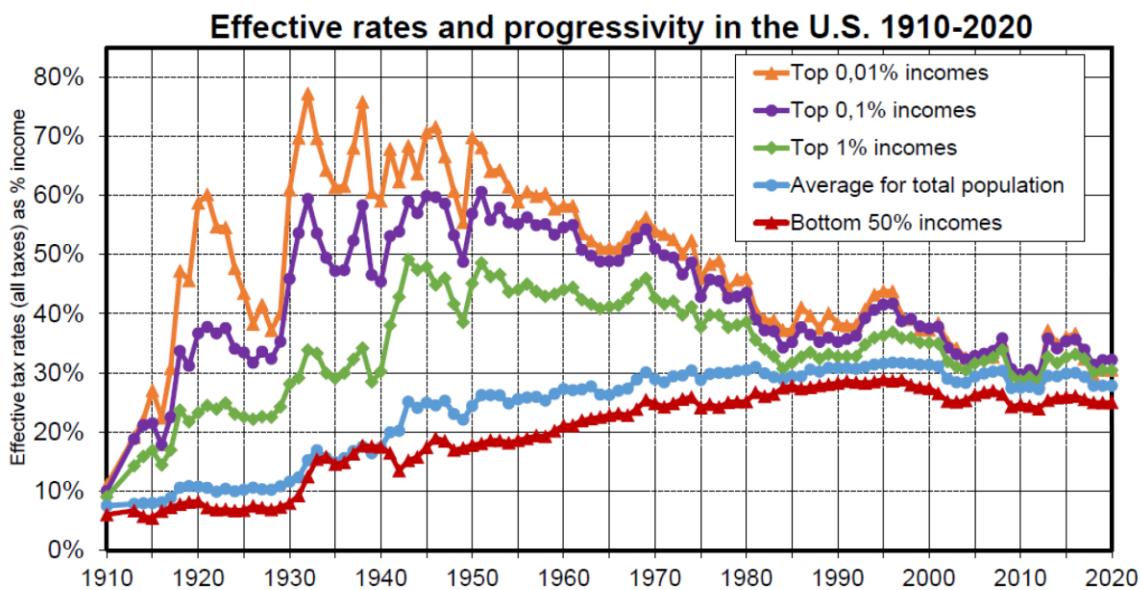
Thus, and this is not new to neoliberalism but perhaps exacerbated (Galvin 2020a; Dorling 2020), what we have is a form of corporate welfare. Current corporate taxation in the UK is at 19%, which is 1% lower than the basic rate of income tax. This looks even worse when one considers income tax rises in increments (and in the UK this is in no way progressive), while corporation tax stays flat. In addition, corporations benefit from schooling/training of employees, health care, heavily subsidised public transport and infrastructure, in-work benefits that subsidise wages, and a government that hands out contracts/consumes goods from these very corporations that know the game (Farnsworth 2015). This situation, which has also been described as socialism for the rich (Chomsky & Pollen 2020), is the extractive context of the CC, where we are told we cannot afford to do certain things such as deal with energy poverty or mitigate the CC as it will be too expensive, while the 1%'s wealth grows to ever more unimaginable levels (Oxfam 2022; Galvin 2020a). This project rejects this framing, arguing we can afford to solve the CC justly because we must, and aims to show why we should reject this hypocritical framing.

Along with key definitions of terms, in the spirit of previous governmentality studies, it is essential to question commonly accepted categories (Wagenaar 2011). As such this project questions the notions of poverty, money, debt and energy efficiency. All are key categories in the study of EJ and a just low-carbon transition. This questioning involves tracking how concepts develop historically, for if we ignore the way the categorisation of people, institutions and concepts have developed, we risk parroting our opponent's bigotries (Graeber 2015; Hacking 2002; Gilroy 1990).

In current use **poverty** is often presented as an unfortunate reality to be tinkered with at the edges, but with a distinction between the deserving and undeserving poor (Graeber & Wengrow 2021; Middlemiss & Gillard 2015; Dorling 2020). However, it can just as easily be argued that a contingent arrangement of social injustice today is reinforced through positive feedback mechanisms that the wealthy exploit: debt and interest rates, accountants, lobbying of government, inheritance, tax avoidance or evasion and private education (Galvin 2020c; Dorling 2020; Graeber 2011; Meadows

1999). These feedback loops can be corrected through negative loops (i.e. inheritance and wealth taxes, debtor protections, limits or write-offs) which serve as stabilisers of a system so that it remains within tolerable ranges (Graeber 2011; Meadows 1999). Such negative feedback mechanisms were part of the post 1945 arrangements, and led to historically low levels of inequality in the developed world until the early 1980s (Galvin 2020a). However, this situation changed because these mechanisms were chipped away, as a system of internationalised capitalisms and market fetishization began to gain traction from the late 1960s onward (Christophers 2020; Pettifor 2019). During these processes many national economic levers, such as capital controls and progressive taxation (Pettifor 2019; Harvey 2007) became Foucault's (1971) folly or falsehood in economic discourse. On the issues of progressive taxation, figure 23 below shows how dramatically this changed from the mid-20th Century to the early 21st in the US, a process Piketty (2014) shows the UK mirrored in many respects. For instance, FTSE 100 shareholder manager returns have risen 56% compared to an 8% rise of the UK's median wage since 2008 (Davies et al 2022, p. 54). This graph and example show what Galvin (2020a) argues: governments are forgoing taxation of the top 10% of income earners who take home 62% of wealth, a large portion of which goes on high emissions activities. This is not how society was organised around 50 years ago and is not inevitable or remotely desirable for 90% of the people.

Figure 23: Percentage of pre-tax revenue paid in taxes In US including direct, indirect, federal & other taxes (Piketty 2020).



In arguing that poverty is constructed, both materially and discursively, it must be shown how this is done. One answer lies in the notions of **money** and **debt** and the nature of these things. Graeber (2011) offers an interesting argument: money and debt are in a sense forms of social relations that originate in the moral obligations we owe to our families and neighbours, in the sense that Williams (1989) talks about when ruminating on the kindness of community of his small Welsh town, and how this is alienated and lost in modern capitalisms. Money specifically, is the vehicle that allows this social relation of debt to be created (Galvin 2020c). However, moving a moral and social obligation to a debt does a number of things – it makes it quantifiable, transferable, impersonal and importantly backed by some form of violence backed by the state (Galvin 2020c; Graeber 2011). This credit-debt form of social relations can be found throughout human history and was the cause of much angst in religious texts across cultures (Graeber 2011). This age old problem is exacerbated now in two ways: we no longer have the release mechanisms that were often used in the past, such as debt cancellations when a new ruler took control (Graeber 2011); and today's form of credit/debt relations have been formalised under specific and extractive neoliberal government and financial forms (Galvin 2020c; Lazzarato 2012). This transference from social obligation to debt often ends up justifying

reprehensible actions. For instance, the structural adjustment programmes (SAP) the International Monetary Fund (IMF) and World Bank (WB) imposed on developing nations were used to make sure loans, irresponsibly made to dictators and often placed in secretive bank accounts, were paid back (Graeber 2011). This cost lives and livelihoods as schools and hospitals were not built and free education ended across the Global South (Federici 2019; Graeber 2011). It was also a reprise of colonialism or example of ongoing coloniality. As Thomas Sankara (1987) said:

We think that debt has to be seen from the perspective of its origins. Debt's origins come from colonialism's origins. Those who lend us money are those who colonized us. They are the same ones who used to manage our states and economies. These are the colonizers who indebted Africa through their brothers and cousins, who were the lenders. We had no connections with this debt. Therefore, we cannot pay for it.

