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Working futures in Australia's renewable industries?

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Abstract

In this article, we consider the future of work in Australia's renewable energy industry sectors through a consideration of the evolving political and economic context that will continue to shape it in years to come. We are particularly concerned about the quantity and quality of jobs, how these jobs will be realised, who secures them, and who will provide them. Further complicating matters, the debate is being carried out in the context of generalised skill shortages and recruitment difficulties. This article draws on and develops arguments we have put forward recently. Our focus in this article has been on the political economy of work and employment in Australia, especially implications of the polycrisis and associated geopolitics, the militarisation of industrial policy, renewable industries, regional development, just transitions, and the future of work and workers. In developing our argument, we consider Australia's focus on 'Renewable Energy Industrial Zones' in an era of the 'new state capitalism', the impact of the US Biden Administration's Inflation Reduction Act particularly and new geopolitics generally, and the dominance of multinational corporations in renewable industries.

Keywords: Australia; future of work; new state capitalism; renewable energy investment zones; renewable industries

Introduction

Climate scientists and environmental activists have long maintained that addressing climate change is one of humanity's most pressing political issues. While government action continues to be slow and insufficient to lower global CO₂ emissions to contain global warming temperatures, climate action and CO₂ emissions reduction policies are figuring more prominently in election debates across many countries. Political parties advocating for climate action have commonly made the case that 'decarbonisation' opens avenues for opportunities to attract new innovative 'clean' industries, revitalise regional areas, and stimulate 'green' job growth. The political strategy has been to present decarbonisation as a 'win-win': good for the environment and good for the economy. This position commonly embraces a 'greening' of capitalism in which climate crisis opens new capital accumulation opportunities but with the assistance of the state through programmes such as Green New Deal initiatives. Graham and Carroll (2022) have described these developments as ushering in a new 'climate capitalism' in which investment is being redirected from fossil fuels

towards decarbonisation and renewable energy (RE) with promises of economic revitalisation and regional and community regeneration. This article draws on, and develops arguments we have put forward recently (see Rainnie, 2023; Rainnie et al. 2021a; Rainnie and Dean M, 2021b; Rainnie & Snell, 2024a; Rainnie and Snell, 2024b). Here, we look at the emergence of ‘climate capitalism’ in Australia and consider the question of jobs. We consider the future of work in Australia’s RE industry sectors and the quantity and quality of jobs, how these jobs will be realised, who secures them, and who will provide them. We argue that while climate capitalism may stimulate investment activities and deliver jobs, they are unlikely to be of the quantity or quality commonly suggested, due to the impact of initiatives such as the US Biden Administration’s Inflation Reduction Act particularly, new geopolitics more generally, and the dominance and business practices of multinational corporations in renewable industries.

We begin by considering the notion of proposals for the green transition in international and Australian experience and debates surrounding what constitutes a green job. This is followed by a discussion of climate capitalism and the theoretical perspective we adopt to examine the future of green jobs in Australia. An interrogation of policy developments in Australia is then conducted, and we conclude with some thoughts on the implications of our analysis for the future of work in the country’s renewable industries.

Green jobs and the ‘new’ state climate capitalism

The connection between the climate crisis and our relations of production (how we produce energy, food, housing, etc.) is becoming more urgent to address (Huber 2022). The role of the state, private enterprise, and capitalism more generally, are coming under increased scrutiny for their contribution to, and failure to not do more to address the climate crisis and place economies and production systems on more ecologically sustainable foundations. While the debate continues to rage about the level and depth of response required to avoid climate catastrophe, and whether capitalism can be both the problem and the solution at the same time, many governments are pursuing policies aimed at decarbonisation and supporting ‘green’ enterprises. According to Graham and Carroll (2022), we are witnessing the emergence of ‘climate capitalism’ in which investment is being redirected from fossil fuels towards decarbonisation and RE, strategically supported by governments and fossil fuel capital. Climate capitalism centres the search for ‘cost-effective’ market solutions, such as carbon taxes or offsets, alongside technological developments such as efficiency enhancement and carbon capture and storage (CCS) to reduce emissions and incentivise energy transition. Proponents frame climate change as a market transition that will lead to new fields of economic growth, working to reconcile the need to decarbonise with the continued imperative to locate new sites for capital accumulation. Climate capitalism offers partial changes, without transforming social relations of production, including the concentration of power and decision-making in large corporations:

[T]he presence of major fossil fuel firms at the climate capitalist network’s centre suggests a ‘weak climate capitalism’ – a slow transition to ecologically modernized production that averts stranded assets, while potentially allowing fossil fuel firms to expand control of emerging renewable energy resources. (Graham and Carroll 2022, 35)

