

# **A Spectrum of Possibilities:** An Eco-Social Analysis of Renewable Energy Transformation in Regional Australia

**By Alana West**  
BGlobSt, BA (Hons)

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**Doctor of Philosophy**

Under the supervision of Dr Jonathan Marshall  
and Dr Jeremy Walker

Faculty of Arts and Social Sciences  
University of Technology Sydney

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# CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Alana West, declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy in the Faculty of Arts and Social Sciences at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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I submit this work for examination in the format of a conventional thesis.

Aboriginal and/or Torres Strait Islander peoples are advised that Chapter 6 contains the name and words of a person who has died.

*'The democratic machineries that emerged to govern the age of carbon energy seem to be unable to address the processes that may end it'*

Timothy Mitchell, Carbon Democracy 2009, p.399

*'The impasse demands new imaginaries'*

Sheena Wilson, Feminist and Decolonial Futures 2018, p.385



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# List of abbreviations

ABS	Australian Bureau of Statistics
ACON	AIDS Council of New South Wales
AEC	Australian Electoral Commission
ARENA	Australian Renewable Energy Agency
BP	Beyond Petroleum (formerly British Petroleum)
CBSI	community benefit sharing initiatives
CCAG	Caroona Coal Action Group
CRG	community reference groups
CSG	coal seam gas
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EIS	environmental impact statement
FANG	Feminist Anti-Nuclear Group
FoE	Friends of the Earth
GHG	greenhouse gas
IMF	International Monetary Fund
JSNWL	Jessie Street National Women's Library
LCSI	Lismore Community Solar Initiative
LNG	liquid natural gas
MCCC	Maules Creek Community Council
NE	New England
NESF	New England Solar Farm
NR	Northern Rivers
REMP	Renewable Energy Masterplan
RET	renewable energy target
REZ	renewable energy zone
SSD	state significant development

STEM	science, technology, engineering and mathematics
UNFCCC	United Nations Framework Convention on Climate Change
UPC	UPC Renewables
WECAN	Women's Earth and Climate Network
WEP	Walcha Energy Project
WAAGV	Women's Action Against Global Violence
WANE	Women Against Nuclear Energy
WAPC	Women Against Pit Closures



# Abstract

The climate crisis necessitates the (now) rapid decarbonisation of global industries and societies. With fossil fuels as the core culprit of carbon emissions, their renewable energy counterparts such as solar, wind and wave energy are vital to the decarbonisation project. The eco-social relations driving transformation of our energy system from fossil fuels to renewable energy can be understood along a spectrum of possibilities. These possibilities range from green capitalist, ecomodernist techno-utopias to Indigenous, ecofeminist (re)commoning futures, and many other possibilities in between. This thesis situates these possibilities within nascent transitions to renewable energy in the rural regions of New England and the Northern Rivers in New South Wales, Australia. Through a multi-sited ethnographic exploration of centralised, corporate renewable energy projects and decentralised, community projects, this thesis examines the possibilities articulated, futures envisioned and challenges encountered by different models of energy transitions. Drawing predominantly on Marxist theories of alienation and materialist ecofeminist theories of de-alienation, this thesis argues that our eco-social relations must also be transformed alongside our energy system if we are to address humanity's alienation from nature, and from one another, that has led us to the climate crisis.



## Chapter 1: Introduction

In 1856, scientist and suffragette Eunice Foote conducted an experiment. Using only the basic equipment available to “amateur” women scientists at the time, Foote sought to “determine the different circumstances that affect the thermal action” of sun rays (p. 382). She recorded the findings of her experiment in a paper titled “Circumstances affecting the heat of the sun’s ray” (Foote, 1856).

As the excerpt in Figure 1 shows, in her paper Foote clearly articulated the foundation of our current understanding of the greenhouse effect—that heightened levels of carbon dioxide (carbonic acid gas) in the atmosphere cause temperatures to rise. Yet those who are interested in the history of climate science will likely be more familiar with the name and work of John Tyndall than that of Eunice Foote, despite Tyndall’s initial paper being published in 1859—three years after Foote’s.

**Figure 1**

Thirdly. The highest effect of the sun's rays I have found to be in carbonic acid gas.

One of the receivers was filled with it, the other with common air, and the result was as follows :

In Common Air.		In Carbonic Acid Gas.	
In shade.	In sun.	In shade.	In sun.
80	90	80	90
81	94	84	100
80	99	84	110
81	100	85	120

The receiver containing the gas became itself much heated—very sensibly more so than the other—and on being removed, it was many times as long in cooling.

An atmosphere of that gas would give to our earth a high temperature; and if as some suppose, at one period of its history the air had mixed with it a larger proportion than at present, an increased temperature from its own action as well as from increased weight must have necessarily resulted.

*Figure 1: Foote, 1856, p. 383.*

While it appears that Tyndall came to his conclusions without being aware of Foote’s research (Jackson, 2018; Sorenson, 2011), the lack of awareness is in itself quite telling. As a woman, Foote was not allowed to present or publish her research herself. Joseph Henry, a

scientist from the Smithsonian Institution, read her paper at the annual meeting of the American Association for the Advancement of Science in 1856 and scientific journalist David A. Wells published Foote's findings and wrote a summary of her research in his 1987 *Annual of scientific discovery* (Sorenson, 2011). Despite the enforced inability to present her own work, Foote's findings were on the record in the scientific community prior to Tyndall's 1859 publication. Perhaps the findings of a woman were not deemed worth noticing.

While performing her scientific work, Foote was also working and fighting for the rights of (white) women to be involved in Western democratic processes through her involvement in the suffragette movement. It is perhaps a crude comparison, but Tyndall meanwhile was spending his spare time climbing mountains and as a member of the exclusive X Club – a 'dining club' of nine men who became increasingly powerful in the nineteenth century Western scientific community (Starin, 2020). Tyndall also participated in and had access to resources, scientific communities, and debates that Foote was excluded from participating in, as both a woman and amateur scientist.

Foote continued her work as a scientist and as a suffragette, but she did not return to focusing on the impacts of carbon dioxide on the atmosphere. One cannot help but wonder if Foote had the same resources and recognition as Tyndall, where she might have taken those initial findings. Could she have combined her scientific knowledge with her skills in advocacy and worked with others to fight for radically redefined eco-social relations long before the excessive carbon emissions of the 20th and 21st centuries? Even if that advocacy was unsuccessful, the risks of carbon emissions may have had stronger popular understanding much earlier than it otherwise did. We will never know of course, but it does not seem outside the realm of possibility. And herein lies a compelling provocation—what do we lose when the labours and knowledges of only a small, privileged minority are left to shape

systems that impact us all? Conversely, what do we gain when these dominant but narrow confines are challenged and rearticulated by those previously devalued or made invisible?

The forgotten or obscured role of women in historical and contemporaneous climate and energy science, politics, and technologies is a foundational tenet of this thesis. However, although Foote deserves the acknowledgment and credit for her work, *this is not a story of individual women*. It is instead an exploration of how dominant discourse and action in the climate and energy sphere is built on patriarchal, capitalist frames, and how feminist praxis can contribute towards regenerative, caring, and reciprocal eco-social futures. What Foote's story highlights is how easily the labours and knowledges of women can be devalued or made invisible. Her story also opens space for questions about what futures can be conceptualised and materialised when marginalised people's labours, knowledges, and experiences of power relations are valued and made visible—questions this thesis seeks to explore.

In particular, this thesis is interested in understanding how transitions to renewable energy are manifesting in regional NSW, through a feminist lens. Through a comparison of large-scale corporate and smaller-scale community energy projects, this thesis aims to document and interrogate shifts in soft infrastructure and eco-social relations occurring through renewable energy transitions. As a feminist ethnography, this project will question whether the labours, voices, knowledges, experiences, values and ideas of marginalised people who were largely devalued under fossil capital are being drawn upon and valued in any manifestations of renewable energy transitions and what impact, if any that has on soft infrastructures and social relations. Through this questioning, this project seeks to document and understand social barriers to transitions to renewable energy. The overarching goal of this research project and thesis is to document and argue for more socially just energy futures, particularly as envisioned by feminist energy futures.

Instead of a suffragette-scientist (and others like her) framing our early responses to the climate crisis, we had the fossil fuel industry. Recent research has revealed that the US oil industry was warned about the catastrophic impacts that continued burning of fossil fuels would have on our planet as early as 1959 (Franta, 2018). And they were not alone in this knowledge. We now know what these corporations chose to do with the information that the burning of fossil fuels was heating our planet. Instead of acting to avoid an existential planetary crisis, Exxon and other global fossil fuel corporations did something markedly worse than nothing—they orchestrated a not-yet-ended campaign of denial and obfuscation (Banerjee et al., 2015; Brulle, 2014; Mulvey et al., 2015; Oreskes & Conway, 2011; Supran & Oreskes, 2017).

Their campaign aimed to sow doubt regarding the validity of climate science to deceive the public about the perils of climate change, so as to prolong the life of their industry and reap in as much profit as possible before the reality of the climate crisis became undeniable. Their campaign has been remarkably successful.

We are now in that climate crisis that fossil fuel corporations denied, diminished or denigrated for decades. Or, perhaps more accurately, we are now experiencing the beginning of a multitude of crises that have no known end date, with unpredictable consequences, and no clear avenue through which humans and non-humans will weather these storms – both metaphorical and real. This thesis seeks to suggest some avenues through which the severity of these crises could be curtailed through transforming dominant eco-social relations alongside the socio-technological transformation of our energy systems.

### ***Thesis outline***

The first five chapters introduce the problem this thesis is exploring, situate the thesis in relevant literature, introduce key concepts and explain the methodology for the research project. Chapters six and seven introduce the two case study regions of New England and the

Northern Rivers – both in the Australian state of New South Wales (NSW). Chapters eight through eleven are the analysis chapters, framed around core concepts of alienation and de-alienation from nature and one another. Finally, chapter twelve provides a conclusion to the thesis.

This introductory chapter will begin by discussing a core concept and scholarly focus of this thesis—energy justice. Energy justice, and the corresponding injustices, were the motivating force behind the creation of this thesis, as will be outlined further in Chapter 5. A motif throughout the thesis is the potential to build energy futures that centre regeneration, care and reciprocity. It is the contention of this thesis that feminist praxis provides fertile soil from which that type of energy future could grow. Accordingly, this chapter includes a brief exploration of feminist responses to nuclear energy in the 1970s and 1980s, to demonstrate how feminist analysis can deepen understandings of and responses to energy injustice. The remainder of the chapter introduces the reader to the specific energy problems that this thesis is applying a feminist energy justice framework to. This includes exploration of energy politics in Australia more broadly and the state of New South Wales more specifically.

### *Energy justice*

Energy justice is a core idea explored throughout this thesis. Like many concepts used across social movements and social sciences, it is an “inherently political and contested topic” (Eames & Hunt 2013, p.48). Its use within environmental and climate activism is linked to campaigns to stop fossil fuel projects, to advocate for transitions to renewable energy, to fight against for-profit energy systems and to improve access to energy for all (for example: Friends of the Earth, Australia, 2022; Global Justice Now, 2022; Groundwork, 2022). While it has been used as a concept in environmental activism for several decades, albeit increasingly, its exploration in academic scholarship is more recent (McCauley et al. 2019, p.917).

Acknowledging its activist lineage Eames and Hunt argue that energy justice is “framed by issues of sustainable development and the environmental movement” and suggest that “energy justice can be understood as encompassing issues of social, economic and environmental equity, with and between past, present and future generations” As such, “the notion of energy justice is then potentially very wide-ranging indeed” (2013, p.47).

Bickerstaff et al. further clarify that energy justice “provides a way of bounding and separating out energy concerns from the wider range of topics addressed within both environmental and climate justice analysis and campaigning” (2013 p.2). For example, within Australia we could consider that campaigns such as ‘Stop Adani’, ‘Don’t Frack the NT’ and ‘Fight for the Bight’ are both energy and climate justice campaigns, whereas campaigns such as ‘Sweltering Cities’ and GetUp’s ‘Climate Compensation Fund’ are climate justice, but not energy justice necessarily.

Academic scholarship on energy justice tends to tease out a more defined explanation of the concept than the amorphous yet strident articulations of justice found within activism. As suggested by Fuller and McCauley,

In its broadest form, [energy justice] research sets out to interrogate questions about the costs and benefits of energy systems. In so doing, it brings questions of justice to the forefront in various ways including the material infrastructure of energy technologies, access and cost of energy services and intergenerational equity in terms of current and future generations, among others. As such, questions about energy production and energy consumption are important, both in terms of procedural decision making and distributive outcomes (2016, p.1).

Perhaps one immediate difference is that where energy justice activism is still predominantly focused on stopping fossil fuels (at least in Australia), academic scholarship on energy justice

has begun to put considerable emphasis on what energy injustices already are or could arise from energy transitions.

In their 2016 conceptual review, Jenkins et al. delineated three tenets of energy justice within scholarly literature: distribution, recognition and procedure. As they explain, “if injustice is to be tackled, you must (a) identify the concern – distribution, (b) identify who it affects – recognition, and only then (c) identify strategies for remediation – procedure”

(p.175). They discuss how these tenets manifest in energy justice scholarship,

Distributional justice encourages researchers to investigate where energy injustices occur in the world...Recognition-based justice moves researchers to consider which sections of society are ignored or misrepresented...Procedural justice inspires researchers to explore the ways in which decision-makers have sought to engage with communities (p.175).

Aspects of distributional, recognition and procedural justice are examined throughout this thesis, however they are not necessarily identified as such. While the delineation between the three tenets can prove fruitful, the philosophical and normative grounding of this thesis called for less rigidity in its definition of energy justice. While distributional, recognition and procedural energy justice can be important lenses through which to explore energy transitions, they do tend to dominate the focus of scholarly literature on the subject. This in turn implies a dominance, or acceptance, of Western conceptualisms of energy justice. There are of course other conceptualisations of the term and phenomena.

McCauley et al. summarise non-western & non-anthropocentric theories of energy justice including Ubuntu, Taoism & Confucianism, Hinduism & Dharma, Buddhism, Indigenous perspectives, Animal-centrism, Biocentrism and Ecocentrism (2019, p.918). Of these theories, the most relevant to this thesis are Indigenous perspectives and ecocentrist theories of energy justice. McCauley et al. define Indigenous perspectives of energy justice as

“energy systems developed cautiously through long-term experience and sovereign protocols, avoiding dramatic transformation of ecosystems, requiring restoration.” They define ecocentrist applications of energy justice as “an energy system is right when it tends to preserve the integrity, diversity, resilience and flourishing of the whole community, involving direct caring relationships and formal rights of nature.” Both of these perspectives of energy justice will be carried throughout the thesis.

The dominant focus in the literature on procedural, recognition and distributional energy justice has also occasionally resulted in a narrowing of the scope of exploration of the problems of energy injustice and subsequent solutions. As argued by McCauley et al. “the low carbon energy transition involves processes of acceptance, mobilisation and also empowerment” (McCauley et al. 2019, p.920). They argue that, particularly concerning procedural fairness, much of the literature focuses predominantly on community *acceptance* of projects, which implies a level of passivity, rather than on questions of how communities can be mobilised and empowered to be active participants in the energy transition, and what implications this has for energy justice outcomes. They suggest that:

The justice question is often reduced to the extent to which developers have successfully imposed or convinced a local community to accept both the positives and negatives of a given project... The energy justice framework applied to the low carbon energy sector must include reflections on public acceptability, but equally challenges scholars to reflect further on the role of community. Acceptability positions the community in a rather passive role vis-à-vis governments or developers. The community is an active player, crucial to proactively shaping a low carbon energy future... The mobilisation of the community to engage both cognitively and physically in planning processes must be considered alongside processes of resistance” (McCauley et al. 2019, p.919-20).



This thesis seeks to contribute towards a broadening of explorations of energy injustice and subsequent moves towards energy justice. In particular, the mobilisation, engagement and empowerment of communities impacted by or actively involved in energy transitions is a core site of interrogation.

McCauley et al. caution against energy scholarship that adopts too narrow a focus on already known and understood forms of injustice arguing that “the new injustices of the low carbon energy transition are only emerging, many of which are not yet evident to policymakers or researchers” (2019, p.916). Bickerstaff et al (2013) similarly suggest that those engaging in energy justice scholarship recognise that “transformations in (low-carbon) energy infrastructures and policies may be perpetuating, or producing anew, forms of inequality and vulnerability – or they may be providing opportunities for change for the better” (p.7).

Drawing on case studies of energy justice campaigns across Berlin, Paris and Philadelphia, Fuller & McCauley (2016) examined how activist and advocacy movements frame the concept of energy justice. Discussing an important component of energy justice, they explain that “normative claims have long been a part of justice scholarship and activism” (p.2). Particularly in advocacy & activism, the work of energy justice involves “both the elaboration of solutions to perceived injustices as well as a motivational ‘call to arms’” (p.3). Eames & Hunt specify that within energy justice scholarship:

What is required above all is a clear normative orientation towards prioritising just sustainability in future energy and low-carbon transitions. This means asking searching questions about who has a voice, and how to ensure fairness, in the distribution of the cost and benefits of such transitions (2013, p.60)

In recognising the importance of normative claims to explorations of energy justice, this thesis includes suggested solutions to existing or potential injustices that were unearthed through the research process. These are predominantly discussed in the concluding chapter.

We turn now to the current day, to the social and political field on which this thesis was written – energy transitions in NSW, Australia.

### ***Transformative Change or Business as Usual?***

After decades of failure, delay, and denial, there are small glimmers of the potential for transformative change as action on the climate crisis is, somewhat, back on the political agenda—if not for all politicians, then certainly for many everyday people. Among all of the dire warnings from ecological systems and the scientists and environmentalists who speak for them, renewable energies—particularly wind, and solar—have emerged as “hero technologies.” Much of the discussion on solutions to climate change from governments, industry and social movements alike centres on transitions from fossil fuels to renewable energy as our saving grace.

The focus on transitions to renewable energy is easily understandable as it directly confronts and seeks to replace the principal cause of climate change—the fossil fuel industry. It is, or should be, undeniable that to meaningfully respond to climate change we need to dismantle the fossil fuel industry and radically change our energy systems. However, technofeminist theory reminds us that “technology is not inherently progressive” (Cuboniks, 2018, p. 16) and that technological changes not accompanied by changes in eco-social systems can easily replicate the status quo.

Negative impacts from the fossil fuel industry are not only limited to carbon emissions and global heating. Fossil fuel extraction, export, and production has myriad social, economic, environmental, and political impacts, including Indigenous land dispossession, land-use conflicts, access to political power and decision-making, habitat destruction, water

usage and pollution, corruption, local community (non)engagement, physical and mental health issues, and so much more. Transitioning away from a fossil fuel-based energy system towards a renewable energy-based system definitely *could* prevent many of these issues from arising, but that doesn't mean that it necessarily *will*. Many of these issues will also need to be struggled over and navigated through transitions to renewable energy. Transitions within soft infrastructure such as eco-social relations, values, communication, regulations, and policies, will be just as, if not more, important than, transitions of hard infrastructure such as the poles, wires, turbines and panels.

Capital accumulation has turned its eye on renewable energy. The same fossil fuel corporations who wilfully and destructively led a campaign of climate denial have started to move into the renewable energy space. They appear to be simultaneously preparing for their own corporate renewable energy futures while using their immense power to delay transitions so as to wring as much profit out of fossil fuels as possible. BP, one of the world's largest fossil fuel corporations, recently changed its name from British Petroleum to Beyond Petroleum and rebranded itself as a future leader in energy. Shell has begun to pay lip-service to their exploration of "new energies" and, incredibly, ExxonMobil proudly announced that it would be using wind and solar to generate the energy needed for their crude oil production in Texas. Despite having led the planet to the brink of destruction, these corporations are laying the groundwork so that a global exit from fossil fuels does not entail an end to the shelf-life of their companies.

However, it's not only the old guard of fossil fuel corporations involved in green capitalism. New entrants into green industries are carving out their territory. Tesla, established in 2003, is a relatively new corporation which has become one of the most renowned companies in the green capitalist field. Tesla's Elon Musk is an almost archetypal example of the Silicon Valley "boys and their toys" (Zylinska, 2018). Musk has put on record

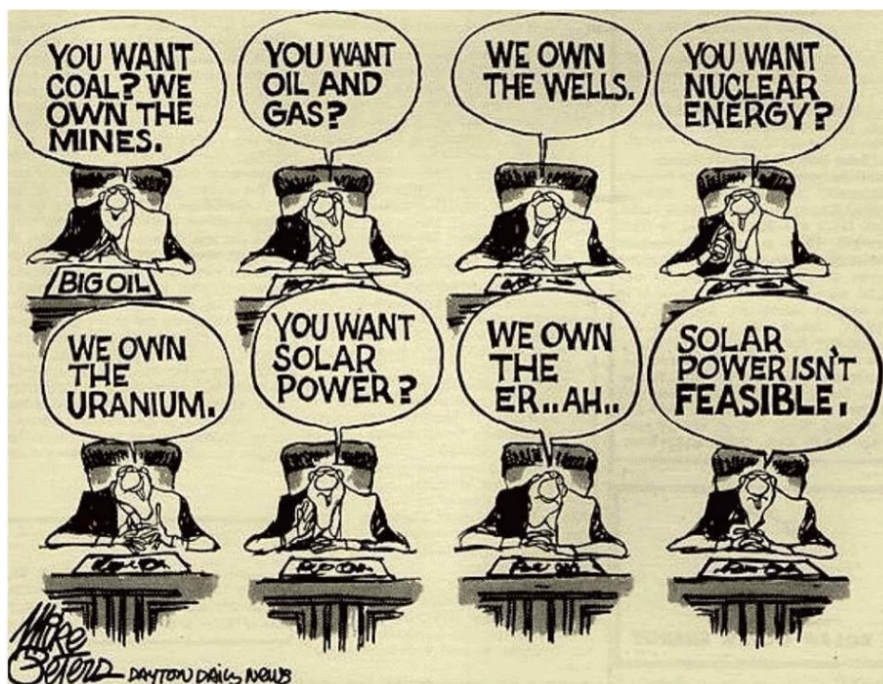
that he is “socially liberal and economically conservative” (Dodds, 2022), indicating he does not connect the climate crisis to the capitalist economic system. Workers at Tesla have spoken-out against union-busting activities of Tesla (Sainato, 2018; Scheiber, 2021) and questions are being raised about unethical lithium mining (Walt, 2021). A common theme among these newer, green capitalist renewable energy companies is a focus and stated belief that technological solutions are all that is needed to solve the climate crisis. The Musk Foundation, for example, is offering a \$100 million prize for demonstrable carbon capture and removal technology, as part of Musk’s goal of turning captured CO<sub>2</sub> into “green” rocket fuel for his space exploits (Musk 2021a; Musk 2021b). These people and projects sit firmly in the camp of green capitalism.

Neither fossil fuel corporations nor recent entrants into green capitalism appear particularly interested in devolving power away from those deeper contributors to the climate crisis—capitalism, colonialism, developmentalism, hierarchical nation-states, and patriarchies. Nor do they appear particularly compelled to share benefits or grow worker and local community participation in the transition. Most likely because transformations of that type of scale would render both types of business defunct under the current economic system. However, these are not the only two types of players in the energy game. Across the world, people and communities are recognising their ability to establish their own small-scale renewable energy generation projects in a movement and phenomena typically referred to as ‘community energy’ or ‘energy democracy’, as will be further defined in the following chapter.

The cartoon in Figure 10 helps to articulate at least part of the reason why the fossil fuel industry has spent so much time and so many resources on halting transitions to renewable energy. The biophysical logic of renewable energy renders it almost infinitely more modular, accessible and decentralisable than fossil fuels. Fossil fuel extraction, export,

energy generation, and transmission require enormous infrastructure and capital investment such that only the state or corporations are large enough institutions to manage it. By comparison, the harnessing, generation, and transmission of renewable energy can be organised at a much smaller scale, theoretically without having to deal with the state or corporations at all.

**Figure 10**



*Figure 2: Mike Peters for Dayton Daily News 1978*

Community energy has a particular emphasis on renewable energy as the associated technologies can be decentralised, locally distributed, and have lower capital requirements to set up and run than intensive fossil fuel technologies. As I came to understand when I was in the field, community energy is often associated with broader campaigns to decentralise and devolve social power away from corporations and capitalist states as part of responses to the climate crisis. The efficacy of these campaigns and projects is a site of much discussion throughout this thesis.

Renewable energy sits at the precipice of these two ultimately incompatible visions put forward by ecological modernisation and energy democracy and justice—and in the entire

spectrum of possibilities in between. While the hard infrastructure is more or less the same, the soft infrastructure promoted by these two visions are currently at odds with one another. Renewable energy is connected to capitalist techno-utopias promised and promoted by green capitalism yet has not been wholly captured by that camp as people, communities, and movements continue to seek more transformative eco-social shifts in response to the climate crisis. Both green capitalist, techno-utopias and regenerative, energy justice futures are being conceptualised and to some extent materialised in Australia.

### ***Political Economy of Energy and Climate in Australia***

The British settler-colonial project that is the Australian nation-state began with Captain James Cook sailing to the continent on a reconstructed coal ship (Australian National Maritime Museum, 2022). Since that coal ship sailed into Botany Bay, the colonial Australian nation-state has been intimately entwined with fossil fuels.

In February 2017, almost 230 years since invasion, and 30 years after the establishment of the Intergovernmental Panel on Climate Change, the then-treasurer of Australia, Scott Morrison, stood up in parliament brandishing a lump of coal. Taunting his political opponents and the concerned people of Australia, he declared, “This is coal, don’t be afraid.” Grinning at his own wit, he proceeded to pass the coal to his colleagues and railed against what he described as “coalophobia”—a fear of coal and subsequent advocacy of renewable energy. Eighteen months later, during the eighth leadership spill in Australia in as many years, Scott Morrison would be sworn in as Australia’s prime minister. His prime ministership, like many before, was<sup>1</sup> a vehicle for the continuation of the entwined

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<sup>1</sup> Scott Morrison and the Coalition government were defeated at the 2022 Federal election during the final stages of editing this thesis. The implications of the incoming Labor government on energy and climate policy is beyond the scope of this thesis but will undoubtedly be a site of much future research, debate and political struggle.

relationship between the halls of parliamentary political power and the fossil fuel industry (Holmes, 2016; Lucas, 2021; Pearse, 2009).

The power of the coal industry in Australia cannot be overstated. Its power is derived from two often opposing spheres—labour and the state-capital nexus.<sup>2</sup> Intricate webs of relationships and career movements have exposed the deep connections between the coal industry, both major political parties, government departments, union bureaucracy, neoliberal think tanks, and the Murdoch press (Lucas, 2018b; Rudd, 2022). Described as the revolving door and/or the golden escalator (Lucas, 2018a), these connections have fortified the strength of the power of the coal industry through access to decision-makers, access to policy drafting, and propaganda-esque public communications, to name a few. For example, upon being sworn in as Prime Minister, Morrison appointed John Kunkel as his chief of staff. Kunkel's experience that landed him the role was as chief adviser in government relations for Rio Tinto and deputy CEO of the Minerals Council of Australia (Parkinson, 2018). Prior to that, he was senior adviser to former Prime Minister, John Howard. A textbook example of Australia's political–corporate revolving door and the “golden escalator.”

Paradoxically, the coal industry in Australia also draws its power from the labour movement and its workers. The coal industry has had a history for more than 100 years of workers civilising the industry through struggles for workers' rights and safer conditions (Eklund, 2016; Ross, 1970). This important history of workers' rights, combined with high wages and a decline in other rural and regional industries (largely a result of economic globalisation), has resulted in coal workers and the union movement establishment rallying around the coal industry as an essential industry which cannot be replaced. This combination

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<sup>2</sup> Humphrys (2018) puts forward a compelling argument about how the labour movement—particularly the Australian Labor Party and sections of the union institution—were deeply complicit and indeed largely responsible for the importation of neoliberalism into Australian socio-economic relations – through the Hawke-Keating government.

of protection and promotion of the coal industry by labour and the state-capital nexus alongside the climate movement's focus on dismantling fossil fuels has caused the industry to become a fiercely contested site in struggles to address the climate crisis in Australia.

If you trace the leadership spills and political crises in Australia over the past decade, a compelling pattern emerges linking energy and climate policy to political instability. Even a cursory glance at Australia's political turmoil over the past decade reveals that climate and energy policy was explicitly or implicitly connected to the ongoing political instability. This is not to claim that climate and energy policies were solely responsible for the removal of four prime ministers in eight years, but to highlight that they were significant and reoccurring factors in those removals.

Just before the 2021 United Nations Climate Change Conference (COP26), Morrison finally caved to growing public pressure over the country's lack of federal policy on climate and energy and announced a commitment to net zero emissions by 2050. Following further public pressure, the modelling that the government used for this policy was released, revealing considerable holes in the plan with a reliance on non-existent technologies, and on discredited practices including offsetting and carbon capture and storage. The reaction to the policy was underwhelming from more progressive sectors of society. Unfortunately, the opposition (now government) Labor Party's climate policy was not much more ambitious and so it appears that climate advocates will need to continue to fight for a meaningful, and coherent, response to the climate crisis from our federal and state parliaments.

The hysteria with which transitions from fossil energy to renewable energy have been met in Australia is almost perfectly encapsulated in the political and media response to a series of energy blackouts in the state of South Australia (SA) throughout spring and summer of 2016–2017. At the time, SA had the highest concentration of wind energy in the country, had recently closed a coal-fired power plant and the then Labor government was running on



an electoral policy platform that prioritised transitions to renewable energy (Kurmelov, 2018). Without any evidence other than the fact that SA had some wind power in the mix of their energy sources at the time of the blackouts, conservative politicians and the Murdoch press orchestrated a campaign blaming wind power for the blackouts, despite the fact of major cables being blown down by the wind (Lucas, 2017).

Politicians and media beholden to the fossil fuel industry utilised the SA blackouts to perpetuate and spread anti-renewable energy sentiment at a time when renewable energy was becoming more financially feasible than the continued use of fossil fuels (Joshi, 2020). For example, Andrew Bolt – a conservative commentator – introduced his segment on the issue with the following,

...now Labor, the Greens and warming alarmists claim the South Australian blackout wasn't caused by their dud green policies. They blame global warming instead. Now for the facts (Bolt, 2016).

Academic and regulatory investigations that were later conducted into the blackouts reported much more nuanced and complex reasons for the blackouts, which had more to do with energy infrastructure issues than the use of wind energy (Lucas, 2017).

Regardless—indeed in spite of—sustained campaigns against renewable energy by government, media, and the fossil fuel industry, the renewable energy industry has grown considerably in the past few years. While the federal government has blocked energy transitions, individuals, communities, advocacy groups, industry, and some state governments, are pushing ahead. In particular, the states of SA, New South Wales (NSW), Victoria, Queensland, and Tasmania are growing their renewable energy generation capacity.

In this abject failure of Australia's representative democracy to meaningfully address the climate crisis, Mitchell's proclamation that "the democratic machineries that emerged to

govern the age of carbon energy seem to be unable to address the processes that may end it” (2009, p. 399) was brought stunningly to light.

### ***Political Economy of Energy and Climate Change in NSW***

NSW has been an interesting site of contests over energy and climate across the past two decades. The following section provides a brief overview of key points in this history focusing on the priorities of energy and climate social movements and the growth of renewable energy in the state.

#### **Energy and Climate Social Movements in NSW.**

Like the rest of the world, activism and organising on energy and climate in Australia has gone through various peaks and troughs over the past several decades. As in any social movement, there is a wide array of strategies, theories of change, tactics, and alliances to be found (Rosewarne et al. 2014). Regardless of this, there has been increasing focus on the fossil fuel industry as the key target across many of the organisations and collectives working in the climate field.

While the national focus has most recently been predominantly on Queensland and the opening of the Galilee Basin for Adani and other potential new coal mines, NSW remains an important site for contestations over coal, energy, and climate. Newcastle, as the gateway to the Hunter Valley and the site of the world’s largest coal export port, has been a stronghold of climate action for a long time. In the mid to late 2000s local activist group, Rising Tide, organised direct-action protests targeting the coal industry, including the Climate Camps, and the “people’s blockade” in Newcastle where hundreds of people in canoes blocked the entrance to the coal port (Connor, 2012; Pearse et al., 2010; Woods, 2012). The work of Rising Tide has been credited by some in the Australian climate movement with shifting the focus onto coal mining and exports. The Newcastle coal port was also the site of the 2014

Newcastle Flotilla which saw the Pacific Climate Warriors and Australian allies blockading the coal port in traditional canoes, modern canoes and various other sea craft (McNamara & Farbotko, 2017). Most recently, a new group named Blockade Australia held a series of actions across the weeks during COP26 and in its immediate aftermath, holding up coal trains and coal processing infrastructure in Newcastle and the Hunter Valley (Blockade Australia, 2022).

Another important site of contests over the climate and energy in NSW is the Lock the Gate movement (Hutton, 2012). Lock the Gate is a national movement that builds alliances between farmers, landholders, Traditional Custodians, and others concerned with coal mining, coal seam gas (CSG), and fracking. In NSW, Lock the Gate has been involved in a multitude of important campaigns including the ‘Leard Blockade’, the ‘Bentley Blockade’, ‘Gasfield Free Northern Rivers’, ‘Save the Pilliga’, and ‘Groundswell Gloucester’. Their deep organising strategies, which see communities building relationships and power together, have been remarkably successful and have contributed to the breaking down of social divisions in rural and regional communities, particularly between environmentalists and farmers (Bailey & Osborne, 2020; Kia & Ricketts, 2018).

Globally and in Australia, climate and energy movements are comprised of a multitude of individuals, organisations, and institutions each with their own values, motivations, and aims. Much like the spectrum of possibilities associated with transitions to renewable energy, there are those within the climate and energy movements who can visualise effective change within the current dominant eco-social systems, and those who regard those systems as inherently linked with the climate crisis and thus requiring dismantling.

**State of Renewable Energy in NSW.** In 2020 the NSW Department of Planning, Industry and Environment released the “NSW electricity infrastructure roadmap” (the Roadmap) to explain “the rationale for the policies and programs that are specifically designed to attract and secure large-scale investment in new electricity infrastructure” (p. 5). The Roadmap heralded a dramatic shift in energy politics in NSW as it announced the necessity of building renewable energy infrastructure in the face of impending coal-fired power stations closing over the coming 15 years.

The establishment of five renewable energy zones (REZs) within the state is the central scaffold around which the Roadmap will be built. REZs are identified regions where renewable energy generation projects, including wind, and solar, batteries, and new transmission infrastructure will be co-located—the department referred to REZs as modern-day power stations (NSW Department of Planning, Industry & Environment, 2020). These five regions are Central-West Orana, New England, South-West, the Hunter and the Illawarra. With a recent announcement that one of the state’s coal-fired power stations would be retiring earlier than anticipated, the NSW Government responded by accelerating their plans for the establishment of these REZs and associated infrastructure (NSW Department of Planning, Industry & Environment, 2022).

While utility-scale, corporate renewable energy projects will predominantly be in the five REZs, renewable energy projects are not confined to those locations. Community, medium and small renewable energy projects are typically less reliant on connecting to grid infrastructure to be viable and as such are less constrained in where they can be built.

The case studies included in thesis include projects both within the New England REZ and in the Northern Rivers region – which is not a designated REZ. The locations of these case study projects can be seen on the below map.



While the Roadmap and broader expansion of renewable energy in NSW has been welcome news for many in light of the poisonous climate and energy policy impasse at the federal level, it has not signalled a total shift away from the fossil fuel industry. The NSW Government appears to be straddling a dualistic and often contradictory energy policy of recognising the inevitability of coal phase-out in domestic use, and the corresponding need to transition to renewable energy, alongside maintaining or even increasing NSW's thermal coal export industry as they continue to approve new coal mines and expansions of existing mines.

### ***A Just Transition?***

Energy is a necessity for life. We need energy to heat and cool our homes and bodies, grow and cook our food, and transport us to where we need to go. Energy is often linked to joy, to our moments of leisure, and to our thirst for knowledge and connection. Energy is part

of the means of life (Giacomini, 2016). How we structure our energy systems into the future can be viewed along a spectrum of possibilities from green capitalist techno-utopias to (re)commoned ecofeminist Indigenous energy futures.

An extractivist logic is currently at the heart of our dominant eco-social systems. Land has been extracted from Indigenous peoples, productive labour has been extracted from the working class, regenerative labour has been extracted from women and raw materials have been extracted from the earth. Ecofeminism unearths the informal economy of ecological reproduction, women, Indigenous peoples, and labourers in the Global South whose devalued, usually unpaid work fuels the formal capitalist economy. Materialist ecofeminism argues that these devalued socioeconomic systems—the regenerative, caring and reciprocal—provide answers to our current catastrophic predicaments.

What might it look like to centre these marginalised experiences, knowledges, and labours? Feminist counter-apocalypse, Indigenous futurism, eco-socialism, and autonomist organising—these are world-making explorations that are not interested in simply getting more women or Indigenous peoples into positions of power within current dominant socioeconomic systems. Instead, they are about deeply interrogating the patriarchal, colonial, and capitalist foundations our modern societies were built upon, then dismantling, or regenerating those foundations and rebuilding for feminist, decolonial, anti-capitalist futures.

Transitioning from a fossil economy to renewable energy is a core goal of many people, collectives, and institutions concerned with addressing the climate crisis. Spend any time around people engaged in the broad energy and climate spheres and you'll hear iterations of proclamations that “we need a just transition to renewable energy,” “we need to rapidly transition from fossil fuels to renewable energy,” “we must transition to a low-carbon economy.” Perhaps due to attempting to convince a public somewhat poisoned against renewable energy by fossil capital, there is limited mainstream, public discussion from those

in favour of transition to renewable energy of just what a monumental task it will be. Even the wording is somewhat disingenuous. Transition implies order, it implies planning, and smooth sailing. Transition sounds seamless. However dismantling fossil capital has been, and will continue to be, anything but seamless due to the necessary struggles against establishment lock-in, and the ability to make, or resist, new forms of social organisation around energy use.

Unlike the coal industry, which had strong ties to labour during its establishment and formative years, the renewable energy industry is in its establishment and formative phase in a period of intense neoliberal capitalism. The power of workers and of unions is incredibly low, and political systems are skewed in favour of capital. We are beginning to see how this is impacting a nascent renewable energy industry in Australia, with labour precarity, disingenuous community engagement, and for-profit models already emerging (Australian Council of Trade Unions, 2020). But community energy projects are also growing in number, and these communities are building relationships with one another and with others interested in establishing community energy projects in their own regions.

### **Research Aims and Questions**

This transformation of Australia's energy systems – and the possibilities it opens up – is the key site of inquiry for this thesis. As a feminist ethnography (to be further defined in Chapter 5) this project did not start with a “specific, inflexible question,” it instead started with “large and intersecting domains of interest” (Buch & Staller, 2007). The domains of interest outlined below give an indication of the broad research interest areas and motivations that informed the thesis, particularly during research design, and the initial stages of data collection.

### **Research Domains of Interest**

1. To understand how transitions to renewable energy are materialising in regional NSW.
2. To document and interrogate shifts in eco–social relations occurring through transitions from fossil fuels to renewable energy.
3. To consider the role of property relations in conceptualisations and materialisations of renewable energy projects.
4. To question whether the marginalised people and ideas that were largely devalued under fossil capital are being drawn upon and valued in any conceptualisations of energy futures and if so, to analyse what impact, if any, that has on eco–social relations.
5. To document and understand barriers to renewable energy transitions.
6. To understand what is the best way of engaging in energy transition for most people and how this impacts agency over their own lives.

My own experience suggested the answers to these questions often falls along gender, race, class, and ideological lines. I went into the field to see if my personal observations would be supported by the research.

**Research Questions.** As the project progressed, particularly as the theoretical and conceptual frameworks were further defined and after initial field visits were conducted, the research questions for this thesis crystallised. The questions this thesis seeks to contribute towards answering are:

1. What energy futures are being conceptualised and materialised in both corporate and community renewable energy projects in regional NSW?
2. What types of eco–social relations are emerging around corporate and community renewable energy projects and what, if any, are their differences?



To answer these questions, the thesis enlists Marxist concepts of alienation and materialist ecofeminist concepts of de-alienation. Two concepts that underpin the thesis and provide important context for Chapters 1-3 are ‘eco-sufficiency’ and ‘re-commoning.’ These concepts will be examined and drawn upon in greater detail in later chapters, however introductory definitions are required here. ‘Eco-sufficiency’ is a concept from materialist eco-feminist theory that refers to human–nature relations and ways of being that centre living-with nature. In its ultimate form, only what is needed for healthy, joyful lives, and a thriving living planet are produced and consumed. ‘(Re)commoning’ is a related concept that refers to practices of establishing or re-establishing systems of commons. The (re) signifies that many systems – including energy – have previously been held and organised in some form of commons or public ownership.

Chapter 4 provides a further, in-depth discussion of these concepts of alienation & de-alienation from others and from nature. Concepts include the metabolic rift and eco-destruction, human-nature divide, nature as commodity, eco-sufficiency and energy sufficiency, (re)commoning, social reproduction and regenerative labours, embodied materialism and feminist praxis.

Chapters 6 and 7 introduce the case study regions of New England and the Northern Rivers. In New England. The case studies include two large-scale corporate renewable energy projects (NE), a community zero-net emission project (NE), a community energy not-for-profit (NR), an off-grid intentional community (NR) and a community–council 100% renewable project partnership (NR).

Chapter 8 is the first of four analysis chapters and examines interactions and social relations between people as they relate to incoming renewable energy projects. Predominantly examining utility-scale, corporate renewable energy projects in New England, the chapter argues that although these projects present considerable eco-social improvements compared to fossil fuel projects, ultimately the profit motive of private ownership of renewable energy projects does not allow for energy justice; it simply perpetuates fraught private property relations. The chapter provides commentary on what *not* to do in the energy transition to foster trust, or conversely, what to do to sow distrust and division.

The examination of social relations is revisited in Chapter 9, which draws upon feminist social reproduction theory to demonstrate that the inverse is also possible; that social reproductive, regenerative labours can contribute to processes of de-alienation between people, to a greater sense of trust and collaboration—leading to varying levels of community cohesion and reintegration. However, the chapter also argues that these labours appear limited in effect when drawn upon for renewable energy projects situated within the state-capital nexus. Despite this, the findings also suggest that regenerative and reproductive labours are about building relationships, networks and connections. This in turn may enable people to be more resilient and co-operative even if when their specific project may not work.

Focusing on the human-nature relations, Chapter 10 demonstrates the myriad ways in which transitions to renewable energy can contribute to the perpetuation of destructive human-nature divisions and the resulting eco-social relations. Through an examination of concerns around how renewable energy projects interact with local waterways, biodiversity and land, the tensions between addressing a global ecological crisis and local ecological concerns are

highlighted. The findings in this chapter suggest that local ecologies and biodiversity may not be prioritised when utility-scale renewable energy projects are built by for-profit companies.

However, as will be argued in Chapter 11, transitions to renewable energy do not necessarily need to contribute to the continuation of humanity's alienation from nature. Chapter 11 will interrogate how renewable energy can contribute to more harmonious eco-social relations, particularly through practicing energy sufficiency (only using what is needed), putting energy back under the control of everyday people through (re)commoning practices and through re-articulating relationships between people, creatures and planet. This chapter draws all four analysis chapters together and strengthens the overarching argument of the thesis that materialist ecofeminist praxis proves fertile ground from which to build energy justice as we transition to renewable energy.

Finally, the concluding chapter returns to the idea of feminist energy futures and outlines key ideas and recommendations on how to better advance justice through the transformation of our energy systems. The chapter revisits the 'spectrum of possibilities' posited in this introduction and throughout the thesis and argues that energy justice is by no means guaranteed as we transition to renewable energy – but requires concerted political effort. The thesis argues that it is in materialist ecofeminist praxis that answers to the energy justice question lies.

This introductory chapter has outlined some of the recent history and challenges around climate and energy politics in Australia. We have discussed the big-picture problems and narrowed down to the scope of this thesis. The following chapter will present a review of relevant literature that shaped and informed the making of this thesis.

## Chapter 2: Problematising Energy Justice and Exploring Alternative Energy Futures

As explored in the introductory chapter, Australian climate and energy politics has been a site of significant contestation in recent history. Of course, Australia is not the only nation-state grappling with these existential concerns. The questions of how to address the interconnected crises that form the “Capitalocene” (Malm & Hornborg, 2014; Moore, 2015), and how to actualise just transitions *to* renewable energy, are questions that are being considered and debated across the globe.

As asserted by Mitchell (2011) and Malm (2016), contestations over our climate and energy futures are embroiled in eco-social systems that have co-morphed alongside, or in competition with, fossil capital. The deep interconnections between Western, neoliberal states and the fossil fuel industry (Walker, 2020, 2022) significantly contribute to the former’s seeming inability to meaningfully respond to the climate crisis. As further asserted by Wilson (2018) this impasse on climate and energy policy demands new imaginaries, new eco-social relations.

This chapter provides an exploration of some of the key literature that seeks to understand historical and/or contemporary phenomena that have contributed to our current impasses, alongside literature that presents new imaginaries. There is an exceptionally wide range of literature that could be included in such an exploration, more than could reasonably be included here. Therefore, this chapter will focus predominantly on literature that is critical, materialist, and/or feminist—as these are the scholarly fields in which this thesis is situated. A notable exception is the section reviewing ecomodernism and green capitalism, as this has been included to highlight flaws in energy advocacy and scholarship that seeks to change technology, but not necessarily the eco-social relations in which technology is created and used.

After establishing an understanding of energy injustice, this chapter will move into a discussion and analysis of key texts in the political economy of fossil fuel energy. In particular, *Fossil capital* (2016) by Andreas Malm and *Carbon democracy* (2011) by Timothy Mitchell will be considered. This will be followed by a brief discussion on ecological modernisation and green capitalism, explaining why the author of this thesis considers these broad theories of change to be lacking.

Following the discussion and critique of these two books, and the fields of ecological modernisation and green capitalism, this chapter will then move into the fields of scholarship where this thesis aims to be situated. First, technofeminist literature will be discussed, followed by an overview, and analysis of, the growing field of energy democracy. Finally, this chapter will situate this thesis in the emerging field of feminist energy studies. This chapter will argue that feminist analysis can contribute more to scholarship on energy than an analysis of the role of women in energy transitions. The small but growing body of literature on feminist energy futures will be the final area for review and discussion.

### ***Energy Injustice***

Energy extraction and transformation, especially of fossil fuels, causes a whole series of social, environmental, and economic impacts of which local communities and the natural environment disproportionately bear the brunt—this is broadly defined as energy injustice. These impacts and their associated concerns include health issues, land-use conflicts, wildlife habitat destruction, access to water, water quality, labour issues, endangered species, sense of community, displacement from land, soil quality, democratic engagement, corporate power, air quality, mental health, and more (Askland, 2020; Askland & Bunn, 2018; Connor et al., 2009; Cottle & Keys, 2014; Hendryx et al., 2019).

This section briefly explores key concepts in energy injustice scholarship, including environmental justice, environmental racism, energy sacrifice zones, and solastalgia. The aim

of this section is not to provide an in-depth exploration of energy injustice but to highlight key concepts that will become useful to consider in the analysis of renewable energy case studies included in this thesis.

Growth in the environmental justice movement in the late 1980s and early 1990s corresponded with increased focus on the existence of environmental injustices in both the Global North and South. The environmental justice movement arose predominantly out of growing awareness of environmental racism. Originally focusing on pollution, industrial dumping, uranium mining, landfills and waste incinerators, environmental justice advocates and scholars highlighted the disproportionate occurrence of these toxic, polluting activities being carried out in communities mostly populated with Black people, Indigenous peoples, and people of colour, and mostly in the Global South (Bullard, 1993; Churchill & LaDuke, 1986; Mohai et al., 2009; Pulido, 1996).

Reminiscent of the tensions between the Greenham women and the WAPC, environmental justice advocates exposed the invisibility of marginalised communities in the mainstream environmental movement and highlighted the necessity of incorporating race, class, and gender power analyses into environmental advocacy. Environmental racism research and the environmental justice movement that was born out of it examined and exposed power relations entangled in environmental issues, particularly those pertaining to race and class. This exposure of power relations and the social movement response provided lessons that would be picked up by other communities resisting environmental degradation caused by fossil capital.

Activism and scholarship on environmental racism exposed eco-social “externalities” of polluting industries, and this exposure helped scholars to formulate the concept of energy sacrifice zones (Cottle, 2013; Fox, 1999; Maldonado, 2018; Randolph, 2021; Shade, 2015). Energy Sacrifice zones occur where open-cut coal mines, tar sands, fracking, uranium mining

and other aggressive forms of energy extraction and production sacrifice, or destroy, the natural environment and local community for the “good” of the rest of the country (Hernández, 2015). Massive, gaping wounds in the landscape from open-cut mines, mountaintop removals, terrible air quality resulting in health problems and water pollution are just a few examples of what is sacrificed and endured in these areas. These energy sacrifice zones are almost exclusively located in rural areas, in areas with a high population of marginalised people, and/or in the Global South.

Energy sacrifice zones often create local contestations over unjust living conditions. Contestations over energy have a varied history—from coal miner strikes to Indigenous-led protests against oil pipelines; from small rural towns opposing fracking to politicians waving lumps of coal in Parliament. In Australia, these contests have included an intriguing mix of farmers, Traditional Custodians, environmentalists, rural landholders, city-based climate activists, multinational mining corporations, local businesses, NGOs, policymakers, and political parties, to name a few (Goodman et al. 2020).

The study of mental health impacts on communities on the frontline of fossil fuel production has resulted in the conceptualisation of a new type of environmentally-induced distress—solastalgia. Coined by Albrecht (2005), solastalgia is distress caused by the environment around one’s home radically changing without one’s consent. A 2007 study saw Albrecht and a transdisciplinary team examine the prevalence and impact of solastalgia on rural residents affected by open-cut coal mining in the Hunter Valley. Ethnographic field work revealed that residents’ “sense of place, their identity, physical and mental health and general wellbeing were all challenged by unwelcomed change” (Albrecht et al., p. 96).

It is interesting to note that in Australia, although local rural residents are increasingly supported by transnational environmental and climate advocacy groups, there is often little to no mention of climate change by residents as being their primary concern about

the fossil fuel project (Connor, 2016). The minimising of climate as a core concern may be initially bewildering to climate activists who have not engaged with local communities at the coalface of fossil fuel production, but it is a strategic decision that is often employed. Connor witnessed the strategic downgrading of climate change as a key concern in fossil fuel contests and analysed the politics of coal contests specifically through landowner engagement with states and corporations. She also highlighted how activists themselves were aware that climate change and energy politics were not core issues for rural dwellers fighting mining developments. Consequently, activists instead highlight issues of shared concern: land use, water, biodiversity, and food security (p. 239).

Through listening to the concerns of local communities, climate activists are better able to forge stronger alliances with residents and mount impressive campaigns against coal mining. This raises the question of whether climate activists would similarly listen to concerns of residents at sites of renewable energy production, or whether energy democracy movements would fragment at this point. Recent research in Australia indicates that concerns raised by residents about wind energy projects are often dismissed or derided by pro-renewable energy organisations and political parties (Marshall, 2018).

Environmental injustice literature highlights the many and varied negative impacts that fossil fuel production or other unwanted changes in landscape can have on local communities and the natural environment, and the sense of injustice this inspires. Recent scholarship has suggested that these issues are not the sole purview of fossil energy, and that energy injustice is of concern for the emerging renewable energy industry and will be an important part of our discussion (Brock et al., 2021; Scott & Smith, 2017).

Environmental racism, environmental justice, energy sacrifice zones, and solastalgia are all concepts and phenomena considered throughout this thesis. What this brief exploration of energy injustice scholarship reveals is that the environmental and social impacts of energy



extraction, transformation and consumption extend well beyond impacts on climate change. Indeed, impacts of climate change are rarely the main concern of residents in energy sacrifice zones or those experiencing energy injustice—at least at this point in time. This raises important questions when considering transitions out of fossil fuels and into renewable energy, and signals a tension between marketised transitions and transitions seeking energy justice or democracy. As we move through this thesis, these concepts integral to energy injustice literature will be revisited, as we consider whether transitions to renewable energy are seeking energy justice.

### ***Climate and Energy Political Economy***

Alongside energy justice scholarship, there is a broad field of scholarly and activist literature that seeks to analyse and contextualise the political economy of climate and energy. Often, imaginaries of more just and harmonious futures accompany the analysis. The following section will discuss two relatively recently published key texts within this field: Andreas Malm’s *Fossil capital* (2016) and Timothy Mitchell’s *Carbon democracy* (2011). These texts were chosen as both are highly cited, both introduce key concepts used in climate and energy scholarship, and both represent in-depth, materialist accounts and analyses pertaining to the social relations of energy. In particular, this section will examine Malm and Mitchell’s titular concepts and situate them in relation to this thesis. This section will also include a discussion on gaps in their respective analyses. Later on I shall expand upon these writers from a feminist point of view.

Malm’s *Fossil capital* (2016) provided a historical materialist analysis of the rise of steam power, and subsequently, a theory on the roots of the climate crisis. He argued that capitalism and fossil fuels are co-constitutive and therefore, it is not all of humankind who is predominantly responsible for the climate crisis, but it is instead capitalists; we are not in the Anthropocene, we are in the Capitalocene. Malm’s conceptualisation of “fossil capital” will

be used throughout this thesis to refer to the intricate relations between the fossil fuel industry and capitalism.

Through a detailed historical analysis, Malm explored how energy flows and stock allow different spatio-temporal realities, with stock being much more profitable to capitalists than flow, as it can more easily be contained. Water and renewable energy sources such as the sun, wind, and waves form energy “flows” in which the ability to enclose and claim ownership of the resource is quite difficult. How could one enclose the sun, the wind, the waves? Discussing historical watermill use for industrial energy Malm wrote:

The flow of energy did not halt before the fences of private property. It respected no deeds or titles, bowed to no monetary transactions; it continued on its course, unmoved by conceptions of private property because it was always in motion. (p. 117)

Fossil fuels, conversely, form energy “stock.” Coal and oil are more physically tangible than their renewable energy counterparts and, crucially, can be more easily enclosed and privately owned.

Malm suggested that the shift from energy flows to energy stock that occurred in the United Kingdom in the middle of 19th century was predominantly a result of capitalists recognising the superior profit-making potential of energy stock compared to flows. It would be much better, they believed, to own the supply of energy in the form of coal or oil than to harvest energy from a common source such as rivers and wind.

The historical analysis of the symbiotic relationship between capital and fossil fuels put forward by Malm is compelling, particularly his articulation and explication of energy flows and stocks. We can see in current struggles over energy that fossil fuel corporations are unwilling to give up the level of control over energy sources, as commoditised property, that fossil fuels allow them. Transitioning to renewable energy would see the decline of energy

stocks and return of energy flows—which crucially has opened up discussion on the potential for renewable energy to be decentralised and decommodified.

However, some of the recommendations Malm made as to the way forward are less compelling. What is missing from Malm’s analysis is the role of the state in strengthening the power of fossil capital, capital generally and capitalist property rights (Carroll, 2020; Carroll & Daub, 2018; Tienhaara & Walker, 2021), not only recently but throughout the earlier fossil capital period. His historical analysis of fossil capital is detailed and illuminating, but his conceptualisations of how to dismantle fossil capital are somewhat lacking, because he does not account for how the state apparatus will be moved away from fossil capital.

Malm is a self-described ecological Leninist (as discussed in an interview with Mealy, 2020), which gives some indication of his theory of change as one centred on state socialism where the state is a key actor in dismantling fossil capital, alongside a global mass labour movement. Ecological-Leninism prioritises the ‘proletarian’ state as the main vehicle for change. On the other hand, autonomists and anarcho-communists prioritise autonomous communities and organising, instead of rearticulation of the state. Malm has been criticised for glossing over avenues through which a proletarian state might arise, and for not engaging with long-held debates over the so-called dictatorship of the proletariat (Garrisi, 2021). This tension between political theories that seek change through a rearticulation of the state and those that seek change through autonomist organising will be returned to throughout the thesis.

Malm’s position on this point of contention was made clear when he suggested that (re)commoning and localisation of energy is improbable (2016). Frustratingly, Malm did not engage with the question of how a rearticulation of the state of the magnitude he was suggesting could be made possible. He argued that commoning and localisation of renewable energy was improbable but then did not turn this same line of critique on his own theory of

change. Particularly for those of us living in countries where the state is captured by fossil capital (Ludlam, 2022), Malm's suggestion that the state is to be the key actor in dismantling fossil capital requires a more compelling discussion than he presented.

There are fields of scholarship that could have improved Malm's analysis, had they been engaged with, including autonomist and feminist scholarship. Autonomist and anarchist activism and scholarship would have allowed a deeper critique of the role of the state alongside capital, and a feminist perspective would have allowed for greater consideration of gender relations and on the role of devaluing of reproductive labour. Had these perspectives been incorporated, the future imaginaries suggested by Malm in response to fossil capital would likely have been more compelling as he would at least been better able to demonstrate his engagement with alternative solutions to ecological-leninism.

Examining a similar time period, Mitchell demonstrated how the modern Western model of democracy evolved in parallel with the use of fossil fuels, as captured by his suggestive term, "carbon democracy" (Mitchell, 2009; 2011). Prior to the widespread use of fossil fuels, energy was ultimately derived from decentralised sources: the sun, wind, water, fire, and animal and human labour – and was often accessed through commons. The increasing use of fossil fuels drastically reformed agriculture, transport, and consumption from the 19th century onwards, resulting in mass population movement and displacement from rural to urban areas in most Westernised nations (Mitchell, 2009, p. 402).

The increasing mechanisation facilitated by fossil fuels replaced animal and human labour which had tied many people to agrarian lifestyles. Western colonisation coupled with increased fossil fuel use also contributed to the urbanisation of Western nations as food and crop production was outsourced to colonies (Hornborg, 2001, p. 489). Mitchell argued that this urbanisation of population, facilitated by the recently centralised energy supply, led to greater political participation, especially by the working class.

Centralisation of the energy supply gave workers in coal mining and related industries in rail and sea transport “a new kind of political power” as they were able to disrupt the energy flows on which rapidly industrialising economies were increasingly dependent (Mitchell, 2009, p. 403). Industrial society’s reliance on coal gave coal miners unique power; by withholding their labour, and therefore hampering the production and export of coal, they could effectively shut down entire nations or industries. Mitchell argued, “The mobilisation of new political forces depended upon the concentration of population in cities ... but equally associated with the forms of mass collective life made possible by organising the flow of unprecedented concentrations of non-renewable stores of carbon” (Mitchell, 2009, p. 403).