Energy efficiency (EE) is a term that often goes by in academic papers with little reflection of what is included/excluded. To take two relevant examples Boardman (1993a) under a heading - What is Energy efficiency? defines it technically as the heating/warmth producing equipment and the building envelope retaining that heat. Grey et al (2017) in a study of FP and EE measures does not even deign to define this term. It might be said this is obvious – it means insulation or double glazing. It is however, a little more complicated for a number of reasons. Firstly, the rebound effect or Jevons paradox, suggests any increase in technological efficiency is lost by subsequent increases in consumption. For instance, in the UK although light bulbs have increased in efficiency, meaning lighting price has dropped by factor of 3000 (per lumen), demand has increased by 40000 (Fouquet & Pearson 2006). This means any national programme of EE would need to factor this in and try to mitigate it, for as Milne & Boardman (2000) show, the initial temperature of the home impacts how far EE improvements result in carbon savings and how far this is taken as increased comfort.

However, this may be looking at the wrong end of the income scale as we know richer people have more damaging environmental impacts (Oswald et al 2020; Chancel & Piketty 2015). Taxing the extremely wealthy and using this to retrofit the houses of those in energy poverty (EP) is shown by Galvin (2020d) to significantly lower emissions. This approach has the benefit of reducing inequality and CO₂ emissions in a just way. Overall, we must begin to focus mitigation on those people and institutions with the most ability to pay and with the highest impacts, rather than as at present, the other way round (Owen & Barrett 2020; Garman & Aldridge 2015).

Finally, Shove (2017) points out deeper problems with uncritical use of this term in the way it abstracts things from historical patterns of use, simplifies them to some number or metric (as in standard assessment procedures or SAPs), and how together these processes of simplification/abstraction might not challenge unsustainable practices but consolidate them. This way of thinking is “hardwired

into methodologies and metrics”, shapes the expertise needed and rehashes the science/society modernist dichotomy (Shove 2017 p. 787). Thus, we should distinguish between EE and sufficiency or good and bad EE; for instance, using a washing line or rack is better than a AAA+ tumble drier (Shove 2017).

In connection to EE are the ideas and materialities of **technology**. In mainstream culture and politics this is presented contradictorily as both neutral and good. Under neoliberal governance socio-political problems such as the CC or the pandemic can be solved through the tech-fix such as a carbon capture and storage (CCS) or nuclear power for the CC, or the vaccines for the pandemic. However, this discourse occludes the politics always embedded to varying degrees in these tech solutions. CCS is a problem for it slows the closing down of fossil fuels and has had vast amounts of money invested in it but is still not ready, while nuclear has anti-democratic features, is not as carbon neutral as presented and also takes vast amounts of funding that could be better spent on renewable alternatives (Sovacool et al 2020; Winner 1980). The vaccine while welcome was paid for mainly through taxation; however, control of this vaccine and the profits of this have been handed over to the pharmaceutical corporations who have presided over, in-cahoots with Global North states, what has been called vaccine apartheid (Global Justice Now 2021). Therefore, this project adopts a critical attitude to technology that asks what/how/who to/for questions of technology, and in luddite fashion argues if a technology/technology bundle is actively damaging communities it should be resisted (Sovacool & Dunlap 2022; Malm 2021; Mueller 2021).

Appendix 2: Governmentality Analysis of Myself

It is probably fair to say that any PhD is a journey of ideas and subjectivity and this was certainly the case in my experience. At the start of this journey, I felt a certain naive optimism in that I believed energy justice was more about sharing out benefits; however, the experience of the last few years has shown me it is much more about, at least in England, highlighting and advocating against injustices. Thus, the table below summarises some of this journey via the governmentality perspective which I have subjected my data to and will now, in the spirit of reflexivity, attempt to do to myself.

Table 18: Governmentality Analysis of Myself

Analytical category	Before/early PhD	Towards the end
Fields of visibility	EJ and MLP literature, inequality tied to climate crisis	Capitalism, ecological debt, neo/colonialisms as start/end of problem
Technical Aspects	Literature review, ethics review	Performance reviews, internship, data analysis, energy advice, participant observations, data analysis courses, (in)Justice project
Forms of Knowledge	Evolutionary/ecological economics, Eurocentric justice theories	Critical theory, decolonial and indigenous justice theories, feminism, degrowth, critical race theory
Formation of identities	Proto-academic, cautiously optimistic	Academic activist, committed but pessimistic

In terms of visibility at the beginning of this course I read widely the more general energy transitions literature and especially the multi-level perspective (MLP) along with EJ literature. Initially, I saw that this general literature was wanting in that it rarely talked about justice and inequality with instead more focus on feasibility and being *realistic*. My aim was to help to integrate the EJ perspectives into this general transition literature, which was a process in motion but only just beginning in 2019. However, as I moved through the course I turned less to this general literature and began to look further into the past and more broadly at the capitalist world-system and in doing so began to see both general transitions and EJ literature as not going far enough to the roots of our current problems. Colonialism and capitalisms that exist on two dialectically connected historical and geographical scales, are the ultimate root of the climate and ecological crises as well as many historical and ongoing injustices. However, both EJ and general energy transitions literature rarely mention these terms, instead tending to focus on symptoms rather than causes of problems.

The early technical aspects of the PhD involved my drafting a literature review and going through the ethical review process. The technical aspect reflected the above mentioned naivety – the first drafts of the literature review included large sections outlining the MLP and transitions literature, while the ethical review was tier 1, or low risk. This latter naivety was more of a problem, for as mentioned in my limitation sections, this precluded me from speaking with people subject to energy poverty as they would be deemed vulnerable. Again, this reflects the early optimism of my PhD where I believed I would not really deal with energy poverty, believing this as something separate to EJ and CREOs. As seen in my first participant observation and chapter 4, this perspective was quickly undermined by fieldwork, which seriously made me re-evaluate what and how I was doing what I was doing.

Later technical aspects included performance reviews, an internship, performing interviews and participant observation, and analysing data. By my second year performance review I had completed my internship with CEE and most of my interviews. These experiences made me feel more confident as a PhD researcher, as did the completion of a number of quantitative data analysis courses as professional development. I also co-designed an intergenerational justice project with academics at University of Brighton, for which ironically as a justice project, I was underpaid and not really given credit for in an online meeting upon its publication. Overall, I feel these technical aspects of academia made me feel a more rounded and experienced researcher, but also aware that academia was a sector with its own power dynamics and injustices and that these injustices were not just coming from upper management.

The forms of knowledge I employed changed fairly dramatically over the course as did in some ways my worldview. Early on I used many theories I had used in my MSc, such as ecological economics, and I started to think in terms of evolutionary economics via my MLP reading. Early justice theories were mainly from Eurocentric traditions as was my reading around deliberative democracy. With my experience in food banks, then the election of a right-wing government with little interest in the climate crises or justice, followed by the pandemic and the said government's response, I began to question the whole system of capitalisms and the growth fetish as something inimical to basic justice concerns. In the summer of 2020 when the Black Lives Matter uprisings began, I entered a period of introspection in which I questioned myself as a white privileged researcher exploring justice and was troubled to see that most of my references were either white or employing Eurocentric frameworks and viewpoints. This led to me re-reading certain texts and looking beyond Europe for literature and ideas and in doing so saw how complicit my blindness was in ongoing coloniality. Thus, I went from critical theory to critical race theories (the Tory gremlin!) and wider decolonial and indigenous literatures. In doing so, I was able to see that the coloniality is ongoing and seeping into the energy transitions in a number of ways and that energy itself was a complex and amorphous category but one entangled in coloniality and its history. This meant I had to take decolonialisation seriously and this is what I endeavoured to do.