The state is essential to the ‘redirection’ away from ‘fossil fuel’ capitalism to ‘climate capitalism’. State action is seen as providing critical assistance, not only in supporting global fossil fuel-dependent firms (e.g. BP, ExxonMobil, Engie, etc.) in diversifying and

Table 1. Tendencies of new state capitalism and their expression

Tendencies of new state capitalism	Expression
Productivist	Intervening in production arrangements and competitive dynamics of productive capital; a crucial territorial dimension
Absorptive	Accumulation of vast surpluses in some state-fuelled expansion of sovereign wealth funds
Stabilising	Attempts by states to produce new scales and geographies of intervention to retain sovereignty and preserve domestic political orders in the face of highly mobile capital and speculative finance
Disciplinary	Politics of governing alienation as outcome of growth of relative surplus populations
Derisking	Current, unprecedented state interventions to save markets and restore private capital accumulation significantly strengthen the active management of the economy by the state
Marketising	Current reconfiguration of roles of the state does not necessarily imply a fundamental break with marketisation, but it does seem to signal the end of neoliberalism, with a new emphasis on a market-creating role for the state
Directing	The market-directing role for the state is gaining in prominence, reinforced by the COVID crisis
Reshaping	Different roles, while potentially contradictory, can often go hand in hand

Concepts adapted from Alami et al (2023), (Alami and Dixon, 2023) and van Apeldoorn and de Graaf (2022).

transitioning into RE (see Pickl 2019) but also enabling existing global RE companies (e.g. Vestas, Orsted, etc.) to expand, and providing the impetus for new RE start-ups to get off the ground. As Harry, Maltby, and Szulecki (2024) argue, climate capitalism involves a mix of market and state-driven policies to support ‘green’ capital accumulation while managing the hardship and disruptive elements emerging from capitalism’s redirection. Adopting the Gramsci et al (1971) notion of a ‘passive revolution’ they state:

Whether neoliberal, ecomodernist, or neo-Keynesian in approach, a ‘green’ passive revolution is about managing transition and linking the future of capitalism to green accumulation, while neutralising disruptive forces through the co-option, displacement, and partial fulfilment of socially transformative demands (See also Morton, 2010; Spash 2021; Harry et al 2024, 5–6).

The climate crisis, along with other urgent challenges associated with the ‘polycrisis’ (e.g. growing inequality, inflation and cost of living pressures, demographic shifts, rising geopolitical tensions, and so on) are contributing to a ‘reemergence’ of the state in areas related to market creation, correction, intervention, and direction (see van Apeldoorn and Graaf (2022); Fairbrother and Rainnie (2006). Indeed, Alami et al (2023, 245) and Alami and Dixon (2023, 89) suggest that a new state capitalism is emerging, in which there is a more visible role of the state across the global economy as a promoter, supervisor, regulator, and owner of capital. The impulse towards a ‘new state capitalism’ according to Alami (2023) involves four key tendencies: productivist, absorptive, stabilising, and disciplinary. Alami (2023) further notes that whereas periods of neoliberal capitalism held that state-owned enterprises (SOEs) were to be privatised, the new state capitalism instead holds an important role for SOEs. As van Appeldoorn and de Graaf (2022, 320–21) further consider, the role of

SOEs, sovereign wealth funds, and other models of state-controlled enterprises are part of the new state capitalism. Table 1 combines these insights to outline the tendencies of new state capitalism and how they are being expressed through a 'revitalised' state. These mechanisms serve as the force behind the growth in the size and scope of the state-industry nexus as it becomes increasingly integrated into global circuits of production, finance, infrastructure, and corporate ownership.

We can see evidence of these various tendencies through their empirical manifestations in government policies and intervention in the emerging 'climate capitalism'. In the 'reshaping' of capitalism, government subsidies are being redirected from fossil fuel energy projects towards renewable industries and carbon-emissions 'internalised' to production through carbon taxes and pricing mechanisms. Governments reward firms venturing into emerging 'clean' industry fields by taking out the risks associated with new innovations and ensuring market creation and stability for new products that protect return on investment. Public-private partnerships (PPPs) are one solution for particularly risky projects where private investors prove hesitant in venturing (e.g. green hydrogen, CCS). Green New Deal proposals in Europe and North America are the penultimate examples of where these 'new state capitalism' tendencies are being embraced. In Australia, these tendencies are found in the Albanese government's National Reconstruction Funding, the Future Made in Australia Act, and other 'green' economy initiatives. This reshaping of capitalism promises to deliver both capital accumulation opportunities but also 'green' job growth. In 2022, the newly elected labour government in Australia held a major 'Jobs and Skills Summit'. Emerging from the Summit, the government published a White Paper – *Working Future* (The Treasury 2023). Its aim was to provide a 'roadmap' to position the Australian labour market for the future by delivering aims of full employment, job security, productivity growth, workforce development, and addressing barriers to employment. On the surface, this presented a standard 'jobs and growth' package. However, the context within which this was taking place – the so-called polycrisis – combined with the necessity to mitigate climate change and decarbonise the economy, had cast the debate in a different light. Industrial policy became inextricably linked with security issues, access to critical minerals, and control of supply chains, particularly in RE industries and related sectors and regional development. The paramount technique has been to promote investment in projects that are explicitly spatial such as 'green hydrogen hubs', 'renewables zones', 'energy precincts', and 'clean manufacturing precincts'. This was accompanied by sector- (and location-) specific initiatives around solar power and batteries. Promises of job creation figured prominently in all these initiatives. We now turn to the 'green' jobs debate and its relationship to climate capitalism.