Coal mine and general strikes, even those that were initially unsuccessful, were incredibly effective tools used to secure many of the political concessions associated with representative and social democracy today. For example, the 1902 Anthracite coal strike in Pennsylvania resulted in changes to wages and hours in favour of workers, and the British national coal strike of 1912 secured the nation’s first legally mandated minimum wage. The centralisation of energy in the 19th and early 20th centuries helped spark this type of mass democratic engagement unseen in pre-industrial times.

Mitchell credited the processes through which coal was produced and distributed with the emergence of “modern mass politics” (2011, p. 12). As with other scholars of labour processes and product, he largely focused on the productive sphere and only minimally engaged with reproductive labour. It could be argued that Mitchell’s discussion on labour and social movements is a discussion on social reproductive labour. Social movements are part of social reproduction. However, this was a selective discussion of reproductive labours—one that largely focused on the labours of men in the coal industry in building these movements. Who was birthing and raising the workers? Who was feeding and caring for coal workers and union organisers? Who was doing all the other social reproductive work that is necessary yet

typically invisible in social movements? Universal suffrage meant expanding the suffrage of capitalist men to working men—leaving women, children, Indigenous peoples, and people in the Global South in their state of disenfranchisement.

Both Malm and Mitchell situated their theses in the productive labour sphere. Frustratingly, despite a vast body of work spanning decades of feminist critiques of Marxist scholarship and labour history, both authors largely ignored the reproductive sphere. While integral to their respective analyses, both Malm and Mitchell paid considerably more attention to technology than to women. Malm and Mitchell both included what can only be described as a cursory nod to the existence of women and their exclusion and de-valuing from the productive processes and relations—a monumental shift in economic relations that was occurring around the historical periods both Malm and Mitchell were discussing. Through focusing on the productive sphere, Malm and Mitchell missed the opportunity to consider intersecting power and social relations. What reproductive labours were supporting those productive spheres? What reproductive labours were providing men with the ability to fight for their own suffrage? How might these labour struggles have been different if more marginalised labours, knowledges, and experiences had been incorporated?

In focusing on male-dominated productive spheres as sites from which to theorise and conceptualise “fossil capital” and “carbon democracy” while only superficially discussing the masculinity of these sites, the solutions or futures envisioned by Malm and by Mitchell are somewhat lacking, as they are a continuation of this ‘male focus.’ Their gender-blind critiques missed core analyses of power relations and offered solutions and futures that continue to be gender-blind, or gender-suppressant. What Malm and Mitchell each missed is that carbon democracy and fossil capital were largely produced by certain types of men—white, able-bodied, wealthy in the case of fossil capital. Malm and Mitchell argued that whole worldviews and social systems were built on fossil fuel energy—yet they missed that

these worldviews and social systems were also built without acknowledging or valuing the labours and knowledges of what Salleh terms metabolic labourers—women, Indigenous peoples, and people from the Global South (1997). It is in these devalued and invisibilised labours and knowledges of metabolic labourers that, I argue, we are more likely to find caring and regenerative futures than those offered by Malm, Mitchell and many other climate and energy theorists who continue to focus predominantly on the productive sphere of energy relations. These failings are further emphasised by the approaches of ‘ecomodernisation’ and ‘green capitalism’.

### ***Green Capitalism and Ecological Modernisation***

Ecological modernisation is the name given to a broad field of policy and scholarship that seeks to continue the project of Western modernisation across the globe, albeit with an ecological bent (Mol et al., 2009). Ecological modernisation promotes technological change and market-based solutions to ecological issues. Its advocates generally agree that meaningful responses to the climate and ecological crises are critically necessary, but see those meaningful responses as occurring through industrial, technological, and policy reform. It is one way of non-feministically analysing energy transitions. Ecological modernisation can be considered to be the academic and/or more benign term than its related counterpart, green capitalism.

Ecological modernisation and green capitalism have been widely critiqued by those seeking climate and environmental justice (Ewing, 2017; Foster, 2012; Pearse, 2014; Wichterich, 2015) as a suite of purported solutions that are centred on technological change but with no change to the eco–social relations that have engendered the climate and ecological crises. The argument that I and many others make is that, yes, responding to the climate crisis will require massive technological change, but social relations impact technology and therefore, social relations must also change. With massive technological

changes, such as those happening as part of energy transitions, some social relations will change – the question (that ecological modernists tend to ignore) is “in what way will they change?”

As this thesis is predominantly situated in Australia, let us take a slightly deeper dive into the arguments of Jonathan Symons, an international relations scholar from Australia who recently put forward a “qualified defence” of ecomodernism (2019). Through a critique of what Symons referred to as the “Green” movement, he argued that environmentalists’ opposition to ecomodernist visions are reactionary and based on outdated environmental concerns which predate the climate crisis as the dominant ecological crisis. Symons argued that ecomodernists have the strongest solutions to the climate crisis, “however, more prominence needs to be given to the role of the state”. In essence, Symons was arguing that ecomodernist calls for technological solutions combined with sociopolitical transitions to social democracy are the best way forward to address the climate crisis. However, there are at least four key problems upon which Symons based his argument. These are 1) a misunderstanding of the current Green movement, 2) an incomplete representation of reasons for opposition to large-scale hydro and nuclear power, 3) a fundamental misunderstanding of the role of fossil fuel corporations in relation to climate denial, and 4) ignorance of autonomist communities, eco-socialism and grounded struggles for (re)commoning energy. There are also at least five claims made he makes which are dubious. These are 1) the project of modernising has been a success and should be universalised, 2) a universal process of modernisation would not be a continuation of Western imperialism, 3) concerns about universal modernisation being green-imperialism are in fact themselves imperial because it purportedly implies that people in Global South do not want “progress”, 4) there are no limits to growth in ecomodernist visions of social democracy, and 5) ecomodernists are materialists and the green-left movement has moved away from materialism as a core concern.



Symons's book, published in 2019, relied predominantly on definitions and understandings of the Green movement from the 1990s—despite the author himself discussing how much had changed in the world in these 30 years. Part of his critique stems from believing that the Green movement is using outdated information, yet he himself is drawing the core of his argument from outdated information. By focusing on the Green movement as he defined it, Symons was essentially only looking at white, middle-class, middle-aged Western environmentalists. He completely ignored the global climate justice movement, from which much valid criticism of ecomodernism stems (Bäckstrand 2004; Kashwan et al. 2020; Tornel, 2019). In doing this, he also ignored or seems unaware of the existence of knowledges, political struggle, and strategies of feminists, Indigenous peoples, and communities in the Global South, who are dealing with 'green questions'.

Symons also makes a bizarre claim that activists, scholars, and writers who focus on the power of elites in society who have engendered the climate crisis, in particular on fossil fuel executives and sponsored think tanks, are engaging in conspiracy theories akin to climate denial. Denigrating the work of Naomi Klein, he claims that “her argument takes a conspiratorial form: it alleges that an elite minority is secretly plotting to harm the wider community” (p. 5). Following on from this, he qualified,

To be sure, extractive industries have worked hard to delay climate action, but we should also recognise that GHG (greenhouse gas) emissions are the unintended consequence of the technologies that well-meaning people depend upon in their everyday lives. The frame we adopt—whether of “elite corruption” or “unintended consequence”—will influence our political responses. (p. 6)

Here Symons does not provide a reason for why both of these things cannot be argued together. This failure to understand that climate denial has been an incredibly well-resourced,

powerful, and deliberate strategy by fossil fuel corporations since at least the 1980s (Banerjee et al., 2015; Brulle, 2014; Mulvey et al., 2015; Oreskes & Conway, 2011; Supran & Oreskes, 2017), and that fossil fuel corporations have known about the potential climatic impacts of burning fossil fuels since at least the 1950s weakens Symons entire argument. His argument either ignores politics, or reduces politics to fantasy. The foundations of Symons's technological analysis were built on a flawed understanding of global power dynamics and the very deliberate campaign of denial and obfuscation undertaken by the fossil fuel industry for decades. Yes, there have of course been unintended consequences of fossil fuel technology, but the "externalising" of eco-social realities such as pollution are built into capitalist economies. Global warming as a result of carbon emissions may have been an unintended consequence up to a point, but certainly over the last half-century at least, the consequences have been known and action based on that knowledge has been avoided.

### ***Technofeminism***

Social relations and technology shape one another (Haraway 1987; Hornborg 2001; MacKenzie & Wajcman 1999; Wajcman 1991). Social relations shape the invention, design, deployment, and the myriad of uses technologies are put to. Social relations also cause a myriad of unintended uses and consequences of technology. Gender relations and roles are a core component of the tangled web of social relations. If social relations and technology shape one another, and gender relations are a significant aspect of social relations, it holds that gender relations and technology shape one another. Technofeminism conceives of a "mutually shaping relationship between gender and technology, in which technology is both a source and a consequence of gender relations" (Wajcman, 2004, p. 7).

Challenging technological determinism, ecomodernism, and green capitalism, technofeminism considers how gender and power relations co-create technology and infrastructure; it considers the social shaping of technology, rather than the more reductionist

technological shaping of society (Mackenzie & Wajcman, 1999; Wajcman, 2004). Climate change, energy systems, and technologies are infused with power imbalances not only through gender, but also through race, class, ethnicity, nature, sexuality, ability, and all manner of eco-social relations. It is the contention of this thesis that a technofeminist framework, mingling with materialist feminisms, is a useful and intriguing lens through which to examine the transition to renewable energy technologies, and direct attention to shifting eco-social relations in these transitions.

Drawing predominantly on the work of Wajcman, this section will briefly introduce and consider gender and energy technology relations. This field of scholarship can inform understandings, critiques, and reimaginings of the transitions to renewable energy. This understanding and critique can subsequently highlight points of intervention where feminist praxis could assist in making transitions to renewable energy centre on care, reciprocity, and regeneration compared to fossil fuel-based energy systems.

Conceptions of masculinity and technology are intimately entwined in dominant social and gendered frameworks (Haraway, 1987; Sikka, 2018; Wajcman, 1991). Indeed, the descriptors “rationality,” “engineering,” “mathematics,” “strength,” “scientific,” and “controlling” can easily be found in separate conceptualisations of both masculinity and technology. Icons of modernity and progress come from science, technology, and medicine, defined as the domains of man (Merchant, 1981). Perhaps none more so than “the machine.”

Wajcman referred to machines as extensions of male power (1991, p. 89) and argued that women can use machines, but are not synonymous with the design, skills, and power of machines in the way that men are. Women are to be classed as non-technical users. Even when the technology is designed with women as the main users, Wajcman suggested that women are generally not expected to understand how the technology works. Cockburn similarly argued that technology is a medium of social power (1986), hence of patriarchal and

capitalist power. Both Cockburn and Wajcman consider the impact of technical knowledge, or lack of it, on gender, and technology relations. Due to socialised gender roles and masculine cultures of technology, women are considered less likely to have the technical understanding to design and/or use the types of technology and machinery that symbolise social power, and be excluded from technological innovation.

With the design, testing, deployment and use of machines and technology carried out “by men with men in mind—the masculinity of the technology becomes embedded in the technology itself” (Wajcman, 2004, p. 27). Technofeminism exposes this masculinity of machines and technology, subsequently revealing that far from technology determining society, “a society’s choices among various possible directions of technological development are highly reflective of the patterns of political, social and economic power in that society” (Wajcman, 1991, p. 100). An ethnographic snippet in of an Australian renewable energy conference in the following chapter will further demonstrate how this is happening within energy transitions.

Dominant political, social, and economic power relations are skewed towards men and this is reflected in the energy system. While women do work in the sector, roles associated with energy policy and production including politicians, coal miners, electricians, engineers, and executives are male-dominated, and masculine-coded. The relative economic, political, and social privilege men hold in the fossil fuel energy sector could be replicated in the emerging renewable energy sector, once again locking women out of opportunities or control and continuing the devaluing of regenerative labours in the transformation of our energy systems.

A common example of gender technology relations raised in the literature are the low rates of women in science, technology, engineering and mathematics (STEM) and how these low numbers not only affect the culture of these industries but also the design,

implementation, and use of technologies and industries. In Australia, women make up only 16% of the STEM workforce (Office of the Chief Scientist, 2016). A report by Professionals Australia (2018), the union that represents STEM workers in Australia, revealed that of their members who were women, 68.5% said taking parental leave was detrimental to their career, 32.2% reported a gender pay gap, 26.7% had experienced sexual harassment in the workplace, and 51.3% had experienced gender-based discrimination. These statistics highlight that we cannot simply push for the liberal feminist goal of more women in STEM—the entire culture of STEM needs to be changed to become more open and flexible and less of a boys club.

With technology still functioning as part of masculine realms, it is likely that renewable energy technologies and infrastructure will predominantly be designed and deployed by men, with men and corporations in mind as the owners, users, and workers. This is subsequently likely to affect whether renewable energy technologies are designed and deployed for community or corporate control, and how the technologies interact with and on nature.

To bring nature into technofeminist scholarship, Lorenz-Meyer et al. suggested the concept of feminist technoecologies, which they explained as following “feminist ethical and political practices” with a focus on “responsibility, solidarity, and care” when questioning and interpreting the interactions of nature, culture and technology (2017 p. 353). They suggested feminist technoecologies as a “theoretical and methodological tool [that] might assist further transdisciplinary investigations of the specificities, challenges, as well as possibilities, of multispecies survival” (p. 357). They also contended that “one of the central concerns regarding the relation between technology, environment and society is how to challenge the practices of technocapitalisation by critically engaging with rather than simply opposing technological developments” (p. 355). This is a core issue for my research project,

which seeks to add to energy scholarship and social movement strategy a greater understanding of how to engage with and promote renewable energy without abandoning climate justice aims that are incompatible with capitalism.

Wajcman argued that “to be in command of the very latest technology signifies a greater involvement in, if not power over, the future” (2004, p. 12). Renewable energy technologies will be integral to the future of this planet. If transitions to renewable energy are not combined with transformations in eco–social relations where regenerative labours are valued, it is possible that an unintended (or possibly intended) consequence of renewable energy technologies will be to perpetuate unequal gender, race, and class relations. A technofeminist awareness and call to action could disrupt this possible trajectory of renewable energy transitions and advocate for design, deployment, and use that centres on care, reciprocity, and regeneration. This could help to avoid replicating energy injustice and better position people to deal with the inevitable unintended consequences of renewable energy transitions.

### ***Energy Democracy***

Energy democracy is a growing area of focus for both academic scholarship and social movements (Burke & Stephens, 2017; Droubi et al., 2022; Szulecki, 2018; Szulecki & Overland, 2020; Van Veelen & Van Der Horst, 2018; Wahlund & Palm, 2022). It is a concept that explores moves to place the power that comes with control over energy supply and infrastructure quite literally back in the hands of everyday people, through various forms of community and public energy systems. Energy democracy has a particular emphasis on renewable energy, as renewable energy technologies can be decentralised, locally distributed, and have lower capital requirements to set up and run than intensive fossil fuel technologies (Burke & Stephens, 2018; Fairchild & Weinrub, 2017; Morris & Jungjohann, 2016).

Conceptualisations and definitions of energy democracy seem to vary predominantly across spatial zones and are nuanced, based on the position of those doing the defining. It has been referred to as a revolutionary movement in energy, one that wrests control and ownership of energy resources out of the hands of the energy establishment—democratising energy and making it a vital resource for advancing environmental, economic, and social justice needs of our communities (Fairchild & Weinrub, 2017).

Energy democracy has also been defined as “an ideal political goal, in which the citizens are the recipients, stakeholders (as consumers/producers), and account holders of the entire energy sector policy” (Szulecki, 2018, p. 36). Here we can see how the positionality of those providing a definition for the term impacts on that definition. Fairchild and Weinrub, for example, are situated in a social justice, activist space, and therefore centre the role of social movements more so than Szulecki did.

Scholars have drawn on the concept of energy democracy to explore and interrogate situated case studies of corresponding shifts in energy technology and social relations. Recent examples include an examination of Australia’s Climate Council (McLean, 2022), connections between energy democracy and degrowth in Greece and Spain (Tzagkari et al., 2021), consideration of equitable participation in Kenya (MacEwen & Evensen, 2021), and exploration of South African community energy projects (Bloem et al., 2021).

Energy democracy has been upheld by some activists and academics as a challenge to fossil capital (Burke & Stephens, 2017, 2018; Komendantova et al., 2018; Mey & Diesendorf, 2018) and it has also been upheld as a challenge to colonialism and developmentalism (Fairchild & Weinrub, 2017; Lennon, 2017). These discussions and explorations of energy democracy can be linked to energy justice frameworks alongside energy democracy.

Despite increasing global engagement with the concept and practice of energy democracy, mainstream discourse in Australia (and much of the global north) continues to place renewable energy predominantly in the neoliberal domain as a corporate, large scale, market issue (Australian Renewable Energy Agency [ARENA], 2018; Australian Financial Review, 2018; Clean Energy Council, 2018; Smart Energy Council, 2018). In Australia there are relatively few organisations advocating for renewable energy transitions that are community or publicly owned and our energy democracy movement is not as prominent as those in Europe or the US. Some notable exceptions include The Australian Greens, Community Power Agency, FoE, CoPower, and Pingala.

Despite the growing capture of control over transitions to renewable energy by the state–capital nexus, the more radical, transformative potential of renewable energy still exists. However, it will take a concerted and strategic effort on behalf of feminists, socialists, the climate movement, local communities, and renewable energy engineers, to name a few, to ensure that renewable energy transitions consider the broader eco-social consequences of energy rather than just their market potential.

As Mitchell (2011) argued throughout *Carbon democracy*,

As we move, with a dangerous slowness, towards the increased use of renewable sources of energy that do not require the combustion of carbon and its further accumulation in the atmosphere, it is sometimes assumed that the post-carbon world will inevitably be more democratic. ... The lesson from *Carbon democracy* is that one cannot predict democratic possibilities directly from the design of socio-technical systems. ... The point, rather, is that in battles over the shape of future energy systems the possibilities for democracy are at stake. (pp. 266–267)



Transitions to renewable energy will not automatically resolve exploitative corporate power relations, land-use contests, or the extractive eco–social relations currently associated with sites of energy extraction, transformation, and consumption. To resolve these and other issues, transitions to renewable energy will need to be accompanied by shifts in eco–social relations. Energy democracy is a potential social movement vehicle from which these technological and eco–social transformations can be advocated. Feminism adds to energy democracy by emphasising the necessary role of women and others in making the energy truly democratic and responsive to the community.

However, Western academic consideration and activist organising around energy democracy has so far largely neglected the possibility of energy democracy as a feminist political project. At the advent of designing and researching this thesis, there was only minimal engagement with feminist scholarship and activism in the energy democracy space. Thankfully, over the last few years, a new sub-field of energy studies has emerged—feminist energy studies, detailed in an upcoming section of this chapter. Exploration of energy democracy and justice through a feminist lens could assist in understanding the role gender plays in how energy democracy movements are enacted; it could assist to highlight where energy democracy movements are perpetuating exploitative power dynamics; and it could reveal points of intervention where feminist praxis can build more just energy systems and eco–social relations. This is a gap in research that my thesis will contribute towards.

Prior to exploring the emerging field of feminist energy studies, it is important to also discuss a related sub-field of energy studies—gender and energy. I consider this a related, but ultimately different field to that of feminist energy studies.

### ***Gender and Energy***

In the inaugural edition of the *Energy Research and Social Science* journal, editor-in-chief, Benjamin Sovacool, concluded his introductory article by calling on “social scientists,

political scientists, philosophers, historians, feminists, and others to assist in broadening the field of energy studies” (2014, p. 26). The article was an in-depth content analysis of articles from 1999 to 2013 in major academic energy journals. Among other issues, Sovacool’s analysis found that “less than 16 percent of authors in our sample identified themselves as female and none across the entire sample of almost 4500 reported training in women’s studies, feminism, gender studies, or related disciplines” (p. 14). This was further problematised by Sarah E. Ryan, whose article in the same journal edition affirmed that “gender and identity should be important concerns for energy researchers, though the topics remain understudied” (2014, p. 102). She similarly called on social scientists to “use *Energy Research & Social Science* to publish gender and identity research that will matter to many” (p. 102).

Since that inaugural issue in 2014, there has been a small but steadily growing stream of scholarship exploring gender and energy. Gendered energy research has predominantly focused on representation and participation of women in energy politics (Allen et al., 2019; Allison et al., 2019; Fraune, 2015, 2016; Patnaik & Jha, 2020; Tjørring, 2016), on engendering and gendered perspectives of energy (Cecelski, 1995; Clancy & Mohlakoana, 2020; Johnson, 2020; Lieu et al., 2020; Roehr, 2001; Standal et al., 2020), on gender mainstreaming in the field of energy (Anditi et al., 2022; Clancy, 2009; Clancy & Mohlakoana, 2020; Maduekwe et al., 2019; Musango et al., 2020; Oparaocha & Dutta, 2011) and on intersectionality and energy (Cannon & Chu, 2021; George, 2019; Johnson et al., 2020; Ryan, 2014).

While important, what most of these studies focus on is the role of women in the broad field of energy politics and relations. Explorations on the role of women is of course an important part of feminist research; however, it is by no means all that a feminist analysis can offer. What is often missing from research that focuses solely on the role of women is deeper

analysis of power relations, of the complexity of gender relations, and the ability to formulate more structural solutions than simply “adding women” to pre-existing social systems.

Perhaps recognising the risk of a narrow focus on the role of women, and building on the foundations of intersectionality laid by black feminist scholarship (Crenshaw, 1991), Stacia Ryder (2018), called for expanded usage of intersectionally informed social science research into energy and climate change. Intersectionality recognises that gender oppression is “often shaped by other [intersecting] dimensions of identities, such as race and class” (Crenshaw, 1991, p. 1242). For example, Indigenous women experience both gender and racialised oppression, resulting in their experience of gender oppression being different to that of settler/white women, and their experience of racialised oppression being different to that of Indigenous men.

Drawing on her own multi-sited critical ethnography, Ryder argued that intersectional analyses allow for a more nuanced and relational approach to understanding the “production, politics, organisation and technology” of energy decisions (p. 7). This includes consideration of the role of power, privilege, oppression and access to decision-making processes, as well as considerations of the subsequent eco–social consequences of energy transitions, both localised and diffuse across multiple sociopolitical scales.

Ryder called for research that contributes to transformative approaches to energy and climate systems and suggested that intersectionally informed, multi-sited qualitative research is a missing and integral part of this necessary research. Taking up this suggestion, this research project was designed as intersectionally informed, multi-sited qualitative research, as is further explained in Chapter 5.

### ***Feminist Energy: More Than “Women and Solar Panels”***

Recognising that feminist analysis could contribute deeper understandings of the power relations surrounding energy politics and could put forward more just

conceptualisations of energy futures, a growing field of scholars have established the emerging field of feminist energy studies (Bell & Braun, 2010; Bell et al., 2020; Brault, 2017; Buechler et al., 2020; Daggett, 2018; Howe, 2019; Lorenz-Meyer, 2017; Shreejaya, 2018; Sikka, 2018; Wilson, 2014, 2018; Zylinska, 2018). Their scholarship highlights how various feminisms can collectively contribute to energy research, how feminist analytical frameworks can expose and explain energy power relations, and how feminisms can contribute to conceptualisation and materialisation of more just energy futures. It is in this emerging field of critical, feminist energy studies that this thesis aims to be situated.

Wilson articulated the deep and varied scholarship and activism of feminists that could be drawn upon to build more just energy futures:

We use the impasse [of global climate/energy policy]—not to optimistically leapfrog this critical moment in pursuit of easy futures that are ultimately harshly cruel, but instead—to interrogate and disrupt ongoing conversations with feminist knowledges of all kinds, including Indigenous feminisms, womanism, decolonial love, ecofeminisms, Marxist feminisms, feminist system’s change, standpoint feminism, Xeno feminism, matrixial and maternal ecologies, feminisms yet to come that can inform new material realities as we imagine them into existence. To my mind this is a radically necessary response if any of the solutions imagined by local communities or global decision-makers are to undo the injustices of our extractivist exploitative past and present in order to ensure the equitable distribution of energy and *power* (Wilson, 2018, pp. 404–405).

Here, instead of pitting certain types of feminisms against one another, Wilson demonstrated the type of reciprocal, collaborative effort that feminist energy scholars argue is required for more just energy futures. This claim that feminist knowledges of all kinds can contribute to the massive global project that is responding to the climate crisis, supports the

theoretical and conceptual goals of this thesis—to draw on ecofeminisms, Marxist feminisms, techno/Xeno feminisms and Indigenous feminisms in exploring nascent renewable energy transitions in regional NSW. However, I will add the caveat that not all feminisms are compatible with futures being conceptualised and advocated for in this thesis, particularly more liberal or conservative feminisms that do not seek a dismantling of the state-capital nexus.

A common claim among feminist energy scholars is that feminist analysis of energy transitions will be particularly rich when those analyses are grounded and situated. Lorenz-Meyer's ethnographic work examining the emergence of a large photovoltaic power installation in the Czech Republic found missed opportunities to couple energy transitions with more radical, egalitarian social change. Drawing on feminist scholarship, Lorenz-Meyer used her ethnographic research to answer the question “what could it mean to become response-able—that is, to cultivate the capacity for response (Haraway, 2016)—in relations with solar power?” (2017, p. 427).

Lorenz-Meyer (2017) revealed a large-scale solar project with a multitude of social, economic, political, and ecological issues that replicated the extractive logic of the fossil fuel industry. She writes:

The local community felt excluded from decision-making during the conceptualisation of the project, and then the project failed to materialise promised jobs...Lack of terms on disadvantageous leases raised uncertainty and concern about the dismantling of the solar array at its life-end...Land enclosure, dispossession and hiring-discrimination marked a continuation of racism and economic marginalisation of local Roma peoples...Finally, the establishment of the project “rendered solar power the embodiment of the tangled relations between politicians and state-owned businesses and in the eyes of the public materialised an ethos of profiteering in which

the development of solar power was less a public utility than oriented towards private profit (p. 433)

By examining the myriad of issues raised in one remote Czech community by one solar project, Lorenz-Meyer has articulated a response that she named “feminist technoecologies”. Lorenz-Meyer argued for renewable energy transitions that would be accompanied by social transformation, not just technological change:

As solar power is projected to become the dominant source of electricity by 2050 (International Energy Agency, 2014), and more solar panels are installed globally—producing waste to come—feminist technoecology arrives as a tool that challenges divisions of technology and environment, and helps, through situated inquiry, to extend feminist imaginations of community, participation, and care. This approach does not turn away from the potentials of solar energy, even in view of the problems it creates, but moves towards thinking a commoning that also includes extinguishment, the relational within non-participation, and an ethos of care-full attentiveness that incorporates indifference. (Year, p. 352)

Here we can see Lorenz-Meyer, like Wilson, put different feminisms to collaborative work. This provides a richer analysis of the complexities of eco-social and technological relations in renewable energy projects than might otherwise have been possible through drawing on only one field of feminism.

### ***Feminist Analytical Frames***

The analytical and practical potential of feminist thought can be utilised when exploring the multiple, intersecting vectors of energy policy and energy relations. Bell et al.—also known as the Mayapple Energy Transition Collective—outlined a vision and analytic framework for feminist energy systems that is centred on paying attention to four guiding principles of the political, economic, socio-ecological, and technological dimensions

of energy systems (2020), rather than reducing them to mere technological change. There is a vocal reclamation of feminist analysis as analysis of power, not just of gender and women:

Perhaps contrary to popular thought, a feminist perspective on energy research can reach far beyond simply providing a lens for understanding gender inequalities as they relate to energy production, use, or policy-making. Feminist scholarship provides a means for understanding how power works more broadly, whether it is political power or fuel power. (p. 2)

Bell et al. further suggested that feminist analysis of energy systems would include considerations of

- the political: democratic, decentralised, pluralist
- the economic: prioritising human wellbeing and biodiversity over profit and unlimited growth
- the socio-ecological: preferring relationality over individualism
- the technological: privileging distributed and decentralised fuel power and people power (p. 2, pp. 3–10)

In putting forward this framework, Bell et al. had not yet published research demonstrating its use in the field. This thesis seeks to broadly apply their framework to situated examples of energy transitions, as explored through the case studies in this thesis. As will be further explored in the following chapter, these dimensions of feminist energy systems analysis map onto ecofeminist and materialist feminist concepts that form the conceptual basis of this thesis.

### ***Feminist Energy Futures.***

A core task of feminist energy scholarship is to demonstrate how feminist thought and action can be employed in energy transitions, responses to the climate crisis, and in transforming eco–social relations. The Mayapple Collective recognised and intercepted the

critiques that are often thrown at feminist analyses of engaging in purity politics—of being unrealistic, “difficult nay-sayers”:

Dismantling violent energy systems and building feminist ones will not be easy and may not always—or even often—succeed, but difficulty should not permit us to relinquish hope. ... Feminist energy may sound like a “killjoy” to ecomodernists, oil companies, the agents of “world-destroying machines,” and even some energy scholars who cling too tightly to growth and profit. But for many Earthlings, both human, and not, feminist energy brings hope, insisting that new and better worlds of energy are possible. (pp. 10–11)

A through-line of active hope and possibility can be seen in all feminist energy literature written to date. As another example, Wilson suggested that:

...the antidote to these ways of thinking and being is the world [logics of white-supremacist-cis-heteropatriarchal-neoliberal-settler-colonial petro capitalism] is, to my mind, the reintroduction of Other knowledge systems and world views, including but not limited to, feminist, and Indigenous, which can help us collaboratively imagine and collectively move toward socially just—decolonised and feminist—energy futures. (2018, p. 378)

In her ironic provocation, *The end of man: A feminist counterapocalypse*, Zylinska also situated her analysis as a site of active hope:

In response to the apocalyptic tenor of the dominant discourses of the Anthropocene, I want to outline an alternative microvision: the prospect of a feminist counterapocalypse that takes seriously the geopolitical unfoldings on our planet while also rethinking our relations to and with it precisely as relations. (2018)

It is in this spirit of the active hope and possibility of new worlds that feminist energy represents to the Mayapple Collective, to Wilson, to Zylinska, and to others in the emerging



field of feminist energy studies, that this thesis situates its critiques and visions for more just, caring, and regenerative eco–social relations and energy futures.

This thesis aims to contribute to the field of feminist energy studies with a situated examination of nascent renewable energy projects in regional NSW, the most populous state in Australia. The thesis will draw on ethnographic data to compare corporate and community renewable energy projects and will consider whether the conceptualisations and materialisations of renewable energy transitions in regional NSW align with feminist energy systems.

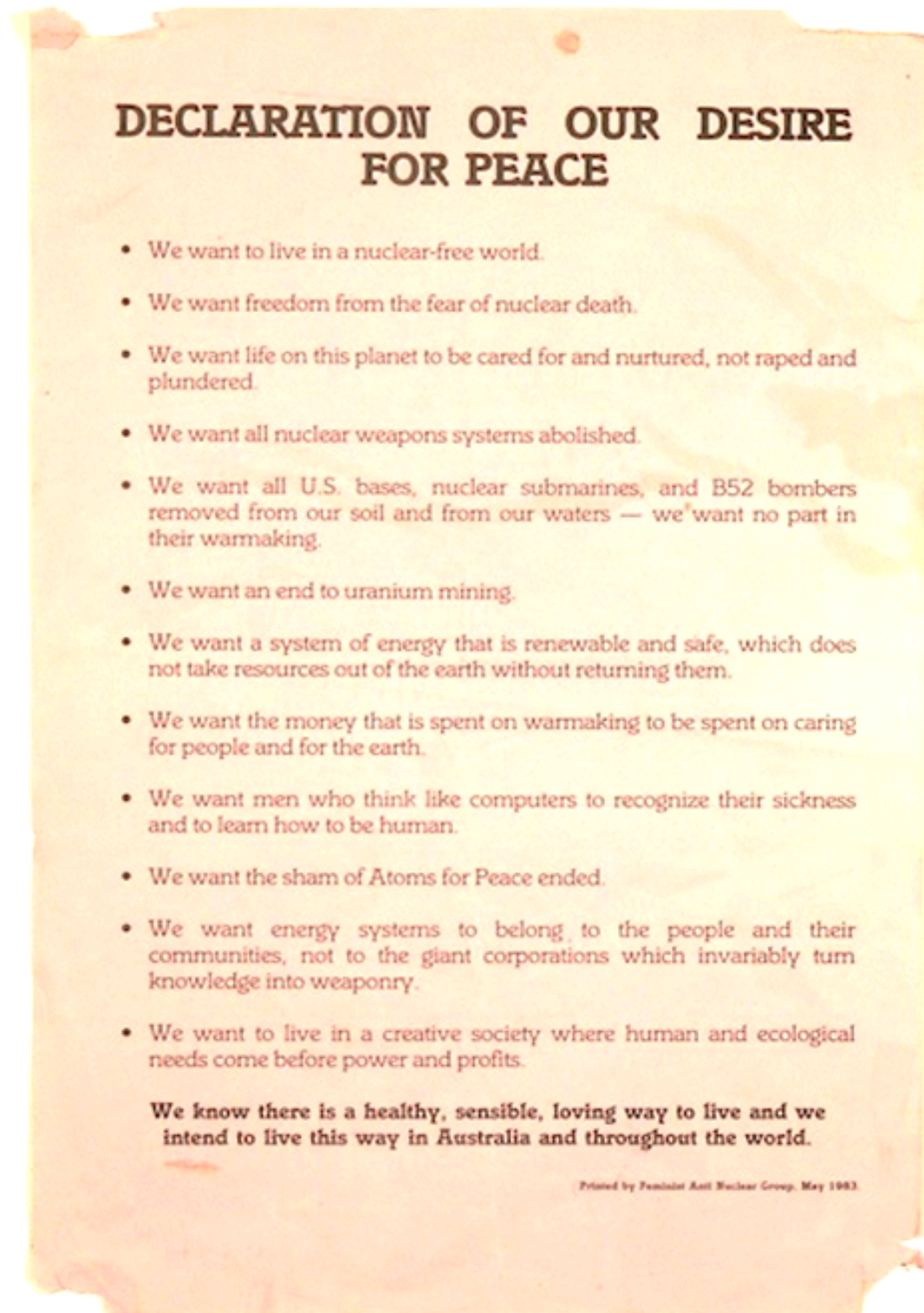
We turn now to a brief discussion of a time in recent history where energy, and energy justice, was being given significant attention in the broader environmental and peace social movements – the height of the nuclear power and weapons debate of the 1970s and 1980s. In particular, the following section will demonstrate what feminist analysis and praxis can bring to questions of energy injustice and to imaginings of more just energy futures.

### Chapter 3: Anti-Nuclear Feminist Energy Imaginaries

“We know there is a healthy, sensible, loving way to live and we intend to live this way in Australia and throughout the world”—so declared the Australian activist collective Feminist Anti-Nuclear Group (FANG) in May 1983. FANG was one of many feminist collectives around the world engaging in the global debate on nuclear weapons and energy during the Cold War period. FANG is just one example of feminist activists and scholars during this period whose future imaginaries were grounded in a growing understanding and elevation of the diverse labours, knowledges, and experiences of women—labours, knowledges, and experiences that were largely rendered invisible and devalued in dominant Western societies. The feminist anti-nuclear movement was characterised not only by critique of nuclear war and energy, but by feminist advocacy that sought to dismantle—among other capitalist and patriarchal systems—centralised, corporate energy, and usher in decentralised, self-organised energy.

**Nuclear Power Relations.** As has been documented extensively, women were at the forefront of the global anti-nuclear movement, particularly during its peak in the late 1970s and early 1980s (Eschle, 2013; Garc’a-Gorena, 1999; Liddington, 1991; Maleta, 2018; Merchant, 1981; Nelkin, 1981). Despite often being dismissed as anti-science and anti-tech greenies or hysterical mothers (Managhan, 2012), feminist interactions with the anti-nuclear movement were often complex and nuanced. In Australia, alongside FANG, other feminist anti-nuclear collectives included Women’s Action Against Global Violence (WAAGV), Women Against Nuclear Energy (WANE) and Wimmin for Survival.

#### Figure 2



*Figure 3: Declaration of our desire for peace, FANG poster 1983, Jessie Street National Women's Library—General Stacks, [IMG: A. West, 2020]*

From peace movements that focused on the threat of nuclear war to anti-uranium movements that focused on the impact of uranium mining and nuclear energy on the health of

people and planet, the women involved in these collectives were articulating connections between ecological destruction, patriarchy, capitalism, USSR state socialism, colonialism, and energy systems. The opposition of feminist anti-nuclear collectives to nuclear technologies largely stemmed from a systemic critique based on previous experiences of dealing with the psychological, social, ecological, and economic fallout of patriarchal and capitalist power relations.

It was due to these systemic critiques, and the multitude of other concerns that were held about nuclear war and nuclear energy, that so many specifically feminist, anti-nuclear groups emerged worldwide during the Cold War. Anti-nuclear feminists were recognising and articulating eco-social impacts and power relations associated with nuclear technology. The people involved in these collectives were demonstrating how technology is not neutral, and how the creation, implementation, and use of technology is deeply social – lessons that could be exceedingly valuable for people advocating for renewable energy technologies as part of energy and climate justice. Further, the arguments helped to shape the discussions in this thesis through demonstrating how feminist questioning of energy systems can unearth injustice and provide solutions. Similar women's collectives and campaigns outside Australia included the Greenham Common Women's Peace Camp in the UK; the Seneca Women's Encampment for a Future of Peace and Justice, and Women for Peace in the US; and the campaign in India against the Kudankulam Nuclear Power Plant—to name a few.

When campaigning against nuclear war, these women's collectives drew upon experiences of war in general, from bearing the psychological burdens of caring for returning war veterans from previous wars, often long after the state had abandoned them (Newcomb, 1986; Outram et al., 2009; Rehn & Sirleaf, 2002); to the traumatic experience of women's bodies being weaponised through rape as a tactic of war (Harris, 1993; Milillo, 2006; Nordstrom, 1996); to the grief of losing children, partners, family and friends to previous

wars (Grayzel, 2014; Noakes, 2015); and to being used as economic playthings—a cohort of surplus labour to be used in the war effort and then neatly returned to lives of drudgery and unpaid labour as housewives (Anderson, 1982; Goldin, 1991; Greenwald, 1990; Summerfield, 2013; Trey, 1972).

Women's opposition to nuclear energy drew upon experiences of previous chemical use and weapons testing impacting women's health and the health of children, including early nuclear weapons testing in Australia and the Pacific Islands (Bromet, 2014; Caldicott, 1978; Dibblin, 1990; Kerber et al., 1993; Tame & Robotham, 1982; Wittner, 2009); from ongoing exploitation and disenfranchisement at the hands of powerful corporations and male-dominated governments, (Kuhn & Wolpe, 2013; Logan, 1997; Salleh, 1995); to growing connections between feminist, environmentalist and Indigenous movements that exposed environmental racism and sacrifice zones (Bullard, 1993; Mann, 2011; Taylor, 2014); and for a desire to live more harmoniously with our living planet. As will be argued throughout this thesis, women are not innately more attuned to nature, but these collectives recognised that the lived experiences of women as carers and providers gave deep insight into humanity's reliance on and connection with a healthy, living planet (Federici, 2014; Salleh, 1997).

### **Figure 3**

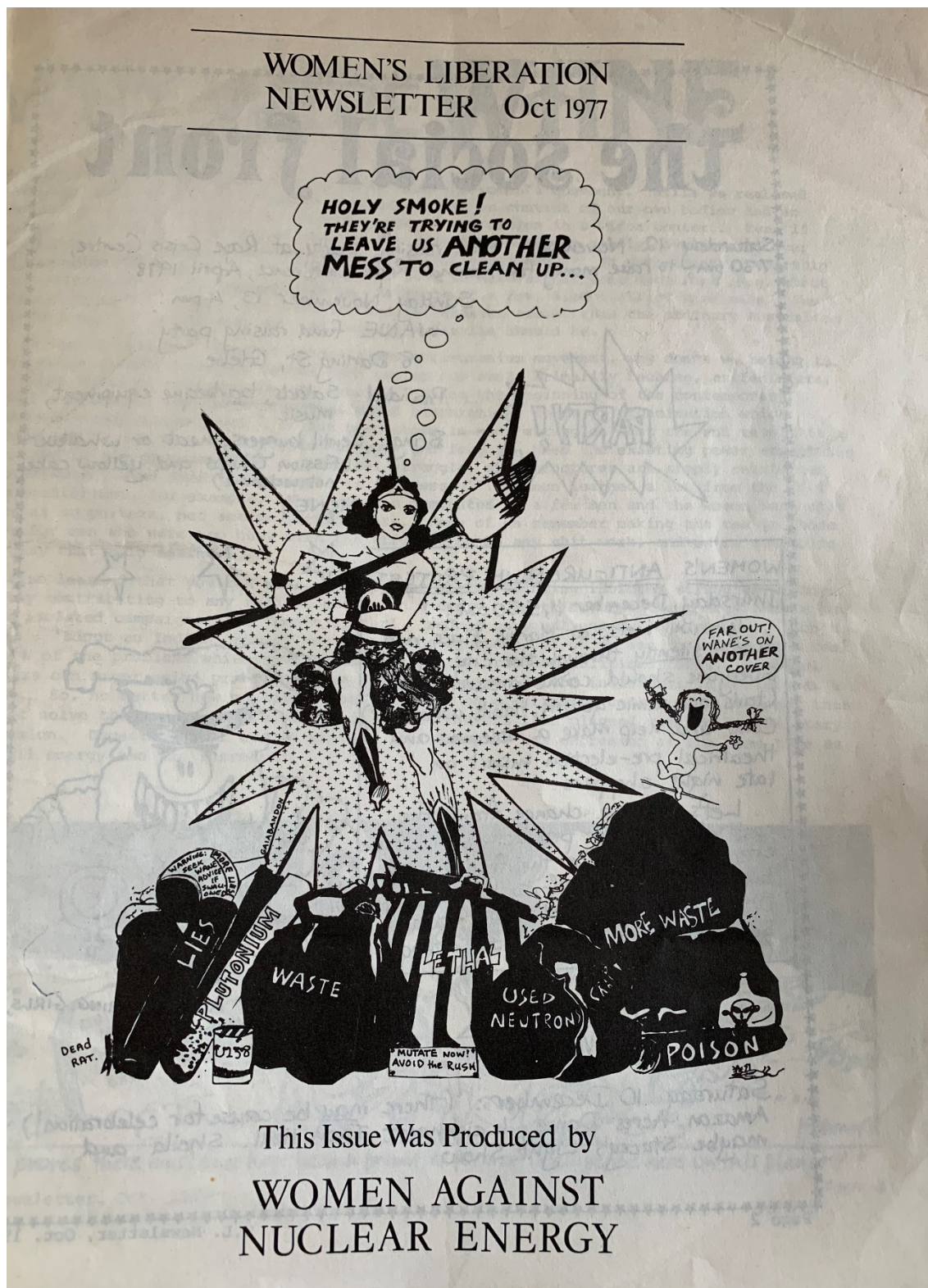


Figure 4: Sydney Women's Liberation Newsletter Cover Image, Oct 1977, Jessie Street National Women's Library—General Stacks, [IMG: A. West, 2020]

In October 1977, the collective WANE explained in the *Sydney Women's Liberation newsletter* why they had formed a women's anti-nuclear group:

While we realised the importance of specific women's struggles (such as control of our own bodies and an end to job discrimination), we also saw women's oppression in a wider context. Even if we won the right to abortion on demand, for instance, would we really have control over our own bodies when we can't escape the poison in our environment? (WANE, 1977)

A similar argument was put forward in the Australian Friends of the Earth (FoE) publication, *Chain reaction*:

Feminists whose previous political activity has been in the women's movement have found that the spectre of a nuclear society with its vast infringements of civil liberties threatens to destroy the reforms they have fought so hard to win and make long-term feminist goals impossible to achieve. ... It is obvious that the two are linked, especially now as we see our feminist anti-uranium demands knocked back by the same sections of society. Feminists are helping to broaden the anti-uranium movement into one for a non-nuclear and non-oppressive world. (O'Sullivan, 1979, p. 10)

The following excerpt from Susan Koen and Nina Swaim's *Handbook for women on the nuclear mentality* (1980), demonstrates the type of systemic analysis that feminist anti-nuclear activists and scholars were making at the height of the nuclear debate:

The nuclear industry functions on the premise that people and resources are expendable:

- Native Americans, South Africans, and other Indigenous and Third World peoples are exploited for the purpose of obtaining uranium.

- Mountains of uranium tailings are abandoned by uranium corporations with no responsibility for their clean-up.
- Workers in fuel processing and enrichment plants have insufficient safety regulations.
- Utility employees work with “permissible” doses of radiation.
- “Routine” emissions of hazardous materials occur from normally operating plants.
- Propaganda from the corporations which design, build, and operate nuclear plants promote more use of electricity to justify building more plants.
- Nuclear arms and plants are exported to other countries with minimal concern about their use.
- Nuclear bombs are dropped “to save the people.” (p. 11)

We can see in this array of experiences, arguments and discussions how feminist conceptualisations of energy injustice allow for different and arguably deeper articulations of the problem/s than, for example, the procedural/recognition/distribution framing discussed earlier in this chapter. Through articulating a broader understanding of how energy injustice might manifest, and how it might affect people and places beyond immediate impacts of particular energy projects, perhaps more effective counter-measures could be enacted or stronger bonds of solidarity across issues, movements and locations could be formed. At the least we have a more complex and realistic starting place.



**Challenging Techno-Determinism.** Further building upon understandings of eco-social relations of energy technologies, feminist anti-nuclear collectives also called into question the technological determinism in the idea of inevitable technological progress and the elevation of technocrats as during global nuclear weapons and energy debates. Anti-nuclear feminists had a desire to democratise science and ensure that the false dichotomy between social and technical decisions was no longer perpetuated:

We also feel that the division between social, moral, and ethical arguments on the one hand and technical rationales on the other must be challenged. The decision over uranium is not one for experts but for ordinary Australians. The prominence of (male) “experts” on uranium ... makes people believe that they cannot possibly make a decision on the question since scientific knowledge is beyond them. We think that the technological and economic aspects of the uranium issue can be expressed in ordinary language and are quite within most people’s grasp. (WANE, 1977)

Arguments such as this highlight how feminists involved in the anti-nuclear movement were not necessarily anti-technology or unscientific as they were often disparaged. Instead, many articulated an understanding of the subjective, masculine nature of dominant scientific thought, sought to demystify it, and use critical, scientific thinking to build better futures for people and the planet.

**Figure 4**



Figure 5: [Wimmin for Survival Newsletter December 1984 p. 14]

As this demonstrates, the crux of feminist opposition to the nuclear industry did not stem from unscientific or anti-technology sentiments, although some individuals may have held these positions; instead it largely stemmed from systemic power analyses of the nuclear industry. This is amply evidenced in feminist anti-nuclear writings, slogans, artworks, and other materials from this period which are shown throughout this section of this chapter (see also: FANG, 1983; Koen & Swaim, 1980; WAAGV, 1984; WANE, 1977; Wimmin for Survival, 1984). The carving out of space for specifically feminist anti-nuclear discussions and action allowed for new articulations and imaginaries to form. This in turn contributed to a refining of demands for the end of nuclear war and nuclear energy, and for the building of more regenerative, caring and reciprocal futures.

Challenging those who put certain technologies on a pedestal, or who suggest that technology is neutral is important for those of us who seek to ensure transitions away from fossil fuels and to renewable energy are just transitions. There is a notable element within the broader climate movement who hold considerable faith in the power of technology to overcome exceedingly complex eco-social problems (Zylinska, 2018). Recognising and

highlighting the deeply social elements of technology is another important lesson in energy justice that can be learnt from anti-nuclear feminists.

**Anti-Nuclear Solidarity and Collaboration.** Feminist praxis involves both the critique of injustice and the practice of more just alternatives. While feminist anti-nuclear collectives were critiquing and highlighting the unequal power relations and unjust potentialities of the nuclear industry, they were also demonstrating that other modes of living can exist outside of competitive, profit-driven, centralised systems.

As will be explored throughout this thesis, care, collaboration, and reciprocity are central tenets of materialist feminist politics. Feminist solidarity is reciprocity writ political and demonstrates how feminist anti-nuclear activists were conceptualising and materialising their values and visions for alternative futures. Figure 5 demonstrates not only cross-pollination between Australian feminist anti-nuclear groups and individuals, but their explicit aim to “link with our sisters” around the globe who were also struggling against the nuclear industry.

### **Figure 5**

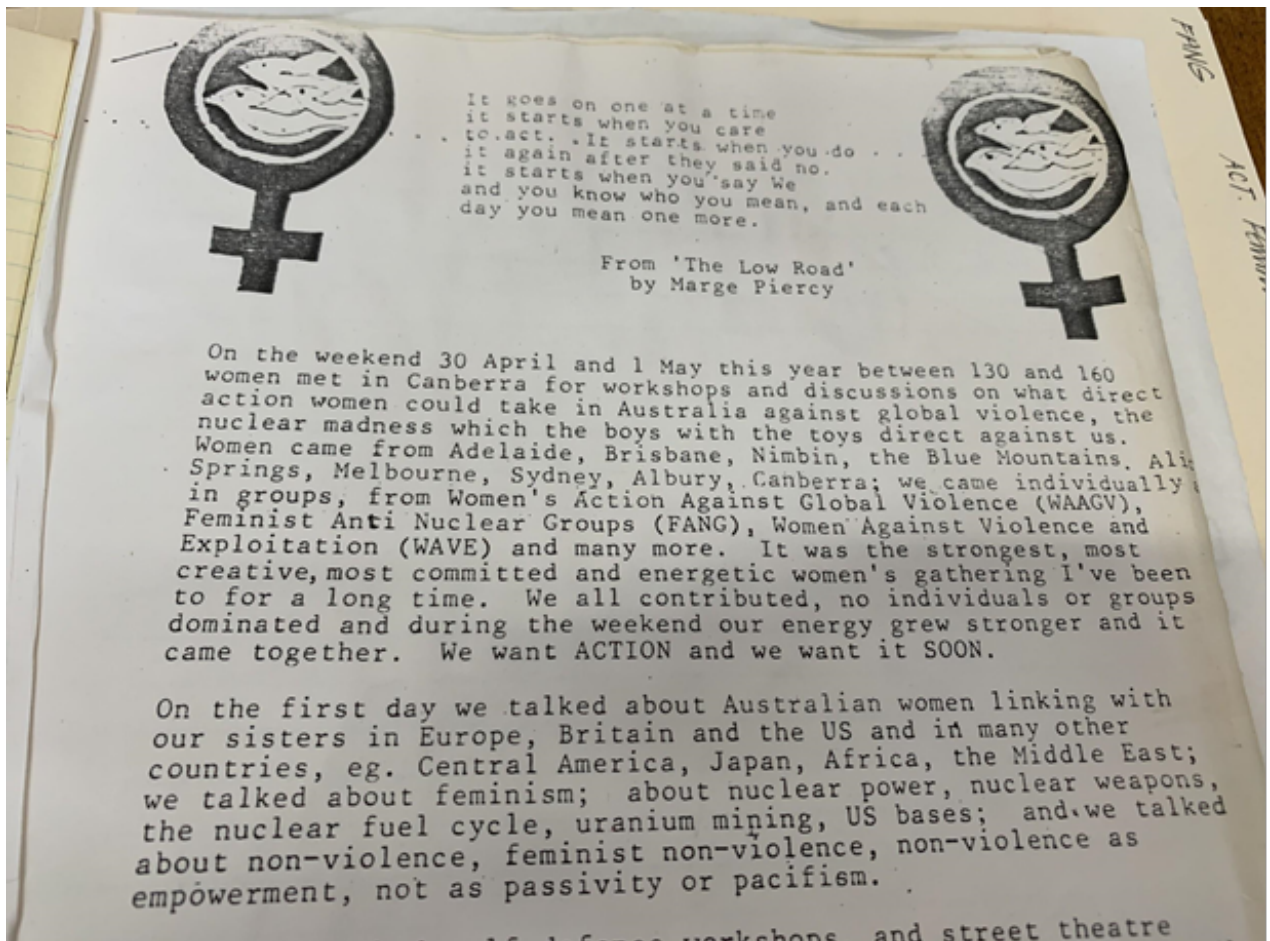


Figure 6: FANG report back in *Women's Liberation Newsletter* (Sydney) 1977 p. 8

The valuing of reciprocity and its embodiment in solidarity work was not only limited to building connections between feminist anti-nuclear groups globally, but also extended to struggles occurring simultaneously over fossil fuels. Figure 6 shows an excerpt from the 1984 WAAGV newsletter which recounts solidarity work being undertaken by feminist anti-nuclear activists and women of British mining communities.

**Figure 6**

## **Significant links between women of Greenham and mining areas**

— **Miranda, from WAND Newsletter**

There have been links forming between Greenham women and the women of the British mining communities for some time now. The first I heard of it was several months ago when Greenham women were given bail conditions of staying distances from not less than 5 metres, to 5 miles away from the fence, while miners' wives were being bonded to stay 5 miles away from the picket lines. One day at Greenham, someone had the bright idea that obviously, miners' wives should come to Greenham, and Greenham women should go to the picket lines.

Since then, there have been steadily increasing exchanges of support, visits and general involvement with each other at tacti-

*Figure 7: Note. WAAGV newsletter 1984 Vol.1, No.6:*

This type of support and collaboration between women anti-nuclear activists and mining women goes some way towards challenging the dominant framing of “environment versus jobs,” or “greenies versus miners,” and demonstrates some level of understanding of commonalities and commitment to reciprocal relations in future building political projects.

However, solidarity and reciprocal relations are not necessarily easy to achieve or maintain—and there were tensions between the Greenham women and the Women Against Pit Closures (WAPC). Shaw and Mundy (2005) drew out some of the complexities of these relationships, particularly those around class and gender relations:

Their mutual solidarity was positively expressed through active participation in each other's struggles. Women participants in our research had visited Greenham, and spoke of their admiration for Greenham women; but they did not identify with their separatist politics, and this became the source of considerable tension at a specially

convened conference in 1987 in Durham to bring women together from each protest.  
(p. 161)

Shaw and Mundy suggested that the tensions that arose between the Greenham women and WAPC largely stemmed from a failure on the part of the Greenham women to consider class relations. WAPC was a predominantly working-class campaign, whereas Greenham was predominantly run by middle-class women.

These tensions and the fragility of the “sisterhood” between Greenham and WAPC provides important lessons for future feminist political movements, and indeed for all those within the energy justice movement. Feminism that does not account for or recognise the differences between women, and that does not look to intersecting power relations of class, race, ability, sexuality and so forth, will likely result in enacting the very unequal and unjust power relations feminism seeks to dismantle. Regeneration, caring and reciprocity must be genuine and seek to redress injustices that include, but go beyond, gender relations.

**Alternative Energy Futures.** The critiques and actions taken against the nuclear industry by anti-nuclear feminists were often accompanied by imaginaries and demands for alternative futures. Futures that were free from the threat of nuclear war, yes, but also futures that encompassed broader, eco-social transformations. Recognising the ubiquity and power of the energy industry, particularly nuclear, but also later fossil fuels, feminist conceptualisations of the future often included solar energy.

We can see in the excerpts in Figures 7 and 8 that some anti-nuclear feminists located a structural, materialist ecofeminism as their foundation for conceptualising alternative futures. In placing their hope for the future in ecofeminist praxis, they are putting forward a form of active hope. For Koen and Swaim, hope is to be found in the work of building and enacting ecofeminist politics; hope is to be found in both imagining but also, importantly,

building towards alternative futures. This foundation of active hope through feminist praxis is similarly central to this thesis.