Finally, my idea of who I am changed over the last few years, but in many respects was remembering an earlier version of myself and extending and consolidating this subjectivity. I came into the PhD diffident but optimistic with the hope to either be an academic or work in policy development or implementation. I had spent the previous few years either teaching academic English on short-term contracts or volunteering in environmental organisations. This was after applying for many jobs after my MSc but with no success. Therefore, funding for a PhD in an area that has practical applications seemed to be a change in my personal fortune with a corresponding potential in the political situation

with the Labour Party producing some very ambitious climate mitigation goals. However, since then things have changed, particularly with disillusionment following the election of a regressive right-wing government with deep ties to the fossil fuel industry. This combined with the government's subsequent handling of the pandemic, locally and globally, portends a deeply troubling future. So, with my growing anti-racist and decolonial positions my anarchist sympathies – I wrote my MA thesis on anarchist ideology – resurfaced and were renewed through linking these ideas to decoloniality and indigenous struggles. Thus, now I feel I have a much more historically and spatially sophisticated justice perspective and see the world and England moving rapidly in the wrong directions. I am also left wondering what kind of job I can do after my PhD as academic jobs rarely mention the word justice and I feel anti-institutionalised through the long experience of working from home.

Appendix 3: Draft Recruitment Email

Dear (Name),

My name is Lee Towers and I am a PhD candidate studying at the University of Brighton and am emailing you/your organisation to inquire if you/your organisation would be willing to take part in my project. In order to do so with full consent and understanding, I politely ask you to read the following description of the project.

The purpose of this study is to gain understanding of the role and potential role of local community action in achieving an energy transition. Theories of energy justice and energy democracy argue we can have a fairer, greener, locally and democratically controlled energy system. This project intends to explore how far local action can help promote a more just energy transition. It will focus on community energy organisations and how these interact with private, third sector and public organisations. It will also investigate how community energy organisations interact with local

communities, as well as other key stakeholders in the energy industry and in government, to understand their perspectives on energy justice and transitions policy challenges.

If this project sounds of interest to you/your organisation and you would like to learn more about what would be involved please email me back at: L.Towers@brighton.ac.uk and I can send you more detailed and specific information.

Kind Regards,

Lee Towers

Appendix 4: Energy Advice Record Sheet

Champion / Volunteer name	BESN organisation name	Date

One-to-One Advice – Record Sheet

Consumer full name:

Action taken on the day of the surgery

Consumer switched supplier/ tariff / payment method on the day of the surgery (tick)

Annual estimated cost saved by switching on the day of the surgery – do not complete this section if the consumer has not switched on the day of the surgery

£

Consumer agreed to review and consider supplier/tariff/payment options (tick)	
Identified eligibility for <u>previously unclaimed</u> Warm Home Discount (tick)	
Identified <u>previously unregistered</u> eligibility for the Priority Service Register (tick)	
Consumer identified as eligible for Warm Home Check	
Other Action – please state (such as energy debt write off)	
Estimated annual saving through ‘other action’ such as energy debt write off	£
No action taken (tick)	
Follow up required	

Please retain this sheet for reporting and auditing purposes.



Big Energy Saving Network follow up

To help us evaluate the work that we are doing Citizens Advice may contact you at a later date. We will only do this to ask for your feedback about the Big Energy Saving Network event you attended and any actions you have taken as a result. Sometimes we use a trusted research partner to help us to do that.

Once the evaluation of the project is complete we will delete your data.

To help us conduct this evaluation we need the following information:

Name:	
Email address:	
Phone number (include area code):	
Can we leave a voice message or send a text message?	Yes / No

Please tick to indicate that you understand the above and are happy to supply this information:



-----Please provide the following for the consumer to take away with them-----

Confirmation of Advice

Thank you for participating in a one to one advice session. This advice session has been designed to equip you with information about energy tariffs; energy efficiency measures; and to assist you in making informed decisions about your energy use. This form provides you with a summary of the advice you have received and the actions you have taken or intend to take as a result. The advice and guidance you have received today is delivered through the Big Energy Saving Network, a programme funded by Citizens Advice. If you have any questions about the Big Energy Saving Network please contact besn@citizensadvice.org.uk.

Date		Venue
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Today your adviser was		From the organisation	
You can contact them using these details			
Summary of advice you received today			
Estimated savings you made/could make			
Cost saving actions for you to take			

Appendix 5: Participant Observation - Webinar With PRASEG/Ofgem

PO Notes	Analysis 1 st & 2 nd	Links to theory literature
<p>Jonathan - key time/covid and future challenges</p> <p>Ofgem's role: protect customers and drive CC mitigation and economic recovery</p> <p>Government leads - Ofgem administers - works within the gov's framework</p> <p>2019 Decarbonisation plan - fundamental to objectives - as important as dealing with CC</p>	<p>Interesting that Ofgem has role in economic recovery – how is this connected? Shows the economicistic mindset of the regulator.</p> <p>This plan is also very economicistic: language</p>	<p>Foucault's (2004, p. 131) neoliberalism not simply inserting markets into social: more embedding neoclassical economics in government institutions as “general art of government”</p> <p>I7 talks about how meeting with Ofgem</p>

<p>Saying to industry - coming out of Covid but economic impacts still there so companies must be mindful</p>	<p><i>of cost, efficiency, customer over community or justice</i></p> <p>This is hilarious – this pandemic is far from over esp because of vaccine apartheid, and past pandemics were 3-5 year events</p> <p>What does mindful mean – “stay aware”??</p>	<p>Showed how only cared about economics as were all accountants and economists – Thomas 2019 details how bad Ofgem are and how execs are either/and industry/economists.</p> <p>Global Justice Now have many pieces on vaccine apartheid, while the effect of pandemic on injustice can be seen on national level - Caddick & Stirling show that upper 5% £3300 p/a better off while lower half -£110 on average; int level Sharma 2021 and Harvey 2021 show how 2000 billionaire turn into 2700 during the pandemic.</p>
<p>Two things: price controls last week - need investment but they need to be secure stable but get to net zero. Want something back from industry - cheaper the better investment in future. Less to shareholders - lower ROI</p>	<p>Net zero – a term that hides multiple sins such as CCS assumptions in IAMs, or green colonialism as industry can use land in global south to do their decarbonisation</p>	<p>Davies et al photosynthetic effect</p> <p>Buck 2021 on net zero or War on Want's fair share flip of net zero where this concept is turned into a justice mechanism by placing decarbonisation burden on global north, rather than the unjust capitalist fix that shifts burden onto Global South. WRSW 2021 – on Green Colonialism in Sahara – this is good example of Dunlap & Arce's 2021 fossil fuel + type renewables that don't deserve the name</p>
<p>New phase - harder bargain but maintain stability</p> <p>More announcements later in Summer/Autumn</p>	<p>Ofgem frames this as them imposing a harder bargain – this is ludicrous as DNO were making 25-39% profits: two issues – it wasn't Ofgem that highlighted DNOs</p>	<p>Wild 2017 shows DNO raked in £7.5 billion in unjustified profits</p>

<p>Demand change important - data is key here (due to growth of demand through EVs etc)</p> <p>A. From chair - how far away from demand management as a reality?</p> <p>EV more affordable, battery storage more widespread so this is happening now (also with smart meter role out)</p> <p>Customers - some will win, but others won't so need to mind them.</p> <p>N:</p> <p>Before C19 the Government was getting ready - so, this can start up again - the Government is keen to take advantage of C19 and take this opportunity to use the GND as a way out depression</p> <p>Lord bla bla:</p> <p>Questioned the cut on ROI of %50 - could this lead to lack of investors?</p>	<p>were making eyewatering profits – it was CA and the ECIU; also, no asking why they were allowed to do this and why these monopolies are privatised and why ‘consumers’ are paying these shareholder who were gifted this under privatisation and sweat assets anyway</p> <p>The focus on EVs here is instructive of neoliberal thinking in these economicistic circles – all individual solutions with very little care or analysis of problems as tech-fixes are all about moving problems in time/space rather than solving them.</p> <p>I wonder who will be the winners and losers?</p> <p>GND – er what GND? – they will not even do anything about energy efficiency!! If he is referring to the 10 point plan this would be funny if not so tragic.</p>	<p>ECIU 2017 report the eyewatering profits extracted by these monopolies.</p> <p>Bayliss et al 2020 on privatisation and asset sweating.</p> <p>This myopia is staggering when you think about it and links to Moore’s arg VERY STRONGLY that there is no way out with this limited thinking.</p> <p>Paris Marx on EVs talks of how they eat up the space of more collective solutions while Sovacool et al 2019 deal with raw earth/metal demand and the injustice of the decarbonisation divide.</p> <p>Moore 2015</p> <p>Boardman 2010 says middle classes have been getting all treats, Sovacool et al 2019 shows how wealth/home ownership likely to widen justice gap Caddick & Stirling 2021 show this more broadly.</p> <p>Caddick et al 2022 show 1/3 people caught in heat/eat dilemma and 50% of CHILDREN.</p>
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<p>Jonathon - replied it's a draft! It will be reviewed - they have been taking money back voluntarily but will discuss this with them</p> <p>Oates: What does gov need to do to maintain a lower ROI?</p> <p>Independent regulator allows for stability, also more confidence the investors have in the change Ofgem leads they will feel happier.</p> <p>Audience Q: most of this stuff supply side how about demand?</p> <p>Flexibility often comes from supply side - need to move this to demand side.</p> <p>This summer was a case study of demand reduction</p> <p>My question: to get consumers onside why not give them stake in energy through CE?</p> <p>They are enthusiastic about CE - and local energy - if we go back ten years we have over achieved - so now DNOs at heart of different supply demand of local generation</p> <p>Darren Jones says he is a big fan and says stuff about Bristol wind Turbine and mentions the wider economic and social impacts.</p> <p>After this move on swiftly with no detail of how CREOs will gain.</p>	<p>Wow – so even Ofgem sees that 25-39% profit extraction was too much and they needed a ‘harder bargain’ but the liberal lord is worried about investor’s pockets. Tells us about our political class and their priorities.</p> <p>This suggests any review would swing in DNO favour not other way as he is so diffident here.</p> <p>Glad somebody is happy with Ofgem as I’ve yet to speak to someone who is! Independent?!</p> <p>This shows a distinct bias to supply side – a very neoliberal focus – that characterises UK energy system.</p> <p>Interesting they use a pandemic as demand management – it wasn’t enough and sections of the right-wing and centre have been howling over restriction all the time.</p>	<p>The Sussex Energy Group all had a swipe at 10 point plan saying it was a tech-fix wish list that was supply side and would likely lead to high bill cos of nuke and hydrogen focus.</p> <p>The whole pandemic was a lesson in these priorities with government doing as little as possible for people while basically writing blank checks for big business - Brenner 2020; and then government raises taxes on the poorest/youngest through hike on national insurance.</p> <p>Thomas 2019 questions this independence strongly framing it more as regulatory capture and when energy crises hit Ofgem seemed more concerned making sure energy companies did not fold than helping the consumer – hence Martin’s money savers outburst. Nolden et al 2022</p> <p>La Quere et al 2020 show that while pandemic saw -17% of emissions in worst lockdown periods this only reduced it to 2006 levels; and over year more like -4.2 to -7.5 %</p>
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	<p>This response again instructive – yes we like it but not going to do anything material to support it. Big-E energy is what Ofgem and policy-makers see – CREOs the PR picture that makes them seem like they care.</p>	<p>which we would have to do every year from now on to have chance of meeting 1.% degree avg rise in temps.</p> <p>COP 26 with majority of delegates from the fossil fuel industry shows Big-E focus – McGrath 2021</p> <p>I25 & I26 take very dim view of government coming out of COP and in relation to 10 point plan.</p> <p>Also, gas/oil North Sea investment to get every last drop – UN Production Gap/Harvey 2021 shows how oil/gas been paying tories for service to their shareholders</p>
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Appendix 6: Participant Observation - Immigration Advice Centre

PO Notes	Analysis 1 st & 2 nd	Links to theory literature
<p>The church was running a multi-pronged service (dealing with the Home Office, Benefits Agencies etc.) and we were helping with energy advice.</p> <p>First guy had very limited English but had his bill - he was paying a DD of £148 per month and had a projected bill of nearly £2000 per/year.</p> <p>The bill seemed strange as the bulk of the bill was in the first month of his tenancy - I</p>	<p><i>Racialised aspects of EP very strong here</i></p> <p><i>An example of “errors” with bills – Ofgem regularly fines companies for this so is it an error or calculated risk?</i></p>	<p>Wynter's 2003 racially and economically damned – Mbembe 2019 makes point we all share vulnerability and key to caring world is recognition of this</p>

<p>suspected he had inherited a previous tenant's bill but there was little we could do without an interpreter who I think would be there in two weeks' time.</p>	<p><i>-£2000 a year!! This I guess would almost certainly be more than 10% after housing.</i></p>	<p>On definitions – Moore 2012 in which he models before/after housing cost and the MIS defns of EP</p>
<p>This made me wonder how many people with limited English are being over-charged and considering I (the timing is helpful) have a bill today from EDF threatening legal action when I called them last week to say the bill was not mine. This would not be so easy for someone with little English.</p>	<p><i>Not being able to do anything on the first meeting was common – this is all the funding covers.</i></p>	<p>Nolden et al 2022 in press quote BESN extensively on this limited funding problem so policy-makers know this.</p>
<p>Another citizen came with a bill with different addresses and seemed fed up with the whole process - we had run out of time by then and told her to come back in two weeks.</p>	<p><i>This and other food bank experiences were incredibly frustrating and angering – how is this going on and allowed to? Is this country openly racist and contemptuous of the poor or is there some kind of strategic ignorance going on, or both?</i></p>	<p>Social evil – Galvin 2020 for strategic ignorance McGoe 2019</p>
<p>I did help someone update their address with Southern Water so that was quite good.</p>	<p><i>The multiple aspects of impoverishment – water bills seemed very high and I think this is feature of area but moreover privatisation</i></p>	<p>In terms of scale Trussell Trust shows how demand in FBs rose 12% over C19 period</p>
<p>A referred to his time at the food bank and said it was hard as he recognised people he'd grown up with - some of them recognising him other not (I think he preferred if they did)</p>	<p><i>This made me think what it would be like doing this in Stockport.</i></p>	<p>Bayliss et al 2020 discuss how neoliberalism's drive to privatise is impoverishing people.</p>
<p>Reflections:</p> <ul style="list-style-type: none"> • There is clearly high demand for this in Eastbourne's immigrant community and makes wonder how many of these are part of the least well off being exploited by the energy companies. I was also considering how hard it is to deal with these companies with a clear command of English as the employees of these companies are clearly not trained to deal with limited English - it would be interesting to try to find out what 	<p><i>In literature there is a tendency to talk of gaps/oversight – i.e. policy-makers and companies make mistakes. However, if it is the same people over and over is it a mistake??</i></p>	<p>This links to Galvin thin/thick ethics and Dorling – to treat inhumanly frame people in certain way – deserving of this</p> <p>For global to local levels use Táíwò on how colonial history/structures make advantages/disadvantages flow to specific groups Use Boardman 2010/2012 who seems to straddle this by using terms like gaps but also showing how it is the same groups that benefit and same groups that</p>