Figure 7

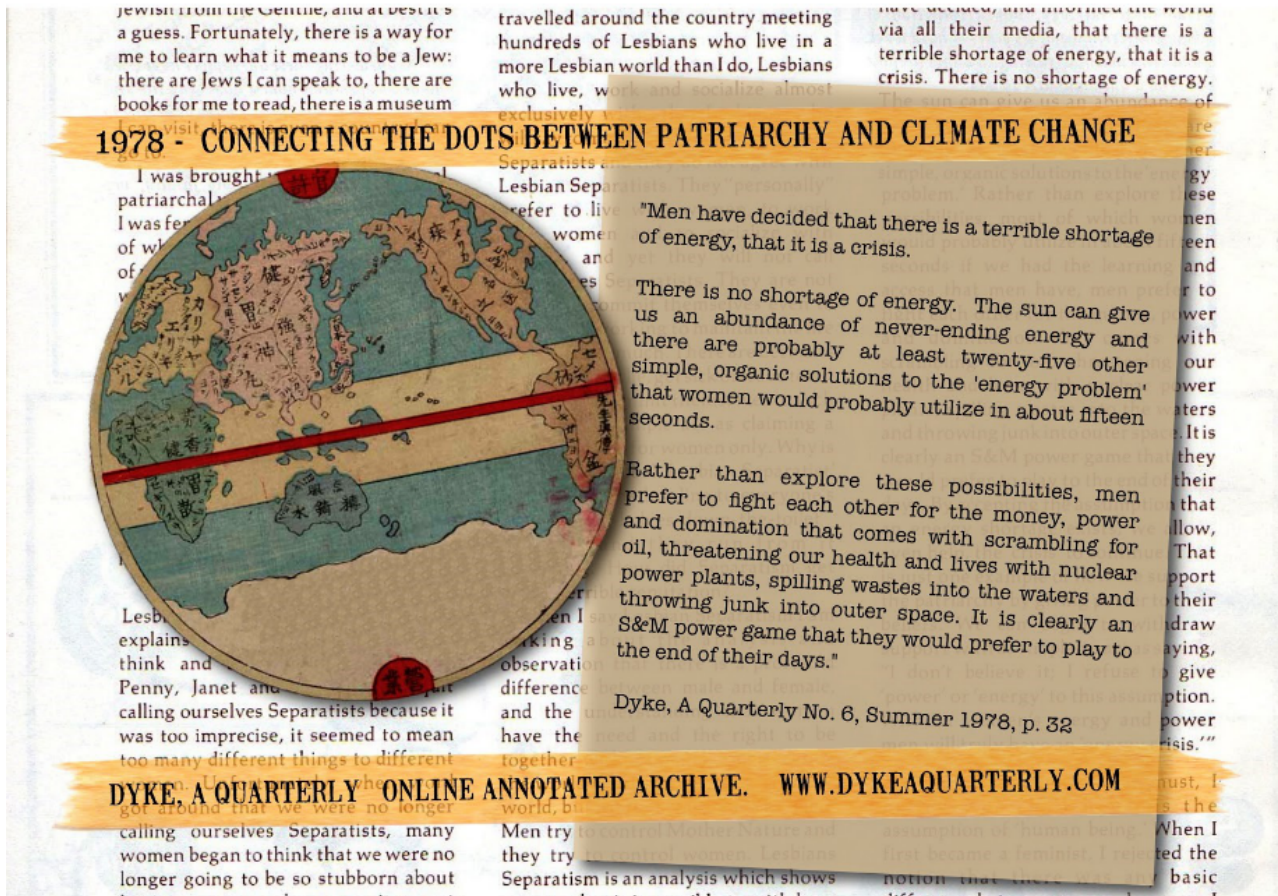


Figure 8: Connecting the dots between patriarchy and climate change – Dyke Quarterly

Figure 8

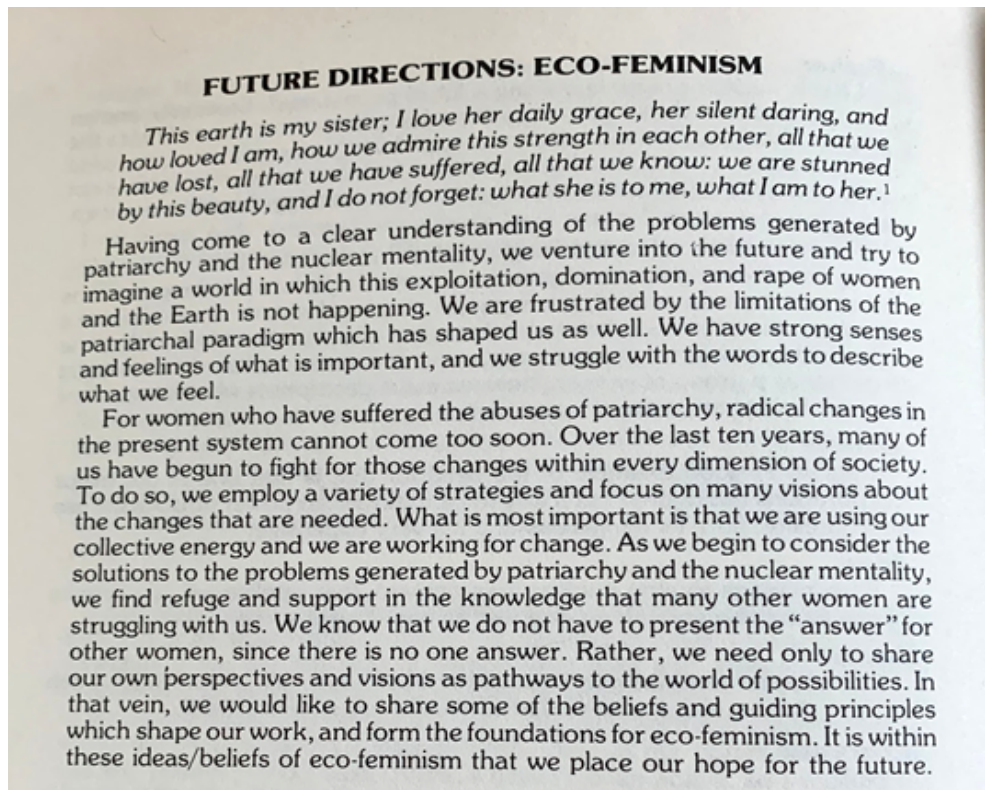


Figure 9: *Ain't no where we can run: Handbook for women on the nuclear mentality*, Koen & Swaim 1980, p. 6

The biophysical logic of renewable energy (i.e., sun and wind are pretty much everywhere) allows for the decentralisation and democratisation of energy systems—two aims of materialist feminist alternative futures. Anti-nuclear feminist collectives recognised this potential and conjured up feminist energy imaginaries where energy was derived from the sun, collectively owned, and locally sourced. In these imaginaries, human–nature relations were more harmonious and there was greater focus on joy, leisure, and spending time with one another. Clearly, more than a transition in energy sources would be required for these imaginaries to come to fruition. However, the inclusion of energy systems in these imaginaries highlights the connections that feminist anti-nuclear activists were making between centralised, corporatised energy systems that were destructive of the planet, and decentralised, community-owned, and controlled energy systems that were more in harmony with people and planet. This thesis considers these imaginaries and applies them to present-day energy transitions. Is there a greater focus on joy, leisure and spending time with one





**Anti-Nuclear Lessons for Emerging Renewable Energy.** As we face another global debate on our energy futures, we can look to the energy imaginaries of anti-nuclear feminist activists and consider the paths we are advocating. As will be argued throughout this thesis, renewable energy has the potential to contribute to regenerative, caring and reciprocal eco-social relations, but that does not mean that it necessarily will (West, 2019). Bell et al. took up this point and formed an eloquent argument:

The political diversity of emerging solar and wind projects tells us that more than one renewable energy future is possible, and that political struggle will be necessary to ensure that these futures are just and sustainable. ...

Any critique of the state of renewable energy development raises an important question, oft heard from ecomodernists: given the high stakes of the climate crisis, should we quibble over the means by which we achieve decarbonisation? ... Such a question rests upon several assumptions that have not thus far been empirically demonstrated: that authoritarian-, imperial-, and/or capital-led forces exist with sufficient motivation to lead a global decarbonisation; that such pathways would in fact be easier and faster than more democratic and inclusive ones; and that a decarbonisation effort brought about via hegemonic political styles could ever be truly sustainable from an ecological and social perspective. A feminist energy perspective, attuned to the violent outcomes of other political hegemonies, is sceptical of all three assumptions. (Bell et al., 2020, p. 4)

The critiques and future imaginaries of feminist anti-nuclear collectives discussed here provide important lessons for considerations of transitions to renewable energy. These collectives exposed the unjust and unequal power relations of the nuclear industry and they highlighted the social relations of technology—challenging nuclear techno-determinism.

Furthermore, these collectives enacted solidarity, demonstrated the necessity of systemic, intersectional feminist solidarity, and conceptualised and often began to materialise alternative futures grounded in the diverse labours, knowledges, and experiences of marginalised peoples. The mistakes, oversights, learnings, and triumphs of feminist anti-nuclear collectives provide rich ground from which to build feminist renewable energy systems.

The lessons provided by feminist anti-nuclear energy imaginaries will be returned to throughout the thesis, particularly in the concluding chapter. To progress the arguments presented throughout the thesis, the Marxist concept of alienation, and subsequent materialist ecofeminist responses of de-alienation and (re)commoning will be drawn upon. These concepts allow a deeper examination of the energy transformation through the lens of feminist energy futures alongside complementary Marxist articulations of more just futures. It is to this conceptual framework that the thesis now turns.

## **Chapter 4: Energy, Alienation and the Potentiality of De-Alienation Through Energy Commons - A Conceptual Framework**

New conceptual tools are needed for describing the humanity-nature interface.

(Salleh, 2009, p. ix)

De-alienation is grounded firmly in peoples' movements for what we would call ecosocialist, ecofeminist transformation. It is about confronting capitalist power with peoples' counter-power in every circuit of production, consumption, social reproduction, and nature. (Brownhill et al., 2012, p. 102)

“Alienation theory is enjoying a resurgence,” proclaimed Norwegian sociologist Emil Øversveen, “the concept of alienation possesses an explanatory power that makes it difficult to abandon” (2021, p. 2). Alienation refers to the phenomenon whereby people become estranged from one another, from ‘nature’ and from the processes and products of our labour due to capitalist economic relations (Marx, 1844). The theory suggests that we first and foremost consider one another, nature, and labour through a (capitalist) economic lens, as resource or competition for resources, rather than more complex – and potentially more harmonious – eco-social interactions. It is certainly true for this thesis that the explanatory power of Marxist conceptualisations of alienation provided a clear pathway through which to explore and examine ethnographic findings. As will be discussed throughout this chapter, Marxist alienation theory alongside materialist ecofeminist de-alienation theory provided structure and conceptual grounding to the analytical insights that arose from my ethnographic fieldwork.

This chapter will define the key concepts used throughout this thesis and explain how and why these concepts were chosen. Alongside the broader concepts of alienation and de-alienation, this chapter introduces key related concepts including ‘metabolic rift’, ‘human–

nature divide’, ‘regenerative labours’, ‘eco-sufficiency’, and ‘embodied materialism’. The majority of these concepts come from materialist ecofeminist scholarship.

Indeed, the explanatory power of Marx’s theory of alienation was revealed to me initially not through Marx or Engels themselves, but through ecofeminist and ecosocialist scholars Leigh Brownhill, Terisa Turner, and Wahu Kaara. In 2012, Brownhill et al. published a paper arguing that de-alienation and a corresponding re-commoning was a desirable path out of the current intersecting eco-social crises that have resulted from centuries of rampant capitalism. What is being taken up in this thesis from Brownhill et al. is their conceptualisation of de-alienating remedies to Marxist concepts of alienation, as outlined in Table 1.

**Table 1**

*Table 1: Brownhill et al. de-alienation remedies*

Marxist concept of alienation	Brownhill et al. de-alienation remedy
Alienation from labour process	Returning control over processes of production to producers
Alienation from product of labour	Regaining dominion over the products of labour
Alienation from others	Reintegrating with others
Alienation from self and nature	Re-conceiving of ourselves as individuals, part of the universal/re-establishing the species-being and therein recognition of one’s interaction with all

Originally, this thesis was going to examine renewable energy projects through all four concepts of alienation and their corresponding de-alienation remedy, as outlined by Brownhill et al. However, it soon became apparent that each concept of alienation and its corresponding de-alienation would require their own chapter—totalling eight analysis chapters! To stay within a reasonable word limit and to ensure the analytical examination of

my data received the time and attention from me that it deserved, I decided to focus on two out of the four concepts of alienation.

Therefore, this thesis explores ethnographic data through the conceptual lens of alienation from others and alienation from nature—and their corresponding de-alienation remedies as suggested by Brownhill et al. This allowed me to focus more on social reproduction and eco-social relations in energy transformation rather than solely focusing on production and consumption, although of course alienation from others and nature is deeply entwined with alienation from product and labour. As discussed in the previous chapter, exploration of these areas is a gap in the literature that this thesis aims to help address. However, an exploration of renewable energy transitions focused on alienation from product and alienation from the labour process, and their corresponding de-alienation remedies, would also be an interesting and valuable area of future research.

### ***Alienation From Nature and Others***

In his earlier works, the concept of alienation was fundamental to Marx's exploration and examination of labour, capital, and nature. In *The economic and philosophic manuscripts of 1844*, Marx identified a series of processes of alienation that had arisen, and he argued would continue to arise, in capitalist societies. While Marx would move on from using alienation terminology in his later writings, scholars have argued that these earlier conceptualisations of alienation laid the groundwork for Marx's scholarship on commodity fetishism, metabolic rift, and estranged labour (Swain, 2012). Similarly, as suggested by Øversveen in the opening paragraph of this chapter, the power of alienation theory as an analytical tool has been discovered and utilised by Marxist and materialist scholars in recurring waves since it was first proposed. Many of the scholars drawn on in this chapter have built their theories and concepts through thinking, writing, and critiquing in dialogue with the rich tapestry of Marxist scholarship.

In his theory of alienation from others, Marx (1844) essentially argued that capitalism estranges people from one another as it causes us to first and foremost consider one another in relation to our economic positions, and economic relations, alone. This idea was continued by Engels who argued that capitalism led to humans acting in competition with one another, rather than acting in the common interest. In his 1845 book, *The conditions of the working class in England*, Engels provided a social history of early capitalism and the industrial revolution in England, as it affected the working classes. It was there that he formed some of his initial understanding and analysis of how shifting socioeconomic relations were similarly shifting relations between humans. He drew on the concept of competition to explore emerging alienation between people. Engels argued that:

Competition is the completest expression of the battle of all against all which rules modern society. This battle, a battle for life, for existence, for everything ... is fought not between the different classes of society only, but also between the individual members of these classes. (Engels, 1845, p. 111)

Marx's theory of alienation from others was, like much of his analysis, predominantly grounded in the sphere of productive labour. He argued, for example, that "within the relationship of estranged labour each man views the other in accordance with the standard and the position in which he finds himself as a worker" (Marx, 1844/1988, p. 79). However, as will be explored throughout this chapter, the concept of alienation from others has been expanded by other scholars to encompass broader social relations, specifically the social-reproductive sphere<sup>3</sup>.

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<sup>3</sup> For an in-depth and insightful critique and discussion of Marx's and Engels's understanding of human nature, productive labour, and reproductive labour see materialist feminist scholar Maria Mies's *Patriarchy and accumulation on a world scale* (2014, pp. 49–52).

The process of alienation arguably least explored by Marx but most important to our current Capitalocene era is alienation from nature (Malm, 2016; Moore, 2016). Briefly, in his theorisation of capitalism's alienation from nature, Marx recognised that capitalist eco-social relations relied upon a false separation of humans and nature, and on taking nature as commodity or resource. He also recognised the inherent artificiality of this claim, arguing that

man lives on nature ... with which he must remain in continuous interchange if he is not to die. That man's physical and spiritual life is linked to nature means simply that nature is linked to itself, for man is a part of nature. (Marx, 1844/1988, p. 76)

Engels, arguably more concerned with incorporating eco-social relations into his critiques than Marx, similarly rejected the capitalist division of humanity and nature. He argued that "Nature ... is the foundation upon which we human beings, ourselves products of nature, have grown up. Nothing exists outside nature and man" (Engels, 1886/2001, p.17).

While alienation theory is enjoying a resurgence, it is not without its critics. Some Marxist theorists argued that Marx abandoned the concept of alienation and replaced it with ideas of commodity fetishism. However, this thesis takes the view articulated by Swain (2012), that commodity fetishism is a development of Marx's theory of alienation, not a replacement:

The strongest argument against these ideas is the strength of Marx's theory of alienation itself. ... I have tried to argue that alienation is a concept that can genuinely help to understand many of the problems faced by human beings. ...The theory of alienation offers a way of understanding how these things are connected, and how they might be different. (p. 89)



Similarly, considering critiques of alienation, Gimenez (2019) traced the broad application and vast literature on alienation to suggest that “there is no agreement about [alienation’s] meaning, causes, and nature” (p. 258). However, she follows this with an exploration of how the concept of alienation has allowed her to articulate her own work. As a Marxist scholar, Gimenez appreciated and highlighted how Marx’s theory of alienation is grounded in exploration and critique of the social relations of capitalism. Like other feminist scholars, however, she found Marx’s consideration of the reproductive sphere to be limiting:

[Alienation theory] is, however, somewhat limited in its scope because it undialectically stresses the negative dimension of private life and domestic activities and overlooks their potential for generating ... experiences, social practices, and forms of consciousness antithetical to capitalism. (Gimenez, 2019, p. 260)

By drawing on these concepts of alienation from one another and alienation from nature, this thesis is able to interrogate how the centrality of capitalist, for-profit economic relations impacts localised examples of energy transformation to renewable energy. Importantly, the thesis will also explore where alienation is being challenged in our energy transformation, which leads us to the next section introducing de-alienation from others and nature.

### ***De-Alienation From Nature and Others***

Marx described his scholarship as “positive criticism” (1844/1988 p. 15), whereby he aimed to draw out a strong critique of capitalist socioeconomic systems alongside suggestions on how to struggle against and overcome their inherent exploitation and move towards the good life. Marx and Engels argued that collective action is the revolutionary remedy to alienation and exploitation as it has people labouring together in solidarity and common cause (Marx & Engels, 1848/2012). It is in keeping with this ethos of positive criticism and

the promotion of ‘healthy human action’ that this thesis is framed; not only around the lens of alienation but crucially, also that of de-alienation.

While the Marxist theory of alienation is highly cited and is enjoying the resurgence discussed by Øversveen (2021), Brownhill et al.’s paper on de-alienation is not well-cited. Their paper was written in response to, and as a critique of, degrowth scholarship, and most responses to the paper (Akbulut, 2021; Andreucci & Engel-Di Mauro, 2019; Barca, 2019; Weiss & Cattaneo, 2017) continued the debate on degrowth rather than taking up the de-alienation framework put forward by the authors. It is outside the scope of this thesis to engage deeply with the ongoing debates over degrowth’s efficacy and usefulness as a political movement. However, perhaps through framing de-alienation in response to degrowth, Brownhill et al. unintentionally limited the impact of what I consider to be an insightful theoretical framework for any process of energy transition.

Brownhill et al. clearly articulated their conceptualisation of de-alienation:

The term calls attention to the problem of “alienation”—from enclosure of land, productive processes, and products to the alienation of people from each other and from themselves—and the *transformational potential of subverting alienation*. The discussion of “de-alienation,” and those critically engaged in it, brings us to the centre of a perspective that is historically grounded, involves real world actors, and has at its core the exercise of power and counter power. (2012, pp. 96–97, emphasis added)

De-alienation is a necessarily political and social attempt to ‘restore’ or generate the wholeness of human life in society and ecology. De-alienation both recognises alienation as a central existential problem, and actively seeks to resolve that problem through collective action and the (re)commoning of eco-social systems. As argued by Brownhill et al., “‘De-alienation’ tries to capture this double movement, of the reclamation of the earthly commons

(necessarily entailing class struggle against enclosures [including enclosures of energy]) and the reconstitution of the social life necessary for human stewardship of those commons” (2012, p. 102).

By examining eco–social relations around renewable energy projects through the lens of both alienation and de-alienation from nature and others, this thesis is able to interpret and understand issues that are arising and avenues through which to address them. Grounding the ethnographic data in alienation concepts, individual concerns can be brought into the larger pattern of people both feeling and being alienated from others and from nature in the context of energy transitions. Further, in exploring the ethnographic data through de-alienation concepts, the power of and potential for collective action to contribute to more harmonious eco–social relations, de-alienation and the (re)commoning of eco–social systems emerges.

The remainder of this chapter introduces and outlines other key concepts drawn on throughout this thesis. The first half of the chapter will explore concepts that allow for a deeper analysis of how alienation from nature and from others is manifesting in transitions to renewable energy. The following half will similarly explore concepts that enhance the understanding and examination of processes of de-alienation from nature and from others that are emerging from transitions to renewable energy. These concepts will then be woven into the following analysis and discussion chapters.

### ***Additional Concepts for the Exploration of Alienation***

The core concepts explained in this section include metabolic rift, ecological destruction, human–nature divide and nature as commodity. Each concept will be defined, linked to alienation, and justified in relation to how it enhances the arguments put forward in this thesis.

**Metabolic Rift and Ecological Destruction.** Although Marx adopted different concepts to alienation in his later works, many of these concepts were grounded in and built upon alienation theory. One such concept is “metabolic rift” which has been developed by Marxist scholars from ideas in Marx. As argued by Foster:

Much of Marx’s discussion of the metabolic relation between human beings and nature can be seen as building on the early Marx’s more directly philosophical attempts to account for the complex interdependence between human beings and nature... Most importantly, the concept of metabolism provided Marx with a concrete way of expressing the notion of alienation of nature. (2000, p. 158)

This relationship and interdependence between humans and nature was the key site of theorisation and conceptualisation of the metabolic rift for Foster. Metabolic rift is deeply related to the separation of humanity and nature, and the commodification of nature that will be discussed later in this chapter. As further defined and argued by Foster:

[Marx] applied a dialectical mode of analysis not to external nature itself ... but rather to the interaction between nature and humanity, emphasising the alienation of nature in existing forms of reproduction and the contradictory, nonsustainable character of the metabolic rift between nature and society that capitalism in particular had generated. Moreover, Marx conceived this metabolic rift not simply in abstract terms but in terms of the concrete crisis represented by the degradation of the soil and by the problem of human and animal “wastes” that engulfed the cities. Both were equal indications, in his analysis, of the metabolic rift between humanity and the soil, reflected in the antagonism of town and country. (1999, p. 399)

The crux of Foster’s argument on metabolic rift is that capitalism is reliant on extractive eco–social relations whereby ecosystems and harmonious eco–social relations are

disrupted. As defined by Salleh, “the harmonious material process by which humans take from nature, digest, and give back in return is known as the humanity–nature metabolism” (2009, pp. 5–6). Marx argued that this humanity–nature metabolism is disrupted by capitalist production; a rift is created between humans and nature due to capitalist production, and both ecosystems and humanity suffer as a result. The degradation of soil, the agricultural crisis, and urbanisation of Europe were the catalysts for Marx conceiving of the concept, but it can be applied more broadly to examples of ecological destruction and degradation caused by disharmonious, capitalist eco–social relations.

The concept of metabolic rift allows us to describe and discuss problems caused by extractive, exploitative eco–social relations as part of a broader pattern present in capitalist societies. It also opens up space to consider how de-alienation from nature might occur. Salleh, often critical of Marx’s lack of focus on eco–social relations and the reproductive sphere (1997), acknowledged that his work on the metabolic rift demonstrated an understanding of the importance of more harmonious humanity–nature interaction. Linking metabolic rift to alienation from nature, Salleh argued,

If Marx gave most of his attention to the human condition, he also acknowledged nature’s part in the generation of value. Moreover, workers themselves in this dialectic were seen as “forces of nature” pitted against nature by the capitalist production process. When Marx wrote in this way, he was contesting the ideology that alienated humans from nature. (Salleh, 2010, p. 208)

In *Capital* Volume 1, Marx argued that “the transformation of capitalism, the abolition of wage labour, and the creation of a society of associated producers thus necessitated the abolition of this alienation of human beings from the earth” (Marx, 1858 quoted in Foster, 2000, p. 175). While it is not always recalled as a core argument, we can see

Marx's understanding that creating or reinstating more harmonious eco-social relations would be integral to building socialist futures.

The concept of metabolic rift will help us to explore what kind of eco-social relations are emerging in different models of transitions to renewable energy. We will be taking the concept and expanding it to those broader examples of ecological destruction and degradation caused by disharmonious eco-social relations. When taking an expanded understanding of the concept, global ecological crises, including the climate crisis and the biodiversity crisis, can be brought into an analysis and discussion of how capitalist economics are at the heart of such crises.

The following analysis chapters will consider in which situations metabolic rifts are continuing through renewable energy production, and conversely those in which renewable energy is seeking to contribute to repairing the metabolic rift. In particular, Chapter 8 will draw on the concept of metabolic rift to examine the destruction and/or restoration of water systems, biodiversity, climate, and the impacts of industrialisation.

**Nature–Human Divide.** Ecofeminist scholarship broadly posits that the dominant eco-social systems that converge as Western capitalist patriarchy have sought to naturalise women and feminise nature in an attempt to control and exploit both. Ecofeminism sprouted out of social movements such as the Chipko movement and Green Belt movement, and broad feminist theory (Maathai, 2007; Plumwood, 1993; Shiva, 1987). It sought to bring nature and the environment into feminist scholarship and activism. Materialist ecofeminism (Mellor, 2000; Salleh, 1997) more specifically posits that the unequal power dynamics present in class, gender, and race relations are also present and entwined with eco–social relations. Materialist ecofeminism holds that the concepts of nature and gender have been socially and economically shaped to create and enforce unequal power structures that rely on the unpaid labour of women, on the exploitation of the Global South and on “externalisation” of ecological destruction (or, pretending that ecological destruction is external to important socio-economic systems).

Mies suggested that the transition from feudalism to capitalism was a key process whereby human–nature relations shifted considerably. She argued,

Whereas the ruling classes among the pastoralists and the feudal lords were still aware of their own dependence on nature, including women (which they, therefore, tried to influence by magic and religion), the capitalist class saw itself right from the beginning as the master and lord over nature (cf. Merchant, 1981)... This extractive, non-reciprocal, exploitative object–relation to nature, first established between men, and women and men and nature, remained the model for all other patriarchal modes of production, including capitalism which developed it to its most sophisticated and most generalised form. (Mies, 2014, pp. 68–71)

Gruen and Gaard explained how

the way in which women and nature have been conceptualised historically in the Western intellectual tradition has resulted in devaluing whatever is associated with women, emotion, animals, nature, and the body, while simultaneously elevating in value those things associated with men, reason, culture and the mind. (Gruen & Gaard, 1993, p. 3)

Salleh utilised a formula to discuss this phenomenon. She argued that Western patriarchal capitalism is built on a system of Men > Women = Nature. She further uses this formula structure to explain a core difference between liberal feminism and materialist ecofeminism, in which she argued the goal of liberal feminism is Men = Women > Nature compared to materialist ecofeminism's goal of Humans = Nature (Salleh, 1997, p. 159).

Language is a key tool in perpetuating this division between men and nature. Merchant's (1981) classic textual discourse analysis of scientific and philosophical literature written by men about nature revealed a dominating, sexualised, and gendered language and attitude. Such literature was based on the assumption that nature must be "bound into service" and made a "slave," or put in "constraint" and "moulded" by the mechanical arts. It also suggested that the "searchers and spies of nature" were to discover her "plots and secrets." In contrast, strong masculine language was used to describe and praise male scientists: "hard facts," "penetrating mind," or the "thrust of his argument". Merchant argued that within dominant capitalist societies, nature had shifted from "an active teacher and parent [to] become a mindless, submissive body". This language exposes the overpersonification of nature and the correlative underpersonification of women (Roach, 1996), both integral for dominant eco-social systems that rely on the unpaid labour of women and the separation of humans and nature to function (Birkeland, 1993).

The core praxis of materialist ecofeminism is a double movement of exposing the false separation of humanity and nature perpetuated by capitalist eco-social systems followed



by repairing and generating more harmonious eco–social relations—specifically through valuing, teaching, and practising “women’s” labours and knowledges (to be discussed in further detail later in this chapter). Through this, the materialist ecofeminist analysis employed in this thesis will assist us in understanding how the human–nature divide has contributed to the climate crisis and whether this divide is continuing to be perpetuated through proposed “solutions” to the crisis, including renewable energy. As highlighted, materialist ecofeminism can do more than provide an understanding of where this division is continuing and the impacts that is having on eco–social relations around energy; it can also provide a framework through which to explore and enact transformative responses—including transforming our energy systems. That is to say, a materialist ecofeminist analysis allows a consideration of the human–nature divide, an analysis of alienation, and of de-alienation in renewable energy transformations.

**A Brief Case Study on the Separation of Humans and Nature in the Corporate Renewable Energy Space.** The language used by corporations, organisations, and individuals involved in energy system transformation reveals significant information about their priorities. Through fieldwork conducted for this thesis, I observed that the language used by corporations involved in the renewable energy industry is predominantly focused on financial outcomes and emerging technologies. By comparison, I observed that the language used by community energy organisations and advocates is predominantly focused on the social and ecological benefits and impacts of our energy-system transformation.

Even a cursory glance at the websites of the peak bodies for the renewable/clean/smart energy sector and the community energy sector demonstrates this difference. The website copy for the Smart Energy Council – a peak body for the ‘smart’ energy sector – reveals an organisation deeply interested in the technological and economic

aspects of energy transition. This section of their ‘about us’ page is indicative of the tone of the rest of their digital communications,

Australia’s transition to a net-zero emissions economy will deliver massive business and economic benefits. It is possible to grow jobs, attract investment, innovate and become more economically competitive, all while transitioning to a safe climate. Achieving a strong economy and a safe climate is not just possible, it is absolutely critical if we are to confront the challenges of the future. (Smart Energy Council, 2020)

We can compare this to the Community Power Agency website – the peak body for community energy in Australia.

At the Community Power Agency, we believe that local, people-powered clean energy projects will bring lasting benefits to communities across Australia. We care about achieving a transition to clean energy that benefits everyone, regardless of where you live, or what you earn. Together we are powerful – and now is the time to act on climate change. We are dedicated to supporting communities to take the power back and develop and deliver their own clean energy projects. Let’s work together. (Community Power Agency, 2019)

Linking back to the dualisms outlined earlier by Gruen and Gaard, finances and technology remain socially coded as masculine, whereas care and consideration for people and the environment has been coded as feminine—and as considerably less important when it is fundamental to an equitable and just energy future.

The masculinity of centralised, corporate renewable energy is often on full display at industry events. At the 2019 Smart Energy Conference held in Sydney, one of the renewable energy industry’s biggest annual events, the room was awash with men in blue suits and

shiny stalls with the latest technology. Upon walking into the venue, my initial impressions were that it was very corporate, very technical, and very male. Through observation of conference spaces across the two days, I would estimate 80% of the attendees were men. Men also dominated panels and audience questions. When I attended the conference again in 2021, there had been some attempts to improve the representation of women speaking on panels and a launch for a new Women in Renewables group, but overall it was still a male-dominated space.

It was not only the gender imbalance that was stark at the 2019 conference, there was also a decided lack of First Nations representation. The Welcome to Country in the opening session sent a strong message and elicited a few nervous laughs as Gadigal Elder Uncle Allan Murray highlighted the fact that Aboriginal and Torres Strait Islander people currently are not being consulted, engaged with, or receiving profits from corporate renewable energy projects established on their land.

The industry's failure to engage with Traditional Custodians and First Nations communities could also partly account for their minimal consideration of ecology and land outside of offsets and property relations. If one had no knowledge of the climate crisis, there was very little within the physical space of the conference that would lead you to believe that transitions to renewable energy had anything to do with ending ecological devastation. There was similarly very little that I could see that reflected renewable energy as being a response to the climate crisis, and much more which reflected renewable energy as an emerging space for capital accumulation. Again, discussion of the climate crisis was somewhat more present at the 2021 conference, but many of these discussions were still centred on markets that were emerging as a result of the climate crisis.

The Smart Energy Conference framed transitions to renewables as a market-based, profit seeking, phenomenon. The pervasiveness of 'green capitalism' was writ large, as many

conference speakers, who were self-describing as progressive, were also pushing for greater market/corporate control of our energy system. Throughout the conference there was a repeated argument that regulatory challenges facing the renewable energy sector should be resolved through markets rather than through government or communities. After over a decade of policy stagnation and the crippling hold the fossil fuel industry has on Australian politics, perhaps this is not so surprising. However - happening concurrently to the political impasse - free markets, deregulation, and hyper-individualism have decimated workers' rights, made it difficult for cooperative or community-owned projects to be established and have contributed to tensions and contestations between renewable energy corporations and the communities where potential projects are set to be located. All of this will be explored in the following analysis chapters.

Apart from a few token speakers from the community energy sector, all of whom were women, there was negligible discussion on two potential avenues through which the impasse in Australian energy and climate policy could be broken, and through which social power around energy could be devolved to the people: 1) (re)nationalisation of our energy systems and 2) community energy. Women are at the forefront of community energy advocacy and policy, and community energy broadly prioritises the social reproductive work and regenerative potentiality of transitions to renewable energy, rather than focusing on the profitability potential.

It was evident at the Smart Energy Conference that renewable energy is being heralded as an emerging site of capital accumulation, with wind, the sun, and land all being discursively framed as exploitable commodities/resources. The following section of this chapter takes up the concepts of enclosures and accumulation to explain how nature as commodity contributes to our ongoing alienation from nature and from one another.

**Nature as Commodity: Enclosures and Accumulation.** Accumulation and enclosures are the lifeblood of capitalism; the private sector always needs more markets, more consumers, more products and more sources of energy to maintain the market economy and perpetuate the dream of infinite economic growth (and growth of profit)—as well as more places from which to obtain all of the resources necessary for capitalist societies. To this end, in capitalist societies nature has become commodified and turned into infinite resource. Land in particular is a core site of commodification and enclosure; however, capital accumulation has also captured water, skies, space, and even biological processes. The connected concepts of nature as commodity or resource with enclosures, and accumulation are integral to the exploration in this thesis of how alienation from nature and alienation from one another are manifesting in renewable energy projects.

When using the concept of enclosures, it is important to define what precisely one is referring to, as there are two common definitions that, while connected, do differ. There is the historical use of the term, which refers to the period between the 16th and 19th centuries when a series of Enclosure Acts were enacted by the English parliament to entrench a system of private property relations over previously shared or common lands. Federici described these as

a set of strategies the English lords and rich farmers used to eliminate communal land property and expand their [personal] holdings. It mostly referred to the abolition of the open-field system, an arrangement by which villagers owned non-contiguous strips of land in a non-hedged field. Enclosing also included the fencing off of the commons and the pulling down of the shacks of poor cottagers who had no land but could survive because they had access to customary rights. (Federici, 2014, pp. 69–70)

Federici linked these Enclosure Acts to the development of the Western capitalist sexual division of labour (2014). To simplify an incredibly detailed historical analysis, the enclosure of the commons and the pre-eminence of private property curtailed women's access to their material needs and intensified a system whereby women's access to land and property depended on their relationship with men, be it their father, brother, or husband.

Here Federici is using the historical definition of "enclosures" for her analysis. She highlights the importance of the Enclosure Acts to the formulation of Western capitalism, or "market society," as Polanyi conceptualised it (1975). The historical term and the process of land privatisation in early Western capitalism that enclosures describes has in turn informed the more contemporary usage of the term.

The privatisation or enclosure of previously communal or public lands, water, forests, services, and agriculture is a core tenet of capitalist—particularly neoliberal—political organisation. It is this ongoing, global process of *privatisation* and *enclosure* of previously communal or public *holdings* that the contemporary usage of enclosures refers to. Unpacking the dual usage for the term, Federici explained that the term enclosures "has become so associated with the expropriation of workers from their 'common wealth' that, in our time, it is used by anti-capitalist activists as a signifier for every attack on social entitlements" (2014, p. 69). While an understanding of the historical context of the term is important, this thesis is predominantly focused on contemporary enclosures, capital accumulation of nature, and their connection to social movements for (re)commoning.

Mies and Bennholdt-Thomsen identified that enclosures are entirely necessary for the continuation of the capitalist project, arguing that:

capital has to continue the colonial enclosure of other people's commons if it wants to continue its constant growth or accumulation. ... This, however, points to a problem inherent in this mode of production: it can enclose, colonise, exploit material, and

non-material commons, but it cannot recreate them. And yet it needs such areas for the ongoing process of accumulation. What is it to do? (Mies & Bennholdt-Thomsen, 2001, pp. 1007–1008)

Here, Mies and Bennholdt-Thomsen asked the critical question: What is capital to do when it cannot re-create commons to subsequently enclose? A question similarly posed and examined by Luxemburg (1913). This is a particularly compelling provocation from which this thesis explores the presence of, and challenges to, accumulation and enclosures in the emerging renewable energy industry. Part of this inquiry includes thinking through what fossil capital might do, and indeed is doing, in the face of the threat of the climate crisis. There is the dominant response at present of denial and obfuscation of the climate crisis and the delaying or hindering of global climate action (Dunlap & McCright, 2011; Oreskes & Conway, 2011; Supran & Oreskes, 2017). However, there is another response that I would argue fits with capital's eternal search for new sites of enclosure.

The biophysical logic of renewable energy (i.e., sunshine, wind and/or waves are more or less everywhere) opens the potential for energy to become decentralised, decommodified, and democratised. In other words, the biophysical logic of renewable energy opens the potentiality for the (re)commoning of energy. This could explain at least part of the reason why the capitalist state-corporate nexus has been so vehemently opposed to the dismantling of the fossil fuel industry and subsequent transitions to renewable energy. It suggests corporate capital may not be needed.

The fossil fuel industry has been hugely financially profitable for a relatively small percentage of people and corporations. Access to fossil fuels has also been incredibly powerful in international and intranational politics and military capacity. The socioeconomic and sociopolitical potentialities of renewable energy undoubtedly threaten those who have both financial and political power as a result of centralised fossil fuel energy systems.

Therefore, neutralising the threat or bringing renewable energy into the extractive logic of fossil capital is a “reasonable” ongoing project for the fossil fuel industry (Abboud et al., 2013).

It is possible that as part of this ongoing project, the state–capital nexus could try to enclose the energy potential of the sun and the wind, and indeed we can see examples of this occurring already (Burke & Stephens, 2018; Neslen & Brussels, 2015; Pickl, 2019). The idea of enclosing the energy potential of the sun and the wind of course raises an immediate question: How could something so pervasive, so ubiquitous possibly be enclosed? Perhaps geoengineers could be tasked with another bio and ecological impossibility (Nicholson, 2013) such as designing something that captures the sun and the wind; or perhaps the harvesting of energy from the sun or the wind by individuals and communities could be outlawed. Both of those possibilities seem more at home in a cli-fi dystopia (Tuhus-Dubrow, 2013), than actually being likely.

In lieu of being able to physically enclose the sun or the wind, there are other avenues available to the state–capital nexus to limit or eradicate decentralised and decommodified energy. We can consider here the increasing enclosure of the internet, a non-physical, digital space with commoning and collectivised potential that was strongly heralded prior to its corporate enclosure and privatisation (Andrejevic, 2007; Lametti, 2012; Manjikian, 2010; Zook & Graham, 2007).

Where the potentiality for enclosures of the sun and the wind emerges is in the capitalist renewable energy industry and market-based approaches to climate mitigation and adaptation. Rather than being able to physically enclose the sun or the wind, corporations, associated politicians, and peak bodies in the renewable energy industry call for the continuation of privatisation of energy systems and energy infrastructure while also lobbying for policies that favour centralised, privately owned renewable energy projects. When



describing their advocacy efforts, the Smart Energy Council draws on almost revolutionary rhetoric, proclaiming,

One of our core roles is to transition Australia to a sustainable future through smart advocacy on behalf of our members and the community. We're here to liberate. To fight and to win. To persistently challenge, disrupt the old, be proactive, to activate and accelerate your business. This is our vision. A safe climate will be delivered by building strong business and economic opportunities for Australia. Creating jobs, attracting economic investment, building a zero carbon export sector by tapping into the world's cheapest renewable energy (Smart Energy Council, 2020).

It may have seemed impossible to people in previous centuries that land, forests, rivers, and fields could become private property, yet today it is our norm. As Howe discovered, part of the conflict over the establishment of wind farms in Mexico's Isthmus of Tehuantepec were tensions over the commodification of, and questions around who "owned," the wind (2019, pp. 32–36). This thesis takes up these questions of ownership, accumulation, enclosure and the commodification of nature to further the exploration of alienation from nature and from others in the ethnographic data.

### *Additional Concepts for our Exploration of De-Alienation*

The previous half of this chapter was predominantly concerned with defining and justifying key concepts drawn on the exploration in this thesis of alienation from nature and from one another in the emerging renewable energy industry. The remainder of this chapter takes up the "positive criticism" aspect of the thesis, by defining and justifying the key concepts drawn on in exploring de-alienation from nature and from one another. These concepts include the commons and (re)commoning, social reproduction and regenerative labours, eco-sufficiency, and embodied materialism.

**Commons and (Re)Commoning.** Establishing or re-establishing systems of commons is an integral avenue through which many materialist feminist scholars argue that alienation from nature, and from one another can be challenged and eventually dismantled.

Federici defined the commons as:

lodged halfway between the “public” and the “private” but irreducible to either category, the idea of the commons expresses a broader conception of property, referring to social goods—lands, territories, forests, meadows, and streams, communicative spaces—which a community, not the state, or any individual, collectively owns, manages, and controls. (2011, p. 41)

In this definition we can understand that Federici’s idea of the commons is more associated with Indigenous or autonomist forms of eco-social organisation than with capitalism or state socialism. Capitalist states are built on relations of private property (exclusion) and corporate power; social democracy and socialism are predominantly built on public ownership—that is, collective ownership mediated and controlled by the state. In Federici’s conceptualisation of the commons there is more direct responsibility and management by the people, as is encouraged by autonomists and anarchists.

Turner and Brownhill define the commons similarly to Federici; however, they emphasise the idea of *civil* commons. In explaining this qualifying term, they argued that the concept of the commons has been somewhat appropriated and linguistically enclosed by global capital through the use of “global commons” terminology: “The civil commons opposes the now familiar concept of the global commons which denotes the knowledge, spaces, capacities and natural resources that are defined by corporate globalisers as available for private commodification and exploitation” (Turner & Brownhill, 2011, p. 806). The concept of global commons has been used by multilateral neoliberal institutions including the

World Bank and the International Monetary Fund (IMF) to enact the opposite of commons—enclosures. Greenwashing enclosures of predominantly Indigenous lands as protecting and improving the global commons, the World Bank engages the language of the commons to aggressively push private sector and green capitalist agendas (The World Bank, 2006; Tokar, 1997). The language of global commons and “human flourishing” has even begun to move off-world as corporations and states seek to enclose parts of the solar system through space mining (Walker & Johnson, 2018).

Mies and Bennholdt-Thomsen refer to this corruption of commoning rhetoric as “the enclosure of language” (2001, p. 1010). It is this hijacking of the language of the commons in the service of the opponent of the commons that has resulted in Turner and Brownhill (2001) using the term “civil commons.” What this distinction seeks to highlight is the shift in power relations that the commons signifies, as well as anticipating the potentiality for the term to be captured or corrupted by actors for capital, as has happened with the term global commons.

More recently, some scholars have preferred to use commoning rather than commons, to highlight that the social processes involved in establishing and running commons are as integral, if not moreso, than the physical entity of the commons. It is this terminology of commoning that this thesis will adopt. In particular, (re)commoning is the term most used in order to signal that both energy production and eco-social relations on the land of this continent have been commons or involved processes of commoning before they were privatised and enclosed. Cooke and Lane define commoning as “the active and ongoing interactions between humans and nonhumans in the process of negotiating benefits and needs for a “community of more than one”(Gibson-Graham, Cameron & Healy 2013, 138)” (2018, p.1716).

Ecofeminist sociologist Terran Giacomini has further delineated “commoning ecofeminism” (2016). Analysing the language and praxis of two ecofeminist social

movement organisations, the Women's Earth and Climate Network (WECAN) and La Via Campesina, Giacomini came to suggest a series of three connected actions as representing commoning ecofeminism:

When women take action to deny capitalists their labour, by transferring their time and energy from exploitative relations and to commoning, capitalism is fundamentally undermined (Turner, 2012). I identify these actions as “commoning ecofeminism” because they are made on the basis of (i) a recognition that the exploitation of women and nature is central to capitalism, (ii) a stand against that exploitation, and (iii) an affirmation of life-centred alternatives. (Giacomini, 2016, p. 96)

Giacomini's explication of ecofeminist commoning serves to highlight what she and many others consider to be an integral link between “women's” labours and the commons (Federici, 2011; Federici & Linebaugh, 2018; Giacomini, 2016; Mies & Bennholdt-Thomsen, 2001; Turner & Brownhill, 2001). This linkage, in line with other analysis within materialist feminist scholarship, focuses on feminised work and social roles rather than any inherent or biological connection between women and nature. However, non-feminist theories and explorations of the commons, including those from other critical and Marxist fields of scholarship that also recognise the liberatory potential of the commons, often ignore or downplay the essential role women play in building, organising, defending, and reinventing commons throughout history and across the globe.

Gender-literate exploration of the commons has also identified the different experiences of women in the Global North and the Global South, particularly across recent decades. Women in the Global North have been largely disconnected from commons by centuries of enclosures and decades of privatisation, whereas women in the Global South are

more likely to retain some access to commons—although this is being increasingly enclosed as well.

Brown argued that capitalism's current dominant iteration—neoliberalism—has exacerbated the labours of women through the enclosure and privatisation of previously public goods and services. The privatisation of education, water, healthcare, transport, and other life-sustaining services has increased the burden on women who are now often required to perform extra labours to lessen the effects of privatisations on their families. These extra burdens increase women's work and often requires this work to be done alone rather than as part of a community. Many of the materials and social support required to perform these regenerative labours were historically accessed in the commons and more recently were provided by the state through social-democratic policies – at least to a certain degree.

Critical scholarship has suggested that neoliberalism has induced a form of social amnesia, a disintegration of the social memory of collectivism, of public good, and of society instead of individualism (Brown, 2015; Giroux, 2015). This has occurred overtime as the role of the state has shifted, social services have been cut and individual “responsibility” prioritised. This has in turn impacted our ability to imagine more radical, democratic futures, even as the dubious rights afforded to us through Western liberal democracy are eroded in the interests of corporate domination (Brown, 2015).

Neoliberalism's assault on our social memory of collectivism more broadly and the commons more specifically—what Federici refers to as “amnesia”—is undoubtedly a major challenge to the application and proliferation of materialist feminist politics, and ecofeminist commoning in particular. However, strength and knowledge could be sought by building global solidarity networks in which people in the Global North learn from people in the Global South. Brownhill et al. suggested as much in their discussion on de-alienation through (re)commoning:

Given the gendered and ethnicised character of the class formations that arise in capital's processes of enclosure and alienation, it should not be surprising that the "most exploited" of the world's peoples are those who feature prominently among the "most advanced" peoples in terms of reinventing the commons. Neither is it any coincidence that peoples who are still partially rooted in the pre-colonial commoning social relations of cooperation, ecological stewardship, and autonomous political organising possess rich resources from which to draw in struggles to re-establish new commoning relations. (012, p. 98)

Mies and Bennholdt-Thomsen similarly suggested that people in the Global South more so than people in the Global North remember, and in some places continue to have access to, the commons: "Whereas people in the South can still see the connection between their sustenance or livelihood and their control over their commons, this insight has almost totally vanished in the North" (2001, p. 1007).

However, the emergence of community renewable energy movements and projects, despite their difficulties, suggests that a spark of knowledge and desire for the commons continues to exist, even among those in the Global North who have become alienated from the idea of the commons.

### **(Re)Commoning Energy.**

If it is to occur on a global scale, the re-inventing or re-establishment of the commons is a process that would require total eco-social transformation. Mies and Bennholdt-Thomsen suggested that

to reinvent the commons cannot just mean to open up new free access areas for further enclosure, investment, and capital accumulation but must mean rather to reclaim material and non-material areas of reality, of life, and of nature as the

foundations for the production and reproduction of life by local communities. (2001, p. 1010)

For many, it would also mean learning, or re-learning, how to build and run commons, what kind of conventions are required, what kind of enforcements are required, how the local ecology works and how to work in a broader network of commons. This is where the work of Elinor Ostrom is useful.

As argued by Wall, “Elinor Ostrom put huge intellectual effort into investigating how the commons could be made to work” (2017, p.26). Out of her investigative efforts came what Wall refers to as Ostrom’s “eight rules for radicals”; or eight design commonalities that she recognised from examining various long-lasting commons across the globe. Synthesising her book *Governing the commons: the evolution of institutions for collective action* these “rules” for successful commons were:

1. Clearly defined boundaries
2. Localised rules/contextual management of commons
3. Empowerment of commoners to make & modify rules
4. Monitoring of commons (rather than policing)
5. Graduated sanctions (soft to severe)
6. Low-cost conflict resolution
7. Commons organised from below, not managed from above
8. Work within wider system of commons and environments (Ostrom, 1990).

These rules or conventions will be drawn upon in later analysis chapters to assist in understanding successes and failures of current attempts of (re)commoning energy.

Some scholars argue that it would be difficult to conceptualise a form of societal organisation that could withstand both (re)commoning and the continuation of the capitalist project, as commoning is antithetical to the private ownership, control, and separation out of

property from its common bonds as required by capitalism (for example: Caffentzis & Federici, 2014). However this is challenged by other scholars who point to the co-existence of capitalism and some commons. Indeed Cooke et al. suggest that

there is nothing inherently just or equitable about commons, in that they are open to corporate and state co-option and risk reinscribing the enclosure and violence known to be enacted through property. (2020, p.171).

The potential for commons to perpetuate a form of neo-colonialism through diminishing First Nations' sovereignty over unceded lands is another concern, and is further explored in Chapter 10.

Perhaps the terminology of commoning, rather than commons, can lend some assistance towards thinking through its position in relation to capitalism. For example, it could be argued that Germany's Energiewende was a decades-long eco-social (re)commoning project, regardless of whether its proponents would define it as such. However, it was a commoning project that for the most part did not seek to radically redefine socioeconomic and sociopolitical organisation, and is now in the process of being enclosed by the state–capital nexus (Grashof, 2019; Gsänger & Karl, 2019; Morris & Jungjohann, 2016). After labouring as a social movement for decades, centralised renewable energy projects and government policies and regulations favouring them are marginalising community energy proponents that seek to decentralise, decommodify, and democratise energy by taking it back into the community.

Perhaps if those involved in the Energiewende had sought assistance and fostered relationships with communities more adept at cultivating and defending their commons, the state–corporate nexus may have failed in their enclosure of the Energiewende. As discussed above, those of us in the Global North are further removed in social memory from the commons. Federici (2011), Mies and Bennholdt-Thomsen (2001) have suggested that global



solidarity and education efforts could help to alleviate this loss of social memory as people in the Global North learn from women in the Global South who are still connected to the commons.

As Federici proposed, perhaps we could look to the women across Africa who continue to resist land enclosures, and indeed work to (re)common land even in the face of fierce neoliberal power—the World Bank and the IMF—attempting to enforce enclosures through structural adjustment programs:

Women [across Africa], the bulk of subsistence farmers, have always cultivated any vacant land available to them. However, since the 1980s, as economic conditions have deteriorated, this practice has become more widespread, especially in the urban areas to which many have migrated. (Federici, 2011, p. 51)

Mies and Bennholdt-Thomsen also suggested learning from the women and students in Papua New Guinea whose anti-enclosure movements had been successful in protecting their commons:

In this situation it is indeed time to learn from Papua New Guinea, as Faraclas tells us, how to defend our existing commons, and also how to re-create new ones. This is also a question of survival for people in industrial society in the North. (2001, p. 1008)

While women in the Global South evidently have expansive knowledge and experience in cultivating and defending the commons, marginalised women within the Global North also often remain in touch with the commons. Giacomini's ecofeminist analysis of the rhetoric and praxis of two women's activist groups highlighted how marginalised women, particularly Indigenous women, in the Global North were connecting the capitalist exploitation of women and nature to the need to (re)common futures:

The statements made by WECAN and Via Campesina women and their organisations recognise that extractivism exploits and threatens women by destroying or undermining the social relations and ecosystems they rely upon for subsistence. ...

WECAN and La Via Campesina activists' insight that women are exploited by capitalism while also being agents of commoning transformation, is crucial to informing system change praxis and averting ecological crises. (Giacomini, 2016, p. 95)

This focus on solidarity and education is interconnected with women's regenerative labours and has the potential to change the logic of energy systems from one based on profit to one based on provisioning. Here it would be prudent for settlers living in Australian to learn more regenerative eco-social relations from Indigenous peoples when seeking solidarity and education towards the goal of (re)commoning.

The alienation from energy experienced by many in the Global North, and the elite and growing middle class of the Global South, can be considered as part of the confluence of factors explaining why we as a global society have thus far been unable to curb carbon emissions. Aside from the (increasing) effects of the climate crisis; the negative environmental and health effects of centralised, fossil fuel energy system are generally limited to those living within close proximity to coal mines, power plants, oil wells, and so forth. As discussed in the previous chapter, the substantial literature on energy sacrifice zones and environmental racism exposes the classed, gendered and racialised nature of these effects (Albrecht, 2005; Albrecht et al., 2007; Bullard, 1993; Churchill & LaDuke, 1986; Connor et al., 2009; Cottle, 2013; Cottle & Keys, 2014; Hernández, 2015; Pulido, 1996).

The centralisation of coal energy, while previously contributing to the expansion of democratic participation and redistribution of profits (Mitchell, 2011), has, under neoliberalism, generated an exploitative energy system. The dominant logic of the fossil fuel

energy system is no longer one of provisioning, if it ever was; it is now one of profit, control of politics, and global destruction. The biophysical logic of renewable energy, however, opens up the potential for the decentralisation of energy and for a radical shift in the dominant logic of energy systems—perhaps back to one of provisioning.

In September 2015, Cherri Foytlin, a representative of Idle No More (an Indigenous social movement led by women in Manitoba, Saskatchewan, and Alberta (Canada)) who helped to lead the campaign against BP after the Deep Water Horizon oil spill, spoke at a WECAN event about the future of energy:

It is time to bring the power back to the people and to recognise that our greatest natural resource is not oil or coal or LNG [liquid natural gas] but it is our children and our future generations. We are in a place where we have to make decisions. And we have to talk about a few things because it goes a little farther than just finding some solar panels. Who is in charge of that? Who benefits from it? It is not any good if BP [“Beyond Petroleum,” formerly “British Petroleum”] moves off of oil and starts selling solar panels, if they are still the ones in power. We have to shift the power back to the people. (Giacomini, 2016, p. 97)

In this speech, Foytlin considered green capitalism to be a threat to the liberatory potential of renewable energy. Like others in ecofeminist, Indigenous, and social justice movements, she recognises that eco–social relations need to radically transform alongside changes in the technologies we use. As highlighted by Giacomini,

The women profiled here do not pursue reformist “green” capitalism or technology fixes. Rather, they seek broad transformation in social relations away from capitalist hierarchy towards commoning horizontalism; including, centrally, the expansion of collective control over energy and food. (2016, p. 99)

Foytlin's appeal to shifting "power back to the people" is recognised by Giacomini as a call to ecofeminist commoning of energy. The slogan "shift the power back to the people" is commonly used in anti-extractive and energy democracy campaigns. However, often these social movements are still so consumed by the mammoth task of dismantling the fossil fuel industry that greater detail on what the re-commoning of energy might look like, and how it would work, are somewhat lacking.

Drawing on the concept and discussions of (re)commoning assists in the identification and analysis of a range of behaviours and eco-social relations that are appearing around transitions to renewable energy. As will be evident in the upcoming analysis chapters, the concept of (re)commoning was particularly fruitful for comparing the underlying motivations and goals of smaller-scale community energy projects to those of larger-scale corporate energy projects. More broadly, the concept allows an exploration of the types of futures that people and organisations involved in different types of renewable energy projects are working towards.

**Social Reproduction and Regenerative Labours.** Embedded within capitalism is a false dichotomy between valued productive work and devalued reproductive work.

Productive work has been largely monetised, and provides the capitalist class with surplus profit. While women have (re)entered the workforce, particularly throughout the last century, productive work remains socially coded as masculine. Socially reproductive work, however, is socially coded as feminine and simultaneously devalued, yet it is essential to the continuation of life on Earth. This reproductive work includes the reproduction and caretaking of children, but it also includes a whole range of eco-social labours such as food provisioning, education, caretaking of the sick and elderly, community building, gardening, and generally holding space for the needs of families and communities.

Waring & Steinhem (1988) referred to this reproductive work as disappearing work, due to its devalued and invisible nature under patriarchal capitalism. Disappearing work has also been referred to as holding labours (Salleh, 1997), women's work (Mellor, 2009) and life-centred cultures (Shiva, 2016). In the materialist ecofeminist spirit of coupling critique with new potential paradigms, the term used throughout this thesis is "regenerative labours."

While the majority of women across the globe no longer have access to commons in the form of woodlands, farming plots, and waterways, we continue to learn and access the skills necessary to perform regenerative labours. As discussed, in capitalist societies, particularly the current neoliberal iteration of capitalism where women do not have access to commons, these labours have been brought into market society. Under capitalism, regenerative labours (along with all other labours) are often alienated from nature. Food is sourced from a grocery store rather than a farm or garden, energy is sourced from an outlet in the wall rather than from wood collected from a forest, and water is sourced from a tap rather than from a nearby stream. Similarly, under capitalism regenerative labourers are often alienated from others. Caretaking has been brought into the market society with private health

insurance, day care, and retirement villages; women also regularly perform reproductive labours such as housework and carework alone rather than communally, as was previously done in commons-centred societies.

While women, particularly in the Global North, may have become more alienated from the commons, regenerative labours are still the purview of women and provide skills and knowledge that are deeply aligned with focusing on the collective rather than the individual. The devaluing of this work and the accompanied skills can be linked to the climate crisis, a crisis engendered by an extractivist, exploitative logic (Daggett, 2018; Gaard, 2015; MacGregor, 2010; Pease, 2016; Swim et al., 2019). Ecofeminist scholars and activists argue that these devalued regenerative labours hold the key to (re)commoning the future and building a more caring and just future.

Focusing predominantly on the broad experience of countries in the Global North, we can trace the commodification of energy alongside its transition as a product of reproductive labour to a product of productive labour. Prior to the centralisation and commodification of energy, the collection of fuel for heat and the nourishing of human bodies for manual labour was reproductive labour, commonly performed by women. The provision of energy was “women’s work.” This was also work where the procurement of energy was not the alienated, flick of a switch process it is now. Fuel needed to be collected from forests, from grasslands, from animals; food for both humans and animals needed to be sourced, prepared, and provided. This provisioning labour was more immediate, more direct. This immediacy and directness would have resulted in eco–social relations that considered the impact of energy procurement on at least the local environment and community. Women often did this work collectively, ensuring communal access to fuel and food, as well as moving through different locations to ensure fuel had a chance to be “restocked.” When energy procurement was part

of these provisioning, reproductive labours it wasn't a commodity, and it wasn't fetishised in the way that Marx defined the term.

The purpose here is of course not to idealise some kind of wholesome past that we need to return to, nor to diminish the dangers that come with this type of provisioning work, nor to discount the struggles of people, predominantly women in the Global South, for whom the procurement of energy remains reproductive labour. It is instead to draw out an interesting and pertinent observation that as energy moved from provision to commodity, it also moved from reproductive regenerative labour to productive alienated labour.

Therefore, a question this thesis is interested in is: Could reproductive labours be drawn upon now, in another time of energy transition, to assist with the project of decommodifying, decentralising, and decarbonising energy?

This thesis will draw on the concept of regenerative labours to explore where community building, deep relational work, and caretaking of Earth and people are being centred in transitions to renewable energy. Further, the concept of regenerative labours will assist in the exploration of situations in which alienation from nature and from one another are being challenged in eco-social relations around renewable energy. Ecofeminist scholarship has suggested that regenerative labours are integral to de-alienation and to a future organised around commons; this thesis will explore whether this is happening, particularly in community energy projects in the Northern Rivers and New England regions of NSW.

**Eco-Sufficiency.** Another core concept that will assist in the exploration of de-alienation from nature in this thesis is eco-sufficiency, which refers to human–nature relations and ways of being that centre living within nature. In its ultimate form, only what is needed for healthy, joyful lives, and a thriving living planet are produced and consumed. As described by Salleh, eco-sufficiency “rests on the logic of permanently reproducing the humanity-nature relation; it is a permaculture” (2009, p. 18). It is a concept most deeply explored in feminist political ecology and feminist ecological economics (Muthuki, 2006; Salleh, 2009, 2010) although broader fields of sustainability scholarship have also taken up the term—albeit without the gender-literate analysis provided by feminist scholars (Robra et al., 2020).

While “eco-sufficiency” is similar to the (more commonly used) concept of degrowth, it also sits in contrast to that concept. Where degrowth focuses on economic relations and on the problem—centring growth as the core concern, eco-sufficiency focuses on eco–social relations and on the solution—centring regenerative human–nature relations as a site of global regeneration and justice. It is this focus on the *solution*, itself another form of positive criticism, that drew me to the concept in place of earlier iterations of this thesis that originally used the concept of degrowth. When arguing for the use of de-alienation over degrowth, Brownhill et al. offered:

De-alienation differs by focusing on the reconstruction of peoples’ relationships with themselves, others, with the fruits of their labour, the labour process, and nature. And because the goal of this de-alienation activity is the recovery of the species-being, those involved in such activity do their best to replace the conditions under which private property is established and maintained with conditions suitable to collective stewardship. This makes de-alienation explicitly anti-capitalist and foregrounds the



constructive processes (the intrinsic value accorded to creativity) among those engaged in what we would say is de-alienation. (2012, p. 100)

In her discussion of eco-sufficiency, Salleh suggested that “models of eco-sufficiency imply local autonomy and resource sovereignty” (2009, p. 8). Certainly, local autonomy and resource sovereignty are key considerations in global energy systems. The history of the fossil fuel industry is one mired in a distinct lack of local autonomy and in global power struggles over resources. As we transition from fossil fuels towards renewable energy systems, we should question whether local autonomy and resource sovereignty are coming into existence or whether power, control, and enclosures are continuing. That is certainly a key question this thesis is interested in exploring, and the concept of eco-sufficiency is a useful one in aiding this exploration.