<p>the policy of a company is for this - how would I find this out?</p> <ul style="list-style-type: none"> I was struck again by how many vols there were (like at the food bank on Friday) linked to churches doing essential social support work - I need to get some of their perspectives on what is/has been going on There was a kind of order being imposed of who would be seen first - the people doing English lessons being at the back - I wasn't sure if this was because they had to do their lessons as part of their visas or there was more need with the groups who did not go to lesson - I need to ask next time. 	<p><i>I remember is one first meeting with ESC Colin saying that vols were unsustainable – I could add that it excludes loads of people. But here in terms of providing baseline support for people in crisis it was inspiring to see some people still caring</i></p>	<p>don't over longer term. In general, I agree with Galvin 2020 that the energy poverty literature does not really address the fundamentals – in interviews with 3 experts they'd all started to look beyond England</p> <p>Cruickshank 1999 and Graeber 2018 go into the poverty industry which I think this whole area of EP intersects with. Many interviewees talked about how poverty imposes a kind of scarcity of higher human functioning – this was more palpable in the food bank. Táiwò makes point on crime and how prison works as absolute disadvantage – you get areas of people who've been brutalised by the system and act in this way then get blamed for being this way – as does the community.</p> <p>Ettlinger 2011/Foucault 1994 vol 1 The Care collective 2021</p>
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Appendix 7: Interview - Food Bank Manager

Interview script	Analysis 1 st & 2 nd	Links to theory literature
<p>I think we run a rights and responsibility approach - you have a right to this a responsibility to do that. What that doesn't do is approach from the point of view that everyone has value even if they're not able to contribute at the moment and need support.</p>	<p>Rights/responsibility – occludes overlooks intrinsic human value – even if they can't contribute 'at the moment' – good critique of rights from practitioner!!</p>	<p>-Capability approach – Sen 2009 and Nussbaum 2003 – this is a bit liberal for me but the actual idea of capability I feel is much more just than rights which is even more liberal. Could link to Mbembe on how we are all vulnerable – a place of solicitude is recognition of this.</p>

<p>And so this, in my opinion, leads to an almost total lack of kindness in the system and so I don't know how to change that, so much, but I think this myth of the undeserving poor, like they're out to get something for nothing is toxic.</p>	<p>Leads to 'total lack of kindness in the system' good quote Undeserving poor discourse is 'toxic' – so many examples of this and justice of recognition and how impoverished blamed for position -Meta – toxic of underserving poor discourse – suggests it is undermining social relations and institutions and making an uncaring state -This is really good for my discussion of poverty and discourse around it – how it aims to discipline people in to work but fails on its own terms – E6/2</p>	<p>-Dorling 2020/2015 really digs into the interacting edifice of bullshit that supports both the 'they earned it' for billionaires and 'deserve it' for the impoverished. -On media McArthur & Reeves 2019 do quant study of papers over 20th c and they show that major newspapers engage in stigmatising rhetoric – and as they have role in shaping public opinion this is a problem – this connects to both Sen's 2009 and Habermas' ideas of role of press in demos – Can broaden this out historically and geo – even when we had functioning welfare systems this was based on neo-colonial extraction/fossil fuels (Akala 2018; Mitchell 2013).</p>
<p>And approaching things like that makes people feel useless, worthless and pushes them further into mental health illness, and further away from working. People .. they don't want to be famous, but they want to feel significant and valued, and I think that is the approach we need to take in order to get people nearer to work. We have the system, we don't have the right values.</p>	<p>Makes people feel 'useless, worthless' causes mental distress – 'we have the system, we don't have the right values.' Interestingly put – so welfare state system is good – debatable but better than nothing in class stratified society – but values wrong!!</p>	<p>Fraser 2021/2014 talks about how capital is eating away at systems of social reproduction. Dorling 2015 again is good on myths and realities of impoverishment. This also links to Graeber & Wengrow's 2021 points and Graeber 2018 that admin systems as faceless leveller will always create an army of people ready to be exploited. This in Turn links to decolonial args of Wynter 2003 and the economically damned.</p>
<p>I: I think in central St Leonards, I went to the Shine launch, which was a European funding bid/initiative. But what they told us was statistically more people die in central St</p>	<p>-This would be with ESC ask about where they got this stat!! -Interesting but again feeds into deserving/undeserving</p>	

<p>Leonards through lack of adequate heating than through drugs and alcohol combined.</p> <p>So, there is a huge link between your property not being properly assessed and kitted out, between some, a minority, energy providers that target vulnerable areas and introduce these leading tariffs which are good and then they end up on higher tariffs unless they swap or change.</p>	<p>as the implication is drug addicts deserve it - example of the hall of mirrors neoliberal discourse E2</p> <p>Shithousery of some/minority – but is it though? Energy company practices E1 – K/R talked about this</p>	<p>Middlemiss 2016 touches on deserving/undeserving and in interview with EP people this came up with one of rich parents getting winter fuel payment – she framed it as oversight but old people vote more/and more for Tories so again – IS THIS A MISTAKE? I don't think so. Táíwò would not frame this as conspiracy but historically determined (not however immovable) flows of advantage/disadvantage</p> <p>This suggests predatory behaviour and links to Bayliss et al 2020 piece on this.</p> <p>Also, Ofgem details how/what it fines on its website. This injustice can be tracked up scale to international level with the predatory behaviour of institutional investors, SDGs and the transition, and Wall Street</p> <p>Consensus – Dafermos et al 2021 – this is like burning someone's house down then saying we'll lend you the money to rebuild it.</p>
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Appendix 8: Participant Observation - Lottery Fund Meeting 13th Nov

PO Notes	Analysis 1st & 2nd	Links to theory literature
<p>Present:</p> <ul style="list-style-type: none"> • Tim (engineering type who likes to recycle as much as poss - focused on conserving energy/using stuff more effectively) • David (Rebellion partner - a social enterprise consultant - interested in getting org to achieve aims/potential and work toward solutions) 	<p>Interesting that consultant from org called rebellion came out with most prosaic, market ideas.</p> <p>I think this is good – imagine the possible</p>	<p>This links to poverty industry – Graeber/Cruickshank</p> <p>Seaton 2019 on pragmatism v strategic utopianism – Davies (2010,</p>