Eco-sufficiency comes under the umbrella concept of de-alienation in this thesis. In particular, eco-sufficiency will be drawn upon in regard to de-alienation from nature. As capitalist societies have alienated us from nature, and as fossil capital in particular has created destructive energy systems, what can be done in transitions to renewable energy that bring us to more harmonious human–nature relations? In this thesis, when drawing on the concept of eco-sufficiency, I am examining instances of people and organisations seeking to implement ways of living and systems of production and consumption of energy in which they engage in non-alienated activities, and we use only what we need, and make sure the ecology can regenerate.

Eco-sufficiency as a concept opens up more lines of enquiry than it answers, which makes it a particularly fruitful lens through which to consider the ethnographic data collected for this research project. Some of these lines of enquiry include the following: What might eco-sufficient energy systems look like? Can any of the projects explored in thesis be considered eco-sufficient projects? Were there examples of eco-sufficient thinking or action

present in renewable energy projects in regional NSW? As will be explored predominantly in Chapter 11, eco-sufficiency as a concept allowed me to recognise disparate instances of conversations or actions witnessed in the field, as forming part of a pattern of people seeking to build eco-sufficiency into energy transitions but coming up against barriers from the state–capital nexus.

### **Embodied Materialism and Feminist Praxis.**

Embodied materialism is another concept popularised in materialist ecofeminism and feminist political ecology by Salleh. Salleh defined embodied materialism as a double movement of (i) understanding the necessity of a healthy living planet for the wellbeing of humans, and (ii) action taken against ecological destruction and for caring, regenerative futures that draw on the skills, knowledges and values afforded by women’s labour (1997; 2009). Essentially, embodied materialism is a concept that

1. Recognises humans as a part of nature, not something separate;
2. Recognises that the wellbeing of humankind is dependent on the wellbeing of our living planet;
3. Demonstrates that women and others engaged in social reproductive labours are well placed to build regenerative, caring and reciprocal futures; and
4. Engages in feminist political action to bring about such futures.

As a practice, embodied materialism challenges and repairs the alienation from nature that capitalist societies instil in people. Embodied materialism is therefore a recognition of our siting in the natural world, and a practice of working towards healthy, thriving people and planet through more harmonious eco–social relations.

Embodied materialism is not the only term that could have been used to explain practices of de-alienation from nature by challenging the human–nature divide. We can map

Giacomini's concept (2016) of "commoning ecofeminism" onto Salleh's concept of embodied materialism (Salleh, 1997). Giacomini's commoning ecofeminism follows a similar pattern, with perhaps more explicit attention to commoning as the preferred remedy for harmonious eco-social relations.

As suggested by Salleh, "the first premise and deconstructive insight of an embodied materialism is that humans are themselves 'within' nature, and that social institutions and knowledges need to be reconstituted around that holistic reality" (2009, p. 20). By drawing on this concept throughout the analysis of the ethnographic data collected for this research project, instances where individuals or organisations attempted to bridge the human-nature divide through renewable energy projects, or conversely were concerned about the continuation of a divide in particularly corporate, large-scale projects, avenues for de-alienation from nature were more clearly revealed.

A common theme has likely emerged for the reader, of the selection of concepts for this thesis that demonstrate positive criticism—that is, concepts grounded in not only a critique of the problem, but more crucially, in suggested solutions. Embodied materialism is no different to previous concepts like eco-sufficiency or (re)commoning in this regard. Salleh described this positive criticism as a "transformative agenda, counter-balancing deconstructive critique with reconstructive remedies" (2009, p. x).

### ***Conclusion***

Does the transformation of our energy system towards renewable energy in regional NSW represent more enclosures and continued alienation, or is there a possible shift to (re)commoning and working collectively? Grounded in the concepts outlined in this chapter and drawing on the ethnographic data gathered for this project, the following chapters will explore where alienation from others and nature, and where de-alienation from others and nature, can be seen to be manifesting around renewable energy projects in regional NSW.

## **Chapter 5: A Multi-Sited, Feminist Ethnographic Methodology**

By exploring situated energy system transformation within the conceptual and theoretical frameworks outlined in the preceding chapters, this thesis seeks to compare the eco-social relations of centralised, corporate renewable energy, and decentralised community energy in regional Australia. Guided by a multi-sited feminist ethnographic methodological practice this thesis examines the eco-social relations of nascent energy transitions in two regions in the Australian state of NSW, both with recent and active renewable energy projects. These regions and the energy projects within them are described and explored in greater detail in the following chapters.

The multi-sited ethnographic data collected in these regions seeks to observe and understand how communities with different demographics, political orientations, and democratic input respond to, and engage with, transitions from fossil fuels to renewable energy. Falzon suggested that “the essence of multi-sited research is to follow people, connections, associations and relationships across space” (2009, pp. 1–2). As will become apparent throughout this thesis, the complexities, potentialities, struggles, and triumphs of people and places involved in energy transition can be explored and, importantly, compared in a rich and interesting way through multi-sited ethnography. A single-site ethnography would undoubtedly still have produced rich and interesting scholarship; however, the comparative element would have been lacking.

As someone who grew up in a coal-mining community and as an active participant in Australia’s climate movement over the past decade I have noticed that gender relations and feminist praxis are important, and often overlooked, components of broader social relations and movements around energy and climate. Using a feminist lens to explore what is happening on the ground during energy transitions allowed me to highlight how gender and

other social relations affect, and are affected by, these transitions and what intended and unintended consequences can arise as a result.

This chapter explains the methodological considerations and practices that formed my research project and subsequently, this thesis. This chapter will begin with an introductory discussion on feminist ethnographic methodology, followed by a discussion on participant engagement and methods used for this research project. The remainder of the chapter includes exploration of key feminist methodological considerations, including research as advocacy and research power dynamics. Within each of these sections, the broader scholarly discussions of these issues will be interwoven with the methodological practices and reflections from my own research practice. Prior to these discussions, however, we will first turn to the research aims and questions this thesis seeks to address.

### ***Research Aims and Questions***

As a feminist ethnography, this project did not start with a “specific, inflexible question,” it instead started with “large and intersecting domains of interest” (Buch & Staller, 2007). The domains of interest outlined below give an indication of the broad research interest areas and motivations that informed the thesis, particularly during research design, and the initial stages of data collection.

#### **Research Domains of Interest**

7. To understand how transitions to renewable energy are materialising in regional NSW
8. To document and interrogate shifts in eco–social relations occurring through transitions from fossil fuels to renewable energy
9. To consider the role of property relations in conceptualisations and materialisations of renewable energy projects

10. To question whether the marginalised people and ideas that were largely devalued under fossil capital are being drawn upon and valued in any conceptualisations of energy futures and if so, to analyse what impact, if any, that has on eco–social relations
11. To document and understand barriers to renewable energy transitions
12. To understand what is the best way of engaging in energy transition for most people and how this impacts agency over their own lives.

My own experience suggested the answers to these questions often falls along gender, race, class, and ideological lines. I went into the field to see if my personal observations would be supported by the research.

**Research Questions.** As the project progressed, particularly as the theoretical and conceptual frameworks were further defined and after initial field visits were conducted, the research questions for this thesis crystallised. The questions this thesis seeks to contribute towards answering are:

3. What energy futures are being conceptualised and materialised in both corporate and community renewable energy projects in regional NSW?
4. What types of eco–social relations are emerging around corporate and community renewable energy projects and what, if any, are their differences?

Through using semi-structured interviews, participant observation, artefact collection, and document and media analysis, I collected, collated, and documented community views, relations, hopes and fears, and ideas for political and social change relating to energy and climate.

Halfway through the data collection period, Australia’s 2019–2020 bushfires and the global COVID-19 pandemic necessitated a cessation of in-person field visits and data collection. As a multi-sited ethnography, this created significant barriers to the original

research design and a substantial impact on the original hope for the project. The changes in research design and the impacts these had on methodology is further explained throughout this chapter.

### ***Feminist Ethnographic Methodology***

Ethnography, originally a research method employed by anthropologists, has evolved over the past several decades and now encompasses different epistemologies, methodologies, and methods across many disciplines including sociology, geography, political economy, environmental humanities, and more. Discussing shifts in practice and issues with defining ethnography, anthropologist Harry F. Wolcott described how “colleagues unfamiliar with ethnography press for more precise definitions than those that seem adequate to insiders. ... But the extent of variation in the ways ethnography is applied, adapted, and reported seems to know no limits” (1999, p. 169). One significant addition to ethnography has been the advent of feminist ethnography.

In 1992, when defining feminist ethnography, Reinharz and Davidman outlined three goals that it held in common with other feminist methodologies. The first goal was to document the lives and activities of women, the second was to understand the experiences of women from their own viewpoint and the last was to conceptualise women’s behaviour as an expression of social context (p. 51). Expanding on this, Reinharz and Davidman suggested,

Feminist ethnography is research carried out by feminists who focus on gender issues in female-homogenous traditional or non-traditional settings, and in heterogeneous traditional, and non-traditional settings. In feminist ethnography, the researchers are women, the field sites are sometimes women’s settings, and the key informants are typically women. (Reinharz & Davidman, 1992, p. 55)

However, as with other methodologies, feminist ethnography has evolved over the decades since its inception. Contemporary feminist ethnography centres on a consideration of social power, not just in the society being studied, but the power differentials within the research *practice* and power dynamics within the research *focus*. There has been an important shift from women-focused research to power-focused research which considers gender, race, class, and other power dynamics. This shift has largely occurred as a result of intersectional feminist (see Crenshaw, 1991), critical race (see DeCuir-Gunby et al., 2019; Denzin et al., 2008; Solórzano & Yosso, 2002), and ecofeminist (see Nelson & Seager, 2005; Salleh, 2003; Warren, 1996) critiques that have exposed the entangled connections and power relations along gender, race, class, environmental, and other lines, as discussed in the preceding chapters.

While it remains important to do research about women, by women, for women, feminist ethnographic research has expanded to include broader considerations of social power dynamics and a deeper understanding of the spectrum of genders beyond that of cisgender men and women. An important point to emphasise is that feminist research continues to consider women, incorporate gender analysis, and build towards gender equity and justice. This remains a key distinction from other critical research epistemologies and methodologies, some of which continue to ignore or minimise gender as an analytical focus.

For the methodological considerations of my thesis, I have made significant use of the recent work by Davis and Craven on feminist ethnography (Craven et al., 2013; Craven & Davis, 2013; Davis & Craven, 2011, 2016). The following definition of feminist ethnography provided by Davis and Craven (2016) has grounded this thesis and highlights the shift from solely women-focused to social power-focused research:



1. Involves a feminist sensibility and commitment to paying attention to marginality and power differentials; these include not only gender, but also race, class, nation, sexuality, ability, and other areas of difference
2. Draws inspiration from feminist scholarship
3. Challenges marginalisation and injustice
4. Acknowledges and reflects upon power relations within the research context
5. Aims to produce scholarship ... that may contribute to movement building and/or be in the service of organisations, people, communities, and issues we study.

(p. 11)

From the beginning, a key difference is drawn between feminist methodologies and other critical methodologies, which is a *feminist sensibility*. My thesis was not initially a feminist research project, but throughout the first year of my PhD, while I was reading widely in my field of critical climate and energy social studies I became frustrated and concerned with what I perceived to be a lack of gender analysis (e.g., Malm, 2016; Mitchell, 2011) and a failure to appropriately cite feminist scholars, even when drawing on ideas, theories, and movements pioneered by feminists, such as the feminist anti-nuclear movement introduced at the beginning of this thesis (e.g., Moore, 2015; Morris & Jungjohann, 2016; Wainwright & Mann, 2018). These concerns were outlined in greater detail in the preceding literature review and conceptual framework chapters.

When searching for scholarship on energy that was feminist or included gender analysis, I found some examples of intersectional analyses (Lennon, 2017; Ryder, 2018), research into women's representation and participation in energy politics and production (Fraune, 2015, 2016; Tjørring, 2016) and an ethnography of a solar energy project in the Czech Republic (Lorenz-Meyer, 2017). However, the field of energy social science had a significant gap where feminist scholarship and gender analysis could (or should) be. My

feminist sensibility allowed me to notice this gap, and upon failing to satisfactorily fill that gap with existing literature, I decided to contribute to feminist energy scholarship in my thesis.

During the research design and fieldwork process I was often asked what energy transitions or renewable energy had to do with gender and feminism. Reflecting on this, I was reminded of a point made by Davis and Craven that “a person may shape a feminist project on a topic that does not have an inherently feminist focus” (2016, pp. 78–79). While energy transitions and renewable energy projects may not immediately evoke thoughts of gender or feminism it is my hope that this thesis contributes to an understanding that there is an important link, particularly for those who consider renewable energy to be a part of a larger liberatory project in response to the climate crisis and exploitative capitalist economic systems. Of course, in a society strongly patterned by gender in which gender is a political issue, gender will play a role in energy transitions even if that role is not immediately obvious to everyone.

Davis and Craven called on us to remember that:

what makes an ethnographic project feminist is when it is in the hands of a feminist—someone who pays attention to gender and power dynamics—who is intentional in their research design and draws from previous feminist scholarship to conduct feminist ethnography. (2016, p. 78)

This was echoed by Barbara Pini when she stated that “it is the manner in which these [research processes] are engaged, in the context of feminist theory and derived from a feminist epistemological and ontological position, which makes them ‘feminist’” (2003, p. 420). It is my aim that by drawing on my feminist sensibility and exploring energy transitions through a feminist lens, that I can contribute towards providing “an important

framework for understanding what keeps us stuck in unsustainable energy cultures, as well as a paradigm for designing truly just energy systems” (Bell et al., 2020).

I am both grateful and hopeful that in the years following my initial review of literature and scholarship on energy and climate, the field of feminist energy studies has grown and appears to be continuing to grow, as discussed in the literature review chapter.

The following sections will further unpack what makes feminist ethnography feminist, and how the methodology was incorporated into this thesis. First, I discuss participant selection and methods used in this feminist ethnography research project. Then, the ongoing epistemological conversation between positivists and feminists will be further explored, including explanation of the importance of academic advocacy. Finally, I discuss power dynamics within research including the positionality of the researcher, power in research processes, and power in post-fieldwork period, weaving in discussion on social power considerations within my own research for this thesis.

**Participants.** Few research projects can include all voices. Decisions regarding who to include and not include in feminist ethnographies are important, as careful consideration and purposeful selection of participants is a vital part of knowledge making. Davis and Craven emphasised the importance of feminist ethnographers, explaining “how and why particular choices were made (or why and how changes occurred during or after the research encounter)” and thinking about the “language used to describe their research as they design their study” (2016, p. 78). Part of this consideration of language is what a feminist ethnographer should call the participants in her research. Davis and Craven choose to use the word participant, but others have used a myriad of descriptors including informants, collaborators, co-authors, and so forth.

As a research project in which I am more of an observer-participant than participant-observer, and in which I have made most decisions regarding the design of the project, it feels

somewhat disingenuous to describe the participants in my research as “collaborators”; that would suggest a more active role in which I have devolved decision-making power to those involved in my research. Similarly, the term “informant” feels inappropriate as it invokes a cold, extractive relationship which is not true to the researcher–researched relationship this project has tried to cultivate. Instead, I have chosen to use the term “participant,” which, while more neutral, still reflects an active role and recognises some level of agency for those involved in the project.

As an oscillatory ethnographic research process, the people involved in this research project and how they have been involved has ebbed, shifted, and flowed over the course of the project. After deciding on which regions of NSW would be my case study regions, my process for finding and approaching the initial group of potential participants involved drawing on my own prior knowledge of energy and climate activists and groups in the regions, followed by online research into fossil fuel projects, renewable energy projects, political groups, electoral representatives, and community groups within both New England and the Northern Rivers respectively.

Introducing myself and including a brief description of the project, I emailed 10 potential participants from each region, including both groups and individuals, asking for their assistance with my research and offering further information about what would be involved to those who indicated interest by reply email. I was pleasantly surprised at the number of affirmative responses I received. From these replies I was able to organise my first field visits in February 2019.

I had initially intended for my research to be a comparison between energy transitions in the two case study regions, as the localities are quite different from one another. However, through my initial field trips to both New England (NE) and the Northern Rivers (NR), and subsequent data collection, it became apparent that it would be a more fruitful lens to

examine different models of energy transitions. It was only by entering the field that I came to focus on analysis of eco–social relations present in centralised corporate and decentralised community energy, rather than in comparing the two regions.

After visiting the field in February and March 2019, I ended up with several mini case studies across the two regions. These were: two large-scale corporate renewable energy projects (NE), a community zero-net emission project (NE), a community energy not-for-profit (NR), an off-grid intentional community (NR) and a community–council 100% renewable project partnership (NR). These will be further described in the following chapter. These smaller case studies came about through both initial responders to my first participant invitations and recommendations from people I had contacted. This is indicative of the snowball approach to participant selection, which is the approach I utilised following my initial, more targeted participant recruitment. An interesting observation in my research is that in each case study project, with the exception of the corporate project, it was women who took on the informal role as my main point of contact for each project.

Due to bushfires in Australia across the 2019–2020 spring/summer season (referred to as Black Summer) and the subsequent global COVID-19 pandemic, my ethnographic research changed significantly as I was unable to enter the field from November 2019 onwards. The necessary shift to conducting the remainder of my “fieldwork” online had corresponding impacts on who was involved in my research. Due to my inability to physically re-enter the field, it became difficult to meet and involve new people in my research. I couldn’t meet anyone at the pub, or at local meetings and events. I became even more constrained to engage participants who were recommended to me and those who I could engage online. To put the significance of the shift into context, I had originally planned to be going into the field up until September 2020. The Black Summer bushfires and the COVID-19 pandemic denied this project 10 months of in-person fieldwork. The full impact

this had on the participants I was able to involve, and indeed the level at which I was able to engage with the participants already involved, is ultimately unknowable. However, the richness of data and the relationships made in the preceding 10 months when I was physically in the field gives me some indication.

You will get to know the individuals and groups who ended up being the main participants in my research project throughout the remainder of the thesis, however, in this methodological chapter it is important to make a note regarding the gender make-up of my research. Out of the ten potential participants from each region I initially approached, I took care to ensure I was approaching more women than men. Although I was interested in hearing from people of all genders, it was important as a feminist research project interested in gender dynamics to ensure that women were well represented, particularly as electoral politics and corporate energy companies remain male-dominated spaces. This early care to include women proved valuable, as when participants began to suggest other potential participants to me, their suggestions generally skewed towards men.

This care to include more women participants early in my research initially put me at odds with my university's ethics committee. In my ethics application, I explained that as a feminist project, I would be seeking to engage with more women and non-binary people than men. I received a response that this approach was not acceptable, and that I should endeavour to ensure that I had an equal number of participants who were women, non-binary, and men. I was surprised that a university ethics committee would have such a lack of understanding about why a feminist project might seek to involve more women participants, and after further reasserting my position and justification for this planned participant selection, they agreed. That an explicitly feminist research project still required argument and justification for seeking women participants by a university ethics committee demonstrates the importance of feminist organising and research both outside of, and indeed inside, our institutions.

As discussed in the introduction, the feminism I draw from is trans-inclusive feminism. Something that I struggled with throughout this research project, including during participant selection, was how to use language and engage in research practices that were inclusive of all genders, while also thinking through the lens of feminised labour, experiences, and ideas. As explained in the introduction, when I am discussing feminised labour or “women’s work” I am not referring either exclusively to women or to all women, but more so to marginalised peoples of all genders, ethnicities, classes, and abilities who are designated the “feminised other.” While I made it clear in my ethics application that I would be prioritising women and non-binary people, none of my participants openly identified as non-binary or transgender. This is not to suggest that there are not non-binary and transgender people living where I was conducting research. However, my research sites were in regional NSW where there can be particular challenges for trans and non-binary people (AIDS Council of NSW [ACON], 2019). I was someone unknown to the communities and my research project was not explicitly concerned with LGBTQIA+ issues. I believe the combination of these three factors contributed to not having any openly identified non-binary or transgender participants.

Although this project includes some exploration of continuing ideas of terra nullius and how proponents of renewable energy projects are engaging, or not engaging, with Traditional Custodians, I did not interview anyone in their capacity as a Traditional Custodian or First Nations person. Terra nullius, the colonial legal construction which falsely designated the continent of Australia uninhabited upon British invasion, continues to have profound impacts on property, land, and eco-social relations, as will be further explored in the upcoming analysis chapters.<sup>4</sup> I made a decision early in my research design that I did not want to enter into a research relationship with First Nations people while I was still

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<sup>4</sup> For an explanation on terra nullius and the Mabo case that saw it overturned see Galloway, 2017.

inexperienced in conducting research. I did not seek to actively exclude First Nations people, but I did not seek anyone out to be a participant in their capacity as a Traditional Custodian.

There is significant ongoing history of settler/coloniser researchers harming or exploiting First Nations communities (see Bodkin-Andrews et al., 2017; Foley, 2003; Moreton-Robinson, 2011; Nakata, 2012; Smith, 2012) and I did not want to inadvertently contribute to that history. There is also the question and ongoing debate of whether settler/coloniser researchers should be doing research with First Nations communities without a First Nations researcher also being on the project (see Bond et al., 2021; Povey & Trudgett, 2019; Smith, 2012). While I was uneasy that, through not actively seeking First Nations participants, I was myself enacting a form of research terra nullius, I thought that the greater harm would likely be in entering into a research relationship unprepared and inexperienced. I did, however, endeavour to keep First Nations sovereignty at the front of mind in my research, and to think through how transitions to renewable energy interact with land rights.

### ***Methods***

A common feature found in scholarship on feminist methodology is an emphasis on there being no particular method that is inherently feminist; instead it is the methodology and how methods are enacted that makes research feminist (e.g., Davis & Craven, 2016; Hesse-Biber, 2013; Reinharz & Davidman, 1992).

Research methods themselves are neither feminist nor non-feminist. They offer us tools through which to collect data and are used in a variety of scholarly projects. Rather, it is our methodology—the rationale we create for the links we make among feminist theories, our research strategies and ethical decisions, the data we collect, and its relevance to the world—that marks our research as feminist ethnography (Davis & Craven, 2016, p. 84).



The method of interviewing people, for example, is not specifically a feminist method. However, methods can be employed through a feminist lens, for example making sure your interview sample includes more women and non-binary people than men.

However Bell (2015) highlights how methods can and have been conceptualised and developed by feminist researchers, detailing the example of Photovoice (Wang & Burris, 1994; Wang et al, 1998) as method. Photovoice involves researchers providing participants with a camera “to take pictures that represent important aspects of their lives and communities” (Bell, 2015 p.38), this is then followed by group and individual reflection on the process, ideally followed by participants engaging in political action on the issue they have represented through their images. Bell discusses that while “others have used modified versions of this method and have still called it Photovoice, the original conceptualization of the process is explicitly feminist (Wang & Redwood-Jones, 2001) (2015, p.37). Bell’s use of photovoice as method in feminist energy research will be further explored later in this chapter.

While there are no solely feminist methods, there are methods common to ethnographic research. These include participant observation, artefact collection, and participant interviews. These methods, alongside document and media analysis, and archival research, have been used in this research project and are further elucidated below.

**Participant Observation.** Participant observation was a core method for the earlier stages of this research. Observations took place at organisational meetings, at public events, and at project sites. I was broadly observing what was happening in these spaces (description), with particular regard to eco–social relations, and then more specifically looking for gender and power dynamics present. These included what roles and tasks people were carrying out, whether any gender roles were being subverted, who was and was not speaking, who was involved in decision-making and how people were relating with one another and with nature.

The combination of participant observation and interviews was of particular note, as interviewees would often refer to events or discussions that happened during participant observation and reflect a different light on them. This included on more than one occasion an interviewee offering an opinion that they were not comfortable voicing in the group setting. This was invaluable for gaining further insight into power dynamics, community and individual viewpoints, and relationships.

In-person participant observation came to a grinding halt in November 2019 and would not recommence for the remainder of the project due to the Black Summer bushfires and the COVID-19 pandemic. This was a particularly difficult circumstance to absorb in the middle of a multi-sited ethnographic research project that had a strict timeline. Once it became clear that re-entering the field physically was not going to be possible, I shifted to online “fieldwork” where possible. This involved more focus on document analysis, accessing transcripts for public and council meetings where available, and joining online events. Although this online fieldwork assisted in filling some gaps in my knowledge and data for my project, it paled in comparison to the in-person fieldwork I was able to do in the first 10 months of my data collection period.

**Interviews.** Interviews were conducted using the practice of feminist in-depth interviewing which prioritises unstructured and semi-structured interviews (Leavy & Hesse-Biber, 2006). I utilised semi-structured interviews when I had a list of questions to ask participants, however, I would allow the conversation to move away from the structured questions if an interesting line of discussion came up, or the participant was particularly interested in some point. Semi-structured interviews allowed for this exploration, and for the conversation to be somewhat guided by the participant's experience and stories, while still allowing me to ensure I covered all the key themes and questions I wanted to ask. Interviews typically lasted one hour, with some coming just under and others going slightly over. Most interviews were held in person, however those conducted after November 2019 were held online.

While I found online interviews easier to conduct than online participant observation, I also found online interviews to be more distant than in-person interviews. It was more difficult to build initial rapport, there were fewer opportunities to consider body language and similar observations that are possible with in-person interviews.

The shift to online interviews also came with a corresponding shift in the availability of some of my participants. I found that during the pandemic it became more difficult to reach some existing participants and, as already mentioned, next to impossible to reach new participants. This is likely due to a sense of overwhelm both at the situation of a global pandemic but also the significant increase in digital communication that corresponded with the pandemic. Similarly, during an intense bushfire season, engaging in my research was, understandably, not a high priority for some of my participants whose homes and communities were threatened by the fires.

**Document and Media Analysis.** Documents and media were also collected as supplementary data to participant observation and interviews. Initially, documents, and media that were publicly accessible were used for background research prior to entering the field. During my in-person fieldwork I was often given documents by participants that related to the project they were involved in, and these became valuable additions to my data for analysis—particularly those documents that were not publicly accessible.

The documents and media that I collected throughout the research project were utilised in a variety of ways. As mentioned, they were invaluable sources of information when finalising the initial research design and in preparing to enter the field. Documents and media continued to act as a source of extra information throughout the research project period. They also served as useful sources for analysis, particularly in comparing differing views, changes in opinion over time, changes to project plans, and personnel. Documents and media were often rich sources of how different renewable energy projects presented themselves publicly and of the particular eco–social relations and energy futures the projects were conceptualising and materialising.

**Archival Research.** While not originally in my research plan, I also conducted some supplementary research at the Jessie Street National Women’s Library (JSNWL)—a specialist library and archive in Sydney, Australia, dedicated to preserving “Australian women’s work, words and history” (JSNWL, 2019). Within the archives of JSNWL, I found a treasure trove of newsletters, posters, pamphlets, self-published books, and cartoons from the height of the anti-nuclear movement in the late 1970s and early 1980s. This archival research formed the basis for the section on this period of feminist activism that was discussed in the introduction of this thesis.

These methods of participant observation, semi-structured interviews, document and media analysis, and archival research formed a vast and rich assortment of data from which I

was able to conduct my analysis. As an oscillatory approach, I did not collect all of my data and then analyse once the fieldwork was completed. Instead, I was continually analysing and collecting data in tandem as new or deeper lines of enquiry appeared to me. The data analysis approach that was utilised in this project is discussed later on in this chapter. Prior to that, feminist methodological considerations of advocacy and power dynamics will be explored.

### ***Research as Advocacy***

Feminist epistemologies and research contribute significantly to academic conversations on knowledge, objectivity and scholarship (see Hesse-Biber, 2012, 2013; Harding, 2012; Intemann, 2010; Littlewood, 2016; Reinharz & Davidman, 1992; Wolf, 2018). Leckenby explained that the root of positivist social science formulation was the subject/object distinction that positioned the researcher as a detached and impartial subject (2007, p. 44). Like the feminist researchers who preceded them, Davis and Craven questioned this formulation asking, “Why is objectivity considered an advantage?” and suggesting that “Most feminist researchers, including feminist ethnographers, would argue that all scholarly inquiry is subjective—in the questions we choose, how we gather data, as well as our positions as we encounter participants in fieldwork” (2016, p. 60). A core feature of feminist research has been not only to expose the (masculine) subjectivity in supposedly objective positivist research but also to include normative analysis. With this focus not only on how things are, but also how they should or could be, feminist researchers frequently link their work with advocacy efforts.

Scholarship on feminist research methodology typically includes explorations of research as advocacy (for e.g., Craven & Davis, 2013; Davis & Craven, 2016; Leavy & Hesse-Biber, 2007; Pini, 2003). This can be traced back to the rapid growth in specifically feminist research that arose out of the feminist political movement from the 1970s onwards. Many feminist scholars were involved in the feminist movement, and the involvement of

feminist researchers in social movements continues to this day. As discussed by Craven and Davis:

Many of us began, in a sense, in “the field.” Most of us began our scholarly careers with pre-existing commitments to social justice struggles, and oftentimes we had long histories of engagement in activist efforts that shaped and later became part of our research. (Craven & Davis, 2013, p. 20)

This is true for my research. My engagement in various social movements, particularly energy, climate, environment, and feminist movements, has undoubtedly shaped this thesis throughout the entire process. Indeed, my original research proposal manifested as a result of conversations I had been having with other people involved in climate and energy social movements regarding what we considered to be a worrying trend towards an uncritical fetishisation of renewable energy occurring alongside a capture of renewable energy technologies and policies by corporate interests.

Through my PhD candidature I maintained a commitment to, and involvement in, leftist social movements, the values they uphold, and the futures they work towards—particularly movements that seek to radically shift eco-social relations towards regeneration, reciprocity, and care. As I was researching and writing this thesis at a time when action on the climate crisis was desperately needed, I felt quite strongly that to do research without an element of advocacy and contributing towards social movements would be futile.

As explored in detail in the introductory chapter, Australia as a nation-state is in a woeful position on climate and energy politics. Over the past decade I have volunteered, I have written, I have cooked, I have painted, I have designed, I have door-knocked, I have phone-banked, I have met with politicians, I have marched, I have sat-in, I have gate-crashed, I have locked-on, I have paddled-out, I have discussed calmly, I have debated, I have yelled, I

have hugged, and I have cried. And of course, I haven't been alone—the climate and energy movements in Australia have grown considerably since my first protest in 2009. Despite all of this, Australia is still a state beholden to fossil capital.

There are a lot of dedicated people and organisations in Australia that have been working on the question of how to break free from fossil capital. When I applied for my PhD, and throughout my candidature, I realised that my strength, my contribution, did not lie in remaining in this well-attended field of social change. To me, there was another equally important part of the equation—what do our eco-social relations around energy look like during and after transitions to renewables? How do we ensure that *all* the alienating and destructive aspects of the fossil fuel industry are eradicated in transitions, so that we won't reproduce a similar set of problems with renewable energy? How do we ensure that energy forms part of a world centred on regeneration, reciprocity, and care for people and planet?

Being explicit in the advocacy goals of feminist research does not come without challenges or critique. When discussing her research into rural women in the agricultural industry and how their position might be changed, Pini reflected that a challenge for researchers who are committed to political change “is that any researcher who takes a particular political position faces the possibility that the research may not be taken seriously” (2003, p. 428).

This critique of research as advocacy can be linked back to earlier scholarly debates between feminists and positivists discussed earlier. The validity of research that is also advocacy can be found in these debates. All research is social and will inevitably be impacted by social relations. Through taking an overt political position in a research project, the researcher is at least partially aware of their own position and can aim to build in checks and balances throughout the research design—although there will always be unconscious social conditioning that is present in research. Conversely, perhaps through aiming for objectivity,

researchers who do not reflect on their own position may miss these opportunities, resulting in research that is subjective being presented as objective.

Checks and balances can be built into feminist ethnographic research to alleviate concerns about validity and to ensure the reader can understand how the argument came to be made. Throughout my research process and in this thesis these strategies include rich descriptions supported by visual aids where possible; corroborating claims with fieldwork data, images and relevant documents; regular debriefing sessions with supervisors and mentors to seek feedback and guidance, and this detailed methodological chapter which includes my positionality as a researcher and my reflections on the research process (Shenton, 2004). These strategies for trustworthiness and credibility allow me to maintain my epistemological belief that feminist knowledge “is a project inseparable from praxis” (Craven & Davis, 2013, p. 17) and to incorporate elements of advocacy into this research.

Using the method of Photovoice in her research on women living in the coal-mining region of southern West Virginia in the United States, Bell demonstrated how “finding ways to expose and draw attention to locally produced narratives of injustice is something that feminist researchers are well positioned to do” (2015 p.33). Participants in her research project were able to use photos to tell their stories of localised environmental injustice and through reflective discussion – another method often used in feminist ethnography – some of the participants felt empowered to communicate with their local elected representatives to try to resolve some of the problems they were encountering. As Bell explained,

The Photovoice project provided a mechanism for local residents to communicate with policymakers about needs that were going unmet and about the ways in which corporate polluters were affecting their communities. The power of Photovoice as a communication strategy lies in its authenticity. The photographs and narratives are



created by people who are directly experiencing these issues, not by paid employees of an advocacy or special interest group (2015, p.45).

Bell's example demonstrates how research as advocacy does not always mean the researcher become the advocate, but instead can create circumstances in which participants feel more comfortable and prepared to advocate for themselves. Later in this chapter I outline how, with the benefit of hindsight, a method like Photovoice could have helped alleviate some of the issues that arose for this research project as a result of bushfires and Covid-19.

### ***Research Power Dynamics***

As suggested previously, power is at the heart of feminist ethnographic methodology and this includes ongoing consideration of power dynamics *within* the research process. The following section on research power dynamics is framed by Wolf's conceptualisation of three interrelated dimensions of power in feminist research:

1. Power differences stemming from [the] different positionalities of the researcher and the researched (race, class, nationality, life chances, urban-rural backgrounds)
  6. Power exerted during the research process, such as defining the research relationship, [research questions,] unequal exchange, and exploitations
  7. Power exerted during the post-fieldwork period—writing and representing”
- (Wolf, 2018, p. 2)

Attention to power relations within research processes stems from an ongoing conversation among feminist researchers that attempts to unpack whether the hierarchical relationship between researcher and researched can ever be fully dismantled. Stacey's (1988) and Abu-Lughod's (1990) respective questioning of whether there can be feminist ethnography are important parts of this scholarly debate among feminists.

More recently, feminist researchers like Wolf argued that “as long as the researcher makes the decisions about the topic of research and how to conduct it and write it up, she holds that power, and most feminists do hold those reins of power, from conceptualisation to writing” (2018, p. 19). Various strategies are employed by feminist researchers to “unsettle the hierarchy” (Pini, 2003, p. 423) between the observer and the observed, researcher and researched. These include participatory and action research, reciprocal relationships, participant contribution to research design and editable access to interview transcripts, and draft writings prior to publication. These of course come with their own challenges—some of which are discussed in the following sections.

### ***Research Positionalities and Reflexivity***

The first consideration of power in feminist research processes is the positionality of the researcher and participants, described by Davis and Craven as a consistent “interrogation of one’s positionality, how one is situated in relation to participants in their work” (2016, p. 65). This “critical reflection on the process of research and/or locating the ‘knower’” (Littlewood, 2016, p. 41) is often referred to as reflexivity. Reflexivity can include a range of reflections on how the experiences, positions, and perspectives of the researcher inform scholarship. For example, how is the researcher positioned in comparison to research participants in terms of gender, race, class, sexuality, rural/urban, education, and ability, and how might these differing positions impact on the research?

One integral part of examining positionalities is the insider/outsider (false) dichotomy. Discussions within feminist scholarship regarding the position of the researcher compared to research participants often focuses on whether a researcher should be an insider, who is researching within one’s own community, or an outsider, researching outside of one’s own community. Particularly within the feminist standpoint, arguments were made that it was both advantageous and less oppressive to research as an insider as the researcher would have

a greater understanding of the experiences and perspectives of the research participants and would be less likely to exploit or misrepresent the community (Davis & Craven, 2016).

However, this view was challenged by other scholars who pointed out that being an insider might provide more impetus to misrepresent the community, particularly in a more positive light.

Feminist ethnographers have also questioned the insider/outsider dichotomy through exploration of their multiple positionalities. Davis and Craven suggested that “feminist ethnographers, indeed, researchers in general, typically recognise the fluidity and complexity of human experience and know that the spaces between the poles of insider and outsider are far more complicated” (2016, p. 61). Similarly, in an often-cited essay “How Native is a ‘Native’ Anthropologist,” Kirin Narayan argued that “the loci along which we are aligned with or set apart from those whom we study are multiple and in flux” (1993, p. 671). Challenging the focus on the insider/outsider dichotomy she instead suggested focusing on the quality of relations between researcher and participant and through acknowledging the hybridity of researchers who are always at least “*minimally bicultural* [emphasis added] in terms of belonging simultaneously to the world of engaged scholarship and the world of everyday life” (p. 672).

Further challenging claims of the superiority of insider research that are predominantly made by standpoint/s feminists, Uma Narayan highlighted how dealing in the absolutes of insider or outsider ignores feminism’s strengths of contextuality, inclusivity, embodiment, and socially relevant research (2004). It is the manner in which relationships between researcher and researched are cultivated, and the motivations for the research, that impact the power relations in the research, rather than prescriptive insider/outsider blanket rules. Research is inherently situational, and a focus on the quality and practice of relations within research, rather than prescriptive dichotomies, recognises this.

**My Position as a Researcher.** I am in agreement regarding the minimal biculturality of researchers, and the importance of cultivating good relationships, as this was my experience during the research for my thesis. As a young, white, well-educated woman there were multiple ways in which I had commonalities with the participants in my project, as well as multiple differences. For example, I was somewhat of an “insider” when I was with participants from the community energy case studies due to my involvement in energy and climate social movements, yet I was also an outsider as I had not been personally involved in any of the chosen projects and was engaging with those projects now with different motivations.

Depending on who I was speaking to and their background or position, I found myself drawing upon specific parts of my life to build a stronger connection. For example, when meeting people involved in community energy, or indeed most participants from the Northern Rivers, I would discuss my involvement in climate, energy, and environmental social movements. This typically resulted in the discovery that we had been involved in similar campaigns and a sense of solidarity and connection was formed. Similarly, when meeting with farmers or most participants from New England, I would discuss having grown up in the rural, coal-mining town of Singleton. This often resulted in participants becoming more comfortable as I was no longer seen as a city researcher with no knowledge of life outside cities, no understanding of rural living, and no understanding of the impacts of living alongside large energy projects.

I was conscious that as a white woman I was granted easier access to my field and did not have to endure questions about my credentials or ethnic background that Indigenous researchers or researchers of colour, and indeed such local residents, had been subjected to.

I was usually younger than the participants in my project and my economic position was often lower. This combination, particularly with participants who were familiar with

academia and knew of the precarity of many graduate students, often created situations in which participants offered to pay for things for me, offer me accommodation, and so forth. I found this challenging as I knew these offers came from genuine interest in the project, a sense of hospitality that is often found in regional areas, and a strengthening relationship between myself and participants, yet at the same time knew that accepting these offers may not be in accordance with the ethical guidelines of my university. Obtaining ethics approval in my experience was a slow process, which did not allow for in-field decision-making. Being in the field gave me further insight into the difficulties that can come when engaging in ethnographic research that by nature involves working and living closely with participants, and how that may be affected by institutional ethical constraints.

### ***Research Process***

Research design, participant selection, data generation, and other aspects of the research process are predominantly decisions made by researchers, in line with their discipline, and tempered by institutional requirements and constraints. This is the second core point that concerns feminist researchers with power in the research process and contributes to the now-commonly-held belief among feminist ethnographers—that there will always be some form of shifting power imbalance between the researcher and the research participants. While attempts are made by feminist researchers, particularly those engaged in participatory or action research, to include participants in the research process, ultimately the researcher is in control of the project—although of course participants have certain forms of power within the research relationship.

Participant selection in ethnography is crucial as it is the experiences, beliefs, and practices of participants that will inform much of the research. Reflecting on participant selection, Craven and Davis have acknowledged that “the strategic decisions that we as feminist activist ethnographers make about whose voices to highlight in our work inevitably

make our ethnographic accounts partial” (2013, p. 19). This is normal: in ethnography there will always be voices that are not heard and experiences and perspectives that cannot be included. This partiality can be a result of the research design, typically controlled by the researcher, or because of participant consent—not every potential participant will be willing to talk to a researcher, nor will they necessarily talk honestly or without attempting to manipulate the research in some way.

While individual potential participants have the power to decline to participate, and participants are typically able to control what they do or do not say, researchers generally have the power to decide the focus of the research, who they are going to approach and exclude, what questions are going to be asked of those participants and which participant activities are going to be observed. This control over the project often gives the researcher much more power in the research process than any participant.

However, while the power dynamics of the research process are generally skewed in favour of the researcher, this does not mean that researchers are never in a position in which the power dynamics are flipped. This is particularly true for researchers who are young, women, or people of colour—indeed anyone who is “researching up” (Davis & Craven, 2016). When it comes to reflecting on power dynamics in which researchers may feel vulnerable or disparaged, Wolf has discussed how explorations by feminist ethnographers are generally insufficient (2018, p. 23). While feminist researchers have been concerned with how their actions and power in the field can impact the research and the participants, there has been less focus on how the power of some participants has impacted on the research and the researcher.

**Reflections on My Research Process.** Inexperience and a sudden inability to physically enter the field significantly impacted upon the power dynamics I had hoped to cultivate in this research project. Although, as discussed earlier, this was a research project in which the initial stages of the research design were predominantly under my control, I had planned on making the latter stages of data collection, analysis, and writing somewhat more collaborative.

Prior to the onset of the Black Summer bushfires and the COVID-19 pandemic, I had planned to use my final field visits as opportunities to discuss my initial analysis with participants. I had planned to go over transcripts and drafted sections of the thesis with participants in person and to discuss whether my observations and analysis rang true for them, whether there were important aspects of renewable energy projects and eco-social relations that we had not yet covered and to further hear their perspectives. Unfortunately, the depth in which I was able to do this was not reached as a result of shifting online. While I was able to conduct follow-up interviews with some participants, I did not achieve the level of feedback and discussion I had originally planned for.

My relationships with my participants also suffered as a result of losing the ability to conduct in-person fieldwork. Instead of semi-regular in-person visits over a period of 18 months, my research involved 10 months of semi-regular in-person visits and then 10 months of sporadic online or phone communication. The lack of certainty about if and when I would be able to physically re-enter the field over the first several months of the bushfires and pandemic meant that my participants and I were in a kind of limbo and unsure how to proceed. It was not until several months into the pandemic, when it became clear that travel was not going to be possible within the timeframe of my PhD, that we shifted to online data collection. This resulted in several months during which I was unable to adequately either continue to strengthen existing research relationships or forge new relationships.

This raised a perplexing question for me. Did I conduct feminist ethnography? I followed the five parameters of feminist ethnography set-out by Davis and Craven (2016, p. 11) and believe I am contributing something rich and useful to feminist energy scholarship through this thesis. However, particularly in the acknowledgment and reflection of power relations within the research context, I do not feel that I fully achieved what I set out to. With foresight and planning I think it would be possible to conduct feminist ethnography online, however, being thrown into online ethnography halfway through a project, and the uncertainty of whether I would be able to re-enter the field, left me feeling as though my research process was not as in line with feminist research practices as I had originally planned and hoped. For example, had I known that my physically re-entering the field, or entering it at all, would not be possible I could have designed my research to draw more strongly on participant-led methods, such as Photovoice as discussed earlier in this chapter.

### ***Conclusion***

This chapter has explored and explained the multi-sited, feminist ethnographic methodology that was employed for my doctoral candidature. Drawing predominantly on feminist research considerations, the chapter examined how research was conducted, considered power dynamics within the research context and explained how the dual interruptions of the Black Summer bushfires and the COVID-19 pandemic impacted upon the project. With an understanding of how the research was conducted, what concepts are being drawn up, a review of key literature and an introduction to the problem being considered in this thesis, we can now turn to the field.



## **Chapter 6: History, Energy, and Social Relations in New England, NSW**

In grounding the spectrum of possibilities that transformations to renewable energy affords, this chapter introduces the New England region of NSW, Australia, where both centralised corporate and decentralised community renewable energy projects are being proposed, debated, and built. Alongside introducing the region, this chapter also introduces the reader to the renewable energy projects explored in the region, and the main participants in the research. These projects include UPC Renewable's New England Solar Farm (UPC / NESF), the Walcha Energy Project, and Z-Net Uralla. These three projects were chosen as they were active projects, involved community decision-making, and had people involved in the projects who were willing to be participants in the research.

### ***Ethnography Includes the Journey***

In February 2019, I departed for my first field visit from my parents' house in Newcastle on a 40-degree day with blustery winds so strong they shook my car. All of the 'Fire Danger Rating Today' signs that dot Australian roadsides had their arrows set to EXTREME. By the time I was nearing the end of my five-hour journey, the sky was filling with smoke from the multiple bushfires burning across the drought-stricken state of NSW.

Climate change, never far from my mind, had been particularly present over the preceding month. I felt like I hadn't slept throughout the month of January, the hottest ever on record in Australia at the time, as I sweltered in my rental apartment. Of course, putting in flyscreens for airflow or an air conditioner for liveable temperatures was not high on my landlords' agenda, despite housing increasingly being considered a key site of necessary climate adaptation (Edwards & Bulkeley, 2017; Instone et al., 2013; Shearer et al., 2016). In Australia, as elsewhere, recent research has revealed that heatwaves are the most significant risk to human and non-human life caused by the climate crisis (Meyricke & Chomick, 2019). A new Australian community organisation established in early 2020 called Sweltering Cities

seeks to draw attention to the risks of heatwaves and advocate for planning and policies to sustainably cool down cities and their infrastructure.

During that summer of 2018–19, uncontrollable bushfires had been ripping, heartbreakingly and unceasingly, through ancient forests in Tasmania. These were forests that activists had saved from corporate greed on more than one occasion, but no amount of protest could stop this particular fiery incarnation of corporate greed (Krien, 2012; McIntyre, 2018; O'Brien, 2019). The Murray-Darling River system was in crisis, its fish were dying *en masse* (Jackson & Head, 2020); remote communities, particularly those with high Indigenous populations, had no clean drinking water (Allam, 2019; Mason, 2019); while a deluge of water had flooded Townsville in Northern Queensland (White, 2021). Two Aboriginal men were killed in those flood waters after being chased into them by local police (Armbruster, 2019). Climate change had well and truly arrived on the continent of Australia, and as many had already been theorising, Aboriginal and Torres Strait Islander people were being impacted the worst (Altman & Jordan, 2018; Green et al., 2009). Little did we know at the time that the Tasmanian fires of the 2018–2019 summer would pale in comparison to the Black Summer fires the following year.

As I drove to Armidale, I passed through the Hunter Valley where I had grown up. The Hunter is one of the largest black thermal coal producing regions in Australia. As I drove through Singleton and out towards Muswellbrook, the morbid curiosity that stirs in me every time I drive that familiar route stirred once more. Slightly hidden from view but visible if you know where to look are the giant open-cut coal mines that have fascinated and horrified me for most of my life. If you have never seen an open-cut coal mine, I urge you to see one in person if you ever can. They are truly breathtaking, in a horrific way. In them, the damage humans can impact on the earth is writ large.

Driving through the Hunter towards Armidale on this sweltering day with bushfires, floods, and drought on my mind, I couldn't help but look towards those gaping wounds in the landscape that had contributed to all of this trouble. On days like these, when bushfires burn out of control in places they never used to, and they burn further and stronger than they used to (Owens & O'Kane, 2020), I wonder if the people who continue to deny climate change, who continue to fight for new coal mines, think about whether it is all worth it. If the death and destruction and irreversible losses are worth the profit, the ideology. I sit with Donna Haraway's (2016) call for us to stay with the trouble and form new ways of meaning, relating, and living with one another and with non-human species in a time of ecological destruction and upheaval. It was with all of these thoughts and events swirling around that I arrived in Armidale to begin my fieldwork on energy transitions.

Waking the morning after my drive, the smoke from the still-burning bushfires nearby had settled just above Armidale. For the next few days, I would battle with difficulty breathing, a blocked and bloody nose, itchy eyes, and the general exhaustion that accompanies travel combined with bushfire smoke inhalation. These were minor inconveniences compared to what the firefighters and communities across the state battling those bushfires were experiencing, but they were a constant reminder of the cost of our current energy system and the need for the transformation.

I had an extra day before I needed to start meeting with people in the local community and decided to gain a sense of Uralla and Walcha and the physical scope of the projects. Driving through Uralla, there was nothing to alert the casual observer or passer-by that this small rural town had big plans to become Australia's first zero-net emission town. There was no big sign or fanfare that you might typically see when entering a town that is proud of something, although I would later notice a very small square promotion with the simple Z-Net Uralla logo on it, sitting side-by-side on a sign compiled of other local associations.

There didn't appear to be many solar panels on roofs visible from the main road. There was no statue, no banner, no fanfare.

Perhaps this has something to do with another thing the town is proud of, something that is clearly visible as you enter the town and drive through it—Captain Thunderbolt. Australia has a curious pride in our history of bushrangers, and Uralla claims Captain Thunderbolt as their own. You can see the large boulder he would reportedly hide behind before robbing travellers, now covered in decades of graffiti. You can visit his grave, visit the permanent exhibition about him at the local museum, even drive along a particular section of the highway that has been named Thunderbolt Way. Maybe it's too early in this zero-emission experiment to ask Thunderbolt to share the spotlight and the pride of the town.

Wanting to find out more about the town, and get a sense of how well known the Z-Net project was, I walked into the Uralla information centre and asked an older man sitting at the counter if he could point me in the direction of information about Z-Net. My first clue came in his not understanding what I meant by Z-Net. "The zero-emissions project happening in Uralla," I clarified, "do you know anything about that?" Still not knowing what I talking about I further clarified, "all the solar panels and things people are installing around here?" That sparked something. He showed me towards a small case of pamphlets towards the back of the centre. He apologised for being vague and said, somewhat disapprovingly, "I don't know much about this ... some people around here are really into future stuff" (Personal communication, February 16, 2019).

Taking my small pile of pamphlets from the information centre, I walked up to one of the two of local pubs. Ordering a New England pale ale from the bar, I asked the bartender if she knew anything about the Z-Net project and showed her my pamphlets. She said she didn't really know much except that she thought they had an office somewhere in town. These two encounters gave me a sense of the scope of local interest in or knowledge about the project. I

had assumed prior to arriving that something like being Australia's first town to attempt zero net emissions would have been well known. But if the information centre volunteer and the bartender at the local pub didn't really know much about it, two people you would expect to know the goings-on in a rural town, perhaps others didn't either.

At this stage, I had thought that my main interest in Uralla would be the Z-Net project, and that Walcha would be the main site of my exploration into large-scale renewable projects in the area. It was only after meeting locals from Uralla and Walcha that I came to learn that UPC's New England Solar Farm was the project they were most concerned with, and it was considerably further along in its development than the Walcha Energy Project (WEP). However, not knowing this yet, I left Uralla and, noticing a lone Wedge-Tailed Eagle flying above, drove south-east towards Walcha.

Driving between the area west of Walcha where the WEP solar arrays are proposed, south of Walcha where the hydro storage is proposed, and north of Walcha where the wind farms are proposed gave me a sense of the massive scale of the project. Armed only with a map I had created based on a video published on the WEP website, it was difficult to tell exactly where the sites would be. Upon attempting to find the dam, which is the site of the proposed hydro storage, my two-wheel drive was eventually barred entry from four-wheel-drive-only roads. Driving out to Moola Plains, one of two main sites for the wind farm, I was able to get a general sense of the proposed wind farm locations. By this stage the strong winds of days prior had died down, but for a relatively calm day it was still quite windy at the proposed wind farm sites. Similarly, I was able to find the general area where the solar arrays were proposed and where, thanks to two centuries of land clearing, the relatively flat plains were abundantly sunny on a 25-degree day.

It was impossible not to notice the degradation of the land surrounding both Uralla and Walcha, which had clearly been incredibly damaged by two centuries of Western

industrial agriculture. During my visit to the sites, I shared the road with droving cattle several times. There were tens of kilometres between the three areas, and although there were a lot of large rural properties, the scale and distance between the three sites indicated to me that there would be quite a few landowners who would need to be engaged and involved. It was not surprising to me that at least a few of them were opposed to the proposed project.

### *Welcome to New England*

New England is a region in northern NSW, Australia's most populous state. Officially, the New England region has no firm boundary but broadly refers to parts of the Northern Tablelands, the North-West Slopes, and the Liverpool Plains. New England is an agricultural region where vast amounts of cotton, grains, wheat, vegetables, and livestock are produced. However, recent droughts, intensified by the climate crisis, have severely impacted farmers in the region. The town centres of New England include Tamworth, home to the Tamworth Country Music Festival, Australia's largest music festival; Armidale, a university town; and Gunnedah, home of AgQuip—Australia's largest agricultural field day.

**Political Representation.** As well as being the name of the region, New England is also the name of the federal electorate the region is represented by, the seat of which has been held by National Party member, Barnaby Joyce, since 2013. The (conservative) Nationals brand themselves as the party of regional Australia, and in coalition with the (conservative) Liberal Party, they form government at both the NSW state and the federal level at the time of writing<sup>5</sup> (Botterill & Cockfield, 2015). Joyce, a vocal supporter of the fossil fuel industry, was comfortably re-elected in the May 2019 federal election with a 2.5% swing towards him

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<sup>5</sup> The conservative Liberal-National Coalition was defeated in the May 2022 elections, in the final stages of editing this thesis. The Australian Labor Party is the party of government at the time of publishing; the implications of this on climate and energy policy remain to be seen, however these policies should arguably become stronger, albeit not strong enough.

(Australian Electoral Commission [AEC], 2019), despite several political and personal controversies preceding the election.

Although he was demoted in 2018 due to those aforementioned controversies, Joyce was returned as the leader of the National Party and therefore as the deputy prime minister of Australia in June 2021. On a two-candidate-preferred basis, Joyce received 64% of the electorate's vote (AEC, 2019), with 36% going towards newcomer independent candidate Adam Blakester, founder of Starfish Enterprises and Farming the Sun—two organisations that will be discussed later in this thesis. Blakester was considered by some of the locals I spoke with to be the only viable threat running against Joyce, but as a first-time candidate he failed to cut through enough to seriously worry the incumbent—at least for the 2019 election.

Two electorates at the state level represent the New England region: the seats of Northern Tablelands and Tamworth. The Northern Tablelands electorate has been represented by National member, Adam Marshall, since 2013. Marshall was easily re-elected at the NSW election in March 2019, receiving 83% of the two-candidate-preferred vote with a 5.8% swing towards him (Australian Broadcasting Corporation [ABC], 2019). The Uralla Shire is located within the Northern Tablelands electorate. The other state electorate, Tamworth, has been represented by National member, Kevin Anderson, since 2011. Although Anderson experienced a 7.8% swing against him at the March 2019 NSW election, he too was easily returned to the seat with 71% of the vote on a two-candidate-preferred basis (ABC, 2019b). The Walcha Shire is located within the Tamworth electorate. The region is comfortably held by the conservative Nationals, however, there is a considerable difference in the energy policies of the state and federal branches, with the state being much more supportive of transitions to renewable energy.

**Walcha.** Located on Dunghutti land, Walcha (pronounced Wol-ka) sits 20 kilometres to the west of the Great Dividing Range, the world's third-longest mountain range that spans from Victoria through NSW and into Queensland. The section of the range which sits near Walcha is currently known as the Oxley Wild Rivers National Park. This park includes remnant Gondwana rainforest, deep gorges, high waterfalls, and still-flowing rivers—even in times of severe drought. The landscapes of Walcha contrast starkly with its neighbouring forest and rivers. With the land cleared of most trees, vast plains are sectioned into industrial farms that have been trampled by billions of hooves since colonisation. Indeed, the Walcha area demonstrates the immense changes that have been wrought on the land of the Australian continent since invasion and colonisation in 1788.

Walcha is home to 3,090 people, six percent of whom are Aboriginal or Torres Strait Islander—significantly higher than the state average of 2.8% (Australian Bureau of Statistics [ABS], 2016a). Like many rural areas in Australia and beyond, Walcha is struggling to retain young people, with a median age of 48 compared to the Australian median age of 38, and the median regional NSW age of 43 (ABS, 2016a). Walcha has a lower median weekly household income of \$1,054 compared to \$1,166 in regional NSW, \$1,481 in NSW and \$1,431 in Australia (ABS, 2016a). The main job providers are the agricultural industry, the service industry, and construction and trades (ABS, 2016a).

**Uralla.** Located on Anaiwan land between Tamworth and Armidale, Uralla sits 45 kilometres north-west of Walcha. Uralla is situated along the New England Highway, which spans nearly 900 kilometres from the coastal city of Newcastle, up through NSW and into Queensland. Somewhat of an anomaly for smaller rural towns that are increasingly struggling to remain viable, the Uralla township is thriving with small businesses, a local brewery, and is a relatively popular tourist destination.



Just over 6,000 people live in Uralla Shire (ABS, 2016b). Like Walcha, Uralla also has a relatively high population of Aboriginal and Torres Strait Islander people with 7%, compared to 2.9% in NSW, and 2.8% in Australia. The median age in Uralla is 46, which is higher than both the Australian median age at 38, and the median regional NSW age of 43. Similar to Walcha and other rural towns, Uralla is conscious of having an issue with retaining younger people. Although the two towns of Uralla and Walcha look quite similar statistically, their character is entirely different. Walcha is a traditional agricultural town, whereas Uralla has embraced more modern industries and social relations.

**Settler-Colonial History.** The settler-colonial name for the region, New England, is almost stunning in its blatant erasure of pre-colonial lives and societies, an erasure facilitated through terra nullius. Similar to most settler-colonial regions in Australia, the New England region has been imposed over several different First Nations countries. Walcha is located on Dunghutti country, and Uralla and Armidale are on Anaiwan country. Gamilaroi country sits to the west, and is the largest First Nations country in the region.

John Oxley, the namesake of the nearby national park, as well as a major highway that travels through both Walcha and Uralla, is credited as being the first European to arrive in the region in 1818 (Walcha District Historical Society, 2020). The European invasion of this region with intention to settle commenced in Walcha from 1832 and Uralla from 1839. Colonisation was particularly violent, with at least four known massacres of the Dunghutti peoples between 1840 and 1856 (Ryan et al. 2017). The Anaiwan Language Revival Program (2018) has compiled a history of the “forgotten New England frontier wars,” examining Dunghutti, Anaiwan, and Biripi resistance to invasion, revealing at least 25 years of intermittent guerrilla-type warfare waged from their location in the Great Dividing Ranges.

As the settler-colonial project became more firmly established, despite ongoing resistance from First Nations communities, the early 1900s saw the forced relocation of most

of the remaining Aboriginal people in the region to missions and reserves. Several missions and reserves were located in the east towards Kempsey where many Anaiwan and Dunghutti peoples were forcibly placed. Others were moved into the East Armidale Aboriginal Reserve, colloquially referred to as “Dark Town” or “The Dump” (Wright, 2019(a)). Dark Town was essentially a shanty-town set up on the edge of the town of Armidale where Aboriginal people lived in houses made of hessian bags, corrugated iron, and cardboard boxes (Wright, 2018).

In the late 1950s and early 1960s, growing publicity and concern about the living conditions in Dark Town, particularly following the spread of preventable illness and death among children, resulted in calls for the Aboriginal Welfare Board to intervene and provide liveable conditions within the reserve (Wright, 2018). The site of Dark Town is now an Aboriginal community housing area named Narwan and the Armidale Aboriginal Community Garden, which forms part of an ongoing decolonial environmental humanities research project led by Aboriginal Elders, community members, and Dr. Kate Wright (Wright, 2018).

There is currently minimal publicly accessible recorded history of the New England region from the point of view of the Anaiwan peoples. Two ongoing research projects at the University of New England are actively seeking to redress this issue. One is the aforementioned Community Garden project. The other is the Anaiwan Language Revival Program, which is seeking to restore the Anaiwan language and, subsequently, build up the historical record from the Anaiwan point of view. The project commenced in 2016.

This recent history of violence and dispossession is by no means resolved and continues to impact on local energy and climate eco-social relations.

**Energy in the Region.** New England has a novel history with regard to energy usage and shifting technologies. In 1888, Tamworth became the first municipality in the colony of Australia to light their streets with electricity (Tamworth Powerstation Museum, n.d.). Interestingly, this move from gas lighting to electric lighting was fiercely opposed by the Tamworth newspaper and the Tamworth Gas and Coke Company, which had previously provided the gas for the town's lighting (Tamworth Powerstation Museum, n.d.). In comparison, Armidale was the last council in the region to establish electricity as a public service, which it did in 1922. A significant reason for the delay in Armidale connecting to electricity was due to the gas supplier being publicly owned by the municipality, and the transition to electricity was going to result in the privatisation of energy (Armidale Express, 1911, April 7).

These debates are remarkably reminiscent of current discussions in the Australian public sphere regarding energy transitions. Similar to the debate in Tamworth, the established fossil fuel industry, conservative governments, and Australia's highly concentrated Murdoch press have consistently disparaged renewable energy technologies, particularly wind energy (Bacon, 2013; Bacon & Nash, 2012; Djerf-Pierre et al., 2016; Lucas, 2017; Marshall, 2018). Like those in Armidale, debates over the privatisation of Australia's current energy systems have been ongoing for decades, and transitions to renewable energy have opened up space for demands that energy be re-nationalised and new renewable energy systems be 100% publicly owned (Quiggin, 2017; Australian Greens, 2019.).

In more recent times, conflict over energy in the New England region has included debates around the domineering presence and extractivist logic of the fossil fuel industry, debates that echo those being held across the state (Askland, 2020; Askland & Bunn, 2018; Connor, 2016; Connor et al., 2009; Goodman et al., 2020). While New England is predominantly an agricultural region, recent increased mining activity in the broader region

has seen land-use conflicts grow (Hindmarsh & Alidoust, 2019; Kennedy, 2016; Sherval et al., 2018). New England is situated to the north of the Hunter Valley, the largest thermal coal producing region in NSW. As the low-hanging fruit of coal deposits in the Hunter have been well and truly tapped, and as the industry has come into greater conflict with local communities and other industries, expansion into nearby regions has been one response of the industry.

Several fossil fuel extraction projects have been established within 150 to 200 km of Uralla and Walcha. While this is a considerable distance, particularly for those unfamiliar with the vast landscape that is the Australian continent, these places do form part of broader interpretations of the New England region, and each project has involved significant campaign assistance from activists and community groups in the Armidale and Uralla areas. Therefore, these fossil fuel projects and the resistance to them are considered relevant to a general overview of energy and land-use conflict in the region. It is outside of the scope of this project to provide extensive detail on the following fossil fuel projects; however, the ensuing brief overview provides useful background context for the eco-social relations arising around renewable energy transitions in the region.

In 2006, BHP Billiton was issued a coal exploration licence which covered 344 square kilometres, and included Carroona, a small village south of Gunnedah. In response to this, farmers and other local residents formed the Carroona Coal Action Group (CCAG) to oppose the proposed coal mine, with a particular focus on the impacts on agricultural land and groundwater. The group, alongside allies in the broader climate movement, campaigned against the proposed mine for 10 years. In response, the NSW government bought back the Carroona exploration licence from BHP in 2016 (CCAG, 2016).

In 2008, the NSW government issued Shenhua with a coal exploration licence at Watermark, just 20 kilometres north of Carroona. The Gomeroi people, CCAG, SOS

Liverpool Plains, Lock the Gate, and local farmers and residents worked together to campaign against the project (CCAG, 2016). In July 2017 the NSW government bought back half of the exploration licence from Shenhua, claiming that in doing so the “prime agricultural land of black soil plains” would be protected (Furlong & Haydar, 2019). In 2018 the NSW government renewed the remaining 50% of the exploration licence. However, the local community continued their campaign to stop the mine and, in a relatively rare win for these David and Goliath–type campaigns, in January 2022, 12 local farming families with the support of one corporate body bought back the land (Oataway & Craig, 2022).

Still further north, in 2010, residents of Maules Creek, Boggabri and surrounds met to discuss their concerns regarding the development of coal and gas in the local area, concentrating in the Leard State Forest. From this initial meeting they formed the Maules Creek Community Council (MCCC, n.d.). After unsuccessful attempts to block Whitehaven’s Maules Creek coal mine proposal, in August 2012 residents and activists established a blockade camp in the forest, near the site of the proposed mine.<sup>6</sup> The campaign against the coal mines in the Leard State Forest peaked between 2012 and 2015. Although ultimately unsuccessful in stopping the Maules Creek coal mine from being established, the campaign drew attention to links between energy corporations, banks and politicians, and many people involved in the campaign went on to play key roles in organising the Stop Adani movement, the Climate Strikes, and many other local climate and energy campaigns.

To the nearby east of Maules Creek, since 2011 there has been an ongoing campaign to block CSG exploration and extraction in the Pilliga Forest, the largest remnant semi-arid woodland forest in the state. Energy corporation Santos has faced fierce resistance from local farmers and residents, Traditional Custodians, environmental groups, and climate activists

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<sup>6</sup> The author of this thesis was personally involved in this campaign from September 2012; therefore, this paragraph predominantly comes from personal experience and knowledge of the campaign.

(Norman, 2016; Ransan-Cooper et al., 2018; Threadgold et al., 2018). A blockade camp was established in the forest in 2012 and is intermittently re-established when the campaign deems it necessary (Wilderness Society, 2019; Lock the Gate, 2018). Santos submitted their development application and Environmental Impact Statement (EIS) to the NSW government in early 2017. The controversial project was approved by the state in September 2020 (Bell, 2020). The approval was challenged by a group of local farmers and residents in the NSW Land and Environment Court in October 2021; however, the challenge was dismissed (Environmental Defenders Office, 2021). At the time of writing, the campaign to stop the project continues and construction has not started; however, legal avenues available to those trying to stop the project may have reached their limit. The campaign has a history of engaging in civil disobedience to stop works for the project; it will be interesting to see how the community responds when Santos attempts to commence construction works.

**The Hunter Valley of Renewables?** As discussed in the introduction chapter, NSW is undergoing a transformation of our energy system with the implementation of the NSW Electricity Infrastructure Roadmap. As part of this new energy policy for the state of NSW, New England has been identified as one of five REZs for NSW. The Central-West Orana is to be the first REZ established, with New England to follow closely behind. An indication of the massive scale and industry interest in building renewable energy projects in the New England region can be seen in the overwhelming response to the government's expression of interest process held over June–July 2021. The state is planning to open up 8 gigawatts (GW) of renewable energy projects in the New England region. They received the equivalent of 34 GW of projects in their expression of interest process—over four times that which is slated to be approved (Parkinson, 2021).

While there has been an increasing amount of information becoming available about REZ policies and processes, much of it is highly technical and more catered towards industry

and government stakeholders than the local communities set to host the REZs. Indeed, when I was conducting my in-person fieldwork, New England had been designated as a REZ, but that designation was more or less the only information available. As will be discussed in the upcoming analysis chapters, this lack of information impacted on the local communities' concerns around cumulative impacts of multiple projects. As I wrote in a draft of this chapter in 2019, "Other than publishing a map, policy details and transition plans remain vague." Thankfully, this improved somewhat in the following years, although for some the damage to local trust in the process had been done.

Throughout 2021–2022 I worked with RE-Alliance, a not-for-profit organisation that "works to secure an energy transformation that delivers long-term benefits and prosperity to regional Australia" (RE-Alliance, 2020). My work was predominantly focused on community engagement in the first Central-West Orana ( REZ . This has allowed me considerable insight into how host communities view the REZ, what concerns they have, and what opportunities they would like to see arise out of the incoming industry. Key among these insights is the relative lack of information provided to the community and the failure so far to establish genuine community engagement and collaboration on the part of the NSW Government. I have heard these sentiments echoed in the New England REZ as well. Construction is set to commence in the mid-2020s for the pilot CWO REZ. It remains to be seen whether the government can rectify these issues and save itself considerable conflict by building and maintaining social licence for these REZs over the coming years.

### *New England Renewable Energy Case Study Projects*

**Introducing Z-Net Uralla.** We were standing beneath a temporary gazebo, everyone holding onto the frame of the roof with both hands, feet firmly planted in the squelching mud while small rivulets of water flowed down our upheld arms. As another gust of wind buffeted the flimsy structure, we all braced our bodies to hold it in place. Across the oval, people were holding down their gazebos with the weight and strength of their bodies as the storm raged through. A young woman continued to lead the pony rides through the downpour, and the kid on the pony's back didn't seem particularly fazed. One of the men to my left grinned at the rest of us and said, "Well, at least we're getting some rain," and moved the display solar panel further under shelter.

"Uralla has taken the first steps towards a renewable energy future," announced the sign out the front of the stall. Due to a cancellation, we would be given two stalls and in the stall behind us, Sandra Eady, president of Z-Net Uralla from 2015 to 2021, continued her conversation with a captive audience—held in place simultaneously by the rain and the lure of lower power bills. Handing people flyers and sign-up sheets for insulation curtain-making workshops, her white Z-Net t-shirt with red lettering matched her almost white-blonde hair and red-rimmed glasses.

That morning, we were running a stall at the Seasons of New England festival that is held in Uralla, each autumn. Although rain is not typically welcome on the day of an outdoor festival, in drought-stricken rural NSW it was greeted with joy.

Located on Anaiwan land between Tamworth and Armidale, the name Uralla is derived from "Ooralala" meaning "a place where people come together" (Townsend, n.d.). While Z-Net Uralla is an energy-focused project, at its core it is a project about people. This section will introduce some of the people involved in Z-Net Uralla, and provide a brief overview of the work they have been doing.



Z-Net Uralla aims to usher in their local government area as Australia's first shire with zero net carbon emissions (Z-Net Uralla, n.d.). Supported by the then NSW Office of Environment and Heritage—now the Office of Environment, Energy, and Science—it is an ambitious goal for a community represented at the federal level by notorious coal-worshipper, National MP, Barnaby Joyce (Haggarty, 2019; Pearse, 2009). The renewable energy goal of Z-Net Uralla is to get the shire “to 100% renewable energy for home and business use” (Z-Net Uralla, n.d.(a)). To achieve this goal, they have teamed with various partners including Farming the Sun, University of New England's Institute for Rural Futures, Regional Development Australia Northern Inland and many local organisations and individuals.

Most of the initiatives that the Z-Net Uralla team have undertaken over their seven-year journey thus far have been at the local scale. They provide free home energy reviews to the people of Uralla, teaching them about energy efficiency and helping residents to lower their power bills. Their Elephant in the Woodlands project taught the people of Uralla how to collect and purchase sustainably sourced firewood—important knowledge for a community that relies heavily on firewood for warmth in winter. Their project officer holds a stall at the local library every week to help people understand their power bills. They provide insulated curtain-making workshops (as previously mentioned), run education events for schools, and assist local businesses in adopting solar and batteries for their energy needs. Together, this multitude of projects is contributing towards Z-Net Uralla's 100% renewable energy and zero-net emission goals.

Sandra, a key participant in this research project, was reluctant to give the project a firm date as a goal for success: “People often say to us, ‘When will the shire be zero net energy?’ and, ‘You won't be successful until then,’ and ‘How are you tackling that?’” Sandra recalled,

To my mind that's an aspirational goal. We will be one day but success for us would be our community saying, "This renewable energy thing is pretty good; we've got solar on our childcare, we've got solar on our cafes; we've got solar at the library; we've got the Z-Net people helping our pensioners. Why aren't they doing more renewable energy stuff in Canberra?"<sup>7</sup> So if our community gives feedback to our federal or state member to say, "Renewable energy is good," that's success. (S. Eady, personal communication, February 18, 2019)

In the days prior to the 2019 Seasons of New England festival, I had been shadowing Sandra and her husband Pete to learn more about Z-Net Uralla. When we first met, Sandra described Pete as Z-Net's "technical person who does all the electrical gadgets and the ch, ch, ch," (S. Eady, personal communication, February 18, 2019) moving her arms in the motion of a pulley system. Sandra is a retired CSIRO (Commonwealth Scientific and Industrial Research Organisation) scientist and was the President of Z-Net Uralla from 2015 to 2021. She has since moved into the role of treasurer of the organisation. Sandra is also on the Community Reference Group for UPC's New England Solar Farm project.

At their home in the Uralla township, which runs off rooftop solar and sustainably sourced firewood (walking the walk, as well as talking the talk), Sandra, Pete and I sat at their kitchen table and tried to wrap our heads around the latest round of grant funding that had been made available by the NSW government for community energy projects, and how it might fit into the work of Z-Net Uralla. Armed with cups of tea, a pen each, and a few scraps of paper, Sandra and Pete mapped out what they thought possible projects might look like and how the technical and financial regulations could work. Drawing quick diagrams and mind maps, they teased out complex regulations and considered how establishing a new

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<sup>7</sup> For international readers, Canberra is the location of Australia's Parliament House and is the political capital of the country.

project could possibly fit in with their group's limited capacity and firm commitment to making energy accessible to low-income earners. If the projects available under the grant would only appeal to already well-off investors, they were not interested:

We've got a strong drive to be equitable in our community. Renewable power can be about professional people who can afford to put solar panels on their roof and batteries and drive Teslas, you know, it has a certain niche. We don't want to be that group who's helping the shire's wealthy part of the community put more solar on their roofs and make power more expensive for the poor people who can't afford solar. (S. Eady, personal communication, February 18, 2019)

This commitment to affordability and equity in renewable energy futures hints at the spectrum of possibilities afforded by transitions to renewable energy. Renewable energy is a socio-technological space increasingly occupied by wealthy "tech bros" (Zylinska, 2018) whose profit motive, anti-unionism (Sainato, 2018), and outsourcing of manufacturing to the Global South (Sovacool et al., 2020) is reminiscent of the fossil fuel corporations that have caused the climate crisis. Groups such as Z-Net Uralla, however, point to the more regenerative, caring and reciprocal possible energy futures.

When it comes to helping her community move towards renewable energy and zero emissions, Sandra is a force of nature. Pete is similarly crucial to the work of Z-Net Uralla, but he hangs back more quietly, seemingly preferring to tinker away with the technical side of the work. Sandra, and to a lesser extent Pete, are constant, recurring characters in this ethnography. However, there are others within Z-Net Uralla who are important for us to meet in this chapter.

Tom O'Connor was the treasurer of Z-Net Uralla at the time of research and is a Councillor for Uralla Shire. He lives in a beautiful heritage house in the heart of Uralla

township with his wife and has become a keen gardener in his retirement. Tom, Pete, and Sandra are all part of what they fondly referred to as the “retired group” in Uralla, attending Friday night dinners at the local pub and going on day trips together. Like Sandra and Pete, Tom’s retirement is quite a busy one, but he values the work and the achievements Z-Net Uralla is contributing towards their community. Teresa French was the Z-Net Uralla membership officer at the time of researching, but has since resigned from the role. Teresa is also the president of the Uralla Business Chambers, and is a strong advocate for community collaboration and cohesion. Suzanne Wright is a member of Z-Net Uralla, although she does not sit on their executive team. Suzanne owns a regenerative farm with her husband Tim, and they partnered with Z-Net Uralla on the Elephant in the Woodlands project. There are many other people involved in Z-Net, both on their executive team and as local members. However, Sandra, Pete, Tom, Teresa, and Suzanne were the key participants in this ethnography.

Z-Net Uralla is a relatively small community group trying to decentralise, decommodify, and democratise energy transitions, although they would not necessarily use all of those terms themselves. They are doing this work among local contestations over the centralised, corporate renewable energy projects that are also being established in the New England region. The following analysis chapters will explore the eco–social relations arising through the transformation of energy systems, and the role that Z-Net Uralla is playing.

Sandra explained,

From our perspective, we believe Z-Net is really important because for small regional towns, things are usually done *to* them. We wanted to give our community some control and understanding so that they could actually participate in it. Rather than being something rolled out and done to communities, that it was something that they felt some empowerment and control over what is happening in their community. (S. Eady, personal communication, February 18, 2019)

In the coming chapters, we will explore how much this empowerment has been achieved.

**Introducing the New England Solar Farm and the Action Group it Brought to Life.** The New England Solar Farm is a project owned by UPC Renewables Australia. The New England Solar Farm is a 720-megawatt (MW) project currently under construction, which will have two large solar arrays across several land holdings to the east of Uralla. A third array, referred to as the Southern Array, was originally proposed but was excluded from the current development due to community and landholder concerns, as will be discussed in more detail in the upcoming analysis chapters.

Notwithstanding the project is currently under construction, and community concerns appear to have been largely alleviated, the project was quite controversial during the time of my in-person ethnographic research. Specifically, towards the end of 2018, a group of residents formed the Uralla–Walcha Community Responsible Solar/Wind Action Group (the Action Group) in opposition to what a research participant described as a “disturbing” lack of consultation on the project. The group claimed not to be against renewable energy, instead citing concern for how the project was being developed. The concerns of the Action Group, the broader community’s response to the project and to the Action Group, as well as the evolving nature of UPC Renewables Australia’s engagement with the community, will be explored throughout the remainder of this thesis.

While I met with several members of the Action Group, some of them were more comfortable speaking to me as background information rather than being identified participants in this thesis. The community conflicts that arose around the project will give some indication to the reader as to why this may have been the case. However, others were willing to be identified participants. Alongside these conversations, a considerable amount of data has been used from the publicly available submissions made by locals to the NSW Department of Planning in response to the project during its proposal application process.

Throughout the following chapters, the reader will meet Peter Dawson, a neighbouring landholder to the now-excluded Southern Array, who was an active member of the Action Group. Peter was one of the first people I met upon arriving in New England, and visiting his farm gave me a stronger visual understanding of some of the concerns that were held about the Southern Array aspect of the project. In discussing this project, I will also draw upon voices involved in the NESF already introduced, including Sandra Eady, Teresa French, and Tom O'Connor from Z-Net Uralla.

**Introducing the Walcha Energy Project.** In 2004, MirusWind, an Australian renewable energy company, began community consultation for a renewable energy project that would eventually become the WEP. Across nearly two decades the project grew and took on different partners and owners. Anticipating the closure of the Liddell coal-fired power station, a point of public debate at the time of writing, proponents of WEP, MirusWind, and Energy Estate, proposed an ambitious project with combined solar and wind generation, and pumped hydro for storage. The capacity of the project is proposed to be 4000 MW, making it the largest renewable energy proposal in NSW at the time (Walcha Energy, n.d.).

The project proponents originally aimed for the wind and solar farms to be developed in 2019 with construction commencing in 2020 and energy ready to be generated by 2022. However, these timelines have been considerably delayed, with construction on the first part of the WEP, the Winterbourne Wind Farm, now set to commence in mid-2024 (Vestas, 2022). Since the commencement of this research project, the WEP has been split into four phases with four corresponding separate projects: Salisbury Solar, Winterbourne Wind Farm, Uralla Renewable Energy Hub, and Dungowan Dam pumped storage hydro. Each of these is at different stages of development, with Winterbourne Wind Farm being the furthest along, followed by Salisbury Solar. At the time of writing, both projects are at the “Prepare EIS” stage of development, which is a relatively early stage in the planning process. While

Salisbury Solar remains in the hands of Walcha Energy (Previously MirusWind), Winterbourne Wind Farm was sold to Danish wind company Vestas in 2019 (Winterbourne Wind Farm, n.d.).

The WEP emphasises their long-term community consultation on their website, stating that they have been consulting with landowners and the wider Walcha community for 15 years. In 2004, MirusWind began community consultation for a renewable energy project that would eventually become the WEP. However, the WEP was also raised in the concerns of the Action Group.

As it was only in the very early stages of development at the time of researching and writing, the WEP does not feature as strongly in this thesis as originally anticipated at the time of research design. However, it has been included as it is integral to understanding some of the local conflicts and discussions around renewable energy, particularly the cumulative impact of multiple projects. In the discussions of this project, the reader will hear from Peter Blomfield, a host landholder for Winterbourne Wind Farm, as well as other local voices already introduced.

### ***Conclusion***

This chapter has introduced the ethnographic field that is the region of New England, alongside the specific case studies that have been drawn upon from this region in the forthcoming analysis discussions. Prior to this, however, the reader needs to be introduced to the second ethnographic field that is the Northern Rivers region of NSW. It is to that region, and the case studies explored there that we now turn.

## **Chapter 7: Protected by Community: Energy, Prefigurative Movements, and Eco-social Relations in the Northern Rivers**

This part of the story finds us in the Northern Rivers region of NSW. A particularly lush part of the state, it is known for flowing rivers, green pastures, and remnant rainforests. Often referred to as the “rainbow region” because the Northern Rivers is the destination of a migratory path taken by many eco-conscious individuals and tree-changers (people who migrate from urban to picturesque rural areas) from across various cities in Australia, and internationally.

Beginning in 1973 with the genesis of the Aquarius Festival, this particular migratory pattern is only 40 years old—not even a blip compared to the centuries-old annual migration of Terek Sandpipers. These small waders fly to the muddy banks of the region’s Richmond River estuaries after breeding on distant shores in Scandinavia and Eastern Europe. Similar to the Terek Sandpiper which now has Vulnerable status in NSW due to compounding ecological crises, the human migration to the Rainbow Region is threatened by repeated floods increasing in intensity and frequency.

This chapter explores energy transitions and the eco-social relations emerging out of renewable energy projects in the Northern Rivers region by examining three projects from the region, all of which can be considered different types of community energy projects. These are Enova Community Energy, Lismore Community Solar Initiative, and an off-grid intentional community. This chapter will introduce these projects and some of the people involved. Prior to introducing the case studies, this chapter will situate these case studies within the broader region and its recent history.

### ***Protected by Community***

A curious sign has been placed at the entrance to almost every town, village, or hamlet within the Northern Rivers region of NSW. The sign beginning with the name of the



town and holding a percentage number, acts as a declaration of community power and energy relations in the region. One's attention is drawn to the sign by the placement of a bold percentage number framed by a bright yellow triangle. The number refers to the percentage of people residing in that place who do not wish for there to be CSG fields established in the region. You would be hard pressed to find one of these signs with a percentage below 85, and the majority are well into the 90s. These signs (see Figure 11) are the result of the Northern Rivers Gasfield Free campaign.

**Figure 11**



*Figure 11: Image of Gasfield Free Yelgun sign*

From 2008, energy corporation Metgasco began exploring for CSG in the Northern Rivers (Northern Star, 2016). This exploration sparked one of the largest campaigns against

CSG in Australia to date, the ramifications of which are ongoing today for both the industry and social movements (Curran, 2017; Kia & Ricketts, 2018; Ricketts, 2013). Upon learning that Metgasco intended to drill for CSG, community members from the Northern Rivers began organising against the company and the industry. There were a multitude of community groups, organisations, and individuals involved in the campaign; the broad coalition became known as Gasfield Free Northern Rivers.

An incredibly effective organising strategy saw local groups across the region knock on every door in their town, village or hamlet and ask their neighbours “Do you want our neighbourhood to be gas field free?” (CSG Free Northern Rivers, 2018). The intention of these doorknocks was to be able to declare the percentage of people in each town who wanted it to be “Gasfield Free.” The signs described above and as illustrated in Figure 11, are the result of this work.

This neighbourhood organising was complemented by public meetings, rallies, political lobbying at local and state levels, a satirical *CSG: The musical* theatre production and a public vote held by Lismore Council on CSG which resulted in 87% of Lismore municipality residents voting “no” to CSG (Turnbull & MacKenzie, 2012). As will be explored in the following analysis chapters, this deep organising and working together towards a common goal and future significantly shifted eco–social relations in the region and led directly to conceptualisations and materialisations of different energy futures.

The organising work also meant that when the CSG trucks rolled in, hundreds, and eventually thousands, of people showed up to stop them. In December 2012 the Glenugie blockade was established, followed by a blockade in Doubtful Creek in January 2013, and finally culminating in the famous Bentley Blockade established in January 2014 (Northern Star, 2016). At its height in early May 2014 when organisers put the call out that Metgasco trucks, accompanied by 850 police, were set to descend upon the Bentley Blockade, over

5,000 people showed up—Metgasco’s trucks and the police never did. A week later on 15 May, the NSW Government suspended Metgasco’s Northern Rivers licence (Northern Star, 2016).

In an extremely unusual move revealing the power of the campaign, in the 18 months following the Bentley Blockade the NSW Government bought back all licences from gas companies in the Northern Rivers (Davies, 2015). To this day, the Northern Rivers remains gas field free. The Gasfield Free organising model has since been used in communities across Australia campaigning against CSG.

The Gasfield Free Northern Rivers campaign did not occur in a vacuum. Over the past 40 years, the Northern Rivers has been a stronghold of environmental activism and prefigurative eco-sufficient lifestyles. This recent history is an important contributing factor to the region’s current plans for responding to the climate crisis. To stand on firmer ground from which to understand the spectrum of possibilities for energy transition currently being explored and enacted in the region, we must first look to a brief overview of this history that includes the Aquarius Festival, the Terania Creek Blockade, and the Gasfield Free Northern Rivers campaigns just introduced.

In 1973, the Australian Union of Students held the Aquarius Arts and Lifestyle Festival in Nimbin, then a dairy-farming town struggling on the brink of socio-economic collapse. Over 10 days, up to 10,000 people attended the counter-cultural festival with a focus on “getting back to the land.” Describing the event, attendee John Jiggins wrote:

Students in corduroy pants and army disposal shirts; earth-mothers in batik dresses long and flowing; hippie chicks in their lacy or velvet St Vinnies specials; fine cool cats in flared bell-bottom jeans and leather tassled vests; silent swamis and yogis; Hare Krishnas in their saffron robes braying their devotion; Jesus Freaks strumming guitars, wild-eyed and earnest: the whole panoply of counter-cultural Australia,

strolling through town, wandering through the camp, gazing at the murals, and the shelters and each other, with one question burning in their hearts. What's happening, man? The answer, of course, was: we were. (Jiggins, 1983, p. 34)

Part of the global counter-cultural moment of the sixties and seventies, the Aquarius Festival aimed to create a space to experiment with communal living, sharing economies, and reconnecting with the Earth. Many of the attendees were university students who had grown up in cities and suburbs (State Library of NSW, 2016). Following the festival, groups of students and other festival attendees bought cheap land and relocated to Nimbin and the surrounding hinterlands. These people are often referred to locally as the “new settlers,” as they marked a significant demographic shift and radically redefined the social relations of the region. This festival and the subsequent permanent migration to the area by new settlers is recognised as establishing the Northern Rivers as the ‘Rainbow Region’ (Scantlebury, 2014; State Library of NSW, 2016; Ward & van Vuuren, 2013).

Prior to the arrival of these young, counter-cultural city migrants, the Northern Rivers was a relatively standard rural region. Logging was a major industry in the early colonial era, with cedar cutters arriving among the first colonisers of the area, and remaining there well into the 20th century. The combination of increasing deforestation due to the logging industry, stunning remnant rainforest, and an influx of counter-culture lifestylers to the region after the Aquarius Festival, led to the Terania Creek blockade of 1979.

Occurring before the massive Franklin Dam protests in the early 1980s—arguably Australia’s most well-known environmental campaign prior to the recent #StopAdani campaign—Terania Creek was one of settler Australia’s first major environmental protests and the birthplace of settler Australia’s forestry activism. Despite the campaign being run predominantly by settlers, it was also an early example of joint protest between local First Nations peoples and settlers (Bible, 2018). Many of the tactics and strategies employed at this

blockade are still in use today in forest, coal mine, and CSG blockades in Australia and around the world (Bible, 2010).

On August 16, 1979, logging trucks and machinery turned up to clear-fell the forest at Terania Creek and the logging workers clashed with 100 forest activists who used their bodies to get in the way of the bulldozers. The blockade and clashes between activists and loggers continued for another month, during which time media and political interest grew in the campaign. Eventually, the combination of dramatic tactics used by activists, media coverage, and political pressure resulted in the government gazetting the remaining rainforest for a national park, today known as the Nightcap National Park. Nightcap National Park and Terania Creek in particular hold a special place in the collective memory and lore of the Australian environmental movement.

I visited Nightcap National Park in February 2019. The National Park, which only remains in existence thanks to the campaign, has a short bushwalk through the forest leading up to a waterfall called Protesters Falls in honour of those who fought to protect the forest. I went to say hello to the ancient trees that had been saved from clear felling and to say thank you to the memory of the people who had put their bodies on the line all those years ago. Sitting on a rock at the foot of the falls, looking around the beautiful remnant rainforest, with its trees both ancient and new, I was reminded of the importance of holding the values that were fought for in that forest as we forge future eco–social relations.

As I left the forest and drove along the road, I could not help but wonder at the memory of the road. Almost exactly 40 years earlier, logging trucks, police cars, and cars filled with protesters and media were bumping along that same dirt road. Small monuments to the conflict dot the road even today, and the backs of road signs sported an array of stickers from more recent struggles: #StopAdani, Lock the Gate, Protect Our Forests, and

more. Just as I did that day, clearly many others involved in ecological struggle had made the pilgrimage to Terania Creek.

In a development almost too horrifying to grasp, Nightcap National Park and Terania Creek were severely damaged in the “unprecedented” bushfires that ripped through the state of NSW in November 2019—fires that were only the start of Australia’s Black Summer (Marciniak, 2019; Morton, 2019; Pugh, 2019). For months, the country was covered in bushfires of previously unseen ferocity which burnt in places that had never burned before. Terania Creek, part of remnant rainforest, was burning. This incredible rainforest, teeming with rich plant and animal life, which held such an important place in the hearts and minds of ecologically conscious people in Australia, could not be saved from the climate crisis. The patriarchal–capitalist worldview that regards nature as a resource was successfully challenged in Terania Creek in the 1970s. In 2019, that same worldview, and its attendant fossil capital contributed to Terania Creek going up in flames.

The migration of ecologically conscious people to the Northern Rivers as a result of both the Aquarius Festival and the Terania Creek campaign resulted in the region becoming a hub for experimentation with prefigurative lifestyles and movements. Monticelli defined prefigurative social movements as movements that “embody their ultimate goals and their vision of a future society through their ongoing social practices, social relations, decision-making philosophy and culture” (2018, p.509). Prefigurative lifestyles and movements can be linked to autonomist social reproduction theory advanced by some materialist feminist scholars, further explored in Chapter nine. As discussed by Ferguson, autonomist feminists

support building alternatives to capitalism as a path to revolution, seeing these as crucial spaces in which people can develop prefigurative relations that put the needs of human life ahead of those of capital. They see in such spaces an immanent counter-power to capital. By consciously developing value-alternative communities and

initiatives, people grasp their own agency as makers of the world and develop dis-alienated ways of relating to each other and the things they produce. (p. 132)

One such area of alternative-building associated with prefigurative lifestyles and autonomist social reproduction that is evident in the Northern Rivers is in energy and in decentralised, off-grid renewable energy technologies and systems in particular. This thesis explores some of the more recent iterations of these experiments. However, before those projects are introduced let us first learn more about the Northern Rivers region to better ground our exploration.

### *Welcome to the Northern Rivers*

Lismore is the regional centre of the Northern Rivers and the starting point from which most of my ethnographic research in this region commenced. Lismore's population is around 44,000 (ABS, 2021a). The area has a high population of Aboriginal and Torres Strait Islander people with 5.9%, compared to 3.4% in NSW and 3.2% in Australia (ABS, 2021a). Lismore has significantly lower socioeconomic status than the rest of NSW and Australia (ABS, 2021a). The median weekly household income is \$1,319 compared to \$1,829 in NSW (ABS, 2021a). The unemployment rate is 5.1% which is comparable to 4.9% in NSW, and 5.1% in Australia (ABS, 2021a), however these statistics do not account for underemployment. Not particularly surprisingly given the recent history of the region, many residents of Lismore volunteer at 18% (ABS, 2021a). Commenting on this, Jenny Dowell, mayor of Lismore from 2008 to 2016 and a participant in this research said,

It's a relatively poor community. There's a high welfare dependence, low incomes, high youth unemployment—all the things that you would think that would lead a community to be disadvantaged and socially disadvantaged but it's not. Disadvantaged, yes, in monetary terms but not socially disadvantaged. (J. Dowell, personal communication, February 25, 2019)

The Widjabal people of the Bundjalung nation are the Traditional Custodians of the Lismore area. The Bundjalung nation covers a wide expanse of Northern NSW and South-East Queensland, from Grafton in the south, Tenterfield in the west, Byron Bay in the east and Beaudesert in the north. Major and small rivers flow across the Northern Rivers region, including Boorimbah/Clarence River, Richmond River, and Wilson's River. Wilson's River flows through the town of Lismore and is prone to significant flooding.

A river region and a flood plain, water is a strong motif in Lismore. Explaining the creation of the rivers, Bundjalung author and activist Dr. Ruby Langford Ginibi included the following Dreaming story in her book *My Bundjalung people* (1994):

[Dirrangun] lived up in the big scrub that was known as Tooloom and she was very jealous of her son-in-law Bulagun. Because she didn't like him she hid the drinking water by sitting on the spring. When she wasn't there she covered it with vines and leaves so no one could touch her water. All the tribe went looking for water because they were very thirsty, but she was so nasty she kept it hidden. One day the water came up out of the spring and she held it back with her body, but the force of the water was so great that she moved one leg—her right one—and the Clarence River flowed from that. The water was getting even harder to control so she raised her left leg and the Richmond River flowed from it. Pretty soon the force of the water carried her screaming, out to sea. (Ginibi, 1994, p. 130)

Water springs up everywhere when exploring the Northern Rivers' energy and eco-social relations. Lismore regularly experiences major floods that reach 9.7 metres or more. Extreme flood events that break the 10.5 metre levee wall protection occurred in 1954, 1974, 1989, 2017, and 2022. 2022 was a particularly tumultuous year for the Lismore community, experiencing two major floods in February and March, and multiple flood warnings throughout the year. The devastation in the region is palpable as people and governments grapple with the realities of living in the climate crisis (Thompson, 2022).



Water once again flows into view during the community's rich history of campaigning on energy in the region. A core concern of the community regarding CSG exploration and extraction in the region was the threat of water contamination. Notably, two of the first major projects carried out as part of Lismore Council's Renewable Energy Master Plan, to be discussed in greater detail further in this chapter, were to put solar PV on the Goonellabah Sports and Aquatic Centre and to build the world's first floating solar farm.

**Colonisation.** Before the hippies and tree-changers moved to the area, and before the loggers and dairy farmers who preceded them, there were already custodians and caretakers of this land. The Bundjalung nation covers a wide expanse of Northern NSW and South-East Queensland, from Grafton in the South, Tenterfield in the West, Byron Bay in the East and Beaudesert in the North.

**Figure 12**

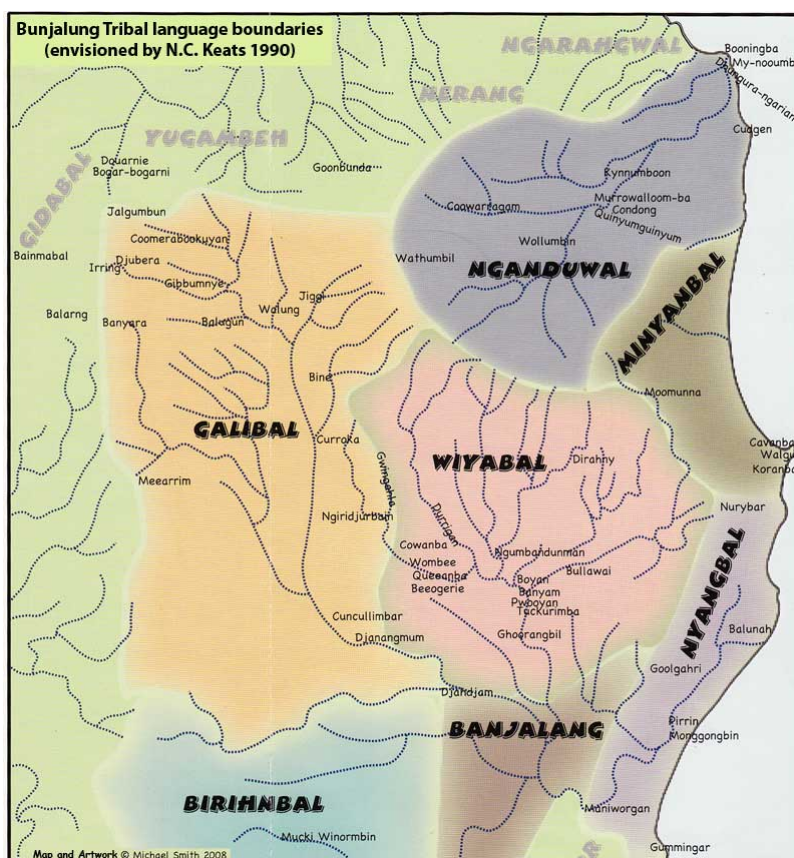


Figure 12: Bundjalung languages map <<http://arakwal.com.au/>>

Until 1828, the Lismore area was relatively untouched by the British invasion of the Australian continent despite Cook mapping Evans Head in 1770. In 1828, Captain Henry Jon Rous embarked on an “exploration” of the area in the war ship frigate Rainbow, a darker occasion for the moniker that would eventually be given to the region (unrelated to the ship). Typically written quite passively in Australian history books, as a project that is concerned with equity and justice it is important for this thesis to highlight that Bundjalung lands were not “settled” or “discovered,” they were colonised in an increasingly violent manner. That this first “exploration” was conducted in a naval war ship is symbolic of the power relations of early colonisation.

Colonisation of Lismore began in earnest in the early 1840s with the arrival of cedar cutters and sheep grazers. A brutal massacre in 1842 saw 100 Bundjalung people slaughtered by European colonisers, followed by another massacre in 1853 or 1854, and mass poisoning in Ballina in the early 1860s. Genocidal and assimilationist policies mean that much of the history of early colonisation from the point of view of Bundjalung peoples has been lost, so it is difficult to know exactly how many Bundjalung people were killed during this time (Ryan et al. 2017).

In 1893, the NSW Aborigines Protection Board established Cabbage Tree Island as an Aboriginal reserve and many of the surviving Bundjalung peoples were moved onto this mission. Cabbage Tree Island was initially community run but in 1911 a white manager was appointed to live on the island, run the farms, and control the community.

Today, non-Indigenous people are still largely in positions of power in the Lismore area, although the Lismore Council recently handed 37 hectares of land back to the Widjabul Wiabul people, signalling towards genuine reparation efforts.

**Representative Democracy.** Like its New England counterpart, the Lismore area of the Northern Rivers is currently represented at the federal level in the electorate of Page by the Nationals, with Kevin Hogan as the representative of the electorate since 2013. However, belying a difference between New England and the Northern Rivers, the Nationals do not have a stronghold on the area. The Richmond federal electorate just to the east, which encompasses other parts of the Northern Rivers region, is currently held by the Australian Labor Party, with Justine Elliot as the representative since 2004. At the state level, the seat of Lismore recently changed hands from the Nationals to Labor's Janelle Saffin in the 2019 state election, and the NSW Greens party holds the state seat of Ballina, with Tamara Smith being elected in the 2015 election and holding it since then. That the region is simultaneously represented at different levels and in different areas of the region by the Nationals, Labor, and the Greens demonstrates the diversity in political views in the region and perhaps a tendency to vote for people rather than parties.

### ***Northern Rivers Renewable Energy Case Study Projects***

The Northern Rivers has been a site of struggle for energy agency for several years. The threat of CSG extraction in the region was viewed as a threat to the lifestyle and futures that Northern Rivers residents had built and envisioned. Despite clear and widespread community opposition, Metgasco, supported by the police—an embodiment of state power—appeared committed to pushing the project through.

It's a curious moment, when a person who had previously believed in the benevolence and rationality of the state and capital comes up against energy politics and finds themselves powerless. In the Northern Rivers there were of course many who were well versed in power relations, but the Bentley blockade also unveiled the power of the fossil fuel industry to other people, particularly rural conservatives, who had not previously been in major conflict with the state or capital.

Throughout my involvement in the anti-fossil fuel movement in NSW I have heard secretaries of local Country Women's Association branches call for revolution. I have seen third-generation farmers alongside national rugby players lock themselves onto bulldozers in attempts to stop a coal mine. I've seen First Nation Elders, students, scientists, priests, farmers, and hippies work together to block access to CSG machinery. The creativity, outrage, and solidarity which arises is demonstrative of the power of social movements.

But there is also grief. And helplessness. What does one do with the overwhelming sense of injustice and untethering that comes from clashing with the state–capital nexus one had previously held faith in? Some look to the alternative, to what could replace the fossil economy—in particular community-owned renewable energy. Recognising the necessity of energy while simultaneously understanding the malignant power of state–corporate control of energy, some people in the Northern Rivers went about brainstorming ideas and hatching plans to go at it on their own.

**Enova Community Energy.** Just outside Byron Bay, before the rolling hills meet the ocean, sits the Byron Arts and Industrial Estate. In a nondescript warehouse a couple of blocks into the estate, you could find Enova Community Energy—Australia's first community-owned energy retailer. Obscured between Circus Arts Byron Bay and BID Food Fresh, small clues gave away the office's location. A fading yellow “Lock the Gate” triangle on the fence, an “I ♥ Enova” bumper sticker on a car in the parking lot and a small sign on a doorway, directing you up a flight of stairs.

Enova was launched in mid-2016, but its origin story is one we have already partly covered. Two years prior to the launch of Enova, the Northern Rivers community had just won their battle against Metgasco and the company's plans to establish CSG extraction in the region. In a region with a strong history of ecological activism and prefigurative lifestyles, the community had been buoyed by their recent show of power to protect groundwater and

stand up against the powerful fossil fuel industry, so discussions on alternatives to fossil fuels were almost inevitable. Recognising renewable energy's potential to not only address the climate crisis but to radically alter how energy is "done," the idea of a community-owned energy retailer was born.

Over the next 18 months, the founders and dreamers of Enova would host 30 community events, raising \$4 million from 1,100 residents (Enova Community Energy, 2020). Many of those involved as founders, as funders, and as supporters of Enova in those first few years had been directly involved in the Gasfield Free Northern Rivers campaign and subsequent Bentley Blockade. The relationships built, trust earned, and futures dreamed together during the campaign laid the foundations upon which Enova was built.

Through the experience of struggling against the state-capital nexus in the form of an unwanted CSG project, the founders of Enova experienced everything they saw as wrong with Australia's energy industry and through this were able to conceptualise, and begin to materialise, what an energy system grounded in regenerative, caring, and reciprocal eco-social relations could look like. Founding board member, Alison Crook, in an ABC Radio Science Talk show said,

In my view, we needed to do more than fight the old. We had made the case that there was no gas shortage if Australia, like other countries reserved sufficient gas to meet its needs before allowing export. We had pointed out that CSG was unnecessary and would damage our water, country, and livelihoods. What we now needed to do was to build the new: to show that our region not only did not need gas, it did not need to continue to rely on fossil fuels. We had to demonstrate that we were well placed to meet our own needs. (Crook, 2018)

Enova was a community-owned energy retailer with a not-for-profit arm called Enova Community. Enova was a social enterprise which invested 50% of the profit (after tax and reinvestment) into Enova Community to fund education, outreach, and social projects related to transitions to renewable energy such as helping renters with home energy audits and working on community renewable energy projects.

Enova was one example of how more harmonious eco-social relations were being sought and enacted through community energy projects in the Northern Rivers. It positioned itself publicly as operating in stark contrast to the centralised, profit-motivated fossil fuel industry, which they referred to as “The Enova Difference.” The differences they highlighted also served to remind potential shareholders and customers about what is missing or negative about corporate energy retailers such as AGL, Energy Australia, Origin, and so forth. Those differences, as stated by Enova included:

1. We’re acting on climate change by leading the transition to a renewable energy future
2. Will invest 50% of profits (after tax and reinvestment) back into the community
3. Supports local economies by keeping money local
4. Australia’s first community-owned energy retailer
5. A leading innovator in electricity retailing
6. Australian owned and operated
7. Local customer service team
8. Competitive pricing and no-lock in contracts (Enova Community Energy, n.d.)

Enova’s focus on the climate crisis and on local economies and ownership aimed to distinguish it from its corporate, fossil fuel beholden competitors. Notably, the cost of the

energy is the lowest point on the list, indicating Enova's attempts to move away from economic framing of energy.

However, in June 2022, Enova customers' received the following email from Felicity Stening, CEO of Enova Energy:

Following on from my recent email to you about the energy market, I am writing again to share some news about Enova that I had hoped I would never need to share. As of the 21 June 2022, the Enova Community Energy Board determined that Enova Community Energy and Enova Energy (the retail electricity business that provides you electricity) *be placed into voluntary administration today*. (T.Raue, personal communication, 2022, my emphasis)

Across May and June 2022, wholesale Australian energy markets were experiencing unprecedented high costs due to a range of global and local factors including extreme weather events and global demand for fossil fuels (Australian Energy Market Operator, 2022). Large multinational energy corporations were able to withstand the onslaught of costs (passing a lot of the cost onto consumers (Public Interest Advocacy Centre, 2022)); Enova, unhappily, was not and announced their effective bankruptcy on Monday 20<sup>th</sup> June 2022.

The implications for the organisation's collapse will be explored somewhat throughout the thesis. However the depth of this discussion is limited by three factors:

1. The collapse occurred in the final stages of this thesis where data collection through interviews, participant observation was no longer functionally possible. Therefore predominantly secondary sources have had to be drawn upon;
2. The voluntary administration process of Enova is still ongoing, which could possibly reveal more information after this thesis has been submitted;

3. The Australian Energy Market Operator and other interested parties are still investigating the May and June energy crisis, with final results from these investigations not available at the time of submission of this thesis (Australian Energy Market Operator, 2022).

In happier times for the organisation, I spent a couple of days in mid-2019 shadowing then Enova Community Manager, Svea Pitman, to learn more about the organisation, its eco-social vision, and its role in Australia’s energy transformation. Svea will be one of the key voices heard in the deeper exploration and analysis of Enova Community Energy. Other key voices include chair and co-founder Alison Crook and Svea’s successor to the community manager role, Bec Talbot.

Linking in with the enterprise’s social movement beginning, Figure 13 highlights the concerns Enova was seeking to address through their community energy enterprise.

**Figure 13**



*Figure 13: Enova Community Energy Brochure: Community Led Transition*

While the language utilised in this graphic is somewhat different, the four key areas of “erosion of social capital,” “equity and affordability,” “environment under threat,” and “failure of democracy,” can be mapped onto feminist eco-sufficient and (re)commoning principles and imagined futures, as will be explored across the forthcoming analysis chapters.



**Introducing the Homestead.** The hinterlands of the Northern Rivers are home to many small villages and a high concentration of multiple-occupancy tenancies, otherwise known as “intentional communities.” Leaving the regional centre of Lismore and travelling north, macadamia and coffee orchards, paved roads, and cultivated agricultural land give way to forests and dirt roads. Nestled among the outer edges of the Nightcap National Park sits the Homestead<sup>8</sup>—one of many intentional communities in the area.

On a warm Saturday morning in February 2019, I sat around a long table in the Homestead’s community centre sharing a vegetarian meal with current residents after their weekly working bee. The community centre is a two-story circular wooden building built into the side of a hill on the property. It was one of the first permanent structures built by the community in the early days of the Homestead. All roads in the property lead you back there. Each Saturday morning, residents of the Homestead meet bright and early to tend to the gardens, fix roadways and homes, and learn about any new systems in place that assist with everyday functioning of life on the farm.

Established in 1977, the Homestead and its inhabitants have been deeply embedded in the prefigurative, autonomist lifestyles and ecological social movements that have come to define the region over the past several decades. The Homestead was established after several of its original inhabitants moved to the area following the Aquarius Festival. Residents were also involved in the campaign to save Terania Creek. The Homestead is described by a founding member as “a spiritually based, non-denominational, leaderless, intentional community,” (Greta, personal communication, 2019) and although there have been changes since its establishment, going there does feel somewhat like stepping back into the counterculture of the 1970s.

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<sup>8</sup> “Homestead” and the names allocated to participants in this case study are pseudonyms for the intentional community I visited, to protect the identity and privacy of those who live there, at their request.

At the time of establishment, the Homestead aimed to be predominantly self-sufficient. It is an established farm with large vegetable gardens and fruit orchards. Dwellings have been constructed from mudbrick, timber, and local reclaimed materials, and—important to this study—it is powered by an off-grid energy system. Today, the dynamics of the farm have changed somewhat, with many residents either retired or working “nine to five” jobs in Lismore. While the food consumed at the farm is no longer predominantly sourced in-house, their energy system remains off-grid and energy consumption is significantly minimal compared to typical Australian dwellings.

The Homestead’s energy system has been adapted and reinvented over the decades as the number of people residing there has fluctuated, technologies have changed, and energy needs have shifted. In keeping with their explicit aim of building a more caring and regenerative lifestyle on the farm—one that is separate from the pressures of corporations and government—the energy system at the Homestead has always been off-grid. People bring different skills and knowledges to the farm and two residents, Jack and Steven, are charged with responsibility of the energy system. Both Jack and Steven have lived on the farm for decades.

I returned to the Homestead to stay for several days to better get to know the people who lived there, and learn about how their energy system echoed their eco-social aspirations. Sitting on the deck of Steven’s house overlooking solar panels on the community centre and a series of bee colonies on the lawn, they spoke to me over coffee about their fears for the future of the farm due to what they perceived as a lack of technical knowledge among the incoming residents of the farm. The off-grid system is like a coat of many colours that has been added to over many years, with some parts becoming obsolete and others requiring upgrades. “It’s a unique system,” Jack said to me, “so just any electrician couldn’t come out

to the farm and fix an issue if one arose and Steven and I weren't here. They wouldn't know what they were looking at" (Personal communication, June 21, 2019).

Over the years, Jack and Steven have tinkered away at the energy system and have created what they refer to as the Homestead Grid. A water turbine, a Pelton-wheel, solar panels, a sunny-boy inverter and diesel backup generator all feed into the Homestead Grid which in turn feeds into each home on the farm as well as the community centre. Each building is equipped with a down converter which was delivered to residents along with a power system manual written by Jack and Steven. The manual provides the reader with a basic outline, a detailed outline, and a technical description of the system so that readers can "choose their own adventure," or read to their level of technical comprehension. While a lot of the information in the manual provides residents with the potential to understand the inner workings of their energy system, Jack and Steven are of the belief that most residents have read only the basic outline, the main message of which is "basically, you can leave it as Jack or Steve has set it" (personal communication, 2019).

While this lack of interaction with the energy system results in fewer issues that Jack and Steven need to fix as a result of curious tinkering by those without technical knowledge, it also means that Jack and Steven are the only ones who know how to make the Homestead Grid function, and how to fix problems. As they explained to me, both are getting on in age and Steven and his partner are considering moving away from the farm. The Homestead has monthly community meetings, as well as one annual general meeting. "We've brought up the issue of technical knowledge heaps of times," Steven said, "we've put it to everyone that the next lot of people we invite to move to the farm have to have technical knowledge, and have to be willing to learn the system" (Personal communication, June 21, 2019). However, it appeared that the urgency of the situation as felt by Jack and Steven was not a high priority for others. This reliance on a couple of key people to maintain a unique off-grid system and

what this can demonstrate about the establishment of autonomous communities will be interrogated throughout the thesis.

**Lismore Community Solar Initiative.** Heading south out of Lismore opposite a golf driving range and a gun club sits Lismore Council's recycling and waste facility. Next to the road that leads you to the facility is an overflow pond for the East Lismore Sewage Treatment Plant. On this overflow pond floats 280 solar panels, generating energy for the requirements of the plant. These floating solar panels make up Australia's largest floating solar farm and its first community and council-owned solar farm. Nine kilometres away you can find the Goonellabah Sports and Aquatic Centre, the rooftop of which hosts another 99-kW solar energy system. These two sites are the flagship projects of the Lismore Community Solar Initiative (LCSI), a community and council partnership that made up part of Lismore Council's Renewable Energy Masterplan (REMP). In February 2019 the Council announced a budget deficit of \$6 million, resulting in projects being cancelled or put on hiatus and staff being made redundant. The REMP was one of the projects put on indefinite hiatus. The impacts of this on the LCSI and the REMP more broadly will be explored in later chapters.

In 2012, Lismore Council commenced their Imagine Lismore initiative which, according to the council, was their "largest community engagement in history" (2017, p. 4). Through a series of surveys, face-to-face engagements, and workshops with individuals, organisations, and agencies, the council "asked residents what their visions were for the future" (Lismore City Council, 2017, p. 4).

The Imagine Lismore process broke from common council–community engagement practices, enacting a more participatory framework. Jenny Dowell explained to me over coffee that her "platform was about community engagement, about everyone having a voice particularly people who perhaps thought that they were marginalised, and that includes

people with disabilities, Aboriginal community, the LGBTIQ+ community” (Personal communication, February 25, 2019).

Arising from community feedback gained through the Imagine Lismore consultation process, Lismore Council commenced planning on the REMP. Two consultation workshops were held in 2014 out of which came several business-plan options and the core goal of the REMP: “Lismore City Council set itself the target to generate 100% of its electricity needs from renewable energy sources by 2023” (Lismore City Council, 2014, p. 8).

Among other energy efficiency initiatives, the two biggest projects for the first stage of the REMP were two council-operated and community-funded flagship solar farms—these projects collectively are known as the Lismore Community Solar Initiative. To establish these community solar farms, Lismore Council partnered with Farming the Sun, a now defunct organisation that specialised in community renewable energy projects. In May 2017, the community solar farm on the roof of the Goonellabah Sports and Aquatic Centre was installed and in January 2018, a floating solar farm was opened on the East Lismore sewage treatment plant. The solar farms were funded by community companies Lismore Community Solarfarm (Goonellabah) Pty Ltd and Lismore Community Solarfarm (East) Pty Ltd, respectively.

Sitting around a large, wooden oval table in a meeting room inside the Lismore Council administrative building in 2019, the then environmental strategies officer, Sharyn Hunnisett, was discussing some of the challenges the initiative had faced: “We thought we would do two really big solar systems,” Sharyn explained, “one for 250 kW at the aquatic centre, and over 200 kW at the sewerage treatment plant” (Personal communication, February 26, 2019). Yet, despite starting with plans for two systems of 200 plus kW each, the end result was two 99 kW solar arrays—significantly smaller than the initial vision.

Sharyn was instrumental in the establishment of the Lismore Community Solar Initiative, and throughout our conversation and my conversations with others, I began to suspect that the initiative might not have come to fruition at all had Sharyn and her quiet tenacity not been involved. Sharyn attributed the eventual success of the project to the community: “The community remained engaged through the whole process, so that kept us going because otherwise, some of these hurdles were going to be really too big” (Personal communication, February 26, 2019).

Other key participants in the research whose voices will feature across the upcoming analysis chapters include Jenny Dowell, who was mayor of Lismore during the Imagine Lismore and early REMP process prior to retiring in 2016, and Susanna Carpi, who was employed by Farming the Sun as the community organiser for the two solar farms. My in-depth conversations with these three women were further supplemented by group interviews and discussions with several members of the community companies that were established to fund the projects.

The IMAGINE Lismore process allowed the community to co-create a strategic vision alongside the council. When speaking to Sharyn about the establishment of Lismore Council’s REMP, the importance of the IMAGINE Lismore process became more apparent:

So that was the biggest community consultation that council had ever done; we had never really done it that way and it was really clear from the results of that that the community wanted Lismore Council to be a leader in environmental—wanted us to be an environmental leader and the bottom line of it, when all the information was put together, they wanted Lismore to be a model of sustainability. (S. Hunnisett, personal communication, February 26, 2019)

The results from IMAGINE Lismore demonstrated that the Lismore community wanted Lismore to be an environmental leader but also, crucially, that they wanted community partnerships with council projects. It was this local desire to prioritise collaborative eco-social projects that created the space for Farming the Sun to work alongside council to co-create the Lismore Community Solar Initiative:

We knew we wanted to be partnering with our community, we wanted to do something that was sustainable, showed leadership and Farming the Sun just ticked all those boxes because what it meant was, we could have the community investing and partnering with us installing our solar. So, we would be reaching our renewable energy goal, we will be community partnering, showing leadership, and model of sustainability—it was just all of those things all in one and the community really loved the idea. (S. Hunnisett, personal communication, February 26, 2019)

Susanna Carpi, the Lismore community organiser for Farming the Sun, was essentially tasked with engaging and empowering the Lismore community to support the Lismore Community Solar Farm. Susanna spoke of the importance of education, support, and communication in helping the community to understand the project and how they could be involved.