<ul style="list-style-type: none"> Jane (Denton Signals - art company in Hastings tries to get peeps to join in art performance etc. help communities with workshops - interested in getting people to imagine the possibilities!!! She is also in XR - wants/believes that art needs to be at the table with imagining solutions to CC - deliver tangibles and imagine the possible) Mima (head of XR Hastings/home educator so in that milieu/Green party/good organiser) Carolina (initiator of the funding opportunity/consultant and disillusioned with market logic of this world and her field and sees this as the problem so not solution/ worked with CONTROL SHIFT (!) wants solutions that appeal and involve those on benefits at the bottom of society <p>K said it is the right time to upscale and do the highest impact thing at ESC and Transition Town - 70 events at TT festival - so many orgs/peeps willing to act - this is a good base</p> <p>R on ESC and CES and school energy coop in Bexhill boards. Has formed another coop Energise South to split ESC which deals with issues of poverty, form those who purely wished to invest in renewables</p>	<p>rather than impose the realistic</p> <p>C said disillusioned with world of consulting and market logic – guy above not listening? Control Shift very interesting: was Bristol based arts collective looking into tech with critical eye about who/how/why makes/owns/controls this as has such deep influence on our lives – Luddites!!</p> <p>Mmm – this formal split is for me the fault line of CREOs – like 19th century demos with richer householders getting vote – E from CEE even makes a similar arg when I asked about internal democracy of CREOs – she argued some people didn't know enough.</p> <p>This competitive nature of being sustainable and being given the resources to do so is stupid on so many levels: first it is anti-innovation, second you can't have as we do now pockets of sustainability, third this bit talks about scaling up but these</p>	<p>p. 46) – says being realist in face of CC will ‘turn us into stone’.</p> <p>Mueller 2021 is really good on the long historical resistance to dehumanising aspects of tech, and how trade unions and the wider left have been rubbish on this – see tech optimism in shit like fully automated luxury communism. Int with R he was talking about driverless cars solving parking problems, while BHESCo’s website loves tech unquestioningly.</p> <p>Dryzek’s (2013) ecological democracy and Fischer 2000 both good on getting past the lay/expert binary. Int with ED expert said we in 19thc in energy democracy terms. Kothari 2020 take ecological demos decolonial and specifically – linking to Quijano – the knowledge commons, which breaks down this expert/lay</p> <p>Graeber 2018 and Cruikshank 1999 on poverty industry, Graeber & Mazzucato on how not to do innovation, and if my piece is published in time I can quote myself on postcode lotteries of injustice – Nolden et al 2022</p> <p>Scale this up to make basic point that CC is a global issue and treats for the middle classes approach is NOT GOING TO WORK.</p> <p>Malm 2021 good on resistance as is Sovacool & Dunlap 2022 who both see the global systems going in the wrong direction as did I16 (this is supported by UN production gap report and a host of other studies including the IEA – the hotbed of radicals!)</p>
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<p>The bid to be competitive so needs to be a project that can scale up for max impact - so Kingston Uni project Faith & power - new idea faith/power/football!!</p> <p>Land use as carbon sink - things with broad sweep and specifics</p> <p>Guerrilla solaring - R said later that in the near future CREOs going to have to face breaking law!!</p> <p>J - ESC founder/board - says common treasury of ideas is focused on sharing inno bus ideas from other places to evaluate and discuss - J likes to connect the dots/ideas/orgs - idea of citizens' assembly - toolkit to empower - mentioned Sam Kinch community activist trainer (!) - idea of energy champ can be turned to paid climate champs this would allow those that are commonly excluded to be involved:</p>	<p>sorts of solutions are place based as green solutions tend to be.</p> <p>This is interesting and is emphasising the contradictions within local national politics – talking talk but not walking – more like lay down!</p> <p>Common Treasury is a project of TT Hastings and example of epistemic justice and the sharing of idea, something capital does not like as loves a bit of scarcity.</p> <p>This move from volunteer to paid energy champ would be more inclusive as the vol and internship model is highly exclusionary.</p> <p>Lottery funding is interesting and I wonder if anyone has analysed who/which groups do it, I'd guess poorer groups which mean this is a regressive tax.</p>	<p>Sioui 1999 is good on how Wendat practices are inherently social and communistic/Graeber 2011 on how we have communistic/reciprocal/competitive or capitalist relations overlayed, which include resources and info, BHESCo had me sign NDA and were adopting confidential practices – anti knowledge commons – Kothari 2020</p> <p>This volunteer issue can be linked to austerity and stupid Big Society – and the broader move of state retraction, which was in Táiwò terms, flowing disadvantage to poorer areas, advantage (or less disadvantage) to more affluent areas (Marmot et al 2020; Gray & Barford 2018).</p> <p>Becket & Lutter 2012 say inverse relation between socio-economic status and using lottery related to job, education and ethnic minority groups – so regressive tax.</p>
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<p>2 streams of funds: 200000 as short-term planning fund/2.5 million longer (5 year) fund - is first a prep for second?</p> <p>Criteria of fund</p> <p>Bold/imaginative/visionary</p> <p>Community led - empowering</p> <p>Reduce CO2 of communities</p> <p>-Framed as genuine democratic exercise - T said seems like capital project not funded so solar panels heat pumps etc not funded - more like employment processes funded - call for innovative ideas from a government that does have them!</p> <p>1st task to respond by 18th Dec to 6 q's (who/what/why/history of the orgs involved in bid)</p> <p>They looking for partnerships - with wide range of peeps and shared vision.</p> <p>Needs to be high carbon impact so - housing, energy, transport, nature</p> <p>Long-term self-sustaining - D says that favours social enterprises as done right they do this naturally</p> <p>Reach - beyond usual middle class types so mixed class, ethnicity, gender, sexuality - this links to scaling 'outward' to other communities</p>	<p>A genuine democratic exercise based on regressive tax in a class stratified society – no mean feat!</p> <p>This notion of shared vision also links to metaphor of transition as journey and the associated rhetoric of 'leaving no one behind' – laughable as bills sky rocket  – the problems here is that no say on where we are going!!! It's a bit like we can choose between various dystopian shitholes.</p> <p>Coloniality in that starting point is exclusionary</p> <p>-It would be really interesting to see how one of the successful bids managed the kind of moon on stick vibe this bid criteria embodied. Ironically, this could be interpreted as government tacitly accepting they can't/don't want to do this 'good' stuff so they competitively farm it out and then can roll out said project and say – look we did good.</p>	<p>Mansbridge/ Young 1990 & Fraser 1990 argue that "shared vision" like public interest itself becomes a contradiction here and need to be established in debate as powerful groups have different interests to marginalised groups – this was written large in 2019 election.</p> <p>This is part of the democratic deficit: poor get no say on where we going/why/how – and are in fact <i>being left behind</i> in multiple ways; children and to lesser extent younger people who will suffer consequences of CC more, completely marginalised by a political system that is weighted toward older more conservative people; the unborn who get economically discounted – except by crazy galaxy brains like Nick Bostrom who is behind long-termism of tech elite, which effectively justified the present world injustices for chance to colonise space and create value (quantitatively more humans) in the distant future.</p> <p>Wynter 2003</p> <p>There are aspects of governing at a distance – Rose & Miller 2008</p> <p>Also key aspect of poverty industry (Graeber 2018; Cruikshank 1999) and connects this to regressive stealth taxes.</p>
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Involves learning and engagement		
Ideas/Discussion		
LA involvement but would have to get paid for this!	Off grid is I think not workable as takes more energy/resources, and even Ofgem wary of this breaking up a collective, if extractive, energy system.	Guy could be forgiven for this as it fits with the message I17 said neoliberalism gives us -"you're on your own dude" – I guess this is a problem with CREO that they have not gone through – Chapter on commons – good, bad and ugly in Federici 2019 – does good job on showing commons cannot be this autarkic self-serving and exclusionary model
Hastings branding idea to connect the various (2nd hand furniture to homeless charity) orgs and show them their role in the greater effort (reducing CO2 and increasing justice)		
<i>Payments for people so they can care/invest their time (this came up a few times and when the arts person was saying people were not involved and perhaps a different presentation may provoke involvement I pointed out the scarcity argument to nodding of heads)</i>	This is problem with inclusion talk – as guy said in Brussels – it's the term white people use and as such has patrician ring.	Needs - Fanon 1963 - the damned not included but designing the processes. This is problem with my research – I through my ethics review took easy option in my haste and now can't even do interviews with EP subjects.
T talked of batteries and how these could be used to avoid the grid - and paying to maintain/upgrade (<i>this argument is worryingly autarkic and a bit like dredge the river here and fuck those downstream argument - set my justice alarm going!</i>)	What would a climate union look like? Would you have to pay – if so what would be the point? What would the aim be? I suppose if think of credit union..	This connects to CLES and community wealth building – I15 talked about this – idea of alt forms of finance, or even Pettifor's 2019 broader arg that we need to democratise the financial system.
<i>Mima said the key question was involving the communities meaningfully - the most difficult question I would add as I think we need a fundamental restructuring of society to minimise inequality b4 we get the poorest (who would no longer be this in such an acute sense and would enjoy some of</i>		Moore 2015 says need new forms of thinking to solve the problems of time as the science/people/traditions etc that create said problems just tend to