The Lismore Community Solar Initiative faced a series of hurdles that could have foiled the project at various junctures. Community renewable energy projects have manifested partly in response to failures at both the federal and state levels of government to initiate renewable energy transitions. Unfortunately, however, this failure of energy policy has wider implications than the government simply not fostering energy transitions, it has also meant that related policies, particularly around planning, infrastructure, and finance, have not been adapted to meet the new energy moment. The Solar Initiative was hampered by a multitude of policy and regulatory settings which were not designed for decentralised

renewable energy, for council–community partnerships, or for community energy infrastructure.

Sharyn recounted how their vision for two renewable energy systems over 200 kW, owned by the community with power sold to the council via a power-purchase agreement was whittled down to two 99 kW systems that are owned by council and funded through a community–council partnership loan.

The first hurdle, unsurprisingly, was that the type of community–council renewable energy project they had envisioned had never been done before, so a business plan had to be created from scratch in collaboration with Farming the Sun—a lengthy and complex process. Having created the business plan, the next hurdle centred on the ownership of the infrastructure.

The initial vision for the initiative had the community investors owning the renewable energy infrastructure, and Lismore Council purchasing power off them. However, the project quickly ran into issues with council-owned infrastructure such as the sewerage treatment plant and the aquatic centre hosting community-owned renewable energy infrastructure. Council policies, state planning, and state OHS laws opened up a quagmire of complications through which the dream of the community owning the project fell through. As a result of these complications, and one other major contributing factor, the project shifted from a community-ownership model (a kind of commons) to a community-investor loan model (a model more familiar within financialised capitalism).

The other major factor that contributed to this shift was the uncertainty around the federal renewable energy target (RET), and subsequently the costs of renewable energy certificates. The RET was a scheme that aimed to incentivise the establishment of renewable energy projects. It operated in two parts: the small-scale renewable energy scheme and the large-scale renewable energy target. Essentially these two parts of the scheme provided



renewable energy certificates for energy retailers that were required to comply with annual renewable energy targets to purchase off renewable energy generators to demonstrate their compliance.

The small-scale technology certificates were created at the beginning of the project—in this way the project partners knew from the outset the size of their certificate and therefore the amount of money they could make off the certificates. In contrast, the large-scale certificates were created for each megawatt hour (MWh) of renewable electricity produced—creating a degree of uncertainty around the future finances of the project. Larger corporations can manage the risk of this uncertainty, but for smaller, community-owned projects, it is quite a significant risk. This risk, coupled with the uncertainty as to whether the federal government would even be continuing with the RET, contributed significantly to the decision to install two 99 kW systems, as anything over 100 kW bumps the project up into the large-scale for the RET.

This decision to downsize to 99 kW systems as a result of both financial and policy uncertainty also had flow-on impacts to the amount of funding the project needed, and therefore on the investment value of the project. Alongside the decision to downsize was the corresponding decision to shift the investment model from community ownership, to a loan to council from the community. This raised yet another hurdle, with the question being asked whether council was legally allowed to borrow money from residents. The answer that Farming the Sun and legal advisers came to was “Yes,” but it took a significant amount of time to come to that answer as, yet again, no one had done this before.

Due to the downsizing of the project to two 99 kW projects, the investment amount required for each of the projects was also downsized to \$360,000. Due to Australian Securities and Investment Commission regulations, an investment of that size required the establishment of a private company. In addition, private companies can only have 20

shareholders. A total of \$360,000 divided by 20 shareholders equalled \$9,000 minimum share amounts. This is very different to the \$100 shares that had initially been envisioned for the project. Jenny Dowell lamented this major upheaval:

The rules were really quite awkward. We thought we'd be able to, you know, have someone who'd invest \$100 or a couple of hundred dollars but it had to be a maximum of, I think, 40 investors; so, it meant the amount for the average had to be quite high. (J. Dowell, personal communication, February 25, 2019)

The significant dollar amount to invest in the project as a community member very quickly shut out low-income and many middle-income people and families from investing in the community project. However the project was fully subscribed in a few weeks and they could have raised even more money – demonstrating the popularity of the project at that point in its journey.

### ***Conclusion***

This brief introduction to the history and case studies in the Northern Rivers ethnographic field revealed a community significantly attuned to ecological protection, community building, and community power. These values and skills subsequently align many in the region with scholarship and activism around de-alienation and re-commoning. It is to our key concepts of alienation and de-alienation that we now turn, as we move into the analytical discussion chapters of the thesis.

## **Chapter 8: Local Tensions, Global Problems: Renewable Energy and Alienation in Regional Communities**

So far, this thesis has introduced the idea of transitions to renewable energy as happening along a spectrum of possibilities. It has discussed different parts of that spectrum from green capitalist techno-utopias to Indigenous, ecofeminist (re)commoning futures, and many other possibilities in between. Key literature has been reviewed in chapter two, weaving together scholarship on anti-nuclear feminism, energy injustice, climate and energy political economy, technofeminism, energy democracy, and the emerging field of feminist renewable energy futures. The conceptual framework for the thesis was defined and explored in chapter three, centring on the Marxist concepts of alienation from nature and alienation from others, alongside materialist ecofeminist concepts of de-alienation. Chapter four introduced the feminist ethnographic methodology and reflected on the research process. The previous two chapters introduced the ethnographic field, introducing the reader to both the New England and Northern Rivers regions of NSW, and to the renewable energy case study projects.

Now, drawing on this rich theoretical and conceptual background, we turn to the analysis of the ethnographic data. The next four chapters are analysis chapters, each one leading into the next. First, this chapter presents an exploration of how alienation-from-one-another is manifesting in contestations over renewable energy in regional NSW.

Prior to commencing the chapter proper, a note must be made on its composition, as it differs to the other three analysis chapters. While each of the forthcoming analysis chapters examine and explore ethnographic data from both regions, Chapter 8 only includes data from New England. This is not to suggest that there were no examples of alienation-from-one-another present in the Northern Rivers. Instead, data pointing to alienation-from-one-another in the Northern Rivers was so entwined with local efforts towards de-alienation that splitting the discussion between the alienation and de-alienation chapters hindered the strength of the

analysis. Therefore, alienation-from-one-another in the Northern Rivers will be discussed in Chapters nine and ten, which focus on de-alienation. Even this structural decision belies a difference in the two regions and between community and corporate projects, as will be explored over the next four chapters.

Marxist theory posits that capitalism estranges us from one another, as first and foremost we consider one another in relation to our economic positions, rather than more holistically as human beings. This leads to humans coming to be in competition with one another rather than acting communally in the common interest. This estrangement and competition are what Marx referred to as alienation from others (1988).

This chapter examines the ways in which people relate to one another with respect to renewable energy projects in NSW. It will predominantly consider how large-scale, for-profit renewable energy projects can foster alienation among the different stakeholders in the projects. The chapter will examine individualism, private property relations, division, competition, gendered and racialised fears, together with communication and trust issues. These factors will be predominantly explored through the New England Solar Farm case study.

### ***Individualism and Private Property Relations***

Private property relations are at the heart of tensions arising from the establishment of large-scale, corporate renewable energy projects in NSW. Due to the nature of private property, these projects require the consent and collaboration of the landholders on whose land the projects will be sited. This means that these landholders are typically the first local people to learn about the project and have more access to information and decision-making throughout the life of the project than other locals (Australian Energy Infrastructure Commissioner, 2020). When a developer chooses the location for their renewable energy project the host community is at first divided up into host/leasing landholders, then

neighbouring landholders and finally the remaining, broader community. At every stage, either explicitly or implicitly, the host landholders have the most power over the projects in the local community, as a result of their ownership of a prized commodity—land.

The use of the term “host” is an interesting one for the purposes of this thesis. Host in this context implies a certain level of consent, of invitation, and of agency. Landholders can perhaps more rightly accept the term “host landholder,” as they have quite high levels of agency and consent in the project process. However, “host communities” is somewhat more contentious. For example, in the establishment of REZs in NSW, local communities designated as a REZ do not always feel as if they are hosting these projects, more so being invaded by them, as we shall see throughout this chapter.

For large-scale, for-profit renewable energy projects, decisions about hosting wind turbines or solar arrays are made by individuals and families who own the land on which the proponents wish to establish the project. It is common for host landholders to be asked by project proponents to sign a confidentiality agreement which precludes them from discussing the project with anyone—including their neighbours. This can result in neighbours and the broader community not knowing or having a voice in the project planning until it is already considerably underway, which takes away their involvement and sense of participation. As highlighted by the Australian Energy Infrastructure Commissioner:

[Tensions and disputes] can also be exacerbated by developers conducting confidential, individual discussions and negotiations with specific landowners, creating a level of distrust amongst neighbouring landowners and the developer from the outset. The consequences of these scenarios can be severe, both in terms of fracturing support for the project within the community as well as dividing the community in economic and social terms. (2020, p.24)

Neighbours and the broader community can voice their opinions through community engagement processes and during the state's planning process—but their level of access to actual decision-making is mostly at the discretion of the project proponent. As one anonymous local resident discussed in their submission opposing the project:

We were deeply shocked to hear recently of the UPC New England Solar and Walcha Energy Project renewable energy developments in this area and have since heard of the “gag” orders placed on landholders who had signed leases for both solar and wind plants on their properties. We feel this is very dishonest business practice and should be made illegal. Had they been allowed to discuss their involvement in these projects openly, we may have been able to find out more about these projects before we purchased. Had we known of this development, we would have settled elsewhere.

(Anonymous A, 2019)

The establishment of renewable energy projects through a system of private properties creates a hierarchy of people within the community in relation to the project and centres people as individual, economic subjects. Through the establishment of this hierarchy, renewable energy projects become more about individual economic considerations than about addressing the climate crisis or empowering communities—two goals of energy democracy and energy justice.

A particularly illuminating quote from another anonymous submission supporting UPC's New England Solar Farm project, demonstrates this prioritisation of individual economic considerations:

Property owners should be able to decide what they do with their freehold land, and NOT be told by other people how to manage, work, or look after their property. No

landowner makes decisions lightly especially in the current climatic conditions and everyone's decisions should be respected. (Anonymous B, 2019)

Here we can see how attitudes around private property relations can lead to individualistic thinking and decision-making as well as hostility to others who want a voice when it comes to renewable energy projects. The author of the quote is correct, within the current system of private property, it does make sense for property owners to make decisions that are in their own best interest. However, there are broader considerations and impacts on people other than project hosts. This demonstrates how centring private property relations in transitions to renewable energy can create or further entrench alienation between people in local communities.

At every stage of these projects, private property relations saw the individual landholder as holding more power than the community as a whole. However, it is not only individual landholders who are impacted by renewable energy projects. The individualism that arises through the establishment of renewable energy projects under a system of private property leads to considerable tensions, conflict, and a sense of unfairness. The following sections explore how some of this unfairness manifested in the New England region during the planning process for UPC's New England Solar Farm.

**Neighbours.** Neighbouring landholders have some of the more complex relationships with and often, vocal opposition, to large-scale renewable energy projects (Australian Energy Infrastructure Commissioner, 2020, pp.31-33). This is largely due to their experienced level of impact compared to the level of compensation. Often, the impact is considered—by the neighbouring landholders themselves—to be quite high, and the compensation or other benefits seen as negligible. The impact on visual amenity is often cited as the main concern; however, this is almost invariably linked to property value. The following quote from Peter Dawson, a neighbouring landholder for UPC’s New England Solar Farm, demonstrates property-owner concerns:

Quite apart from those property owners that agree to put the panels on their property, okay, they’ll generate some income but what’s that going to do to the capital value of their property? What’s that going to do to capital value of neighbours, such as myself? A few land owners, in cahoots with developers determining the future for the majority. (P. Dawson, personal communication, February 17, 2019)

These tensions that arise as a result of establishing renewable energy projects through a system of private properties are often heightened by the incomes that host landholders receive for leasing wind turbines or solar arrays on their property. Host landholders will often argue for their right to earn income from their land in whatever form they desire—farming or hosting solar arrays—it is up to them to decide. In a submission supporting the project, one host landholder spoke to the financial implications of leasing his property for a solar array:

The potential income generation from the project for the participants and the general Uralla community is much greater than the value of agricultural output that can be achieved from the same area of land. From my own perspective the development of only around 20% of our farm allows me income diversification, to consider options



for my four children in my succession planning for my family farming business and a way to contribute to a positive outcome for the environment (Sutherland, 2019).

Here we can see that this landholder, in agreeing to host part of the New England Solar Farm solar array, is considering his and his family's financial position as a core motivator. As demonstrated in this quote, many host landholders do also consider addressing climate and environmental issues as another motivator to hosting these projects, however the individual economic considerations are prioritised.

Conversely, neighbouring landholders often feel that they bear the brunt of the visual impacts of projects, but receive none of the income. As neighbouring landholder Peter Dawson explained,

You've got a few land owners that signed up [to the project], and that's an income stream for them in the future. You're looking at the age group with a lot of farmers too. Late 50s, early 60s, so when a developer comes along offering so much per acre per year into the future for the next 20 to 30 years, that's an obvious retirement income stream for them. There are no more problems with droughts, no more anything. You've got other land owners around them that don't necessarily agree with that, so you've got this tension there between landowners, those that are for it and those that are against it ... might be half a dozen land owners. So, that doesn't spread the love too much in terms of the dollars through the area. (Personal communication, February 17, 2019).

Recognising neighbouring properties as sites of particular tension and disputes has led some renewable energy proponents to adopt neighbour benefit agreements. For example, the Thunderbolt Energy Hub, set to be built in Kentucky, NSW – just up the road from Uralla – is implementing a neighbour benefit program that:

...provides neighbours with an annual payment throughout the operations phase of the project (25-30 years). It is based on the number of turbines within certain distances of your house. The nearer the turbines are, the higher the amount. (Neoen, 2021).

These type of arrangements are relatively new to the renewable energy sector, and are not being applied as a matter of course across all new projects. While close neighbours will receive financial compensation, there will still be those who miss out on directly benefiting from nearby projects. It remains to be seen how neighbour benefit programs will impact upon the tensions and divisions that have been seen elsewhere, including around the NESF.

The prioritisation of economic considerations, and the dominance of viewing one-another through economic relations points to another problem that arises in local tensions and debates on large-scale renewable energy projects – the framing of loss or distress. The prioritisation of economic impacts and benefits in conversations around the siting of renewable energy projects limits the vocabulary available to people to discuss their loss or distress. This problem will be further discussed in the following chapter in a section on solastalgia (Albrecht, 2005).

The establishment of renewable energy projects through the private property system creates hierarchies within host communities. These hierarchies can lead to tensions and perceptions of unfairness forming and growing within the community. The following section will further explore these tensions and how social division and competition are manifesting in regional NSW as a result of large-scale renewable energy projects. As will be discussed, these projects can cause new tensions and division to arise but also can reignite old tensions and divisions.

### ***Land and Class Interests***

Power relations, competition, and division between classes in the New England region have been one of the foundations on which the concerns and conflicts regarding nascent

transitions to renewable energy have grown. Several local residents described the majority of host landholders for the UPC project in particular, as the “landed gentry” (Bolton, 1968). The landed gentry in rural Australia typically refers to landholders with large properties whose families have been in the region for several generations and who make a significant income off their own agricultural businesses and the leasing of land. These families will often also have significant local political and social power.

With regard to the UPC project, smaller and arguably less powerful neighbouring landholders often had less access to information, compensation, or social power. Sandra Eady described her distress at the situation:

The large landholders, the “landed gentry,” a lot of them have been there for generations ... [they have] been able to negotiate, “Well, I don’t want any panels in that view from my verandah and I don’t want to see them but they can go in my back paddock”—which is in someone else’s view. You don’t criticise people; it’s not a wrong thing to do but they’ve had the ability and the control over the process to be able to have it come onto their properties, benefit from it without it impacting on their amenities, to a large extent whereas [impacted families] have had none of that and they’re feeling pretty beaten up. (S. Eady, personal communication, February 18, 2019)

The establishment of renewable energy projects through a system of private properties allows pre-existing class competitions and divisions to expand. To profit from wind turbine or solar array host landholder lease payments, one needs to already own enough land on which to situate the project. This can be regarded as another example of money begetting money, of the “haves” getting more, and the “have-nots” getting very little compensation and suffering significant impact. Once again this reflects how transitions to renewable energy that

occur through a system built on private property relations favour the individual over the community, and leave some in the community disempowered and frustrated.

### ***Division and Competition***

“This proposal has divided an otherwise tightknit community,” wrote an anonymous local in their submission opposing UPC’s New England Solar Farm, “There has been a lack of a whole of community consultation” (Department of Planning and Environment, 2019). This sentiment, that UPC’s New England Solar Farm was dividing the Uralla community, was not uncommon among the submissions, interviews, and conversations drawn on in this ethnography.

This section of the chapter will explore some of these key divisions, demonstrating how the current process for establishing large-scale, for-profit renewable energy projects can contribute to alienation between community members where these projects are located. In particular, this section will explore the rise of the Uralla–Walcha Responsible Solar and Wind Action Group, the broader community response to the groups’ concerns and the bitter divisions that can arise when neighbouring landholders are not genuinely engaged early in the planning process. Following on from this, this section also explores how the establishment of large-scale, corporate renewable energy projects can contribute to the growth or re-emergence of systematic and historical divisions and power relations within the community—in particular, class divisions, and the continuation of terra nullius.

**The Uralla–Walcha Responsible Solar and Wind Action Group.** Ten kilometres south-east of Uralla, along a dry, dusty dirt road surrounded by rolling hills and flat flood plains sits the Sunhill Dairy Goat farm. Owned by Corrinne Arnetts and Richard Downes, the small hobby farm produces a goat milk skincare product range and consumable goat milk dairy products (Sunhill Dairy Goats, 2021). In 2018, Corrinne and Richard learnt that their neighbours had signed lease agreements with UPC/AC Renewables to host solar panel arrays on their properties. Looking at a map of the project, they were horrified to see that if the project proceeded as planned, their home and goat farm would be surrounded by a sea of solar panels (Fuller, 2019; Link, 2019).

Finding it difficult to negotiate directly with the project proponents, Corrinne and Richard began talking to other neighbouring landholders and the broader community about their concerns with the project. From this, the Uralla–Walcha Responsible Solar and Wind Action Group (the Action Group) was formed. Initially the Action Group claimed to be concerned about both UPC/AC's New England Solar Farm and the WEP, however their efforts were concentrated on the UPC/AC project. This was most likely due to the New England Solar Farm being the most impactful project on the properties of those most involved in the group, and the UPC/AC project being considerably further through the planning stage than the WEP. At the time of writing, construction had started on the New England Solar Farm while the WEP remains in the very early stages of the NSW major development planning process. Despite opposing both renewable energy projects in their local vicinity, the Action Group's public position was that they were not opposed to renewable energy, they did however want to ensure that projects were appropriate.

While the establishment of a community action group might not, at first glance, appear to demonstrate alienation between people, the reasons for creating the group, the response to the group by others in the community, and the results of the groups' efforts did

cause and enhance divisions within the community. Corinne and Richard were, arguably, the most impacted landholders, but they “tapped into some concerns, broader concerns” (S. Eady, personal communication, February 18, 2019) within the community about the New England Solar Farm, and about the cumulative impact of the range of different projects planned for the New England region.

“So basically,” began Peter Dawson, “they’ve [UPC] moved in, they’ve spoken to various landowners and signed them up to lease agreements” (Personal communication, February 17, 2019). Peter and I were standing on a hill in his paddock, overlooking the proposed site of the Southern Array. “We’ve got a few landowners,” he continued, “that, in our action group’s view, they’re almost deciding the future for the rest of us.” The private property relations at the heart of these tensions are clearly the motivation for Peter’s involvement in the Action Group. But he also points down to a nearby creek, explaining—when it’s not a time of drought as it was at the time of our meeting—that part of the site for the Southern Array is actually a flood plain. He’s also concerned about migratory birds that stop on the Salisbury Plains during their journeys each year. People’s reasons for opposing renewable energy projects are often complex and multifaceted.

As previously discussed in Chapter 6, the New England Solar Farm was originally designed to have three solar arrays. The Southern Array, or the Salisbury Array, was the part of the project that the Action Group was particularly concerned about. The Action Group wrote letters to residents of Uralla Shire, started a Facebook group, met with MPs, enlisted the assistance of legal, industry, and political experts, nominated for the project’s community reference group, orchestrated a submission campaign for the public exhibition period of the UPC/AC project, engaged the Wind Commissioner (now the Australian Energy Infrastructure Commissioner) and spoke to the media. Largely as a result of these efforts, the

southern/Salisbury array of the project was removed from the development application in April 2019 by UPC/AC.

The response to this array removal will be discussed further below, but suffice to say that the decision did not entirely dissipate tensions—indeed the tensions between people who wanted the Southern Array to go ahead and those who did not will likely remain in the community for years to come. When discussing the removal of the Southern Array from the development application, local regenerative farm owner and Z-Net member, Suzanne Wright, explained that while this was a good outcome for some, others had wanted it to go ahead. “They’ve [UPC] divided it even more. Instead of listening and coming to the party, they’ve said, ‘Cut the third stage out of the picture,’ and basically divided the community even further” (Personal communication, May 17, 2019).

**Community Backlash Against the Action Group.** “This is such an important project from a local, regional and global perspective,” wrote Adam Edwards, a host landholder for the NESF, in their submission supporting the NESF. “Therefore,” they continued, “it must be supported. It cannot be derailed or diminished in scope by a minority of detractors” (Edwards, 2019).

While some within the Uralla community were sympathetic to the Action Group’s concerns, and in particular to Corinne and Richard’s predicament, there were also many people within the community who were opposed to the Action Group. Host landholders were particularly opposed to the Action Group but they were not alone. Some within the Uralla community believed the group to be motivated by self-interest and NIMBYism. Others were concerned that a “minority of detractors”—an oft repeated phrase in submissions supporting the project—were denying the Uralla community an opportunity that would be good for the local economy and the planet.

Accusations that members were acting only in their own self-interest were commonly levelled at the Action Group by others in the community. The following quote from local Carly Wright in her submission supporting the project rather poetically demonstrates the self-interest viewpoint that was common among those opposed to the Action Group:

The mercurial nature of the minority who oppose the project has been evident from the beginning. Their reasons for objecting to the development have shifted like the sands in the Sahara. In fairness, the true motives behind the opposition are now becoming apparent. The current *raison d'être* for the minority opponents is said to be the “inequitable compensation for neighbouring real estate while participating landholders are compensated.” In a word, avarice. Those who oppose the development, in the main, appear to be motivated by the fact that they will not obtain the direct benefit associated with having the array built partially on their property, and if they cannot have it then no one can. That malevolent outlook, combined with equal doses of NIMBYism and pre-Copernican obscurantism, has informed a lot of the local debate over the proposed solar farm. (Wright, 2019)

Part of what is being alluded to here is the motivation of some in the Action Group. According to one participant, one of the key members of the Action Group had been planning to subdivide his land and believed that a solar array would impact on the amount he could sell the land for. There was also a widely held belief that the couple who owned the goat farm were hoping their farm would be bought-out entirely by the project proponents—similar to the way coal mine proponents often buy up neighbouring properties. It is important to note that these assumptions were not confirmed to me by the goat farmers or the person purportedly interested in a subdivision, as they stopped responding to my communications



after the Southern Array was removed from the application. However, that this was the perception of some in the community is evidence of local tensions and divisions.

The issue of self-interest here is an interesting one, and demonstrates a certain level of cognitive dissonance on the part of some in the community. The Action Group was quite widely condemned as acting out of self-interest, yet host landholders were often praised for what were, in essence, similar acts of self-interest. There appeared to be a commonly held view within the broader Uralla community—at least for those engaged in the debate—that it was good for host landholders to negotiate lease payments to diversify their income and droughtproof their farms, but it was selfish for neighbouring landholders to attempt to obtain financial compensation. Indeed, the above quote describes this as “avarice.” This is particularly interesting as the wind industry has increasingly provided neighbour-benefit schemes in recognition of the impact on neighbouring landholders by such large-scale projects, as discussed earlier in this chapter.

**Landholders and the Unfairness Factor.** The issue of self-interest can be linked to what can be described as the “unfairness factor”—when tensions and disputes arise as a result of some individuals or families benefiting directly from large-scale renewable energy projects, and others feeling as if they have been neglected. It became clear during my research that the privileging of host landholders over neighbouring landholders and the broader community, contributed significantly to a rise in tensions and a sense of alienation from one another. There were issues with the privileging of financial benefits but also the privileging of access to information and decision-making.

The following ethnographic snippets demonstrate this division between host landholders, neighbouring landholders, and the broader community:

Might be half a dozen land owners [who are hosting the NESF and receiving financial compensation...]. So, that doesn't spread the love too much in terms of the dollars through the area.

Much of the detrimental impacts of such developments [are] economic impacts—felt hardest by the broader community—not just those landowners who are being compensated.

The landholders are being paid very generously—I don't know what they're being paid but it's very generous.

In effect, you got that divide and conquer.

The use of the phrase “divide and conquer” in this situation is reflective of a broader issue with the NSW planning process. Throughout my years being involved in multiple campaigns energy justice campaigns, I have repeatedly heard that same phrase used by residents living near proposed coal mines or mine expansions. It highlights a planning system based on individualism rather than collectivism, and one in which power relations and class divisions can become exacerbated. The sense of “divide and conquer” also points to those who feel they have been left out of consideration conceivably finding this more upsetting than the lack of financial benefits.

That the Action Group essentially disbanded after the Southern Array was removed from the planning application does lend some credence to the accusations of self-interest and NIMBYism. However, a question still remains as to why neighbouring landholders seeking compensation were seen as jealous, self-interested NIMBYs while host landholders were typically considered to be acting in a more favourable light.

**Terra Nullius.** While the class divisions and tensions between neighbours were explicitly recognised and discussed as problems for large-scale renewable energy projects in the New England region by research participants, Aboriginal voices and recognition of their custodianship of land were barely mentioned. At no point in my discussions with people that regularly focused on land and property relations did the original custodianship of the land by Aboriginal people arise as a topic of conversation. In fact, other than a compulsory Aboriginal heritage report compiled for UPC's planning application, the invisibility of Aboriginal people has been stark. This likely reflects an ongoing, informal segregation—particularly as settler landholders and Traditional Custodians have their own history of land-use conflict arising from Aboriginal land dispossession. Recognising Aboriginal property might suggest that the 'settlers' had no legitimate tie to the land and their sentiments were invalid. The following chapter will explore the implications of this more deeply, particularly through the lens of psychological terra nullius (Behrendt 1999a; 1999b).

**Fear of (Male) Construction Workers.** One of the more surprising aspects of my research was the level of concern within the Uralla community about the potential for a camp to be built to house workers during the construction period. This in itself was not surprising—I had assumed local residents would want workers that already lived locally to be hired. In addition to this though, several people raised specific, gendered concerns about fearing for their own safety or the safety of their children if a temporary workers camp of predominantly men was sited near their homes. One family even claimed they would have to move if a workers camp was set up due to the “perceived or real threat” to the security of the mother and children who lived there occasionally without the father, who travels for work.

The following are just some of the concerns raised in interviews, submissions and other sources drawn upon in this ethnography regarding a large group of men temporarily moving into the community:

We don't know what the short-term construction impacts will be on Uralla. You know, you are talking about construction camps, power workers, brawls at the pub, drugs, you know, it will all come, all that sort of stuff comes with that sort of magnitude of a workforce coming—single males, you know.

How many undesirables are coming into town, sort of thing.

Very unsettling location for a lady and four children alone at night, with five hundred men across a paddock from the home.

Perhaps the security fencing will serve not only to keep us out of the solar farm, but to also keep the workers within it!

The safety of my children and family are priority. This is a huge workforce that will be within close proximity to our home and business. This causes significant concerns as the majority of workers will be men. Our residence is isolated and I have fears of so many people in such close proximity to myself and young children.

We do not feel safe having hundreds of workers brought in and living only a couple of kilometres from our houses.

As a single woman on the land with children I have concerns regarding local policing ratios and vandalism that may occur at the proposed site.

Does everyone coming to work on this project have police checks? Past convicted criminals could have a devastating effect on our tight-knit community.

UPC did listen to these concerns about a workers camp and eventually removed it from their planning application. However, the fear is worth discussing even though there is now no chance these particular fears will be realised for this particular project. The fear of

accommodating a relatively large group of what would likely be predominantly male workers is an interesting one when considering alienation from one another.

The value in intersectional analysis that considers how class, race, gender, and other identities or experiences impact and interact with one another is apparent here. Within the reproductive and productive labour that is required to transition to renewable energy, it is not only class divisions that require attention. The fear and alienation between different genders is a topic connected to, but not the focus of, this thesis and therefore outside of the remit of this project to attempt to resolve the phenomenon here. Suffice to say that energy justice, climate justice and transitions to renewable energy that seek to shift the power relations of the fossil fuel age will need to reckon with gendered oppression and the alienation between genders that arises as a result.

### *Communication*

“They’ve got a problem,” Sandra Eady recalled. “They know they need to do a community benefit-sharing initiative, they know they have to do it in consultation with the community and they have got no idea how to do it, you know, they’re engineers” (personal communication, February 18, 2019). Sandra was referring to the UPC Renewables team responsible for the New England Solar Farm. The project team up to this point did not have a dedicated community engagement manager—and this deficit was clear to local residents. UPC would eventually hire a consultant to facilitate a community engagement process specifically on the issue of community benefit sharing, however, the failure to initially enter the community and practice a deeper level of care, listening, and reciprocity would taint the company’s relationship with some parts of the community.

Communication is a key concern in the establishment of large-scale corporate renewable energy projects. As seen in the previous section on neighbour conflicts, a lack of genuine engagement with neighbouring landholders and the broader community can often

lead to vocal opposition to the project. Ethnographic research centred on UPC's New England Solar Farm demonstrates how de-prioritisation of relational skills, care, and reciprocity within project teams can lead to a lack of timely communication, miscommunication, considerable distress within the community and an erosion of trust. This contributes to the sowing of deeper divisions within host communities and a sense of alienation between neighbours, friends, communities, and project developers.

From the perspective of some within the Uralla community, the lack or de-prioritisation of relational skills within the project team created problems with communication that in turn contributed to significant levels of distress within the community. Richard Downes, one half of the couple who own the goat farm that was originally proposed to be surrounded by the Southern Array, described initial contact with project staff as “intimidating and highly stressful,” and that he “found the process extremely isolating” (2019). Another neighbouring landholder, Nanette Peatfield, described UPC as “insensitive and intransigent,” regarded the company to be “aggressively pursuing what it considers its divine right to place their footprint where it commercially suits them,” and objected “strongly to the lack of empathy” demonstrated by project staff in their community engagement (2019). Intimidating, stressful, isolating, insensitive, intransigent, aggressive, and lacking empathy—not exactly descriptors of a company that was communicating well with all of the local community.

While it appears that the contracting of a specialist significantly improved UPC's community engagement and communication, her role was to facilitate the community engagement regarding community benefit sharing only. The community engagement for the project itself was facilitated by UPC staff, whose skills were more in engineering and project management than in community engagement. There was a sense by some in the community that the engagement was not genuine, with Action Group member Peter Dawson describing it

as “almost perfunctory” (personal communication, February 17, 2019). Mr. Dawson recounted some of the groups’ concerns with UPC’s early community engagement efforts:

I think that’s an important expression— “proper community engagement.” They conduct community engagement but it’s almost perfunctory. It’s just ticking box. “OK, we’ve had this. We’ve had that. We’ve spoken to council. OK, job done.” It’s not effective. The community should be in a position where we’re fully engaged, or you know everyone’s done their best to make sure that people are aware of what’s coming. Whatever that entails. And it’s then up to the community to decide what they want. It’s almost as if these developers sort of sneak in, the first people they talk to are the landowners. They get them signed up and they acquire what Mark [industry consultant] says are their land banks, put those aside. And then they start the assessment process. (P. Dawson, personal communication, February 17, 2019)

This sense of the community engagement process being a tick-box or perfunctory exercise was repeated by others in the community—and indeed has been a common complaint in other large-scale projects, signalling a problem in the NSW planning process.

Mr. Dawson did, however, see a difference between the communication and community engagement practices of UPC and the WEP (previously Mirus). When asked about his knowledge of WEP’s community engagement practices, he replied,

I’m not aware of it to be honest, I do know that they [Walcha Energy Project] have been around this particular area for quite some time talking to landowners, but I’m not aware of the extent of their community consultation. So maybe that says a lot about the depth of what they’re saying they’ve done overtime, but certainly they’ve been around a while. Their approach is slightly different to UPC; UPC are very much on an accelerated time, whereas Mirus seem to be wanting to take a little bit more time

because their project is larger, I suppose. But there seems to be more of an attempt from Mirus to take the landowners and communities with them, whereas with UPC it's more coming in, ticking boxes and getting the development underway ASAP. (P. Dawson, personal communication, February 17, 2019)

Lack of communication was a common concern raised by locals regarding the introduction of large-scale corporate renewable energy projects in the New England region, and lack of initial consultation of neighbouring landholders was a key factor. One neighbouring landholder described having to seek out the Developer themselves as the project was progressing through the approvals process and they had yet to be contacted by UPC. Another neighbouring landholder raised similar concerns:

Not one of the involved landholders in the Southern Array approached myself, my wife, nor my business in relation to the investigation of a large-scale solar project being developed. While this appears not to be a legal requirement it is noted in the wind farm guide for host landholders page 31 that this has been found to be the “best approach.” (R. Downes, 2019)

Alongside this lack of early consultation with neighbouring landholders and the broader community, locals also raised the difficulty in being able to access timely and correct information about the projects. Teresa French, Z-Net membership officer at the time of researching, and president of the Uralla Business Chambers, described the difficulty in obtaining information and how the cumulative nature of the projects enhanced this difficulty:

The Walcha group muddied it a bit in some ways because they made it like an iceberg, with UPC as the tip of the iceberg. There's all of this other stuff going on now. Plus, the group up to the north as well and nobody knows anything about what's going on up there because they're not talking to anybody. So that's sort of the feeling



all over town: “Well what’s going on here?” (T. French, personal communication, March 29, 2019)

Neighbouring landholders also highlighted the difficulty in knowing who to send complaints to. In his submission, Mr. Downes wrote,

We felt there was no one to go to for help or even know what to do about an SSD [State significant development] project if you had concerns ... the level of support for “affected” parties has been overwhelmingly lacklustre. WHO DO YOU CONTACT? When S9 [Sunhill Farms] was first contacted by UPC the large-scale solar development guidelines were in fact still in draft form. Similarly, there was no large-scale solar development commissioner to offer advice. SUNHILL (S9) now holds the rather dubious honour of being the first large-scale solar complainant in NSW<sup>9</sup>.

(Downes, 2019)

In circumstances in which timely, reliable, and transparent information is not available, misinformation and hearsay can become rife. This certainly appeared to be the case in Uralla regarding the UPC project; prior to the project opening an office in town and appointing a local project coordinator, locals reported finding it difficult to access information. One supporter of the project highlighted the danger associated with the lack of information: “It would be in their [UPC’s] interest to make themselves more familiar; whereas people in town will be just talking, yacking about it down the pub” (T. O’Connor, personal communication, March 29, 2019). Another local supporter of the project echoed this, describing the two local pubs as the “local rumour mills”.

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<sup>9</sup> In March 2021 the Australian Wind Commissioner became the Australian Energy Infrastructure Commissioner as their role was extended to cover “wind farms, large scale solar farms, storage facilities and new major transmission” (Australian Energy Infrastructure Commissioner, 2021). Perhaps unsurprisingly given Australia’s political economy of energy and climate change, there is no corresponding role for complaints about coal, gas or oil projects.

The potential for misinformation and rumours to fill the void when there is not timely, reliable, and transparent information was raised as an issue in relation to the UPC project.

One concerned local resident included in their submission supporting the project:

I have been watching debate over the solar development unfold in Uralla (both in person and on social media) and I have some concerns regarding the publication of poorly researched, uninformed and wrong information by a minority of local community members. (C.Wright, 2019)

A report written on behalf of RE-Alliance by the author of this thesis detailed a range of potential avenues through which communication and community engagement issues could be, if not resolved, then at least improved in regards to large-scale renewable energy projects (RE-Alliance, 2021). These include timely, transparent and collaborative communication, local decision-making power, opportunities to co-design projects and local design and governance of benefit programs.

The tensions that arose and the hostilities that were bred through the complex interactions between host landholders, the Action Group, the broader Uralla community and UPC/AC encapsulate how the establishment of large-scale renewable energy projects through a system that centres individuals and private property leads to the estrangement phenomena that Marx labelled as alienation-from-others. These tensions and divisions could probably have been minimised through early and transparent communication, reliable and easy access to information, community deliberation, and through sharing the benefits of projects more equitably—including implementing neighbour-benefit schemes. However, publicly-owned or community renewable energy projects would be unlikely to have these same problems as they would not rely so heavily upon individualised, private-property relations, although this is not to say that they would not have their own challenges.

## ***Conclusion***

While large-scale renewable energy projects present considerable improvements compared to fossil fuel projects, ultimately the profit motive of private ownership of renewable energy projects does not allow for energy justice; it simply perpetuates fraught private property relations.

Advocacy work in the wind sector, which is more established in Australia than large-scale solar, has resulted in many wind project proponents improving their community engagement and benefits. This has increasingly included payments or in-kind contributions to neighbouring landholders. In some cases, this has considerably increased community acceptance. Neighbour payments are, however, optional, and are at the discretion of project proponents. At the time of research, neighbour payments for solar projects, other than the project paying for vegetation screening, were rare.

These issues of land-use disputes, class relations, and the continuation of terra nullius stem from systems of private property and capital. As discussed in chapter three, Ostrom – a scholar deeply immersed in how successful commons function - identified trust, cooperation and agency as crucial. From this, a key question she sought to answer was ‘how do groups of individuals gain trust?’ (Ostrom 2003 p.19). I argue that the preceding exploration of alienation-from-one-another in the establishment of renewable energy projects in New England, is a counter-answer to Ostrom’s question. This chapter provides commentary on what not to do to foster trust, or conversely, what to do to sow distrust and division.

Through the prioritisation of economic relations, large-scale renewable energy projects in the New England region are contributing to alienation-from-one-another. The following chapter continues our examination of alienation, this time turning to manifestations of alienation-from-nature in energy transitions in NSW.

## **Chapter 9: “Constant Flood, Fish-Kills, Drought, Wind”: Alienation from Nature, Energy and the Growing Climate Crisis in Australia**

Drawing predominantly on tensions and divisions caused by large-scale renewable energy projects, the previous chapter examined where alienation-from-one-another is manifesting. We turn now to an interrogation of alienation-from-nature. This chapter begins by discussing the perpetuation of alienation-from-nature by the Australian state apparatus, which leads into a deeper discussion of how this type of alienation is occurring in situated examples around energy transitions.

### ***The Australian Government’s love affair with fossil fuels: climate chaos and eco-crises.***

As discussed in the introductory chapter, the Australian federal state is a paralysed and hostile environment for energy and climate policy. Humanity’s alienation from nature, perpetuated most strikingly through the power of fossil capital (Malm, 2016), has created a particularly noxious environment in which a grotesque mix of climate denial, misinformation, inaction, and wilful destruction has festered. While there has been a notable shift in rhetoric from governments, industry, and media beholden to fossil capital since 2021—from denial to delay through a spurious Net Zero by 2050 campaign—the material reality of the climate crisis remains largely unchanged.

While the federal government has been a site of denial and delay, I should also mention the role of the NSW Government. For the majority of the time spent researching and writing this thesis both the Australian federal and the NSW state governments were held by the conservative Liberal–National Coalition, although in May 2022 the Australian Labor Party took over government at the federal level. Despite holding power in both levels of government for nine years (2013-2022), the Coalition’s approach to climate and energy policy is significantly different between jurisdictions. In NSW, the strategy is one of hedging their bets. On the one hand, the NSW Government is continuing with fossil fuel projects, land

clearing and deforestation, and announcing amorphous “net-zero” targets with limited policies attached to the target. On the other hand, there is a clear commitment to support the emerging renewable energy industry, and although the policies surrounding such were rather vague when I started my ethnographic research, by the time of writing those policies are becoming clearer. This contradiction between continuing to support fossil capital and the status quo while also claiming to support climate action and a transition to renewable energy has been a site of frustration and confusion for people and organisations seeking climate and energy justice, alongside the outright denial experienced at the federal level. For example, one community energy industry source who did not wish to be named, said:

The [federal] government really has no interest in renewables. The federal government really wants to stall on renewables. The state government is completely conflicted, it just doesn't know where it's going. ... On the one hand they're giving grants, but on the other hand they're doing all sorts of sillinesses in relation to forestry and trying to get fracking going again. (personal communication, October 22, 2019)

For those unfamiliar with Australian energy and climate politics, it is difficult to overstate the lengths that successive federal governments have gone to facilitate the continued dominance of fossil capital and to hinder transitions to renewable energy. Despite this, the transition is happening—it is just slower and more difficult than it needs to be. The dual strategies of “denial then delay” that have been employed by the institutions seeking to prop up fossil capital have not gone unnoticed by people in the regions who want to see a fast and fair transition to renewable energy, and meaningful action on the climate crisis. Walcha farmer and future wind turbine host, Peter Blomfield, announced:

Without [renewable energy] we are stuffed. The changing climate is far, far worse than what Morrison<sup>10</sup> and the government, all the governments are saying. It's simple enough to say, "We're meeting our Paris Agreement," which is fine, but if we meet that and it still gets to two degrees or warmer, I don't know what will happen to the environment and agriculture—*it is frightening* [emphasis added]. (Personal communication, February 17, 2019)

In many of the interviews I conducted for this research, the anger and incredulity towards the behaviour of successive Australian governments, but particularly the current Morrison government, was palpable. For people like Peter, those feelings of anger and incredulity were mingled with fear about the future. These emotions demonstrated their grasp of something that the Australian state is deeply opposed to recognising—that there is no separation between humans and nature and that the two and a half centuries of behaving like that separation exists on this continent is bearing consequences.

However, not everyone in New England is as worried about the climate crisis as Peter and others who echoed his sentiments. The following section explores how climate denial and misinformation are manifesting in New England, particularly around the transition to renewable energy.

### ***Denial, Misinformation, and Climate Alienation in New England.***

As previously discussed in Chapter 6, the New England region of NSW has interesting political contradictions. It is a region that has elected Barnaby Joyce as its federal member of parliament repeatedly since 2013—one of, if not the, strongest embodiment of climate malfeasance in Australian federal politics. Yet it is also a region that continues to elect Adam Marshall as its NSW state member—a politician in the same party as Joyce, yes,

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<sup>10</sup> The conservative Prime Minister at the time, for international readers

but who is part of a cohort of younger Nationals MPs who recognise and advocate for the establishment of renewable energy industries in regional Australia (A.Marshall, 2022).

At our second meeting, I asked Z-Net Uralla treasurer, Tom O'Connor, his opinion on this local politics, particularly in light of the (then) recently held state election in March 2019 and upcoming federal election in May 2019. In February 2019, Tom was elected as a Uralla Shire councillor, replacing someone retiring mid-term, and he was relatively well-informed about local politics. I specifically asked him whether he thought the growth of the local renewable energy industry or government responses to the climate crisis were featuring strongly in the region's electoral decisions. His answer was a resolute "No." Expanding, he explained,

It doesn't feature mainly because a majority of people are uninformed. I'm an environmentalist and as far as I'm concerned ... people can argue it's man made or it's a cycle. I don't care right? *It is changing*. If you want to argue about why it's changing, you can have that argument. But do not use the argument to say it's not changing, because that's being bloody minded. Unfortunately, there's a group who don't believe it's changing, but I've lived 78 years and it's changing kid. It's changing. (T. O'Connor, personal communication, March 29, 2019).

This local denial of the climate crisis highlighted by Tom had an impact not only on local electoral politics, but it also informed the work that Z-Net Uralla was doing in the community. "The scope in Z-Net is energy," Z-Net Uralla President Sandra Eady explained to me, "We don't do climate change, we don't do adaptation, we don't do water, and that was quite purposeful because that's what we had community licence to do" (personal communication, February 18, 2019). It is demonstrative of the political quagmire that is energy and climate politics in Australia, that a community organisation established

specifically to champion a zero-emissions future felt more able to reach this goal if they didn't discuss the climate crisis.

One of several arguments made by climate deniers is that the activities of humans couldn't possibly impact the climate of the planet. This assertion, likely truly believed by some and used as a convenient excuse by others, belies a key phenomenon through which our alienation from nature is most apparent—the (false) separation of humans and nature. This phenomenon has already been discussed in Chapter 4, and will be further explored throughout this chapter.

I mention it here because Tom's analysis of local climate politics and Sandra's explanation that Z-Net Uralla steers away from discussing the climate crisis points to a disconnection between the transition to renewable energy in New England and its potential positive impacts on the climate crisis. It is an interesting dilemma and one that is playing out across Australia. Do proponents and advocates of renewable energy highlight its ecological and climate benefits and risk raising the ire of some local communities in the regions set to host the new infrastructure, who have been poisoned by two decades of misinformation about climate and renewables? Or do proponents and advocates stay silent on those benefits and instead highlight local economic benefits?

This either/or dilemma highlights the inherent problems in the binary that is forced between ecology and economy under capitalist eco-social relations. Walker labels economy and ecology "the estranged twin sciences of the oikos" (2020, p.3), weaving a story of how their estrangement has informed and influenced the confluence of eco-social crises currently facing humanity and planet Earth. More specifically, materialist ecofeminist scholars examine how the elevation and separation of the economic from the ecological has further perpetuated our alienation from nature through devaluing and suppressing more harmonious



eco-social practices and relations—and valuing and encouraging eco-social relations centred on the commodification and exploitation of nature and world.

While ideally we wouldn't be faced with an either/or decision, it appears that most proponents and advocates, particularly for large-scale projects in rural or regional areas held by the National Party, are erring on the side of promoting local economic benefits over climate and ecological benefits to avoid conflict. This risks further perpetuating our eco-social systems built around the separation of humans and nature, and therefore further perpetuating alienation from nature. Focusing predominantly on (capitalist) economic benefits is also a missed opportunity to both challenge climate denial, and to provide a space for the many people living rurally and regionally who do want to see strong action on the climate crisis, or who seek a better way of life.

Alongside these tendencies to deny or ignore the climate crisis, there were also interesting instances of climate exceptionalism that arose in the local contestations over large-scale renewable energy. The following excerpt comes from the Action Group's submission to the NSW Planning Department objecting to UPC's New England Solar Farm:

The Action Group, in context of the [Southern Array— "SA"], objects to the Proponent's claim as to "project need." The SA as an operational project presents as only 200 MW of renewable energy—less than 28% of the total UPC development. It presents as only 0.037% of the forecast New England RE Zone of 5,550 MW. In context, the SA does not present as a major erosion against the NSW Climate Change Policy 2016 or NSW Renewable Energy Action Plan. Nor any conflict with the Commonwealth Renewable Energy Policy nor the UNFCCC [United Nations Framework Convention on Climate Change] Paris commitment as both targets have been largely achieved. (Uralla-Walcha Community Responsible Solar/Wind Action Group, 2019)

Essentially what the Action Group is arguing here is that the cancellation of one renewable energy project, or one part of one renewable energy project will not have any real impact on our ability to address climate change. This line of argumentation demonstrates the problem that is likely to continually arise around large-scale renewable energy projects, whereby some people and communities will theoretically understand the need for renewable energy but in practice might oppose individual projects. Indeed, there is growing conflict in the Australian state of Tasmania, with environmentalists opposing transmission infrastructure that would considerably contribute to Australia's ability to decarbonise (Vorrath, 2022).

The macro of the global climate crisis, compared to hyperlocal impacts of individual projects, will continue to be a key site of conflict over renewable energy. In the above excerpt, we can see the Action Group arguing that the Southern Array of the New England Solar Farm would not make a difference in the scale of the climate crisis—adopting a similar rationale to the conservative Australian media who have argued that Australia's carbon emissions do not need to be lowered because in the context of the entire globe, Australia doesn't emit very much carbon. Like the disingenuous argument made by the conservative media, the argument put forward by the Action Group renders their circumstances more important than others, prioritises the individual over the collective, and indeed, contributes to misinformation—for example, that Australia is not even close to meeting our Paris Agreement targets.

Climate denial, misinformation, and exceptionalism have partly framed eco-social relations around renewable energy in New England. However, the groundwork for this alienation from the human causes of the climate crisis was laid long before the emergence of the climate crisis. The following section takes up the phenomenon of Western capitalist eco-social relations that are built on the false separation of humanity from and “othered” nature, resulting in nature being commodified.

### *Land as Commodity.*

Alienation from nature, as caused by capitalist eco–social relations, has largely rendered the Earth into commodified, private parcels of land. Australia, as a colonised country, was built on the unceded lands of Aboriginal and Torres Strait Islander peoples—stolen, enclosed, and commodified to the advantage of the British Empire and British invaders. The Western system of private property and land as commodity continues to reign supreme 230 years after invasion.

While there are a multitude of different ways that property relations are practised across the globe and throughout history, this thesis is predominantly interested in Western capitalist, Indigenous, and common property relations. Briefly, capitalist property relations are structured around ownership of land through private property—essentially, the commodification of land and the removal from common use. Western capitalist property relations rely on the separation of humans from nature, as the relationship between people and land is first and foremost an exclusionary economic one. Juxtaposed to this, Aboriginal and Torres Strait Islander property relations are structured around the concept of Country, and deep relations with land. As defined by the Australian Institute of Aboriginal and Torres Strait Islander Studies:

Country is the term often used by Aboriginal peoples to describe the lands, waterways and seas to which they are connected. The term contains complex ideas about law, place, custom, language, spiritual belief, cultural practice, material sustenance, family and identity (2022).

The concept and practice of Country has no separation of humans from nature (Pascoe, 2014; Weir, 2009) and indeed alienation from nature experienced by Aboriginal and Torres Strait Islander people predominantly occurs through the ongoing dispossession of

people from the land and the dominance of hierarchical Western eco–social systems. Common property relations can vary significantly, particularly between commons conceptualised through the lens of state socialism, and those conceptualised through more direct, local self-governing collectives (see Ostrom 1990). However, typical features of commons are lands that are used communally, are held for the social good, and managed locally. Similar to First Nations’ eco–social relations, those centred on commons can seek to disrupt the separation of humans from nature and to challenge the alienation from nature built into capitalist eco–social relations – although not all commons share this goal as discussed in XX.

As has been thoroughly explored in materialist ecofeminist scholarship, the separation of humans from nature, the elevation of the commodified value-form and the enclosure of previously commonly held lands hinder regenerative, caring and reciprocal eco–social relations. As nature becomes other, land becomes commodity and vice versa. In turn, the pervasive perception of land as commodity results in the prioritisation of maintaining or increasing its profitability and monetary value. The maintenance or growth of the profitability of privately held land is becoming deeply entangled in transitions to renewable energy in regional and rural Australia, and can be considered a hindrance to the potential for more regenerative, caring and reciprocal energy futures.

**Land as Commodity and Renewable Energy.** Outside the political debate over the future of Australia’s energy supply, property relations are possibly the site of the strongest conflict around transitions to renewable energy—particularly at the localised level. The real or perceived impacts of renewable energy projects on the value of host and nearby properties is of paramount concern to many engaged in contestations over large-scale renewable energy projects in rural and regional Australia. While host landholders can negotiate annual lease payments with solar and wind companies to increase their income and, arguably, the financial

value of their property, neighbouring landholders sometimes fear that the financial value of their property will decrease, as discussed in the preceding chapter. As will be explored in this section, through prioritising a transition to renewable energy that relies on corporations negotiating with individual landholders, the NSW energy system further perpetuates the alienation of humanity from nature by centring on the economic rather than the ecological benefits of transforming our energy systems.

My research found contests and tensions around property in New England with respect to both the New England Solar Farm and the WEP. The possibility of a negative impact on the value of their property was a driving factor for those opposed to the New England Solar Farm. (Although for some, property value was just one of an ever-changing slew of reasons to oppose projects as a way of disguising ideological opposition to renewable energy).

Alongside the more typical debates around property values, there was one particularly intriguing dynamic in the contestation over the New England Solar Farm in which the desire of one nearby property owner to sell “natural experiences” through the establishment of an ecotourist resort was central to their opposition of the project: “We intend to transform Cloud Hill and our other properties, Glenlivet and Long Point, into a farm ecotourism resort. ... The [New England solar farm] project will threaten the viability of this enterprise” (Newsome & Newsome, 2019).

I found this particularly ironic and emblematic of those who regard ‘sustainability’ as an avenue for personal economic growth. The host landholders of the New England Solar Farm were engaged in a project that was commodifying “nature”—namely the land and the sun. Yet a neighbouring landholder was opposed to their doing this, because they wanted to commodify nature in a different way on their own land. Discussing a different, albeit similar, example, Cooke & Lane suggest that conservation work on private property is “entangled

with motives for improving aesthetic landscape appeal, recreation and to “experience nature as an individual” (Cadieux 2011, 349), rather than collectively across boundaries” (2018, p.1717), which speaks to the rhetoric employed by the Cloud Hill property owners. Tensions between neighbours and social relations that can arise out of large-scale renewable energy projects will be explored in further depth in Chapter 10. However, it is worthwhile considering this particular microcosm in this chapter to examine how alienation from nature and the prioritisation of the commodity’s value-form can impact eco–social relations.

In this particular example, both parties wish to commodify nature in different ways and yet the landholder opposing the solar farm because they want to establish an ecotourist resort highlights the inherent contradiction in the commodification of nature. This landholder opposed a solar farm which arguably would contribute towards the protection of “nature” through a reduced requirement for fossil-fuelled energy. The basis of their opposition was a desire to establish an ecotourism resort; arguably this could do more damage to ecological regeneration through contributing to the perpetuation of the idea that nature is something untouched, something pristine, and therefore alien. Would not an ecotourist resort, if it truly centred on protection of the ecological, be enhanced through the establishment of a nearby solar farm? In opposing the solar farm, does this landholder reveal the prioritisation of their own financial gain over ecological outcomes?

This dynamic of alienation from nature through its commodification was recognisable to others within the New England community who were engaged in the unfolding energy relations and contests but who did not have directly impacted property. Teresa French, the membership officer for Z-Net Uralla mused,

It’s like people won’t even think of [climate change] because that’s too far in the future; they just want to know right now what’s the impact going to be: “My property value has just gone down or up,” So it’s good or bad based on money. But what

happens in three years' time? "Oh, it won't matter anymore because I've sold my land," so they don't care anymore. (T. French, personal communication, March 29, 2019)

Here Teresa has identified how private property works against regenerative labours and de-alienation-from-nature.

**Psychological Terra Nullius and Land Valued for Capitalist Productivity.** The ongoing history of Australia as a colonial/settler state is perhaps the perfect encapsulation of eco-social relations centred on capitalist alienation from nature and alienation from people who were invaded. Australia was established as a British colony upon the legal fiction of terra nullius. Despite there very clearly being people inhabiting the continent now known as Australia, there were no property laws in place that the British recognised as legitimate. Aboriginal and Torres Strait Islander peoples were dispossessed of their land, in part because their eco-social relations did not amount to separation, subjugation and control, and because the capitalist British Empire required new lands and resources to enclose and accumulate. In discussing these differences, Behrendt argued that:

since land use was so radically different between the two cultures, Europeans dismissed Indigenous use and relations to the land as wasteful, trivial, and primitive. Even from the earliest days of the colony, the British saw themselves as being in competition with the Indigenous inhabitants for land. (Behrendt, 1999b, p. 51)

As a result of terra nullius, land on this continent was recast from relation to stolen commodity – with the theft being denied. Land became valued for its contribution to capitalist productivity and the commodity value-form. While to this day Aboriginal and Torres Strait Islander peoples try to care for Country, and to practice more harmonious eco-

social relations, the power and dominance of the colony subdues and inhibits these caring relations.

Despite terra nullius being deemed a legal fiction through the High Court's Mabo judgement in 1992, the dominant eco-social relations that the settler/colony of Australia was founded on continue to perpetuate alienation from nature and the false binary between humans and nature. As conceptualised by Behrendt, although the legal basis of terra nullius was undone by the Mabo case, it did not dismantle the psychological terra nullius that the dominant Western Australian culture is imbued with. As she argued,

This mindset is encapsulated in the notion of a "psychological terra nullius." This concept captures the notion that, whilst formal equality may have been seen to be accorded through Australia's democratic institutions, parts of the Australian community are still under the spell of the myth of terra nullius to the extent that they are not yet capable of affording the property rights of Indigenous Australians equal protection. Democratic institutions and sectors of the Australian community still embrace a version of history that ignores Indigenous presence, that continues the myth that Australia was unoccupied or without sovereignty before white settlement. (Behrendt, 1999a, p. 209)

This ongoing psychological terra nullius can be seen in debates over the siting of renewable energy, and was certainly present in New England at the time of my research.



### **Psychological Terra Nullius in Contestations Over the Siting of Renewable**

**Energy.** For those who consider transitions to renewable energy to be one part of broader eco–social systematic transformations under the banner of climate justice, and a potential site of (re)commoning, the unresolved invasion and dispossession of land from Aboriginal and Torres Strait Island peoples by colonial forces needs to be reckoned with. Across both the corporate and community energy renewable energy projects explored in this thesis, the issue of dispossession appeared to be of very limited consideration.

A common concern for residents when considering the establishment of New England as a REZ was the limited choice in locations for solar arrays and wind turbines due (at that time) to governments and corporations not wanting to provide financial support to establish new energy grid infrastructure and, therefore, only considering locations near existing grid infrastructure. Upon discussing the location of centralised corporate projects, several research participants, including those engaged in corporate and community projects in New England, responded by arguing for those projects to be located in the desert. In an example indicative of several similar quotes, one participant questioned,

Why are they attracted to the Tablelands as opposed to going out—why don't they go out to the desert? That's been a lot of the argument: "Why are you using this beautiful agricultural land to park these great big metal things on when you are losing all this grazing land? ... Put them in the desert." "Oh it's going to cost too much for the infrastructure," and I said, "So what? The land will be cheaper, the money that you don't have to spend on farmers, spend it on getting big systems in." (T. French, personal communication, March 29, 2019)

This common response to place centralised, corporate renewable energy "out there" where there is "no one and nothing" is a continuation the settler-colonial imaginary of terra

nullius or psychological terra nullius (Behrendt, 1999a, 1999b; van Holstein & Head, 2018; Lynch, 2014; Veracini, 2008). The desert is not empty space for those Traditional Custodians whose ancestral lands comprise remote Australia, nor indeed is the land in New England the sole property and purview of farmers. When it is suggested that renewable energy projects should be sited in the amorphous “out there,” psychological terra nullius and its ongoing impacts become further reinforced.