<p><i>Nussbaum's capabilities) to have the space to care about this - as the yellow vests said 'you care about the end of the world, we care about the end of the month'</i></p> <p>Coop of coops - has the same rights as a corporation - <i>this obvs does not answer the above question!</i></p> <p>Climate Union (<i>I like this idea!! As would be essential form of solidarity in uncertain future</i>)</p> <p>C talks of a resilience theme and the circular/sharing economy</p> <p>How do we arrive at a democratically constructed shared vision??!</p> <p>To summarise - what to do:</p> <ul style="list-style-type: none"> • Branding idea that shows people their part in big effort and • Bring all social enterprises together - <i>D started talking approvingly of market solutions which made me twitch</i> <p>Again q's of how to scale up to reach beyond area</p>	<p>Neoliberal language and solutions here – isn't this the language and techniques that got us here in the first place?</p>	<p>repeat same errors/ best example is carbon markets so full of gaming, stupidity and injustice as to be counter productive and oblivious of fact that growth/markets/consumption is core to our problems – Lohmann 2013</p>
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Appendix 9: Interview - CREO Financier

Interview text	Analysis 1 st & 2 nd	Links to theory literature
<p>On future:</p> <p>We are not using fossil fuels in any form, on a personal level I don't want us to be using nuclear either but I recognise that there will probably be some limits to what we achieve. You know wind would be a better solution.</p> <p>We have addressed the heat issue in the UK and all homes and properties are energy efficient.</p>	<p>Energy/tech/EE So this would mean no CCS – which is good as it is a tech that moves investment away from working none fossil based stuff. Wind over nukes!</p>	<p>Holly Jean Buck 2021 deal with the massive ask that is unhooking us from fossils, as CSS assumption a big percentage in IAM models, and fossils in our food and clothing systems (Moore 2015</p>

<p>So, for me that's probably an even more important outcome than the generation aspect to it. Because I think the generation aspect is heading in the right direction but I think the homes, the businesses and schools heat is along long way behind. We've got to get this to a very local and individual level.</p> <p>I don't care about the source to be honest. But it has to be clean, So, if its solar or wind and we've not creating lots of carbon in the supply chain either. You know what I don't want to be doing is having us have 50 million EVs where we are just pumping out massive amounts of carbon to produce them. I want the low carbon solutions to the low carbon I guess!</p> <p>I'm less concerned by ownership models, what is more important to me is benefit. If it is a case that Shell owns masses of large wind turbines that power most of the country, so long as a portion of profits goes to benefit the deprived and so long as every person in every home and business and school has access to low cost, renewable energy and is living in EE buildings.</p>	<p>EE is fixed – she says below need new non-capitalist systems for all this. In terms of dealing with EP this would seem to be the case.</p> <p>This also rightly see the present system overly focusing on supply and not dealing with local and individual need for and reasonable price of energy – EJ principles 1+2 and 3+4</p> <p>Energy/tech – E2/E3/E5</p> <p>Kind of tech neutral discourse but she does recognise that some techs merely displace carbon – EVs, and this mention of supply chains means she is likely aware of decarbonisation divide</p> <p>EJ/Capitalism-rentier/demos – some might say end of capitalism is required (she does below). Also, in terms of justice how can one person 'have to pay</p>	<p>talk of green rev in early 20th c; Hanieh 2021 deals with petrochemical industry history in similar way to Huber 2013) –</p> <p>interesting split on nukes in interviews with economical/political elites in favour, rest against...</p> <p>Winner 1980 on the undemocratic nature of nukes – also Sovacool et al 2020</p> <p>I9 called EE the "Cinderella of it all" and she needed a fairy to help her!</p> <p>My paper Nolden et al 2022 deals with supply/demand imbalance</p> <p>LCA – Cerdas et al 2018 say can be 2* carbon embedded in EV and if like UK 50ish percent of generation is still fossils just moving emissions around. They embed injustice in that impoverished peeps don't have cars as much and not expensive ones, and live in built up areas so will still get pollution: Lucas et al 2019; Beddows & Harrison 2021</p> <p>They are individual solution that crowds out collective transport options - Tech Won't Save Us podcast is</p>
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<p>Now that requires a different type of capitalism than we currently have. But for me to say local people have to own it, I'm less wedded to that. I'd much prefer to say if it was owned by the LA and they made sure everyone had equitable access to it then that's fine. So, we don't need to own it just have, everybody equitable access.</p> <p>Oh yeah! I mean what I hope is that coming out of C19 we actually change to something that says we just can't continue with this capitalist model that we have.</p> <p>And I kinda hesitate to say this but the capitalist model, you know this is a kind of Marxist approach to this but part of the reason we are where we are is not government but the capitalist structures that we live in.</p>	<p>debts' while Shell does not? Not right.</p> <p>LA as owner – interesting the ambivalent status of LAs in the CREO sphere – I think partly down to austerity but also how we live in a very sclerotic and truncated demos.</p> <p>Social change: Demos/capitalism – this suggest pandemic highlighted certain aspects of injustice that is making people see this system as wholly unsuitable to face the CC with.</p> <p>Interesting she hesitates here – this is probably the finance sector she works in – not allowed to mention Marx!</p> <p>Yeah, the liberals love to point at Tories like: 'so bad, we would be more competent' blab bla.</p> <p>This point to the inherent structures of</p>	<p>writing book on this - Marx 2022 <i>Road to Nowhere</i> Sovacool et al 2022 good on probs with EVs This moves up and across levels/scales with traffic accidents to resource limits to child mining: Sovacool et al 2020: 2019 on decarbonisation divide – I see this as coloniality as did I16</p> <p>Shell was key player in denying climate change – Malm & Zetkin Collective 2021 and has terrible record of injustice and abuse of power in Nigeria – Watts 2004 says petroleum history is one of corruption, violence and worse of frontier capital – see as Mitchell's 2013 brilliant account on this. The high finance int actually said we needed to trust and work with fossil industry!!!!</p> <p>Gray & Barford 2018 detail how LAs been defunded and local income areas more than affluent ones – Marmott et al 2020a&b also show this, suggesting political intent.</p> <p>More broadly LA always been bit crap – I7 – said this, and part of very thin slice of demos and why few people bother to vote in local elections</p>
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	<p>capital: economic growth; racial/gender difference; upward extraction of wealth; putting world/people to work in stupid jobs to keep 0.1% in yachts and private jets.</p>	<p>Many other interviews said similar and I think Gerbaudo 2021 ties how the pandemic has pushed system into crises – Moore 2015 style and the future is highly uncertain but will be a fight to make is fair and not a shitshow.</p> <p>Tailor & Dutta – Davies et al Unprecedented? Use great metaphor of photosynthetic effect of Covid: it shines light on injustices but also makes them grow.</p>
		<p>This framing it as the system not the government would connect to Graeber 2018, Graeber & Wengrow 2021, but also decolonisation args of Wynter 2003, Mignolo 2007, and indigenous writers and activists Este 2019, Sioui 1999</p> <p>Táíwò's flows of advantage/disadvantage</p>

Appendix 10: Interview - Energy Democracy Academic

Interview text	Analysis 1 st & 2 nd	Links to theory literature
<p>I think one of the things in my research what I acknowledge is that energy infrastructure both when it's built and financed and established, <u>it both represents the power structures of time, and also reinforces those structures as most of this lasts 40-50 years.</u> So, whatever is put in then is kind of a societal reinforcement of that social and technical structure it evolved from.</p>	<p>Energy/Energopower: This is good concise way of framing - it reflects social power and reinforces it long-term – this is a problem with Tories at wheel</p>	<p>Malm 2016a/b; Mitchell 2013 both good on historical examples; Daggert 2019 good on energy theory and energopower and history; Boyer 2014;</p>