While privatised energy systems and capitalist eco-social relations can be considered to be perpetuating or harbouring psychological terra nullius, they are not the only ones. As a settler-colonial state, it would be imperative for any ecofeminist commoning projects to grapple with the violent dispossession of Aboriginal land and the ongoing effects of colonisation. Particularly if we are to use the language of (re)commoning, re-inventing the commons, re-establishing the commons and so forth. The only time the eco-social organisation of this continent was shaped around the commons was prior to colonisation. As argued by Coulthard:

In liberal settler states...the ‘commons’ not only belong to somebody – the First Peoples of this land – they also deeply inform and sustain Indigenous modes of thought and behaviour that harbour profound insights into the maintenance of relationships within and between human beings and the natural world built on principles of reciprocity, nonexploitation and respectful coexistence”. (2014 p.12)

The remainder of this chapter explores the concept of ecological rifts, discussing the tensions and contradictions that can arise in transitions to renewable energy between the global climate crisis and hyperlocal ecological impacts.

### *Ecological Destruction, Metabolic Rift, and Renewable Energy Contests*

This section takes up and expands upon the Marxist concept of metabolic rift. As explored by Bellamy Foster, despite critiques to the contrary, Marx did occasionally concern himself with nature and ecology. More specifically, Bellamy Foster pointed out that Marx paid attention to “the interaction between nature and humanity” (1999, p. 99). What Marx noticed was humanity’s “alienation of nature in existing forms of reproduction and the contradictory, nonsustainable character of the metabolic rift between nature and society that capitalism in particular had generated” (Bellamy Foster, 1999, p. 399). According to Bellamy Foster, Marx came to this concept of metabolic rift through examining and problematising

the concrete crisis represented by the degradation of the soil and by the problem of human and animal “wastes” that engulfed the cities. Both were equal indications, in his analysis, of the metabolic rift between humanity and the soil, reflected in the antagonism of town and country. (Bellamy Foster, 1999, p. 399)

In both of these examples, Marx witnessed a rift created by capitalist eco–social relations in what Salleh described as “the harmonious material process by which humans take from nature, digest, and give back in return is known as the humanity–nature metabolism” (2009, pp. 5–6).

While metabolic rift as a term was originally used to describe quite specific phenomena occurring through the growth of industrial agriculture and the urbanisation of Europe, the concept can be expanded beyond that. For this thesis, I use the term “ecological destruction” to discuss ecological rifts and crises that are caused, in one way or another, by capitalist eco–social relations. The remainder of this chapter will take up this concept through an exploration of anxieties, tensions, and concerns around water, biodiversity, and

industrialisation in the New England region—and how this intersects with large-scale renewable energy projects.

**Water.** “Water is a massive issue, a massive issue” asserted Peter Blomfield, farmer and Winterbourne Wind Farm turbine host (personal communication, February 17, 2019). Peter’s assertion was confirmed by nearly all other New England locals I spoke to. Anxieties around water at the time of researching were already heightened due to a current drought, water restrictions, changing rain patterns, floods, water pollution, water-use conflicts, and the crisis of the Murray-Darling River system in south-eastern Australia. In the years following this conversation, these anxieties would only grow as water crises continued.

“It’s just so sad,” continued Peter, “When you look at the environment and what it’s doing to the people. You go out to Wilcannia or somewhere and sit on the river and talk to that community and see how they feel. Or Wee Waa or Walcha” (personal communication, February 17, 2019). The devastation of people and place due to yet another drought in south-eastern Australia was a recurring motif throughout my conversation with Peter, and with others in the region. Although I was spending time with Peter predominantly to learn about his role in, and views on, transitions to renewable energy in the New England region, our conversation, much like a river, kept winding back on itself to the subject of drought, changing rain patterns, and water.

Peter was joined in these anxieties and observations of drought, changing rainfall patterns, and water by others in the region. Tom O’Connor, the treasurer for Z-Net Uralla, explained to me, “We are in a regular rainfall area. In fact, we were basically drought proof. Now for us to have a drought—it’s serious” (personal communication, March 29, 2019). Tom, an avid gardener, revealed to me that he kept meticulous rain records, and that those records had been revealing a drought pattern the likes of which the Uralla township had never previously seen.

**Rain, Floods, Water Use, and Renewable Energy.** For some people within the New England region, like Peter and Tom, the prospect of a renewable energy industry in the area was somewhat of a salve to these anxieties over how the climate crisis was impacting access to, and reliability of, water. As Peter aptly stated, “These are all the things that we have to deal with. This [renewable energy] is a sort of salvation for Walcha that will come from wind, solar and our renewable energy project but not for the rest of the country” (personal communication, February 17, 2019).

However, for others, a potential new industry being established in the region heightened anxieties around the ongoing disruption and destruction of water systems. These anxieties around water manifested very clearly in the contestation around the New England Solar Farm, where the impact of the project on the water table and a local floodplain were common concerns raised by those objecting to the project.

The majority of objections to UPC’s New England Solar Farm centred on concerns with the Southern Array of the project. The Southern Array was set to be located near a system of small creeks and watercourses called Salisbury Waters. The Action Group and several other local individuals included concerns about the impact of the Southern Array on this local water system in their submissions objecting to the project. Their concerns predominantly centred on the existence of a floodplain where the Southern Array of the solar farm was set to be located, and the potential flow-on effects the siting of solar panels on a floodplain might have.

However, the impacts on the floodplain, and indeed the areas of the floodplain that are the most prone to flooding, were a source of disagreement within the community. While those who opposed the project were more likely to highlight potential detrimental impacts to Salisbury Waters from the solar farm, others who were supportive of the project questioned the validity of those claims.

For example, Tom O'Connor, someone deeply concerned with the destruction of ecological water systems, understood and agreed with some of the concerns being raised by the Action Group. What he “didn’t put a great deal of store in is the flood plain.” He explained, “I don’t believe that the structures will change the floodplain. You know, I can’t see that happening” (personal communication, March 29, 2019). Similarly, Adam Edwards, a potential host landholder had the Southern Array gone ahead, challenged the claims about the impacts on the flood plain:

Much has also been made of the Southern Array being located on a “flood plain.” My land straddles Salisbury Waters, the principal sixth-order stream in the project area. My family has owned this land since 1950; in that time, there have been many floods. However, we have no record or recollection of any flood ever affecting the area planned for solar panels. Our records accord with the proponents’ flood mapping and the proposed siting of the arrays away from any identified flood-prone areas. (Edwards, 2019)

This argument was representative of other landholders in the area who were also supportive of the project.

Alongside this debate over the siting of a solar array close to local watercourses and on or nearby a floodplain, there were also concerns raised over the required use of water for cleaning the solar farm, and the potential for water pollution to occur. As with the floodplain issue, anxieties around the destruction of water systems in Australia informed local responses to both the broad idea of renewable energy, but more so to the hyperlocal impacts of these particular projects.

In February 2019, I visited the property of Peter Dawson, a member of the Action Group whose land overlooked the area where the Southern Array for UPC’s New England

Solar Farm was originally proposed to be built. Standing on top of a hill on his farm, Peter pointed out where the development was proposed to be situated, where local waterways were, and where he believed the area was prone to flooding. As he was pointing these sites out to me, he explained some of his concerns around the impacts of the project on water:

The other issue here is this area down here is a catchment area to Macleay River, close to Kempsey. So, you've got an aquifer that runs along the flat area there. During times of flood—I wish we had a flood now to be honest—down there is almost a sea of water and what doesn't drain into the aquifer drains into Salisbury creek and it ends up down Macleay. What are the residual substances [that] may potentially come off these solar panels over years? The solar panels have to be cleaned. It's our view that quite obviously—but I could be wrong—there's a ready source of underground water there, so why wouldn't they try and source that to clean their solar panels? [Putting] detergent into the aquifer what does that do? (P. Dawson, personal communication, March 17, 2019)

These questions demonstrate not only Peter's anxieties and concerns about impacts on local water systems, but also the importance of the provision of information about renewable energy projects. This will be further discussed in Chapter 10, but it is useful to note here that the lack of available information and the difficulty in accessing information both heightened local concerns about renewable energy projects and allowed misinformation and panic to circulate within the community.

It was not only Peter Dawson, the Action Group, and those opposed to renewable energy who were concerned about the potential for water pollution, and the vagueness of information. Teresa French, the membership officer for Z-Net Uralla at the time of researching, held similar concerns: “When they wash the things all that water is going to go

down [into the watertable] and what's in the chemicals?" Teresa pondered, "I actually asked these questions the other day to UPC and I got some answers but I wasn't left feeling warm and fuzzy, it was just a lot of 'I don't know,' or 'Oh, no, that's not a problem'" (personal communication, March 29, 2019).

The following quote from the Action Group's submission opposing the project is indicative of the broad concerns over the impact of large-scale renewable energy projects on local water systems:

The Action Group objects to the Irreparable Interference with precious water resources on Salisbury Plain. At a time when our precious water resourcing is under even greater scrutiny—it is not in the public interest to show disregard to the contribution of the Salisbury Waters. The Group's concerns confirm that at the very least a very precautionary principal approach should be adopted to UPC's somewhat shallow water resource assessments. The Group believes the preservation of upper catchment water resources is one of major resourcing and environmental issues confronting NSW Communities. (Uralla–Walcha Community Responsible Solar/Wind Action Group, 2019)

This paragraph, with its use of emotive language such as "irreparable interference," "precious water," and "environmental issues confronting NSW communities," demonstrates not only the depth of concern of those involved in the Action Group but also their understanding of the importance of using persuasive language to argue their case. Water is a highly contentious and emotive issue in regional Australia and both the project proponents and opponents would have been aware of the power of discourse around the destruction or preservation of water systems in the public contestation over the New England Solar Farm.



There is no doubt that there are anxieties in the New England region about the degradation and destruction of local water systems. However, these anxieties produce different responses in different people with regard to local renewable energy projects. For some, the establishment of renewable energy projects is a welcome response to the climate crisis, and one avenue through which to halt the damage already being wrought to rain, flood, and drought patterns. For others, the potential for localised detrimental impacts on water systems to be caused by large-scale renewable energy projects heightens anxieties about ecological destruction, resulting in strong opposition to the establishment of renewable energy projects in the area.

Among these contestations and concerns are signs of alienation from nature. Clearly, many of those opposed to the establishment of large-scale renewable energy projects in the region—and even some of those on the fence—held views that these projects could contribute to the ongoing destruction of water systems and a furthering of humanity's alienation from our relationship with nature. For some, there was a perception of the renewable energy industry being more interested in the profitability of projects than in the ecological benefits that can come from a transition to renewable energy. There was a perception that a purportedly environmentally friendly project could have devastating local ecological consequences.

For others, humanity's alienation from nature that had manifested up until that point was evident in the ongoing drought. For these people, the connection between worsening droughts, changing rainfall patterns, and the climate crisis was demonstrative of our alienation from nature—and renewable energy projects were a key ticket out of the crisis – both their own personal economic crisis as farmers, and the broader climate and biodiversity crises.

For both those who opposed the projects and those who supported them, there were some attempts to work towards de-alienation from nature—although none of them would have necessarily described it as such. This demonstrates the importance of transitioning to renewable energy and of ensuring that localised impacts are genuinely considered and resolved. These glimmers of de-alienation will be further explored in the remaining chapters.

The potential for hyperlocal impacts on water was clearly a key concern in the contestation over UPC's New England Solar Farm and likely contributed in part to the removal of the Southern Array from the final development application. These concerns over impacts on water bled into another key concern which was another site of ecological destruction and metabolic rift—biodiversity. Alongside Salisbury Waters there is another important water site called Dangar's Lagoon. As nearby property holders Starr and Starr included in their submission objecting to UPC's project:

The effect and devastation this will have on natural water lagoons and ways. Dangar's Lagoon is a very important part of the ecosystem in this area. It provides a safe haven for migratory birds. We are also very worried about the pollution into water ways and destruction of habitat for wildlife. (Starr & Starr, 2019)

**Biodiversity.** I was sitting in the office of Teresa French, membership officer for Z-Net Uralla, in the local printing shop she runs on the main street of Uralla. "Everything, everything, everything has a use," exclaimed Teresa, "and if you get rid of all the bugs you just wait and see what happens. It's not going to be a very pleasant world" (personal communication, March 29, 2019). Out of all the participants from the New England region, Teresa was the one who appeared most strongly concerned with the ecological rifts evident in the global biodiversity crisis (IPBES, 2019).

Teresa's anxieties around the global biodiversity crisis and the climate crisis evidently informed her response to large-scale corporate renewable energy projects in the region. Her concerns seemed to exemplify these tensions and contradictions that could manifest around biodiversity and large-scale corporate renewable energy projects. As an executive member of Z-Net at the time, Teresa was actively involved in the local project to make Uralla a zero-net emissions town. She was a local ambassador for sustainability initiatives and she had serious concerns about UPC's New England Solar Farm and other forthcoming large-scale renewable energy projects in the region. Teresa explained,

My biggest concern, is what it's [UPC's New England Solar Farm] going to do to the climate and to the countryside and to the animals. We were talking about sustainability yesterday and I thought, where are all the little bugs going to go? We need all those things and we are turning this [region] into a wasteland. That's the worry, that the whole place is going to be turned into a wasteland. ... My concern was that all these acres and acres of flat metal solar panels, what's that going to do to the climate? What's that going to do to the level of the temperature of the place? The climate's already mucked around with here, it's going to be even more so in those areas and then I started thinking, yesterday after the talking about the biodiversity stuff, I thought, "That's going to get destroyed too." (T. French, personal communication, March 29, 2019)

Here, Teresa was referring to Z-Net's Elephant in the Woodlands project on sustainable firewood. As part of the project, they were teaching locals about the importance of sourcing sustainable firewood to avoid detrimental impacts on local biodiversity—specifically smaller animals and insects reliant upon fallen trees. Teresa felt there was a

contradiction in promoting sustainable firewood practices and ignoring or downplaying those same biodiversity concerns when establishing a large-scale solar array in the same region.

Although Teresa put her concerns about global and local biodiversity destruction at the centre of her considerations of renewable energy, she was not alone in raising concerns about the impacts of large-scale renewable energy projects on local biodiversity. In multiple submissions objecting to or commenting on UPC's New England Solar Farm, issues around soil erosion and quality, flora, fauna, endangered species, and migratory bird patterns were raised. The potential impact on local and migratory birdlife appeared to be of particular concern in these submissions.

The impact of renewable energy technologies on birds has been a common refrain heard spoken by those who oppose renewable energy, particularly in relation to wind farms (Drewitt & Langston, 2006; Hindmarsh & Matthews, 2008). Research has demonstrated that the impacts of renewable energy projects on flora and fauna pale in comparison to the impacts of the fossil fuel industry (Sovacool, 2012; Wang et al., 2015), but that does not mean that there are no impacts. As with many of the considerations around renewable energy projects, there are tensions and contradictions in the establishment of energy infrastructure that is, in part, seeking to address the global climate crisis but which could cause some negative localised impacts.

Of course, it is not only the local birdlife that could feasibly be impacted by the establishment of large-scale renewable energy projects. New industries and infrastructure will often require changes in land use, land clearing, the introduction of foreign materials and chemicals, changes to local waterways, and numerous other changes in the local ecosystem and landscape. The following excerpt from a submission opposing UPC's New England Solar Farm demonstrates how technological responses to the climate crisis can press up against localised concerns of biodiversity disruption and destruction:

We are concerned regarding the impact that the proposed development will have on the outstanding biodiversity value of our property. On and near Cloud Hill are species of flora and fauna that may be impacted by the proposed development. We understand that the New England Tableland Bioregion, of which Cloud Hill is a part, provides habitat for 68 flora species listed in the schedules of the Threatened Species Conservation Act. Thirty of these species are listed as endangered, 39 are listed as vulnerable. In terms of fauna the New England Tableland Bioregion supports a considerable proportion of the endangered regent honeyeater (*Xanthomyza phrygia*) population in woodland fragments. Numbers of grassland and ground-feeding insectivorous birds have declined in the bioregion, as have some temperate woodland and forest species, mainly due to changes caused by agriculture (e.g., land clearing and habitat fragmentation), a trend which is likely to continue and has occurred across temperate Australia (Australian Terrestrial Biodiversity Assessment, 2002). Ninety-two fauna species listed in the schedules of the TSC Act [*Threatened Species Conservation Act 1995*] have been recorded in the New England Tablelands Bioregion (NSW NPWS, 2001). Of these, 18 are listed as endangered, 72 are listed as vulnerable and a number of species are considered extinct in the bioregion.” (NSW Office of Environment and Heritage <https://www.environment.nsw.gov.au/bioregions/NewEnglandTableland-Biodiversity.htm>) We are concerned that the rich biodiversity that we have in and around Cloud Hill will be significantly disrupted with potential devastating effects and impacts on endangered and vulnerable fauna and flora due directly and indirectly to the proposed development. (Newsome & Newsome, 2019)

This tension between building large-scale renewable energy projects to address the climate crisis while simultaneously potentially harming local biodiversity is a situation ripe

with potential for Donna Haraway's call to "stay with the trouble" (2016). What is to be done when activities that seek to save the planet harm the local environment? (If indeed, that is the goal of renewable energy projects). How do we reconcile the lives of individual birds, bugs, and bees in the New England region (van Dooren, 2010), with the need to transition to renewable energy? My conversation with Teresa and the inclusion of biodiversity considerations in submissions objecting to or commenting on the New England Solar Farm demonstrate that at least some people in the region are attempting to think through what staying with the trouble looks like at a local level. What sacrifices are they willing to make, and what are they willing to fight to save? And amid all of that, what do they have the power to change when dealing with multinational energy corporations? Even those building renewable energy have a bottom line to obey. These questions remain largely unanswered, and will likely be key sites of conflict and contestations as the world transitions to renewable energy.

In these debates and discussions exploring the impacts of large-scale renewable energy projects on local biodiversity, recognition and consideration of humanity's alienation from nature is present. Teresa's worrying about the impacts on insect life, the owners of Cloud Hill worrying about the impacts on threatened fauna and flora, and others worrying about the impact on local and migratory birds all reveal an understanding that industrial activities are a major cause of the global biodiversity crisis. There appears to be an understanding that through these activities we not only harm the planet, we also harm ourselves. The tension between local ecological destruction and global ecological destruction is particularly heightened in contestations over large-scale renewable energy. This site of tension will be crucial to reckon with, not only in New England but everywhere that renewable energy projects are being, and will be, built.

### ***Ongoing Industrialisation and solastalgia***

Alongside concerns and tensions around biodiversity and water, ecological destruction caused by the ongoing industrialisation of land on this continent (and elsewhere) has also informed local responses to large-scale renewable energy projects in the New England region. The history and ongoing practice of industrial agriculture in the region and local fears of an increasingly industrialised landscape were present in the contestations over renewable energy in the New England region.

The study of mental health impacts on communities on the frontline of fossil fuel production resulted in the conceptualisation of a new type of environmentally induced distress - solastalgia. Coined by Australian psychologist Glenn Albrecht (2005) solastalgia is distress caused by the environment around a home radically changing without the person's consent. A 2007 study saw Albrecht and a transdisciplinary team examine the prevalence and impact of solastalgia on rural residents affected by open-cut coal mining in the Hunter Valley. Ethnographic field work revealed that residents 'sense of place, their identity, physical and mental health and general wellbeing were all challenged by unwelcomed change' (p.96).

Albrecht poignantly defined solastalgia in the following paragraph,

"It is the pain experienced when there is recognition that the place where one resides and that one loves is under immediate assault (physical desolation). It is manifest in an attack on one's sense of place, in the erosion of the sense of belonging (identity) to a particular place and a feeling of distress (psychological desolation) about its transformation. It is an intense desire for the place where one is a resident to be maintained in a state that continues to give comfort or solace. Solastalgia is not about looking back to some golden past, nor is it about seeking another place as 'home'. It is the 'lived experience' of the loss of the present as manifest in a feeling of dislocation; of being undermined by forces that destroy the potential

for solace to be derived from the present. In short, solastalgia is a form of homesickness one gets when one is still at ‘home’ (2005, p.45).

While solastalgia was conceptualised around local environmental changes due to open-cut coal mining, the concept can be applied to other types of large-scale, infrastructural change to place - including the establishment of large-scale renewable energy projects. As will be explored below, it could be argued that some of those opposed to large-scale renewable energy projects in the New England region are beginning to experience solastalgia, particularly as a result of their concerns over ‘industrialisation’ of the region. This can be further linked to the idea of alienation from nature, as some people in the region feel they will be further alienated from ‘nature’ as a result of incoming large-scale renewable energy projects.

Discussions and debates around the issue of industrialisation present quite complex and rich examples of alienation from nature—both in people’s recognition of aspects of this alienation but also their ignorance of other aspects. A particularly notable distinction that was held by many people I interviewed was between the types of ecological destruction already being rendered by industrial agriculture and the potential for ecological destruction through the establishment of renewable energy projects. For many, the potentiality of destruction from a new industry was more concerning than that which had already occurred through the existing industry of agriculture.

Like many areas in rural and regional Australia, the New England landscape has been irrevocably altered by the past 230 years of colonisation and the accompanying industrialisation of land. As discussed in Chapter 6, the colonial history of New England is one centred on the violent displacement and dispossession of the Dunghutti and Anaiwan peoples from their land, who were displaced by industrial agriculture and small settler communities.



However, while local Anaiwan people have pointed out that the New England landscape is already heavily industrialised through the colonial agriculture system of the past 230 years (Clayton-Dixon, 2019), many settlers would not necessarily regard it as such. Indeed, the following quote from Action Group member Peter Dawson exemplifies a commonly held concern about large-scale renewable energy projects bringing industrialisation to the New England region:

I guess it's not going to stop with the UPC proposal ... you'll have Mirus [Walcha Energy Project] coming in on the top and beyond that you'll have other developers coming in. We're looking at changing the whole landscape of the area. From an agricultural, tight-knit community that is leveraging its history to almost an industrial sort of zone. (P. Dawson, personal communication, March 17, 2019)

For Peter and others in the New England region who shared his concern, their aversion to an industrialised landscape was, in part, driving their opposition to large-scale renewable energy projects. The impacts on the land from renewable energy projects, the cumulative impact of multiple projects, competition for land between renewable energy and agriculture have all informed and influenced local opinions on renewable energy. This perceived conflict (Clean Energy Council, 2021) between agriculture and renewable energy, and fears of rural industrialisation are not unique to the New England region; these tensions can be found in other regions grappling with an emerging renewable energy industry (Australian Energy Infrastructure Commissioner, 2020; NSW Farmers, 2019; Vorrath, 2021).

While the majority of locals opposing the New England Solar Farm on industrialisation concerns appeared not to consider agriculture as industrial, there were those who did recognise industrial agriculture's ecologically destructive tendencies. I was sitting in the leafy beer garden of Uralla's Top Pub on a cool afternoon in May 2019. Sitting across

from me was Suzanne Wright, a member of Z-Net Uralla and owner of a local regenerative farm with her husband, Tim. Alongside being involved in Z-Net more generally, Suzanne and Tim were partnering with Z-Net Uralla on their project on sustainable firewood Elephant in the Woodland that involved hosting sustainable firewood collection workshops on their property.

For Suzanne, whose lifelong interest in social and environmental wellbeing was evident across our conversations, the problems she recognised in industrial agriculture raised subsequent concerns regarding the establishment of large-scale corporate renewable energy projects: “Those [conventional, industrial] farms, in my opinion, are contributing to the environmental disaster that we’re facing with climate change,” Suzanne argued. Then linking the argument to the emergence of large-scale renewable energy projects in the region she further mused, “ These farmers, they’re in the middle of a drought, so you hit them at a time when they are worried about their income, and they grab at the silver bullet” (personal communication, May 17, 2019). Here, Suzanne was referring to the lease payments that landholders receive for hosting a wind farm or a solar array on their property—the tensions around which are to be discussed in further detail in Chapter 10.

### ***Conclusion***

This chapter has sought to demonstrate the myriad ways in which transitions to renewable energy are embroiled in eco–social relations that contribute to the perpetuation of humanity’s alienation from nature. Particularly, renewable energy projects that are built through a state–capital nexus more focused on the capitalist economic benefits from renewable energy, than in using the transformation of our energy system as an opportunity to also transform our destructive eco–social relations. Despite renewable energy contributing to global attempts to resolve the climate crisis, this chapter has demonstrated the numerous local tensions, alienations and contradictions that can arise through the establishment of renewable

energy projects. However, as foreshadowed in the earlier chapters of this thesis, transitions to renewable energy do not necessarily need to contribute to the continuation of humanity's alienation from nature. In the next chapter, we turn to an exploration of how attempts at de-alienation from nature are manifesting around renewable energy in both New England and the Northern Rivers.

## Chapter 10: “Figuring Out the People Systems”: Social Reproduction in Renewable Energy Transitions

*Those engaged in social reproductive labour can and do defy the alienating and life-crushing tendencies of capitalism to assert and create new forms of relations with each other and with the natural world.*

- Ferguson, 2019, p. 141

This chapter explores how people are seeking to shift social relations and de-alienate themselves from one another through energy system transformation, and it considers how successful these attempts have been. Drawing predominantly on feminist social reproductive theory, the chapter will describe the theory and reflect on each of the case studies examined in this thesis. In particular, the chapter will make use of key concepts introduced in Chapter 4, centred on regenerative labours. This chapter predominantly focuses on the social provisioning aspects of social reproduction and regenerative labours rather than physical provisioning. Drawing together feminist economic scholarship Power (2004) defined social provisioning as including “unpaid and caring labour; emphasis on well-being; analysis of economic, social, and political processes and power relations; articulation of feminist ethical values; and inclusion of class, race-ethnicity and other factors of difference” (p.7). Although the physical provisioning of energy and electricity is a core goal of the case studies explored, the social provisioning aspects, including relational connections, care, and collaboration are of more interest to the purpose of this chapter.

While a full review of feminist social reproduction theory is outside the scope of this thesis, recent key texts reviewing the literature (Ferguson et al., 2016; Ferguson, 2019; Gimenez, 2019) and key theorists will be drawn upon to introduce and situate the field. Four key discussions and insights from feminist social reproduction theory will be briefly explored in this section:

- 1) Women's work and the gender division of labour;
- 2) The Autonomist and Marxian schools of thought;
- 3) Regenerative labours as antidote to capitalism and;
- 4) The positive aspects of social reproductive labour.

All of these will be brought together to examine the contribution of feminist social reproduction scholarship to alternative world-building and de-alienation from one another, and how this links to the spectrum of possibilities afforded by our energy transformation.

### ***Social Reproduction and Regenerative Labours***

Feminist social reproduction theory is not a new field. Nineteenth century socialist feminists Anna Wheeler and William Thompson are often credited with laying “the foundation of the social reproduction feminism trajectory by insisting that ‘women’s work’ be counted as part of the overall production of social wealth” (Ferguson, 2019, p. 120). As argued by Ferguson, the 1825 text by Wheeler and Thompson, *Appeal of one half the human race, women, against the pretensions of the other half, men*,<sup>11</sup>

pushed feminist discussions about labour beyond the rational–humanist parameters of earlier feminism, into the realm of political economy. This groundwork makes it possible to shift the analytic focus from the gender division of labour to the relation between “women’s work” (social reproductive labour) and waged, capitalistically “productive” (value-producing) work. (Ferguson, 2019, p. 120)

Ferguson provided a broad definition of social reproductive labour, stating that

it includes the daily and generational work women have typically performed of giving birth to and raising and caring for children. But it also includes the work people do to

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<sup>11</sup> Originally cited only under Thompson’s name, recent scholarship has highlighted the crucial contributions of Wheeler to the text and corrected the citational record to include her (see Jose, 2019).

sustain themselves and others as human beings more generally, their individual and collective “survival strategies through which people accomplish their basic life tasks.” (Ferguson, 2019, p. 111)

Gimenez similarly defined social reproduction and also highlighted the socioeconomic relations and interplay between different institutions:

Social reproduction is a complex concept which, in contemporary societies, involves market level relationships among various institutions (e.g., the family, the state, educational institutions, healthcare systems, elder care, childcare) which, together with the input of domestic labour, enter into the processes of maintaining and reproducing, on a daily and generational basis, labour power and the labouring population. (Gimenez, 2019, p. 15)

It is these broader labours of “the work people do to sustain themselves and others” that this chapter is particularly interested in. That is, the work—paid and unpaid—that people are doing to contribute towards de-alienated futures including energy futures.

**Women’s Work.** As explained in Chapter 4, this thesis uses the term regenerative labours to explore where community building, deep relational work, and caretaking of planet and people are being centred in transitions to renewable energy. Another term for these collective labours that has been used quite widely is “women’s work”—seeking to highlight the gender division of social reproductive labour.

Materialist feminist scholars argue that social reproductive work and regenerative labours have not been delineated as “women’s work” through some more natural inclination to this type of work. It is instead a complex series of social and historical relations. Speaking to this, Ferguson suggested that “the determining conditions of what does and does not get produced, and how the production and reproduction of life and the world are organised,

however, are not simply natural. They are also social” (2019, p. 16). Expanding a similar argument Salleh suggested,

An ecological feminist perspective emerges from praxis—action learning—and has nothing to do with some special “virtue” of “the fairer sex and weaker vessel.” The global majority of women—being mothers and care givers—are culturally positioned as labour right at the point where humanity and nature interact. Likewise, men “outside of” capital, such as small farmers and forest dwellers, undertake regenerative, or meta-industrial labour. (Salleh, 2009, pp. 6–7)

A key goal of feminist social reproductive theory and broader materialist feminisms is to highlight the value inherent in regenerative labours and to agitate for futures where feminism is not about women fitting into a “man’s world,” but where regenerative labours are deeply valued and recognised as integral to the good life for people and planet. As argued by Salleh:

Men are quite capable of regenerative forms of labour and the life-affirming epistemology learnt from doing them. For example, the meta-industrial provisioning<sup>12</sup> of peasants or gatherers demonstrates an economic model that synergises the satisfaction of human needs with enhanced metabolic flows in nature. (Salleh, 2009, p. 295).

Importantly, there is a corresponding goal of shifting regenerative labours away from being considered as “women’s work” and towards bringing people of all genders into these life-affirming labours. As highlighted by Salleh, we do not have to look too far to find

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<sup>12</sup> Salleh collectively refers to women, Indigenous peoples and subsistence labourers as the meta-industrial class / labourers (2009, pp.14-30).

cultures and ways of living where people other than women are engaged in regenerative labours:

Ferguson argued that contemporary feminist social reproduction theory “moves beyond earlier understandings of ‘women’s work,’ emphasising that it may be paid or unpaid, performed in households, communities, or paid workplaces. And although it is conventionally gendered, *such work does not have to be performed by women* [emphasis added]” (2019, p. 141).

One of the roles of a feminist researcher is to notice gendered dynamics and roles where others, perhaps less attuned to gender as an analytical frame, may not. I have long noticed that in anti-fossil fuel movements women are more likely to be in relational roles (paid and unpaid) that require communicating, organising, provisioning, and caring. In commencing my research into renewable energy futures, it quickly became apparent that women were leading the decentralised community energy sector and were seriously under-represented in the centralised, corporate renewable energy sector (Clean Energy Council, 2021).

However, this thesis seeks to contribute to the goal of increasing the value and recognition of regenerative labours for all people, not only women. The forthcoming exploration of different case studies will demonstrate that, while women do still dominate this space, people of other genders are deeply involved in the regenerative labours associated with ushering in more harmonious eco–social relations through our energy transformation.



**Autonomist and Marxian Schools of Thought.** The autonomist and Marxian schools of thought within the field of feminist social reproduction scholarship are part of broader, centuries-old debates between communism and anarchism. As will be explored throughout this chapter, autonomist feminists suggest that the best way to dismantle capitalism is to set up alternative systems, programs, and movements outside the state-capital nexus; they seek and contribute towards autonomous communities organising alternative futures together. The Marxian school of thought is more aligned with communist futures where the role of the state is rearticulated to serve people and planet instead of capital.

As Ferguson discusses, “socialist feminists have still not resolved earlier debates about how best to untangle the relation between social reproductive and capitalistically ‘productive’ labour (2019, p. 121). The question at the heart of this debate is: Do we create new collectivised spaces outside the state-capital nexus, as argued by the autonomist school, or do we work from inside the current system and rearticulate the role of the state as argued by Marxians?”

Although, as discussed briefly in Chapter 2, I lean more towards the autonomist school of thought—finding the hierarchical and corruptible tendencies of the state as an institution to be largely irredeemable—resolving the debate between anarchism and communism is, unsurprisingly, outside the scope of this thesis (indeed, it is outside the scope of any one person in an academic setting). However, the differences in solutions put forward between the autonomist and Marxian schools of thought in feminist social reproduction theory provide crucial insights into the regenerative labours visible in the ethnographic field of this thesis. Thinking with both of these schools of thought we are able to explore the role of the state, how people are interacting with it—or avoiding it—and how de-alienating regenerative labours are contributing towards building particular energy futures.

### **Feminist Social Reproduction and Regenerative Labours as Antidote to Capital.**

These two schools of thought are reproduced elsewhere, including in scholarship more specifically exploring solutions to the climate crisis. In linking the climate crisis to capitalist economies, many scholars and activists have argued that eco-socialism or eco-anarchism are socioeconomic systems that could allow us to respond to crises in a more just way than is possible under capitalism (for example: Aronoff et al., 2019; Bookchin, 2007; Goodman 2010).

However, in emerging conceptualisations of eco-socialism or eco-anarchism, care will need to be taken to dismantle the human–nature divide and to value the currently devalued work of regenerative labourers—experiences and skills required for these more harmonious futures to be born. Without paying greater attention to past and current externalisations of both regenerative labours and of the destruction of nature, socialist or anarchist futures could feasibly reproduce unequal power relations and alienation, leaving out many people the movement/s purport to represent.

Feminist activists and materialist scholars across the fields of ecofeminism, social reproduction, and feminist ecological economics have conceptualised and, in some cases, materialised economies outside the capitalist paradigm while also responding to the continued undervaluing and invisibilisation of regenerative labours—including under previous socialist and anarchist movements and societies (For example see accounts of Zapatista women’s political struggles both inside and outside of their organisation and social movement: Castillo, 1997; Klein 2015). In her book *Earth democracy*, ecofeminist Vandana Shiva refers to these feminist economies as living economies. She suggested,

Living economies rejuvenate ecological processes while reactivating people’s creativity, solidarity, and interdependence. Robust living economies are people-centred, decentralised, sustainable, and livelihood generating. They are based on co-

ownership and co-production, on sharing, and participation. Living economies are not mere concepts; they exist and continue to emerge in our times. Living economies are being shaped by ordinary people in their everyday lives. (Shiva, 2016, p. 63)

Materialising living economies for her readers, Shiva points to the Chipko movement, the Navdanya farmers' network, Lijjat Papad, and Dabbawalas. Each of these is an existing or past movement where women, farm labourers, and the poor have self-organised and either fought for continued access to forests, to land, to commons, or have carved out their own subsistence economies outside, and often directly confronting, the dominant capitalist economy in India.

Furthering the conceptualisation of “life-centred alternatives” to the capitalist economy, Brownhill and Turner argued,

Capital is dependent upon and cannot survive without the life-centred work of women, peasants, Indigenous peoples, youth, the informal sector, and all waged and unwaged workers—plus nature. But the converse is not true. Subsistence is autonomous from capital and must become more so if human communities are to survive. (2009, p. 234)

Feminist sociologist Ana Isla referred to this as the “ecofeminist subsistence perspective” and highlighted how materialist ecofeminism posits that

subsistence producers all over the world—the majority of whom are women and/or feminised—should be seen as experts who can lead the way to recovering autonomous ways of living, starting from territorial and bodily autonomy, food security in small farms and energy efficiency. (Isla, 2019, p. 30)

Here, Isla is continuing the conceptualisation of subsistence workers set out by Ariel Salleh (1997, 2009).

Of course, upon contact with terms such a “provisioning,” “sufficient,” “sustenance,” and “subsistence,” there is the potential for conjuring up images of desolate futures lacking joy, abundance, or choice. Jonathan Symons, when arguing for an ecomodernist future suggested that degrowth is unrealistic at best and neo-colonial at worst as it would stop countries in the Global South from developing along the modernist trajectory of Western states (2019).

However, this argument revealed that Symons, alongside other ecomodernists, are assuming a homogenous desire within all people in the Global South to “develop” into a capitalist modernist state, as if there were no other options.

Recognising that some of the language utilised around eco-socialism could be potentially off-putting or misleading, anthropologists Dominic Boyer and Cymene Howe , alongside sociologist Daniel Aldana Cohen, created a part-presentation/part-performance called *Low carbon leisure, low carbon pleasure* (2018). They described the aim of this piece:

We need to decarbonise our economy and way of life to avoid the worst scenarios for global warming. But giving things up that you enjoy isn't a lot of fun. So, it's no surprise that it's hard to get large numbers of people, Americans anyway, signed up for carbon austerity programs. So we want to turn the tables from austerity to plenty and start talking about all the good times you can have while not contributing to global warming. (Boyer et.al, 2018)

Feminist social reproduction scholars have suggested that these “good times” can at least partially be found in the regenerative labours that are currently devalued and invisibilised under capitalism. It is to those arguments that we now turn.

**Positive aspects of social reproductive work.** Martha Gimenez’s 2006 essay ‘Loving alienation: The contradictions of domestic work’ explores why she believes that domestic labours, and regenerative labours more broadly, should be “conceived dialectically” and that they are “characterised by negative and positive features” (Gimenez, 2019, pp. 257–258). It is these positive features in particular that this chapter is interested in exploring and drawing upon. There is a tendency for scholarship, activism, and public discussions around social reproductive labours to concentrate on specific domestic labours like housework, and to focus on the drudgery, difficulty, and isolation of such work. While these are valid concerns, there is the other side of regenerative labours that is meaningful, creative, and often even joyful – something that alienated labour is only rarely.

Gimenez highlights how “domestic labour is not just about the production of use values and services, but about the expression of feelings, caring, and solidarity” (2019, p. 265). She suggested that

domestic labour can include activities and experiences of agency, self-realisation, caring, reciprocity, and cooperation, which are the material basis for the emergence of needs and values critical of the selfish, competitive, and dehumanising world of capitalist work and social relations... domestic labour is neither total drudgery, oppression, the terrain of “animal functions,” nor the main destiny to which all women should aspire; it is a set of socially necessary contradictory activities, some unpleasant, and some enjoyable and constructive, which allow people to experience and learn a variety of behaviours and expectations that have *the potential to fuel the emergence of a critical consciousness, antithetical to the alienated world of capitalist economic and social relations* [emphasis added]. (Gimenez, 2019, pp. 269–270)

Ferguson similarly spoke to how social reproductive labours contribute to future imaginaries that are crucial to the work of alternative world-building:

“Work” in this reckoning is expansive. It includes the things people do to create their entire worlds—not just their labour for lords or capitalists. Hoeing fields, assembling cars, and mining coal are certainly part of that work. But so are tasks such as wiping runny noses, clearing dishes from the table, writing poetry, and organizing birding expeditions. ... It is precisely this expansiveness that captures feminist imaginations—both as a lever of social critique and as a vision for building alternative worlds. (Ferguson, 2019, p. 16)

Through drawing on the ethnographic case studies, the remainder of this chapter will explore how experiences and activities of “agency, self-realisation, caring, reciprocity, and cooperation” can contribute to de-alienation from one another and to alternative world-building in transitions to renewable energy. The chapter will explore how these positive aspects of regenerative labours impact people’s experiences of being involved in energy transitions and seeks to highlight some of the joys, reciprocation, and hopes that prioritising social reproductive labours can bring to world-building in energy system transformation. Readers are invited to consider how this differs from the discussion and exploration of alienation in the previous chapter, and how the prioritisation of regenerative labours can shift eco–social relations around energy transitions.

### ***Regenerative Labours: Z-Net Uralla***

Z-Net Uralla is framed by its members and supporters as a community organisation rather than a renewable energy organisation. This distinction influences the work and decisions of the organisation and points to the recognition of those involved of the importance of regenerative labours in eco-social transformation—specifically in the sphere of

energy. Their mission statement, quoted below, exemplifies their commitment to care, regeneration, and cooperation in their efforts towards energy justice:

Mission: To assist the people of Uralla Shire to come together to build resilience as we transition to a regenerative and sustainable way of living that minimises demand for resources, maximises health of the community and environment, while proactively responding to future challenges. (Z-Net Uralla, n.d.)

The centring of local people and their empowerment in the process of the energy transformation that this country is slowly but surely undergoing demonstrates the group's commitment to energy transitions that seek to de-alienate people from another, as well as from energy infrastructure and our living planet.

"I like the idea of helping people," explained Tom O'Connor, Z-Net Uralla's treasurer. "You know it's good. It makes you feel good" (Personal communication, March 29, 2019). Helping others is a central tenet of Z-Net Uralla's work and is a driving motivator for many within the organisation. While they are open to using their skills, knowledge, and resources to help anyone within the community, there is an energy justice perspective that pervades their priorities. When I first met Sandra Eady, then-President of Z-Net Uralla, in a local café, this justice perspective within the organisation became apparent throughout the conversation.

In that first conversation, Sandra explained to me the "really, really strong grassroots equity" that informed their work (Personal communication, February 18, 2019). Some of the work they have done includes negotiating energy bill reductions or vouchers for pensioners, providing free home energy audits, and running insulation curtain sewing workshops. Much of this activity is aimed at low-income households such as pensioners and renters.

For example, if you were to walk into the Uralla library on a Thursday from 2 pm onwards you would be greeted with the sight of Trish Rasmussen, Z-Net Uralla's Projects Officer. Every week Trish sets up in the library ready to help residents and businesses of Uralla with their energy management. She said, "People will wander in; some make an appointment, some don't, they bring their power bills in, sit down and say, 'This is where I am at, what can I do? I'm thinking of solar, what can I do?'" (S. Eady, personal communication, February 18, 2019).

Alongside their drive to help their community, those involved in Z-Net Uralla are conscious of the different skills they bring to their collective and of the importance of collaboration. When I interviewed individuals from Z-Net, they all invariably brought up the skills of the others, and how they all work together. Upon seeing them working together these complementary skills and collaboration were very apparent. For example, Tom O'Connor explained,

[I have] skills in accounting and governance, so I was able to help the group. [I] take all that worry about financing and how to do things correctly and help other people to do the things that can be done. I'm not at the front line, I'm background. You have Sandra and Peter and you know what their energy is like, and Trish. The trio can do what they can do because if they need funds, I can find it. (T. O'Connor, personal communication, March 29, 2019)

Similarly, Teresa French, the group's membership officer at the time, became involved in the project because she was passionate about building community cohesion. When discussing her involvement, Teresa explained that she focused on community building for Z-Net projects, and left the technical aspects to those with the relevant skills. "I am not



technical at all. Usually what they talk about, it just goes ‘Voom!’ straight over the top of my head and I just say, ‘I trust you, ’” (personal communication, March 29, 2019).

We can see in these brief snapshots of the work, priorities, and motivations of Z-Net Uralla a deep recognition of the importance of social reproduction and regenerative labours in their efforts towards a sustainable and de-alienating energy transformation. From my time in the field, Z-Net Uralla was a wonderful example of regenerative labours shifting away from being “women’s work” to being vital, valued work that was core to the goals and identity of the organisation—work that was carried out by people of all genders.

Z-Net Uralla can be viewed through the lens of both the autonomist and the Marxian fields of feminist social reproduction theory. From one perspective, their efforts fit into an autonomist framework as Z-Net members seek to do the work of ushering in a sustainable, regenerative energy future for their community themselves. Through their work educating people in their community, assisting to make energy more affordable and clean energy more accessible, there were clear attempts at (re)commoning processes, however theirs is not a physical commons – at least not at this stage as the group was quite resistant to establishing a community energy project due to the (seemingly insurmountable) time and financial resource requirements.

Their efforts could also be recognised as fitting in to a Marxian framework, as they attempt to demonstrate to the state the importance and success of community energy initiatives, with the aim of shifting state priorities in its provision of, and support for, particular energy futures. However, there was no discernible, explicit critique of capitalism, or even of the obstacles and destruction that capitalism generated, nor acknowledgment of any necessity for dismantling the capitalist state and replacing it with a peoples’/workers’ run state – as a true Marxian framework would advocate.

As is common across most of the case studies drawn upon in this thesis, their efforts were somewhat constrained and dependent upon the state and capital. While Z-Net Uralla is currently less dependent upon government funding, the original development of the Z-Net Uralla Blueprint was funded by the NSW Office of Environment and Heritage and the organisation has sought and accepted government grants to fund some of their project work. More recently, Z-Net Uralla has sought and received funding from the New England Solar Farm through their community benefit sharing initiative – further embedding connections between Z-Net Uralla and state-capital institutions.

While many of these case study projects can be analysed through autonomist or Marxian frameworks, if the organisation or the people involved themselves are not engaging in explicit praxis that seeks to either rearticulate the state away from capital or to create alternatives outside of the state-capital nexus, they typically find themselves both beholden to, and constrained in their efforts by, the state and capital. This does not necessarily mean that their efforts are not worthwhile; it does, however, demonstrate the limits of piecemeal attempts to resolve the alienating, for-profit energy system and broader alienated eco-social relations under capitalism.

***Regenerative Labours: Centralised Renewable Energy Projects in New England.***

**New England Solar Farm.** Although previous chapters have explored the many ways in which the NESF contributed towards new and pre-existing social divisions and alienation between people, there were genuine examples of the community collaborating with one another and with the company to improve community cohesion and build more agency for the community into the project. These came particularly towards the end of the planning process and the beginning of the construction of the project, and demonstrated a certain level of willingness to learn and improve community relations on the part of UPC project

proponents—although not without considerable effort and initiative on the part of local community members.

As outlined in a report written by the author of this thesis on behalf of Australian renewable energy advocacy organisation RE-Alliance, there are a multitude of ways in which local communities can be involved in and benefit from large-scale renewable energy projects (RE-Alliance, 2021). These include genuine community empowerment through involvement in the design (International Association for Public Participation, 2018), planning and operational phases of projects, and the co-design of community benefit sharing initiatives (CBSI) such as community enhancement funds, First Nations benefits, neighbour benefits, in-kind donations, co-location of solar and agriculture, local procurement, community co-ownership, co-investment of the project, and much more. However, for this level of collaboration and empowerment to occur, companies must prioritise the relational, regenerative labours that are required and devolve a certain level of power and profit away from the company—neither being particularly common traits among for-profit corporations.

As discussed in a previous chapter, Z-Net President Sandra Eady almost immediately recognised that the project team for UPC's NESF was compromised of predominantly male engineers who did not have the required skills to effectively build community empowerment or relationships into the project process. The company eventually hired a consultant (a woman from the Community Power Agency) to facilitate their early community engagement around community benefits.

Two Community Reference Groups (CRG) were established at different points along NESF's planning process. The first was created while UPC was designing their CBSI, with the role of the CRG being to provide recommendations and feedback on what, where, and how funds designated for the local community should be spent. Once the CBSI was designed, this group was disbanded and in early 2020 the second CRG was established consisting of

seven local residents. Locals were asked to submit expressions of interest to join the CRG, with UPC deciding the final make-up of the group. It is unknown to the author of this thesis if anyone who applied to be on the group was rejected. This group was responsible for the implementation of the Uralla Grants program and to continue to consult and recommend on other CBSI projects throughout the life of the project.

Alongside her involvement in Z-Net, Sandra Eady was one of the seven members of the CRG for the NESF. Speaking to her in March 2021, after construction on the project had started, Sandra gave me a quick overview of the some of the work the CRG had been doing, and their aspirations for the future:

We wrote out our first round of grants. It was \$50,000 total and they were small \$5,000 grants. That largely went to [Country Women's Association], sporting clubs, running a bike repair workshop, Greening Uralla ... there were about 10 small community-oriented grants. The second round is going to be pretty much the same; it's just opening now. What we will get I am not sure, but at some stage we are going to saturate that sort of appetite and none of it is strategic, so hopefully at that stage we will get a better conversation in the community reference group about being a bit more strategic. (S. Eady, personal communication, March 30, 2021)

Ultimately, companies engage in these CBSIs because it helps their bottom line. Whether the community initiatives and collaborations continue throughout the project remains to be seen.

**Walcha Energy Project.** The WEP, particularly Winterbourne Wind Farm, is an unusual case study in the expansion of community empowerment during the establishment of a large-scale renewable energy project. Mark Waring, the founder and director of MirusWind, began consulting with the community of Walcha about the project in 2004—making the engagement process 18 years at the time of writing. Although Winterbourne Wind is now owned by a different company, landholders involved in the project credit Mark for the unique level of community trust and empowerment.

“The policy all the way has been to tell everyone everything they ask,” explained Peter Blomfield, farmer and host landholder for Winterbourne Wind. “There are some things that can’t be answered but [Mark’s] generally, he’s been open with everyone” (personal communication, February 17 2019). When I arrived at Peter’s home in Walcha, he was working on the tractor in his front paddock, moving trees that had been knocked down in a recent storm that wreaked havoc along the east coast of Australia. We sat drinking tea at his dining room table, overlooking the view of rolling hills and—far in the distance—the mountain ranges of Oxley National Park.

Before arriving, in my pre-fieldwork research I had discovered the claim that MirusWind had been engaging with Walcha residents since 2004, which, having an understanding of typical community engagement processes for large-scale energy projects in NSW, I found extraordinary. I asked Peter to explain to me how the Walcha community had been engaged and empowered in the development process for the WEP.

What Peter outlined for me was an ongoing, iterative process where certain people within the Walcha community were given significant access to co-designing the Winterbourne Wind project while others were left predominantly uninvolved. Peter explained how in the early stages of the project development he became “a sort of conduit” between Mark and the local people of Walcha, opening up access and a starting point of trust that

likely would not have been granted without a known local voice. From that initial stage, the project grew as landholders signed up:

Initially, MirusWind started with the Winterbourne area and with 10 or a dozen landowners in that area. We worked through developing a lease agreement and that took four years. It was difficult but we worked through it and then we had to develop a code of conduct for the landowners and for the developer, and we had to work out a rent agreement so that we knew our parameters on what sort of money we could earn by participating. (P. Blomfield, personal communication, February 17, 2019)

The patience of the developer here is quite interesting and not particularly common:

[I] don't know if we've been to 120 properties ... it's a lot of people, a lot of farmers. We've sat down with their family, with ma and pa and the kids, and the older children. Since this has started, some of the ones we started with are not here anymore and we've got the next generation already who are involved. So, this process has been lengthy, very lengthy. (P. Blomfield, personal communication, February 17 2019)

However, as happens with many large-scale renewable energy projects, in 2019 MirusWind sold the Winterbourne Wind project to Vestas, a multi-national corporation. While the groundwork that MirusWind and the local community had laid together for the project locked Vestas into certain community engagement and community benefit obligations, the transition was not entirely smooth and renegotiation of certain benefits was required. These negotiations were ongoing, and so the final outcome for the local community remains to be seen (Winterbourne Wind Farm, n.d.).

This common experience of corporate projects changing ownership demonstrates how regenerative labours of collaboration, communication, and trust-building can only go so far within the current context of the for-profit, privately owned energy system. Eighteen years—

and counting—of community collaboration on a large-scale renewable energy project, only to have the state of play shift quite significantly in the later stages of the project.

What both of these large-scale corporate renewable energy projects demonstrate is that local communities are putting in work to try to change the eco-social relations of energy, particularly where community agency, collaboration, and prosperity are concerned. Companies have relied on the—mostly unpaid—regenerative labours of local people in the community in which their project is sited, to help the project earn social licence with the local community. While social licence is notoriously difficult to quantify, renewable energy companies appear to understand the costs involved in trying to establish a project that the local community is hostile towards.

The question remains: If the social approval of renewable energy projects is predominantly earned through the unpaid regenerative labours of local people, wouldn't an energy system owned by the people, for the people, be preferable? As it stands, with the for-profit, privately owned model of energy transition, a serious power imbalance remains where the company chooses whether or not to collaborate with locals, to empower locals, keep agreements, and to build meaningful, strategic benefits together. It is predominantly local people performing regenerative labours, particularly communication, collaboration, and caring for people and planet, that is the impetus for these community benefits and community involvement in these projects.

In a way, these communities are attempting to rearticulate the state-capital nexus by encouraging greater agency for local communities in large-scale renewable projects by working with companies to build in more meaningful community engagement and benefits, and in using political, parliamentary, and planning levers to push the government to include people in energy projects and the broader transition. The main problem is the fundamental incompatibility of capitalism with de-alienation. At the end of the day, these companies and

these projects are built around the profit motive, as opposed to a relationship building motive, and profit will always win out. While there are glimpses of the Marxian social reproduction framework at play—more so than autonomist—the rearticulation of the state–capital nexus would need to be far more radical for these types of large-scale renewable energy projects to be considered examples of eco-socialist futures. One solution would be to re-nationalise Australia’s energy system and to bring these large-scale projects under state control rather than private companies, but there were no such case study examples in the regions I focused on, so this model was outside the scope of this thesis.

### ***Regenerative Labours: Northern Rivers***

As discussed in previous chapters, community opposition to CSG in the Northern Rivers that culminated in the Bentley Blockade protest was a catalysing phenomenon for the establishment of community renewable energy projects in the region. The coming together of all types of people from within the community, and their ability to collaborate and work together towards a common goal, arguably shifted community relations permanently and contributed to a strengthening of community cohesion (Kia & Ricketts, 2018; Luke & Lloyd, 2018).

When discussing the Bentley Blockade with people now involved in community renewable energy space in the Northern Rivers, the ability to build alliances and get to know people who had previously been quite alienated from another was a common theme that arose in conversation. Svea Pitman, who was involved in the Bentley Blockade, Community-Owned Renewable Energy Mullumbimby, and Enova Community Energy, expressed how important this building of community connections was:

NIMBYism got them [involved in the Gasfield Free campaign] and water conservation was probably the driver more than climate change or coal seam gas.

Then through that doorway came a whole lot of education and engagement and new



relationship building, and it was amazing. It was one of the best protests I've ever been involved with and not purely because of the numbers, which is obviously great, but because of that social interface and education and connection between diverse groups that wouldn't normally be standing together—the alliances that came out of that were just amazing. (Personal communication, June 26, 2019)

In a similar discussion about de-alienation between people that occurred during the Bentley Blockade, former mayor of Lismore, Jenny Dowell, recalled,

Surprisingly, out in the country where they saw the risk [of CSG] directly, there were people coming together who normally will cross the street to avoid each other. I can still remember out at Goolmangar Hall, I will say their names because it's public—Len Martin who is a scientist, grey-haired, probably in his late 70s, 80, a real Green-voting hippy-like, with his arm around Bruce Sherman, who was, I think, president of the local National Party branch, a dairy farmer, generational. They came together against coal seam gas. (Personal communication, February 25, 2019)

This building of connections within the community, the dismantling of old rivalries and divisions, and working together towards a common goal created an incredible force to be reckoned with—and is likely one of the defining factors of the success of the campaign.

The regenerative labours that went into building the Gasfield Free Northern Rivers campaign have had ongoing effects—long after the campaign was won. These connections and collaborations within the community have continued over into the community renewable energy space in the Northern Rivers. Indeed, as previously discussed, Enova Community Energy arose as a direct result of the Bentley Blockade. It is to that case study that we now turn.

**Enova Community Energy.** Enova “was definitely founded from a community interest in stopping the coal seam gas at Bentley,” explained Alison Crook, co-founder and Enova board member, “and then also from the community financing the enterprise” (personal communication, October 22, 2019). Enova Community Energy’s ability to get off the ground and become a successful social enterprise was born out of the regenerative labours and community cohesion that was built throughout the Gasfield Free Northern Rivers campaign. The birth of an energy retailer out of an eco-social movement is rather extraordinary in an otherwise quite corporate, for-profit industry.

By seeking to establish “a company that is about communities, customers, and the welfare of our planet, not corporate profits” (Enova Community Energy, 2020), the founders, board, and managers of Enova have needed to prioritise regenerative labours including collaboration, cooperation, and consideration of energy justice. Their not-for-profit arm, Enova Community, in particular is a space where regenerative labours are centred.

“Oh, it’s really easy,” started Bec Talbot, Enova Community Manager during the time of research, “battery systems, off-grid, you know, figuring out how to do that, growing your own food. It’s not rocket science. What is rocket science is figuring out how to share resources, so it’s about the people systems” (personal communication, November 27, 2020).

Bec’s focus on the “people systems” that are needed for community energy projects to work was indicative of her approach to managing the not-for-profit arm of Enova Community Energy; an approach that was demonstrative of regenerative labours where she was people focused, rather than technology focused. When speaking to her in late 2020, she consistently brought our conversation back to collaborative communities and their ability to stave off climate anxiety, to bring about meaningful change in response to the climate crisis, and to challenge and dismantle alienation between people and planet:

The climate problem is completely overwhelming. But these little things we can achieve together ... how we can actually have cohesive, collaborative communities who are forward thinking and trying to plan their own futures and being active participants. It gives you something to hold onto. We can have some control over our future and we can help co-design where we want to go. When in reality with corporate donations from the fossil fuel lobby, there's a lot that we can't control. But this is one thing that can be controlled. (Personal communication, November 27, 2020)

Bec's belief that building collaborative communities through projects like Enova is one way to have some control in a society experiencing eco-social crises is rather devastating given that the organisation collapsed eighteen months later. While Bec had only recently joined Enova when I spoke to her, her predecessor in the role, Svea Pitman, also centred collaboration when discussing her work, as did Alison Crook—the three representatives of Enova whom I spoke to and spent time with as part of my research.

A critical aspect of Enova Community's work was collaborating with other community and energy organisations around Australia. How Enova Community worked with other organisations is particularly useful for thinking through de-alienation from others in the renewable energy sector. Svea described the relationships as “collaboration, not competition” multiple times throughout our conversations. They attempted to achieve this in a number of different ways, including partnering with community organisations on renewable energy projects, presenting at events and workshops, and jointly running projects and campaigns with other organisations in the community energy space. However, while Enova was successful in building collaborations and reciprocity within the relatively small space of the Australian community energy sector, their inability to ‘compete’ with massive for-profit multi-national energy corporations within a competitive, financialised energy market was crucial to their collapse.

Like Z-Net Uralla, Enova sought to be an organisation that prioritised energy justice in their work. As Alison explained to me,

We are a social enterprise and we are set up to enable everybody to be able to participate, not just the people who can afford it. Now at the moment, the people who can afford it are buying solar, buying batteries—I've bought a battery—and they are going as close as they can to stepping off the grid without bothering to. That will be the future unless we can make renewables work in a decentralised way. ... The last thing we want is to have a group left out of all of that who are still stuck. If everybody else has stepped off the grid because the costs have got too high, everybody who can afford to and says, "I'm okay Jack," then that's not the model we want to see. We're seeing that it's our role to change the model and make it one in which everybody can share the benefits. (A. Crook, personal communication, October 22, 2019)

When writing up my field notes prior to the collapse of Enova, I wrote the following paragraph:

Enova Energy as an organisation seems to recognise the privatised, corporate energy sector in partnership with a State still supportive of fossil fuels, as a problem they seek to address—however they are working largely within the same system. Social enterprises are more aligned with social democracy than Marxian or autonomist theories of change: "There is a danger that social entrepreneurship might end up addressing the symptoms of the capitalist system rather than its root causes" (Dey & Steyaert, 2012, p. 91). Through essentially recognising the state–capital nexus as the problem but only seeking to tweak it rather than dismantle capital, Enova could find themselves becoming unrecognisable as they grow.

With Enova's collapse in 2022, the dangers of establishing an energy provider as a social enterprise at the present juncture lies not necessarily in being subsumed further *into* capital but rather being annihilated by it. The corresponding conclusion, however, remains more or less the same: individual, piecemeal community energy projects cannot presume to solve the problems of fossil capital – even with regenerative labours being prioritised.

### **Lismore Community Solar Initiative.**

At its core, the Lismore Community Solar Initiative (LCSI) was a collaborative project in which regenerative labours were prioritised. There were entwined collaborations between Lismore Council, Farming the Sun, local community members, community energy organisations, and other local councils across Australia. Although varied, these collaborations demonstrated a desire on the part of those involved to share knowledge and skills, and to support one another—to varying extents—through the establishment of community energy projects.

The collaborative aspect of the LCSI became apparent early in my forays in the field. “We knew we wanted to be partnering with our community,” explained former Lismore mayor Jenny Dowell, when discussing the Lismore Community Solar Initiative (LCSI). “We would be reaching our renewable energy goal, we will be community partnering, showing leadership, and model of sustainability—it was just all of those things all in one and the community really loved the idea” (Personal communication, February 25, 2019).

A key lesson from the LCSI is the importance of having local champions and organisers who understand and are passionate about not only the project outcome but the project process—particularly the collaborative, community efforts. For the LCSI, many of these organisers were women. For instance, Jenny Dowell was the mayor of Lismore at the time, Sharyn Hunnisett was the environmental officer at Lismore Council, and Susanna Carpi

was the community engagement officer for Farming the Sun. Indeed, one of the community directors of the LCSi claimed that “the project would never have happened without Jenny [Dowell]” (J. Watkins, personal communication, February 23, 2019).

However, when I put this gendered perspective to Ms Dowell, her response was more focused on the skills and attitude that different people brought to the project process:

The people who were involved, whether they be good men or good women, were used to working collaboratively. They weren't used to making a decision from the top ... [they were] just used to collaborative decision-making, consensus and taking the time to plan from a grassroots point of view rather than that top-down directional kind of approach. (J. Dowell, personal communication, February 25, 2019)

In this exchange, it is evident that Jenny was making a distinction between the people who were working on the solar project. This is reminiscent of the point ecofeminists and other feminists are often at pains to make—that feminist actions and futures are not the sole purview of women. Indeed, many women, particularly in the Global North, actively work against feminist futures, and many men actively contribute towards them. The gender of the person is not necessarily key. This response demonstrates a key tenet of the feminist epistemology centred in this research project. Here we go beyond an essentialised “men versus women” and instead consider how the skills, knowledges, experiences, and ways of being and knowing that have been socially coded as “feminine”—such as collaboration and caring—can shift our eco-social relations around energy.

Like Enova, those involved in the LCSi considered the sharing of knowledge, skills, and experience with others as an integral part of their role. Discussing a conference organised by the Coalition for Clean Energy in 2014 Sharyn explained:

I was invited there to share this dream that we had for having a community energy project and what was so cool was that I got invited back in 2017 and we could go, “We did it.” So that was just the best thing ever...That was one of our key objectives, was to have this as a showcase model. (S. Hunnisett, personal communication, February 26, 2019)

Sharyn’s excitement at being able to share what was learnt through the process of creating and implementing the LCSi can be seen as somewhat of an antidote to the individualism and competition that is integral to capitalist economies. Jenny Dowell appeared similarly as pleased as Sharyn to be able to share lessons with others – particularly other Councils within Australia:

During the Community Strategic Plan process, the IMAGINE Lismore and also during the Community [solar] farm stuff, I had mayors and councillors from councils all around Australia ringing me to say, “How did you do this? Can we talk about that?”” So, yes, a lot ... a lot of people wanted to know how we did it. (J. Dowell, personal communication, February 25, 2019)

Susanna Carpi summed up the sentiment quite beautifully:

So, there’s this real sense of legacy. It’s not about the recognition for me, it’s really this sense of legacy that I helped do this. That’s my dot in life in some ways, a small dot [that] hopefully will be overshadowed by hundreds of much larger floating solar farms in the future (S. Carpi, personal communication, February 27, 2019).

While the project was not everything they had originally envisioned, these three women, Susanna, Jenny and Sharyn, were able to find joy, meaning and satisfaction in the collaborative and reciprocal aspects of the LCSi.

Considering the LCSi within the framework of Marxian social reproduction theory, we can see that there were clear attempts to rearticulate the role of the state to create renewable energy projects that served the needs of the local community rather than a profit motive—at the local representative level of the state at least. However, these attempts were somewhat hindered by more powerful actors within the state–capital nexus, particularly state and federal regulators on energy, corporations, and markets.

The LCSi was part of the broader REMP project of Lismore Council, which sought to “self-generate all our electricity from renewable sources by 2023” (Lismore Council, 2022). The fate of the REMP is another example of the limitations of piecemeal attempts to rearticulate the role of the state to service de-alienated energy futures. As discussed in this chapter, the regenerative labours—particularly of people like Jenny Dowell, Susanna Carpi, and Sharyn Hunnisett—were crucial to the relative success of the LCSi. What happens when people and organisations that understand the importance of centring regenerative labours in energy transition move on from projects? Jenny Dowell retired from local government in 2016, Susanna Carpi’s role with Farming the Sun was only funded for a certain amount of time at the height of organising the LCSi, and in fact, Farming the Sun and its parent organisation Starfish initiatives indefinitely suspended their operations from March 2021 (Starfish Initiatives, 2021), and in February 2019 Lismore Council announced a budget deficit of \$6 million, resulting in projects being cancelled or put on hiatus and staff being made redundant. The REMP was one of the projects put on indefinite hiatus and Sharyn was made redundant from her role in 2020. As discussed by Marshall,

In 2020 the environmental officer’s [Sharyn’s] job, which included planning the renewable energy transition, was scrapped. This was apparently not formally discussed in Council, nor reported locally in advance, indicating the Council’s work was not embedded in the community. While Council did plenty of consulting, they



did not help the community organize themselves, nor am I aware of close working relations between Council and pro-renewables groups (2022, p.7).

As Jenny was deeply involved in and passionate about the REMP, perhaps if she had still been mayor when Lismore Council discovered their budget deficit it may not have been cancelled and Sharyn may not have been made redundant. Perhaps the long-term *cost-saving* implications of the REMP would have been better understood, or Sharyn better supported to advocate for the project. Had Susanna had a permanent, ongoing role as a local organiser for community renewable energy initiatives, perhaps local public awareness of the LCS, the REMP and community, renewable energy more broadly would have been stronger; perhaps there would have been a stronger local social backing of the project and public outcry at its cancellation – of which, in reality, there was minimal. Broadly, if regenerative labours were more deeply embedded in the ongoing work of renewable energy projects such as these, their success wouldn't be reliant on several key people remaining connected to the project.

### **The Homestead**

Residents of the Homestead were involved in the Bentley Blockade and many had also been involved in a multitude of other campaigns against the state and against capital to protect community and nature. The Homestead was created with the explicit aims of carving out space for agency and building community accountability and care outside of the state-capital nexus—an autonomist project. At the time of establishment (and more or less continuing at the time of writing) the objectives of the Homestead were:

1. To be a community of friends
9. To encourage the flowing of spiritual understanding and freedom through:
  - a) right understanding
  - b) right thought

- c) right speech
- d) right action
- e) right livelihood
- f) right effort
- g) right mindfulness
- h) right concentration

10. To collectively and individually abstain from:

1. killing living beings
2. taking what is not freely given
3. false speech
4. sexual misconduct
5. substances which intoxicate and confuse the mind

11. To experience ourselves and each other in wholeness and community:

1. through birthing and dying
2. learning and growing
3. sheltering and providing
4. celebrating and sorrowing

12. To be responsible to each other for these sacraments and for all our lives as one family. (Homestead Residents, n.d.)

As might be evident from these objectives, the Homestead was established at a time when Buddhist teachings were quite influential within the Australian and global counter-cultural movement. While not everyone currently residing at the Homestead was influenced by Buddhism, the lived values remain mostly consistent with the founding objectives, with residents encouraged to care for self, community, and the land. There is also a strong culture

of modelling regenerative lifestyles and providing space for learning and education for non-residents who visit.

The Homestead is an autonomist project. As with the other case study projects discussed, the challenges being experienced by the Homestead demonstrate the limitations of piecemeal attempts to shift eco–social relations of energy systems. While the off-grid energy system is not the centre around which the broader homestead project revolves, it is a crucial piece of the puzzle and is indicative of the challenges that autonomist projects face. For the Homestead to continue to work as a functioning autonomist community, it needs to have a functioning energy system; for this particular off-grid system to continue to function, it needs to have people who know how it works and how to fix it. The Homestead has the rather perplexing situation where they are possibly over-supplied with people who predominantly perform regenerative labours, and are in need of more people with “productive” labour skills such as electricians—albeit in the service of the community, not profit. The frustrations that Jack and Steven have experienced in attempting to get the other residents of the Homestead to either learn to run the system or prioritise new residents with electrical skills highlights the necessity of building the right people systems alongside energy systems. You can go outside of the state–capital nexus to establish autonomist projects like the Homestead, but you need alternative, sustainable systems in place to continue to function across the long term.

### ***Conclusion***

As discussed in previous chapters, community engagement efforts, communication, and lack of trust were all related to a sense of alienation from specific renewable energy projects, but also from other people within the community and broader stakeholders. This chapter demonstrates the inverse is also possible; that regenerative labours can contribute to processes of de-alienation, to a greater sense of trust and collaboration—leading to varying

levels of community cohesion and reintegration. However these labours appear limited in effect when drawn upon for renewable energy projects situated within the state-capital nexus.

Regenerative and reproductive labours are not only about sustenance, but about building relationships, networks and connections. This in turn may enable people to be more resilient and co-operative even if when their specific project may not work. In a sense reproductive labours are regenerating community and contributing towards de-alienation-from-one-another.

## **Chapter 11: De-Alienation from Nature and the (re)commoning potential of community renewable energy**

The previous three analysis chapters have explored ideas around alienation from nature and alienation from one-another, and de-alienation from one another through the lens of community and corporate renewable energy projects. The forms of alienation explored in this thesis centre on those created by the prioritisation of economic relations between people and between people and nature. It is a contention of this thesis that transitions to renewable energy can occur along a spectrum of possibilities, and that some of these possibilities are more able to contribute towards de-alienation-from-one-another and de-alienation-from-nature. This final substantive chapter firstly considers where de-alienation-from-nature is being attempted through renewable energy transitions in regional NSW and then brings the analysis to a close by questioning whether (re)commoning is being conceptualised or materialised in any of the case study projects explored in this thesis. To do this, the chapter will explore ideas around eco-sufficiency, energy sufficiency, more-than-human commoning and the (re)commoning potential of energy. It is to eco-sufficiency that we now turn.

### ***Eco-Sufficiency***

Eco-sufficiency is a concept that defines new, or old, potential paradigms through which people can live while centring their activities on regeneration and care of the planet rather than profit. I argue that community energy projects could link in with future eco-sufficient paradigms and (re)commoned futures, but that it is not necessarily a foregone conclusion and requires significant political struggle.

As has been explained by feminist economists, women's lived experience of managing households and domestic budgets, results in skills and knowledge in providing nourishment, shelter, and often joy in complex situations and with limited resources. This knowledge will be invaluable in moves towards eco-sufficiency, and it could be argued that

the involvement of women in community energy, the focus within community energy on sufficiency, and the economic and material skills and knowledges of women are connected.

### **Energy Sufficiency.**

In 1999, after witnessing a change in the terminology employed around energy use, Australian energy expert, Dr. Gill Owen, posed a question in her book *Public purpose or private benefit? The politics of energy conservation*:

“Is there a difference,” she asked “between energy efficiency and energy conservation or is this change purely semantic? Does the change of terminology affect the choice of policy instrument and the way in which energy conservation is ‘sold’ to the public?” (1999, p. 8).

Owen demonstrated that the shift in terminology away from conservation to efficiency did correspond with a shift in policy focus. She argued that energy *conservation* was predominantly linked to policies that aimed to minimise energy use for environmental and social outcomes, whereas the change to energy *efficiency* terminology corresponded with a rise in policies and programs directed at individual consumer changes and outcomes. At the time, Owen posited that the rise of individualised, neoliberal energy politics and rhetoric could go one of two ways—either towards reducing energy consumption or to employing the rhetoric of reduction with no accompanying action. However, she was writing before the rapid rise in energy consumption and carbon emissions over the past two decades, at a time when it could still be somewhat reasonably assumed that some action on global warming would be taken imminently.

Decades on, we can see that the change in language from energy conservation to energy efficiency has largely resulted in increasing planned obsolescence of white goods and feel-good rhetoric rather than actual energy use reduction (Moloney et al, 2010; Thoyre,

2015; Wall, 2000), although of course there remain those committed to practices and policies more associated with energy conservation – including some of the people and organisations involved in this research. I have argued elsewhere that:

Energy efficiency is a term which has now been with us through some of the most frustrating, stifling years of energy policy. Transitions from the fossil fuel economy to renewable energy futures deserve new language to inspire and guide new policy directions, new ways of relating to energy and new ways of engaging with one another. (West, 2020)

Therefore, despite the continued use of the term energy efficiency by the community energy organisations explored in this chapter, this thesis will instead use a derivative of eco-sufficiency - energy sufficiency. Ecological economists ask these key questions: “How much is enough?” and “What satisfies our needs and makes for the good life?” (O’Hara 2009, p. 182). I suggest that energy sufficiency is a term that could help us to advocate for and work towards energy transitions that centre regeneration, care and reciprocity. As discussed in chapter three, eco-sufficiency promotes only producing and consuming what is needed for healthy, joyful lives, and a thriving living planet. We need emissions decline and ecological regeneration, eco-sufficiency as defined here requires both. Energy sufficiency takes these principles and applies it to energy production, generation and consumption.

Unfortunately, there are segments of the climate and renewable energy social movements that have adopted a position of energy growth in Australia, and have even adopted imperialist language to promote their vision. Organisations such as World Wildlife Fund Australia (WWF Australia) and the Australian Greens are pushing a campaign for 700% renewable energy production and for Australia to become a ‘Renewable Energy Superpower’ (Mazengarb, 2022; WWF Australia 2021). This type of rhetoric and narrative

promotes a continuation of eco-social relations built on consumption, growth and dominance, which is in direct contravention of the stated goals and aims of the two organisations. The Australian Greens, for example, have four pillars through which the aims and principles of the organisation are centred; peace and non-violence, ecological sustainability, participatory democracy, and economic and social justice (Australian Greens, 2022). A core argument of this thesis is that renewable energy production of the scale that would be necessary for 700% of Australia's energy needs to be produced here is more-or-less antithetical to energy justice, and possibly to ecological sustainability.

Where some of the bigger, more powerful organisations in the climate and energy space are advocating for energy growth future, there are organisations that are more in-line with energy-sufficient futures. The remainder of this section will explore how and where energy sufficiency is present in the community energy advocacy and practice, via our case studies on Z-Net Uralla, Lismore Council Solar Initiative, Enova Energy and the Homestead.

### **Z-Net.**

Energy sufficiency is a core concern for Z-Net Uralla as they have an explicit focus on minimising energy use and improving energy literacy prior to installing renewable energy technologies as part of their energy justice work. As one member put it, they want to first “engineer out the problem” through home energy reviews, insulation and education on energy use, and only after energy use has been minimised do they move towards installing home renewable energy systems (Z-Net Uralla, n.d. c). “So, we’ve helped a lot of people think about how to size their systems, how to cost their systems, how to, you know understand the business case for putting in solar” (S. Eady, personal communication, March 18, 2019). Through prioritising energy sufficiency, Z-Net are helping their community to understand



their energy usage and to require smaller renewable energy systems than they would have needed had they not implemented changes to minimise their energy needs.

Z-Net's commitment to what I've called 'energy sufficiency' directly relates to their regenerative and caring goal of assisting low-income families and individuals to save on their energy bills. They use all sorts of gadgetry to test appliances, thermal signatures and have designed and built their own contraptions that allow them to get incredibly detailed data on energy usage and thermal levels in houses and buildings. They outline on their website,

A team is looking at homes to see how the owners or tenants can make them more energy efficient and comfortable. We have developed tools to enable this process. The tools have been designed to meet the various scenarios e.g. rentals, firewood & solar. The result always has suggestions for everyone: from installing under floor installation to putting lids on pots when cooking. For every household no matter their income there is an affordable option to improve home energy performance (Z-Net Uralla, n.d.d).

Z-Net Uralla is interested in not just switching homes and businesses to renewable energy with no other behaviour change, they are educating people on energy use and practising energy sufficiency.

In the field I saw that educating people of all ages on energy use and sufficiency was very important to Z-Net Uralla. On a Thursday afternoon, I joined in a meeting between Z-Net Uralla and a local primary school. The school had recently had a massive power bill and so had contacted Z-Net to help reduce them in future. Z-Net was working with the school to turn the opportunity to reduce power bills into a teaching moment for the kids. In the meeting they started designing a plan to visit the school every fortnight across one term to engage the kids with most steps of benchmarking energy use, finding energy usage priority areas,

coming up with solutions, and enacting those solutions. Collaborating with the CSIRO Science in Schools Program, Z-Net Uralla has since implemented their primary school science program with both local primary schools (Z-Net Uralla, n.d. (c)).

Through their activities such as home energy reviews, workshops and partnerships with schools, Z-Net Uralla is an example of energy sufficiency in practice. They have helped people to become more conscious of their energy use, and more able to implement solutions to energy waste. While they are only one small organisation operating in one small regional town, their actions demonstrate the potential to build energy sufficiency into our energy futures. The less energy that people need to use, the fewer resources will be needed to build large-scale energy projects.

It appeared that for the majority of people engaging with Z-Net Uralla, the motivating factor behind their foray into energy sufficiency was an economic one. Similarly, while Z-Net Uralla's vision is for "A sustainable Uralla Shire in a sustainable world", their more detailed mission statement is largely framed around the economic benefits of their energy work. Their stated (truncated) mission statement is

to assist the people of the Uralla Shire's transition to energy self-sufficiency, based on renewable sources, and to allow our community to confidently participate in the unfolding revolution in energy technologies...Z-NET is giving Uralla the opportunity, not only of being part of the solution to renewable energy supply, but also the opportunity to build futurist, vibrant local businesses based on renewable energy.

There is a question, then, around whether Z-Net Uralla's energy sufficiency work can be considered as part of de-alienation from nature. While their activities are contributing towards fewer demands being made on nature and the planet, the explicit goal of living more harmoniously with the planet was only present for some of the people I witnessed engaging

with Z-Net Uralla. For some within the organisation itself, de-alienation from nature is certainly a motivating factor to their involvement in the work, but the economic benefits of energy sufficiency are perhaps more compelling – particularly to the low-income communities with who they work. Of course a contention of this thesis is that economic and ecological benefits are not mutually exclusive, and that we need to build futures where people and planet can both thrive.

As with Z-Net Uralla in New England, community energy proponents in the Northern Rivers are practising and promoting energy sufficiency. This is in direct comparison to centralised, corporate renewable energy projects (and some renewable energy advocates) which have an explicit profit and therefore growth motive. It is to these Northern Rivers case studies that we now turn.

**Enova Energy.** The energy sufficiency work of Enova Community, the not-for-profit arm of Enova, was very similar to that of Z-Net Uralla through their focus on minimising energy use, providing energy literacy education, and helping low-income and disadvantaged communities to access more affordable and clean energy. Sitting in the office of Enova Community's manager at the time, Svea Pitman, I noticed that she had stuck a Z-Net Uralla poster on her wall. Asking her about it, I was interested to learn that the two organisations had worked relatively closely in the past, with Enova Community even teaching some of Z-Net Uralla's energy auditors.

Enova Community explicitly connected their energy literacy and energy sufficiency work to issues of energy poverty, housing, and community cohesion. Speaking on an ABC Radio Science program, founding board member Alison Crook explained,

Our not-for-profit arm has recruited and trained a stunning group of volunteer energy coaches, all keen to help others learn how they can reduce their energy use and costs. Right now, they are busy working with community housing tenants as we roll out a

program we developed in partnership with the NSW Office of Environment and Heritage, a local philanthropist, and a regional community housing provider, to put solar on social housing rooftops. The volunteers are also working with two other community groups, (Community-Owned Renewable Energy Mullumbimby and Zero Emissions Byron) to roll out a street-by-street program encouraging households in each street to commit to reducing emissions and costs. (Crook, 2018)

Here we can see that broader social and relational work was being built into the renewable energy transitions Enova was working towards. Not only this, but there was an explicit goal and accompanying work being done to minimise energy usage—in turn contributing towards energy sufficiency for the brief window of time before the organisation went into bankruptcy administration, partly because of a price crisis in electricity supplies

**Lismore Community Solar Initiative.** Through the LCSi and their REMP more broadly, Lismore Council had embarked on a program of energy sufficiency. The REMP demonstrated that, at least some people on council, recognised the potential for renewable energy and energy sufficiency policies and programs to significantly lower energy costs over time, to minimise energy use, to increase energy literacy, and to localise energy production – and that these were all good things to pursue.

In Australia, as elsewhere, much of the early fossil fuel energy generation, transmission, and retail infrastructure was provided and owned by municipalities. As the grid and population grew and became more interconnected, some of this infrastructure shifted to state rather than municipal control. The past 30 years of neoliberal capitalism in particular have seen the privatisation of significant amount of energy generation, transmission, and retailing. What Lismore's REMP could have represented, and what the LCSi partially achieved, is a shift back to the re-municipalisation of energy, such as that experienced on a much larger scale in Germany (Becker et al., 2016).

Bringing energy back into the municipality also has the potential to shift the logic behind energy generation. Instead of a profit motive, as has become the dominant motive under privatised energy systems, re-municipalisation could return the motive to one of use, and arguably, financial savings. Through seeking self-sufficiency of energy, Lismore Council had invested in greater energy literacy and energy use minimisation, both within the council itself and in the broader constituency of the municipality.

However, the energy future Lismore Council was striving for through their LCSi and the broader REMP was about more than financial savings. If financial savings were the core driver, the REMP would have looked very different. Instead, core drivers of the REMP were the community's sustainability goals and the desire to include the community in the energy projects (Lismore Council, 2014). This focus on the eco-social relations of their energy policies can be linked to the people in the Lismore Community who engaged with the Imagine Lismore process and who advocated for the relationality of energy transitions, as discussed in Chapter 7. That these goals were given up by a future iteration of the council after the budget deficit was announced must have been disappointing for some in the local community, although the project did seem to go out with a whimper rather than a bang.

Unfortunately, the deprioritisation and subsequent cancelling of the REMP demonstrates what can happen when energy sufficiency is reliant on the presence and power of certain people and becomes uninteresting, unpopular or untenable after those people are no longer involved in (or removed from) the organisation or project. There was a moment in time where energy sufficiency was being enacted by Lismore Council, through the LCSi and the REMP more broadly, however that moment ended when the Council's budget deficit resulted in the REMP being cancelled.

The ultimate failure of the REMP as a policy demonstrates the difficulty in enacting energy sufficiency through liberal democratic institutions that have capitalist economic

relations at their core. The attempt at de-alienating from nature by building energy policy that was less taxing on the planet wasn't strong enough to withstand the demands of capital, or of state-bureaucracies wed to capital. As seen in the discussions on Enova Energy throughout this thesis, the failure of these projects demonstrates the need for (re)commoning energy projects to build power between people and deepen the presence of community energy and energy justice projects across society. Piecemeal projects appear to eventually fail or be subsumed under the demands of capital.

**Homestead.** When the Homestead was established in the 1970s, collective provisioning and eco-sufficiency were at the heart of the organisation of the farm. The energy system at the Homestead is representative of the eco-social system of the farm. It has changed and adapted across the years with shifting demands and new technologies, but the ethos of the system remains the same: self-sufficiency, eco-sufficiency, and provisioning.

The Homestead is a more holistic version of eco-sufficiency than just energy sufficiency, albeit one that is quite small scale. The founding principles of the farm, outlined earlier, demonstrate that the farm was established with a commitment to eco-sufficiency. Although the farm has changed significantly since its beginnings, its residents remain committed to eco-sufficiency. The farm is located on 160 acres of forested land. Only a small portion of the land has been designated as the residential area. The houses are mostly made from mudbrick, wood, and recycled materials, and are dotted around the landscape, blending into the natural contours of the earth. Throughout the entire residential area, citrus trees bearing impressive amounts of fruit fill gardens and line roadways.

As shown in Figures 14 and 15, solar panels which generate the bulk of energy that powers the Homestead farm are installed on the roofs of appropriately placed houses and slotted in the middle of gardens. Voluntary simplicity was a core tenet when the farm was first established, a tenet that has more or less remained—although most permanent houses

now have at least a fridge and conveniences such as phone and laptop chargers. To keep energy usage low, certain high-energy appliances have been banned—including toasters (although two houses have ignored this rule—but only two is actually okay according to Steve). Despite the creep in energy needs and usage on the farm over the decades with modern technology, cultural, and generational changes resulting in more appliances, their energy usage (for twelve households) is still that of about two typical houses. This demonstrates a commitment to living more within our planetary means, and hints at the pursuit of de-alienation-from-nature by those living at the Homestead. Energy sufficiency is deeply built into the co-operative fabric of life at the Homestead.

**Figure 14**



*Figure 14: Solar panels placed in the middle of a fruit and veggie garden at The Homestead*

**Figure 15**



*Figure 15: Solar panels on the roof of a house built out of reclaimed timber, tin and mudbrick at The Homestead*

### ***Embodied Materialism, Feminist Praxis and More-Than-Human (re)commoning***

Embodied materialism, a term coined by ecofeminist scholar Ariel Salleh (1997), frames ecofeminism as intimately concerned with labour while addressing the gender and nature-blindness of Marxist materialism. As discussed in Chapter 4, embodied materialism involves two moves: firstly it exposes, interrogates, and ultimately rejects the masculine Cartesian separation of man from nature, and secondly highlights, values, and advocates for the labours and knowledge of women, Indigenous peoples, and subsistence labourers to be valued and practiced. The advocacy aspect of the second move is critical, with feminist political action – praxis – being integral to the practice of embodied materialism.

Continuing the double movement of critique and action, Salleh argued that “the first premise and deconstructive insight of an embodied materialism is that humans are themselves ‘within’ nature, and that social institutions and knowledges need to be reconstituted around that holistic reality” (2009, p. 20). This thesis has sought to unearth whether a reconstitution



of institutions and knowledges is occurring through energy transitions, and has used the lens of de-alienation-from-nature and dealienation-from-one-another to carry out that investigation. Mary Mellor further unpacked this idea by explaining that:

The core argument of ecofeminist political economy is that the marginalisation of women's work is ecologically dangerous because women's lives as reflected in domestic and caring work represent the embodiedness of humanity, the link of humanity with its natural being. (Mellor, 2009, p. 255)

An integral point here is that it is the regenerative, caring and reciprocal labours that are socially coded as feminine that contribute to a dismantling of the separation of humans and nature. These labours allow us to work with nature, rather than work on 'Nature'. This work can be the work of people of all genders, however within patriarchal capitalism this work remains predominantly the work of women.

Embodied materialism is a concept that recognises and helps to articulate an understanding that the wellbeing of human bodies is ultimately dependent upon and inextricably connected to the wellbeing of the living planet – and embodied materialists engage in political action to help birth a world that recognises and values this connection. It is a concept that then allows the argument that those already familiar with the care of earth, water, air, and bodies are well placed to lead necessary transformative changes in the face of socio-ecological crises.

Connected to the notion of embodied materialism, recent scholarship in the environmental humanities has been thinking through how non-human–human relations could be engendered in a more ecologically conscious future, in recognition that the wellbeing of humankind is inextricably linked to the wellbeing of eco and biosystems—including flora and fauna. Linking together environmental humanities exploration of more-than-human

entanglements and our consideration of (re)commoning, the following section explores the potentiality of ‘more-than-human commoning’ advanced by Cooke et al. (2020).

### **More-than-human (re)commoning**

Through the lens of ‘urban greening’ practice and politics Cooke et al. (2020) advanced the concept of more-than-human commoning. Theorising from the city rather than the regions, they consider the active role of plants in urban-greening and question how deeper attention to the role of plants as collaborators might provide fertile ground from which to build more-just eco-social relations. Drawing on the concepts of enclosure and commoning, they explain,

Through exploring the ways that plants and urban greening meet property, we ask whether commoning could be seen as a more-than-human practice, and as a means for pushing back against an interpretation of property relations that bound and parcelise ecologies in ways that are socio-ecologically unjust (p.171).

In their exploration of more-than-human commoning, Cooke et al. take care to highlight that effective commons take care of processes and relationships (p.180) involved in creating and maintaining commons – commons are not just the physical entity, they are the socio-political processes that commoning necessitates. They argue that these processes and relationships should be extended to the more-than-human world; that more harmonious eco-social relations are possible by thinking of non-human actors as active collaborators in commons. As will be explored below, if we extend this idea to energy transitions, some of the issues discussed particularly in Chapter 8 around water, biodiversity and industrialisation of the land could be differently, and arguably better dealt with.

More-than-human commoning could be a powerful practice to contribute towards meaningfully addressing the long-term ramifications of the climate crisis. In the fossil fuel

industry, untold numbers of endangered flora and fauna have been destroyed or are set to be destroyed in the face of habitat destruction for coal mines, tar sands, and oil wells. For example, the approval of the Adani coal mine in Queensland signals almost certain death for the endangered Black-Throated Finch. The extractivist logic of fossil capital will need to be dismantled alongside the coal mines, oil rigs and CSG wells – and the sites of these fossil relics could themselves become new sites of more-than-human commoning as they will require rehabilitation and restoration.

The spectrum of possibilities afforded by transitions to renewable energy suggests that energy can either be involved in more-than-human commoning or it could hinder this process. It is possible to see an attempt to build different relations with nonhuman beings, and potentially more-than-human commoning, through community energy projects, as will be discussed below. Decentralised community energy coupled with energy sufficiency could be a part of regenerative futures that centres (re)commoning, whereas centralised corporate renewable energy projects with a continuation of growth and profit motives would likely hinder ecological regeneration through exploitative labour, destructive extraction of raw materials and land enclosures. As one member of Z-Net commented, “you don’t want to wreck the planet to save it” (T. French, personal communication, March 29, 2019).

An example of the potential for community energy initiatives to contribute to more-than-human commoning can be found in Z-Net’s Elephant in the Woodlands project. As a region with a cold climate in winter relative to the rest of NSW, New England energy needs are provided through collecting and using significantly more firewood than other regions in the state. Explaining the name of the project Sandra said, “Because no one is game to ask the big firewood supplier if it was sustainably harvested, so that’s the elephant [in the room]” (S. Eady, personal communication, February 18, 2019). Through the project, Z-Net are seeking to educate the local community about firewood collection practices that allow for the

regeneration of wood supply and which is cognizant of the ecological function firewood plays for local biodiversity. Although at this stage this project is taking place on private, enclosed lands, we can consider their interactions with wood and woodlands as part of local commoning practices that require care, collectivism and limits to what can be taken.

They had partnered with CSIRO and local landholders to run workshops, field excursions and had begun training local firewood suppliers on “sustainable” firewood supply:

So, you know, I'd be on the phone talking to my mates who know about native veg system and saying, you know, “How do we work this out? How can we tell if the amount of firewood we use is sustainable or not?” and, you know, “What sort of nutrients are in firewood that are being taken off properties if you export firewood off properties?” (S. Eady, personal communication, February 18, 2019)

For the skills and ideas promoted as part of the project to be successful beyond the bounds of the immediate project, more attention to the physical commons would be needed. There would need to be communal knowledge of what has been gathered. If every person gathers as an individual, they will not know the impact.

This regenerative consideration is a significant difference between community energy practices and centralised corporate renewable energy practices. Reflecting upon this, one member of Z-Net queried what impact large solar arrays would have on the ecological functions of soil, leaf-litter, and smaller species in the area. Her concern was that if collecting the wrong type of firewood, or too much firewood would have destructive impacts on local ecologies and biodiversity, that the construction, and lifetime of solar arrays could also cause significant damage. It is unknown whether these concerns were met with action or ignored.

Another example of attempting more-than-human commoning that I came upon in the field occurred as part of the floating solar farm project of the LCSF. The team involved in the

project came upon a challenging point at which they needed to “stay with the trouble” and find a way to work around the roosting patterns of water birds in the area. Sharyn Hunnisett explained,

For the floating solar, there were questions as to, “Is this going to impact on the habitat of the birdlife, of the fish, of the water quality, of those things?” ... There were people that were concerned about displacement of birds. There’s a lot of birds at that water body because we’ve got the waste facility nearby. Ibises are one of the biggest problems—I shouldn’t call them a “problem”, but it is a problem for a solar system because if they perch on it, and we have a lot of pelicans there too which have very large output, that affects the efficiency of the panels. So that had to be addressed in trying to discourage roosting on the island. We had a state of the art bird laser put in which does not shoot them—that question was asked—it’s a light and it just draws a computerised pattern over [the panels] and [the birds] go away. ... Some people were concerned—we have a local bird watching group—they asked the question, “Is this harmful, what’s this going to do?” and we were able to provide them with the answers. So it was a very small group of people that raised the concerns but [I’m] really glad that they did because you do need to think about all those things. (S. Hunnisett, personal communication, February 26, 2019)

In this example we can see attempts being made to accommodate both human and non-human needs in a particular body of water in a way which is more caring and cooperative than the bulldozing of habitat or forced relocation so often associated with fossil fuel projects. The use of lasers, rather than the metal spikes often used to dissuade birds from roosting, is an example of utilising new technologies to minimise harm to non-human others.

By viewing community renewable energy efforts through the filter of embodied materialism and more-than-human commoning, the capacity for energy to become more socio-ecologically harmonious becomes apparent. Through enacting energy-sufficiency and more-than-human-commoning as part of energy projects, we can see attempts at de-alienation-from-nature.

Through the climate crisis, the fossil fuel industry threatens all life on earth. Renewable energy, through harnessing the sun, wind, and waves, will be considerably less destructive than its fossil fuel counterpart. However, as has been argued earlier, there is a tension in how the renewable energy industry is established and what its core aims are; these will determine whether energy transitions represent a move towards more just energy futures where our eco-social relations involve processes of de-alienation.

### ***De-alienation and (re)commoning through Ostrom's rules for commons***

This thesis has advanced the argument that de-alienation from nature can be achieved through a political project and daily practice of (re)commoning, and that community energy could form part of these efforts. As outlined in Chapter 4, after studying successful commons Ostrom (1990) suggested a framework that Wall (2017) referred to as Ostrom's eight rules for radicals. These eight 'rules' for successful commons are:

1. Clearly defined boundaries
2. Localised rules/contextual management of commons
3. Empowerment of commoners to make & modify rules
4. Monitoring of commons (rather than policing)
5. Graduated sanctions (soft to severe)
6. Low-cost conflict resolution
7. Commons organised from below, not managed from above
8. Work within a wider system of commons and environments

The ethnographic field for this research was not entered into with these rules in mind, however the validity of several of them was born out in the data. In particular, the need for commons to be organised from below and to work within a wider system of commons and environments. The remainder of this chapter considers these rules in the context of the case studies we have explored throughout this thesis, and discusses the efficacy of de-alienation efforts evident within the projects.

### **Z-Net Uralla.**

Z-Net Uralla is at its heart a group of people who are working towards a localised manifestation of energy justice; of “a sustainable Uralla Shire in a sustainable world” (Z-Net Uralla, n.d.). Their programs and activities to help low-income residents and the broader community to reduce their energy footprint demonstrate attempts at both de-alienation from nature and from others. While their efforts are predominantly centred on energy transition, they draw on regenerative, community-building social reproduction labours as key tools in ushering in renewable energy futures that are different from fossil capital.

While the organisation itself is not a ‘true’ commons in the physical sense, as the majority of their projects are sited on private property, they can be said to be engaging in (re)commoning processes and relationship building. If we consider Ostrom’s rules, part of the successes Z-Net Uralla have had can be contributed to their understanding of and catering to the local context and their empowerment of members to work towards more just energy futures. Conversely, where Z-Net Uralla experienced problems can be linked to some of Ostrom’s ‘rules’ not being followed – particularly commons organised from below and working within a wider system of commons. Unfortunately, as with all of the case studies included in this research, Z-Net Uralla had to work within the confines of government regulations around community and renewable energy, and often had projects funded through

government grants – which came with certain requirements and limitations. The co-location of Z-Net Uralla's activities with corporate-owned, large-scale renewable energy projects caused tension both within and outside of the organisation.

Z-Net Uralla is a project that seeks to redress the issues associated with fossil capital - representing the idea of other-world-making and (re)commoning potential. Through their regenerative labours, commitment to eco-sufficiency, and recognition of embodied materialism, Z-Net is an example of materialist ecofeminist praxis, whether those involved would identify it as such or not.

However, as community renewable energy projects are only in their infancy in the New England region, and as the region embarks on the journey of becoming NSW's second REZ, it remains to be seen whether this sense of responsibility, change in consumption and production patterns, and attempted shift in local eco-social relations will materialise on a large-scale or be overshadowed by the processes of capitalism.

### **New England Solar Farm.**

As one of the first centralised, corporate renewable energy projects to be built in the New England region, the NESF is instructive in what regional communities can anticipate from these types of developments. While the project was not actively malicious, the power differentials between a multi-national corporation and a small regional community—and the tensions and conflicts this can cause—were writ large. As a corporate project that is being sited on private property, the NESF cannot be said to be any kind of commons. As has been discussed, particularly in chapter seven, these private property relations impacted considerably on local experiences of alienation from nature and from one another.

Part of the tensions that arose particularly during the development application stage of the project were around people grappling with the alienation from both nature and from one



another when the economic relation of the project was centred. While many people expressed concern with the climate crisis and a desire to see renewable energy projects built as efforts towards meaningfully addressing the crisis, these concerns were challenged by other concerns around the more immediate, local impacts of these large-scale renewable energy projects. Views were held that profits for the company were the driving force for decisions about the project and that these were being prioritised over local biodiversity and ecological impacts, as detailed in Chapter 8.

The individualistic nature of building centralised corporate renewable energy projects on privately held, and rented, land can further entrench social divisions and sow distrust and conflict in regional communities. The hierarchy of access to information, decision-making, and power that was displayed between host landholders, neighbouring landholders, and the broader community demonstrated that private property relations have further contributed to the alienation-between-people in transitions to renewable energy.

However, it does appear that through the regenerative labours of the local community, the company learnt about the importance of building and maintaining local acceptance for their projects through improved communication, access to information, and collaboration and empowerment of the local community. In addition to being one of the first projects in the region, the NESF was also the first major renewable energy project that UPC Renewables was building in Australia. It remains to be seen how they will take the lessons learnt from building the NESF and apply it to other projects in the future.

### **Walcha Energy Project.**

The WEP is a peculiar example in which the developer of a centralised corporate renewable energy project attempted to take a somewhat different approach by including the community in the development process. While the project can by no means be considered a

commons, there were glimmers of commoning practices and processes incorporated. The long-term community engagement, the co-design of a code of conduct between developer and host landholders, the co-design of locating wind turbines to avoid special places are all definite improvements on the eco–social relations typically witnessed between corporations and regional communities under fossil capital.

However, the project is also indicative of the weakness of the foundations on which these relations rest. At their core, centralised corporate renewable energy projects are privately owned, for-profit projects where the power ultimately rests with the company. If that company chooses to sell, as happened with the Winterbourne Wind component of WEP, there can be no guarantee that the incoming owner will seek to foster the same relationship with the local community, as discussed in chapter nine.

The discussions, conflicts, and actions being conducted around energy transitions in the New England region represent micro examples of a much larger struggle for the direction of the future of the planet. By initiating discussions around justice, fairness, property, common resources, and social power, examples of localised, decentralised, and decarbonised energy potential futures could activate shifts in consciousness that move us from the hyper-individualised neoliberal present to a more egalitarian, just future. However, state policies are increasingly prioritising a continuation of centralised, corporate transformation of our energy system.

### **Lismore Community Solar Initiative.**

As with other projects explored in this thesis, the LCSI's successes and failures broadly line up with the 'rules' put forward by Ostrom. An initial strength of the project was in having clearly defined boundaries, and crucially, having those boundaries be local. As has been discussed throughout this thesis, those who engaged in the Imagine Lismore process

demonstrated a desire to be self-sufficient in sustainable energy – and the REMP broadly and LCSi more specifically appealed to that desire. What became clear throughout my time in the field, was that the initial vision of the LCSi was seeking to establish a commons and practice (re)commoning relations and processes but the final project was unable to accommodate this goal. As has been demonstrated throughout this thesis, the LCSi tried enact several of Ostrom’s rules but were regularly scuppered by the state-capital nexus. The project attempted to work within the local context, and initially sought to empower people involved to make and modify rules, but ultimately the regulations and rules at the state level caused these attempts to fail.

Despite this, regenerative labours were clearly at play in nascent community renewable energy transitions in the Northern Rivers. The LCSi was a project of social reproduction just as much as a project of energy transitions. When I met Jenny Dowell she continually emphasised that the values of social justice and fairness guided both Imagine Lismore and the REMP that came out of it. Lismore Council could have built the renewable energy projects at significantly lower financial costs but Jenny and supportive councillors and staff pushed for the importance of social benefits and community engagement, not just economic benefits. I would argue this is an example of (re)commoning processes and relations shaping a project in a bureaucratic space and being shaped by that space.

With the LCSi we can trace in-depth, genuine engagement at the local level regarding possible futures through the Imagine Lismore process. From this, the council was able to create, in collaboration with the community, the REMP which centred more harmonious eco-social relations. However, in the bureaucratic and regulatory hurdles that were thrown in the path of the LCSi, we can understand that decentralised, decommodified, and decarbonised energy futures will require transformative shifts at all levels of government and infrastructure – local desires and plans are not enough. While the project was eventually established, it

cannot be said that it 100% achieved its goal—not for lack of trying but for lack of policy that sees community energy and local economies as a priority. The project ultimately became not a commons, but an investment that was eventually to be owned by the council, with little input from the community after its establishment.

At a point in history when we have known about the climate crisis for over half a century, have been holding international climate negotiations for over 30 years, and when Australia faces extreme drought and unprecedented fires and floods, it is bewildering that policy and legislation can so severely impact what could have been a relatively straightforward renewable energy project. All of these hurdles significantly increased the time it took for the project to be completed, and dramatically altered the shape of the project from the original vision to the final outcome.

In the LCS, we can see the barriers that bureaucratized, capitalist states put in the way of potential feminist eco-sufficient and (re)commoned futures. The original vision for the initiative was to have two 250 mW solar arrays, owned by the community, with people being able to invest as little as \$50 each. The project specifically aimed to foster community engagement alongside building eco-sufficient futures through renewable energy transitions. Through the initial low-barrier to entry of a \$50 investment, the project was envisioned as one in which those who had previously been locked out of renewable energy transitions due to cost barriers would be able to become involved in the early stages. There were explicit goals to include low-income earners—of which women, Indigenous peoples, and the working class are the majority.

However, as has been explored here, this initial vision did not come to fruition due to a staggering series of policy and regulatory blocks by both the state and privatized energy regulations. This highlights that while some movement can be made towards feminist eco-sufficient (re)commoned futures, while the bureaucratic capitalist economy remains intact,

capitalism will need to be dismantled and the state radically rearticulated or dismantled in order for feminist eco-social transformations to occur at scale.

What these legislative and regulatory blockages represent is a barrier to the (re)commoning, de-alienating potential of community energy. Here was a council and a community that had the vision, the skills and the determination to transition to 100% renewable energy usage, and yet their flagship projects were met with a multitude of unnecessary barriers. We can see that although there were some issues with hard infrastructure, the more serious blockages were as a result of soft infrastructure. This highlights how, for the (re)commoning of energy to be enacted, and for renewable energy transitions to occur at scale, transformation of soft infrastructure is necessary. This in turn suggests that transitions to renewable energy are not simply technological challenges to be met, but social and political challenges—and therefore deeply relational.

### **Enova Community Energy.**

Through their successful work to stop CSG and protect water in the region, there was a corresponding recognition in the Northern Rivers community that a new way of “doing” energy, one in which the relations between people, nature, and energy were less alienated than under the fossil fuel system, needed to be formed.

As discussed in chapter nine, the energy futures Enova promoted were localised, decentralised, decarbonised, and to a certain extent decommodified. Perhaps most explicit in their futurisms was the potentiality for local economies and subsequent social reproduction through community cohesion. Those involved in Enova saw their work not just as a retailer of energy, but as advocates and change agents seeking to significantly transform eco-social systems through energy. When I was initially in the field, I thought that the tension and challenge for Enova was predominantly in their social enterprise model, which while

prioritising social outcomes, did continue to hold a profit motive – albeit partly so they can donate to community projects. Enova Energy CEO Felicity Stening was recently asked about this tension in an interview and answered,

It's always a balance in terms of growing a sustainable business and creating resilient and sustainable communities. In our model, those things sit alongside each other, and we never lose sight of what we're trying to achieve. Customers and communities are at the heart of everything we do (Howland, 2022).

When I was in the field, I wondered whether, as Enova grew, would those eco-social outcomes continue to be prioritised over profit? With Enova going into voluntary administration during the final editing phase of this thesis, those are questions that will go unanswered. Instead, a different question was answered – can social enterprises compete within the for-profit Australian energy market? The example of Enova suggests that the answer is no.

As a business that was operating within the bureaucratic capitalist nation-state of Australia, Enova Energy was arguably established as close as possible to an ecosocialist future while remaining within the legal and regulatory frameworks necessitated by the state and at the same time, building their membership base. However, by modelling the potential for decentralised and decarbonised community energy, Enova was helping to both materialise feminist ecosocialist futures and to build movement capacity for not only community energy but also more caring, regenerative economies. Of course, the organisation's failure is demonstrable evidence that attempts at reformism within the for-profit energy market, under a neoliberal state-capital nexus are unlikely to succeed. This further demonstrates the necessity of building a broader and stronger political movement to support community, renewable energy – not just relying on piecemeal projects.

## **Homestead.**

We can use the energy system of the Homestead as a lens through which to consider the eco-social relations of the place. The Homestead was the only ‘true’ commons among the case studies included in this thesis. When the Homestead was established in the 1970s, collective provisioning and eco-sufficiency were at the heart of the economy of the farm. The energy system, and the farm itself, have changed and adapted across the years with shifting demands and new technologies, but the ethos remains the same: self-sufficiency, eco-sufficiency, and provisioning. From what I saw, the first six<sup>13</sup> of Ostrom’s eight rules were being followed, however problems arose in the last two ‘rules’: Ensuring commons are organised from below, not managed from above, and to work within a wider system of commons and environments.

The Homestead is organised from below within the context of broader society, in that a group of people have self-organised a collective way of living. It is within the Homestead itself where the below/above distinction becomes a potential problem, as an informal hierarchy of original/older residents grapple with the future of their commons.

As the original residents grow older, there are tensions surrounding the future of the farm. Jack and Steven continue to worry about who they can pass on both their knowledge of, and responsibility over, the unique energy system to. In my second visit to the farm, Steven and Jack had installed more solar panels on the community centre and had somewhat alleviated their concerns over the lack of generational knowledge about how the energy system works. They had found a temporary solution by bringing workers from the nearby Rainbow Power Company to understand how the system worked, but they were still

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<sup>13</sup> Clearly defined boundaries, localised rules/contextual management of commons, empowerment of commoners to make & modify rules, monitoring of commons (rather than policing), graduated sanctions (soft to severe) and low-cost conflict resolution.

desperately seeking a more long-term solution in the form of a new resident/s with technical knowledge.

However, children who grew up on the farm and are now in adulthood, who could feasibly takeover this role, are finding it difficult to establish their own housing on the farm due to limited space. This highlights the type of issues that can arise when seeking to establish eco-sufficient, (re)common futures on very small scales instead of at the broader societal level. The Homestead, through actively disengaging from the grid—just one example of a multitude of actions aimed at separating the Homestead from the state–capital nexus—has in some sense become too far removed. If there is no one left to manage the energy system, can the farm feasibly continue to exist?

### ***Conclusion***

This chapter has considered and discussed de-alienation from nature through the concepts of eco-sufficiency, energy sufficiency and more-than-human commoning. It has suggested that there are examples of attempts at de-alienation, however these are often being stymied by the state-capital nexus. Finally, this chapter sought to draw together the analysis presented throughout the thesis, to question whether the (re)commoning potential of community renewable energy projects was being achieved in any of the case studies. The following conclusion chapter will consider where to from here.



## Chapter 12: (Re)Commoned, Feminist Energy Futures

*Successive transitions in our energy systems have been associated with ‘Schumpeterian’ waves of creative destruction, sweeping away old industries and fuelling the growth of the new... We should expect the prospective transition to ‘low carbon’ to have no less profound impacts at every level of our economy and society. What is more, we have no reason to assume a priori that a low-carbon economy will necessarily be any more equitable or just...*

Malcolm Eames & Miriam Hunt, 2013.  
‘Energy justice in sustainability transitions research’ P.46-69

*‘The feminist counterapocalyptic framework creates a space for an ethical opening onto the precarious lives and bodies of humans and nonhuman others... If unbridled progress is no longer an option, what kinds of coexistences and collaboration do we want to create in its aftermath?’*

Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse*, 2018, p.59

As the world grapples with climate, economic and biodiversity crises, global energy systems are in a state of flux. As Žižek, imprecisely translating Gramsci, quoted “the old world is dying, and the new world struggles to be born: now is the time of monsters” (2010, p.95). While there are certainly monsters among us, now is not necessarily their time.

Feminist energy futures provide fertile ground from which to imagine and build alternatives to Gramsci’s monsters. The opening of this thesis argued that various feminisms can collectively contribute to energy research, that feminist analytical frameworks can expose and explain energy power relations, and that feminisms can contribute to conceptualisation and materialisation of more just energy futures. The ethnographic examination of situated

renewable energy projects in NSW demonstrated how feminist energy scholarship can tell a different story about eco-social relations of the energy transformation.

This thesis has presented a comparison of large-scale, corporate renewable energy projects and smaller-scale, community renewable energy projects situated in two regions of NSW, Australia. Drawing on Marxist concepts of alienation-from-nature and alienation-from-one-another, and from materialist ecofeminist concepts of de-alienation-from-nature and de-alienation-from-one-another, the eco-social relations being conceptualised and materialised through energy transitions have been interrogated. As has been suggested throughout this thesis, our global energy futures exist along a spectrum of possibilities from green capitalist techno-utopias, to First Nations', feminist (re)commoned energy futures. It is the contention of this thesis that more just energy futures can be best nurtured through (re)commoned energy systems that exist outside of the state-capital nexus, and that regenerative, caring and reciprocal eco-social relations as practiced and promoted by materialist ecofeminism will be crucial to building those futures. Further, to reach those futures requires stronger and different political action – particularly feminist political action - then is currently present in the Australian climate and energy justice movements.

### ***Can Energy (Re)Commoning Occur in a Vacuum?***

Through an analysis of ethnographic research into a variety of corporate and community energy projects in the Northern Rivers and New England regions of NSW, this thesis has advanced three core arguments. The first is that de-alienation from nature and from each other is more possible in community than corporate energy projects. The second argument advanced is that individual community energy projects are limited by the barriers presented by the state–capital nexus. This suggests that wholesale eco-social transformation alongside technological change is required for (re)commoning of energy to occur at scale. Which, in turn, will require profound political activism, as will be outlined below. The third

argument advanced is that materialist eco-feminist praxis is strongly-placed to shape and nurture this required political activism and ways of relating to one another, and nature.

As indicated by the second core argument, an integral site of struggle to advance more-just energy futures is in the regulatory and policy sphere where key blockages are found. Before arguments are put forth that renewable energy advocates wishing to remove regulatory blocks mimic those of the fossil fuel industry routinely bemoaning “red” and “green” tape, the fundamental difference in the logic behind renewable energy and fossil fuel projects must be acknowledged. The regulatory blocks currently being experienced by the community energy sector in Australia are affecting the ability for it to become decentralised, to redistribute ownership, and to build more eco-socially friendly energy systems. These regulatory blocks serve an energy system built on centralised ownership and technologies based in fossil fuels. In contrast, green and red tape typically refers to regulations that have been hard fought for by labour and environmental movements to afford some protection for workers, communities, and the environment under current planning and energy legislation. The fossil fuel industry’s bemoaning red and green tape is built on an extractive, for-profit logic which predominantly benefits executives, investors and shareholders, while the logic of the emerging community energy sector is (ideally) to benefit all those who have been locked out of fossil capital, including Nature.

It is evident that although there were some issues with hard infrastructure, the more serious blockages to community renewable energy were the result of soft infrastructure. This highlights that for regenerative, caring and reciprocal energy futures to materialise at scale, transformation of soft infrastructure is absolutely necessary. This in turn suggests that transitions to renewable energy are not simply technological challenges to be met, but social and political challenges—and therefore deeply relational. A turn to feminist energy futures would recognise and prioritise this relational opportunity.

A shift in eco-social relations towards more just energy futures will be resisted by fossil capital, making energy justice a difficult – albeit imminently worthy – political project. It has been argued throughout this thesis, that materialist feminist praxis – with its focus on regenerative, caring and reciprocal eco-social relations – is a strong foundation from which to build towards more just energy futures.

As examined in Chapter 3, feminists have provided insightful critique and inspiring alternatives in regards to energy policy before. The feminist anti-nuclear movement revealed important lessons for our current renewable energy transformation. In particular, the movement exposed unjust and unequal power relations of the nuclear industry, highlighted the social relations of technology, linked specific concerns to systemic issues, enacted solidarity in their movements and conceptualised alternative futures grounded in the diverse labours, knowledges, and experiences of marginalised peoples. These lessons have informed the recommendations provided later in this chapter.

Community energy proponents across NSW of course may not necessarily agree with materialist ecofeminist politics when they are explicitly framed as such. Indeed, as has been discussed, materialist ecofeminist scholars have highlighted the loss of social memory of the commons in the Global North and the impact this can have on political demands and future imaginaries. However, whether those involved in community energy would claim these politics or not, much of what they are enacting and struggling for are manifestations of materialist ecofeminist politics.

This research project, in concert with my over twelve years involved in the Australian climate and energy movements, has demonstrated and solidified the need for an array of political actions and strategies to be enacted if we are to move towards more just energy futures. The following recommendations are for the Australian climate and energy justice

movements broadly, and for those who wish to promote and build community energy more specifically. These recommendations seek first and foremost to help usher in more just feminist energy futures, as explored throughout this thesis.

1. Begin, reinstate or strengthen an everyday practice of regeneration, care and reciprocity in your life. Or, as suggested by Osborne, “find room for small, tender, difficult things: care, affection, attentiveness to embodiment, place, encounter, situated entanglements, material effects, located practices (2018, p.151).
2. Strengthen commitment to energy *justice*, rather than energy *transition*. Currently the energy transition in Australia is being framed predominantly through green capitalism. An intentional reframing and explicit demands towards more just energy futures are needed. Do not let the urgency of the climate crisis allow an unjust energy system to be implemented. Energy transitions are full of moral debates and struggle, and we should not leave this unconsciously examined. Resist external and internal pressures to accommodate transitions to renewable energy by any means necessary.
3. Community energy movements and projects need to engage more with Traditional Custodians and First Nations struggles for self-determination, land-back and sovereignty. Care must be taken to ensure these are not paternalistic relations, as said by Lilla Watson, “If you have come to help me, you are wasting your time. If you have come because your liberation is bound up with mine, then let us work together” (Lilla Network, 2007). Struggles for self-determination, land back and sovereignty are deeply linked to more harmonious eco-social futures that community energy could be a part of.
4. Build stronger links between movements, and not just with other community energy groups. Seek lessons outside of the global north and act in solidarity. As

Osborne suggested, “we have failed to save The World, but there are other, subaltern worlds here, accessible if we attend and care for them” (2018, p.147).

Link with feminist movements. Piecemeal projects are not working - you can have localised energy while still being part of something bigger.

5. Prioritise campaigns that aim to bring energy back under common ownership, rather than strengthening capitalist framing through campaigns (for example, the 700% renewable energy campaign). I suggest that a public/community/worker-owned hybrid model would best serve our energy needs. Those who want to can self-organise their energy, and larger scale projects for everyone else and industry could be public or worker owned.
6. Implement practices of more-than-human-commoning, that seek to disrupt and change relations between people and the non-human world. Consider ecologies as collaborators. Renewable energy projects will have ecological impacts, and promoting and enacting more conscious relations with flora and fauna can contribute towards lessening negative impacts and strengthening positive impacts.
7. Climate and energy justice movements should take local communities opposing renewable energy seriously – listen to their concerns and work towards finding solutions rather than dismissing them out of hand. They may be reacting to neoliberal forms of non-consultative, unequal implementation. But, take care to identify those who just use local concerns to promote ideological opposition to renewable energy. Most of whom may come from outsider
8. Prioritise and be intentional about the relational and social aspects of energy transition. We need to talk about energy transitions in terms of what type of eco-social futures we want, rather than what technology is possible.

9. Prioritise improving the accessibility of renewable and community energy. At the moment, engaging in a community energy project or installing renewable energy systems are relatively high-barrier, particularly for many marginalised communities.
10. Do not be afraid to dream big and promote that vision – reformism within the current system is not working.

The barriers to (re)commoning energy in the Global North are systemic, and materialist ecofeminist politics, particularly those of Indigenous women and women from the Global South, offer strategies for the tearing down of those barriers. These strategies include regeneration of the earth as deep, ongoing practice; caring for people and planet through building meaningful relationships; and practicing reciprocity – whether that be through more symbiotic relationships with Nature or acting in solidarity with one another across barriers and boundaries. In short – in practising de-alienation from nature and from one another. Some ideas and recommendations have been put forward in this thesis. Yet the challenge remains: How do we bridge deeper, more explicit connections between community energy efforts in the Global North and materialist ecofeminist politics, so as to build towards (re)commoned, feminist and just energy futures.

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