<p>So, for instance we have a project in the history and future situation of the energy system in Puerto Rico and this is an example of how the energy infrastructure kind of represents and is defined and then defines the power dynamics and the political dynamics of the time and then have this also reinforcing mode, because a lot of energy infrastructure especially the conventional centralised systems are really not flexible or modular at all. They are just one big investment and everything else in the decades after moves around them, evolves from that.</p>	<p>This point about defining can link to Big-E v little -e energy conceptions</p>	<p>Szeman 2014 on theory. I16 said energy and its control is metaphor for state of democracy Lennon 2017 and Lohmann 2013 talks extensively on definitions of energy as does Daggert 2019</p>
<p>I: So, along those lines that happens not just in energy history but in energy policy discussions all the time. People revert to the cost, oh this is cheaper than that, or that's why this happened. All too often this is without contextualising the political landscape that creates those costs or prices. And also doesn't include the negative impact which are the costs to society.</p> <p>So, that technocratic perspective to try to simplify the energy history and policy has been really counter-productive and limiting our imaginations about what could or should change and is also a kind of critique, or relates to a broader critique of economics in terms of a very narrowly defined quantitative assessment of anything and if you base everything on that you're gonna miss a lot in setting that up and then you miss things when you use that as a justification for what to do or to explain what has happened.</p>	<p>Economics: Cost as hiding as much as it shows – so now with War in Russia and energy crisis people thinking about and using coal!</p> <p>Technocratic specs!! This links to the injunctions to be <i>realistic</i> – like you're an economist and you're telling me to be realistic! So cost focus in energy can be traced to the bean counting economists that tell us there is no alternative.</p> <p>Democracy: Fossil fuels interests as anti-democratic – can link that to Churchill and Thatcher in UK, and current government relations with BP/Shell etc. energopower</p> <p>I think Shell and ExxonMobil knew in the 70s and buried it. But here she's referring to not just burying something but actually lying about</p>	<p>This links to Moore's 2015 arg on old thinking/tools of Ofgem types that simply have too myopic perspectives – I7 Links also to Graeber's 2018; 2001 on value – and I13 on quantifying EVERYTHING</p> <p>FT Hook & Hume 2022 Kim Stanley Robinson's quote on economists: 'The whole field and discipline of economics, by which we plan and justify what we do as a society, is simply riddled with absences, contradictions, logical flaws, and most important of all, false axioms and false goals.' P. 106 I16's metaphor: Mitchell 2013 on Churchill and BP and Malm & the Zetkin Collective (2021) detail the stages of fossil fuel denial, greenwash etc and how more recently these interests have found fascist friends all around the globe including in the Tory Party.</p>
<p>I: So, one of the things in the US that has happened, and I don't think it is unique to the US, but it's more acute in the US to my sense. But the fossil fuel interests have really had a decades long strategic campaign to undermine democracy and they weren't at the beginning that sophisticated to think that's what they were doing. They</p>		

<p>thought they were just resisting and sustaining their profits and concentration of wealth and power that they were getting from the fossil fuel profits and to sustain that.</p> <p>As the details of the climate crisis and how fossil fuels and our energy systems was contributing to that got more clear, they doubled down their strategic efforts to squash and resist a transformation away from fossil fuels towards more renewables basic future. They did that is a few different ways, a misinformation campaign to deny climate science was the beginning of it in the 1980s and 1990s and that gets to the litigation going on now about what did ExxonMobil know, and they actually had their own internal scientists who knew exactly what was going on and they used this info to develop an external strategy to develop a suppressing mechanism, that's one piece but beyond that here in the US they invested in secretive ways that people didn't really know was related to the fossil fuel interests, but to really undermine public trust in government and then this was connected to minimising protection and worker rights and there was a kind of cultural shift in companies from these being proud of and taking care of employees to shareholder profit seeking priorities and then the idea was what's the minimum we can do for workers and how can we reduce labour costs. So, again this is where these bigger connections with what's been happening over decades in the US, it's not only linked to the fossil fuel companies but they and the threat of climate change and these linkages were actually quite central to this new corporate strategy, and not just corporation strategy, elites - have you read Dario Kenner who writes about the polluter elite.</p>	<p>changing the world climate – this is necropolitics plain and simple as obvious Global South would be worse/sooner affected but these people didn't and continue not to care.</p> <p>Neoliberalism and financialisation: Graeber talks of this move at a realigning of upper management with bankers etc. and then turning screw on workers. Perhaps talking about the Washington Consensus here with US pushing neoliberalism, outsourcing and globalisation around the world – Gabor updates this with Wall Street Consensus that in relation to climate mitigation is global finance saying we'll pay now if you ensure we never loose money – derisking or placing risks on impoverished global south countries. The 1/0.1 % - this is why we need wealth tax – at minimum.</p> <p>Democracy: I've been on the ALEC website and it frames itself as a kind of grassroots org, this explains why USA has been such a blockage - with willing side-kick UK- in dealing with CC.</p>	<p>Mitchell 2013 on how energy and its flows and the organisation of this set the conditions of possibility for the demos – Christophers 2021 for 1980s carbon neoliberalism. Mbembe 2019 says racism is driving force of necropolitics: “The spirit of the times is not only about survival. It is also about a renewed will to kill as opposed to the will to care, a will to sever all relationships as opposed to the will to engage in the exacting labor of repairing the ties that have been broken.” Pp. 106-7</p> <p>Dafermos et al 2021 On the Wall street consensus</p> <p>Winter 2014 on the wealth defence industry – and the Wealth tax papers from Warwick</p> <p>This kind of astroturfing is a tried and tested tech of right – tobacco industry used it I think</p>
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		<p>– now fossil fuel interests acting like saviour with Ukraine war</p> <p>Huber 2013 is really good on the cultural aspect of the LIFELOOD.</p> <p>I24 argued we needed fossil fuel companies and we should work with them. This is clearly government thinking as shown by McGrath 2021 with fossil fuel turds biggest groups at COP 26.</p> <p>Watts 2004 refers to The Prize a liberal history of oil then says: “replete with criminality, violence and the worst of frontier capitalism. Graft, autocratic thuggery, and the most grotesque exercise of imperial power are its hallmarks.’ P. 75</p> <p>This is like working with a serial killer to solve murders.</p> <p>I think the left equivalent of ALEC is the wedge issue like care and UBI – you start small but then move outward with universal shit and if we could make care the centre part of economic thinking and in just way it wouldn’t really be capital anymore – Patel & Moore 2020.</p>
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Appendix 11: Interview Schedule

Exploring the Role of Community Action in a Just Energy Transition

The purpose of this study is to gain understanding of the role and potential role of local community action in achieving an energy transition. Theories of energy justice and energy democracy argue we can have a fairer, greener, locally and democratically controlled energy system. This project intends to explore how far local action can help promote a more just energy transition. It will focus on community energy organisations and how these interact with private, third sector and public organisations. It will also investigate how community energy organisations interact with local

communities, as well as other key stakeholders in the energy industry and in government, to understand their perspectives on energy justice and transitions policy challenges.

Aims of the interview

- 1.) To understand the interviewee views on the role and potential of community energy
- 2.) To understand the interviewee's conception of justice and how this affects energy consumption/production
- 3.) To explore how the interviewee understands the role of private businesses, energy markets, local and national government and civil society in an energy transition
- 4.) To explore ways in which community and citizen are understood
- 5.) To explore interviewee's visions of a low-carbon future

Guide questions for interview

1. How does your work relate to energy production? Consumption?
2. What are the main challenges of UK energy going into the next decade?
3. How can we make energy policy more effective? Fairer?
4. Are there any policies/practices in the UK energy sector that are particularly effective or ineffective? Fair or unfair?
5. Does your role have an impact on/affected by these policies? How?
6. What do you understand by the term a just or fair low-carbon transition?
7. How do you understand/define community? What role does community have in terms of a just low-carbon transition?
8. Are you involved with community energy organisations? How?
9. What are the roles and responsibilities of government, civil society and businesses in a low-carbon transition?
10. What do you think a low-carbon future looks like? (What kind of energy infrastructure? Who controls/owns and benefits from this infrastructure? Does society change in any significant way? Are social values/priorities affected? How?)

11. How do you think your life will change in this future? (How will your job be affected? Your leisure time? Your priorities and values?)