What is a green job?

In 2016, the International Labour Organization (ILO) put forward a definition of what constituted a green job (see Figure 1).

Green jobs are decent jobs that contribute to, preserve, or restore the environment, be they in traditional sectors such as manufacturing and construction or in new, emerging green sectors such as RE and energy efficiency. Green jobs help to improve energy and raw material efficiency by minimising waste and pollution, limiting Green House Gas (GHG) emissions, contributing to protecting and restoring ecosystems, and supporting efforts to adapt to the effects of climate change.

At the enterprise level, green jobs can produce goods or provide services that benefit the environment, for example, green buildings or clean transportation. However, these green outputs (products and services) are not always based on green production processes and technologies. Therefore, green jobs can also be distinguished by their contribution to

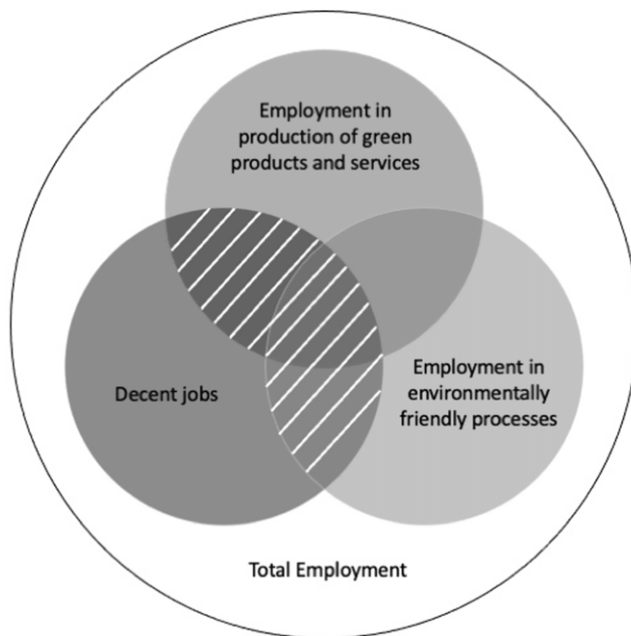


Figure 1. ILO definition of 'green jobs' (ILO 2016).

more environmentally friendly processes. For example, green jobs can reduce water consumption or improve recycling systems. Yet, green jobs defined through production processes do not necessarily produce environmental goods or services. As illustrated above, a distinction can thus be drawn between employment in green economic sectors from an output perspective and job functions in all sectors from an environmentally friendly process perspective. For the ILO (2016), green jobs are all those jobs that fall in the dashed area in Figure 1.

In Australia, the Jobs and Skills Australia 2023 *Clean Energy Capacity Study* argued that the clean energy workforce includes the workers involved in:

- designing, developing, constructing, and operating the infrastructure for generating, storing, transmitting, and distributing energy from renewable, zero, or low emissions energy sources ('clean energy supply'); and
- reducing or managing the energy required to deliver energy services (energy efficiency, energy management, and demand management) and installing and maintaining the technology that uses clean energy rather than fossil fuels ('clean energy') (JSA 2023a).

The notion of a 'green' job, however, has not been without controversy. A 2022 review of the literature on green jobs concluded that there was currently no universally accepted definition of a green job and further that the concept seems to be in a constant state of construction (Stanef-Ouica et al 2022). Part of the challenge in achieving conceptual clarity is that many of the skills and occupations associated with 'green jobs' are identical or very similar to other jobs (e.g. electrician, powerline worker, metal fabrication, insulation installer), and how jobs becoming re-categorised as a 'green' job as opposed to a 'brown' job is not without problems (e.g. a miner digging up coal as opposed to a miner digging up critical minerals is one obvious case). Nonetheless, the concept of a 'green' job has proven politically useful. Trade unions, for example, have used 'green jobs' to construct a distinctive eco-political role for organised labour (see Mason and Morter 1998; Rathzel and

Uzzell 2013; Lipsig-Mumme 2013). Climate crisis and environmental concerns have often been framed by unions as ‘union business’ (ACTU 2011) in ways that open new possibilities for union action (Levesque and Murray 2010). At the heart of these eco-politics has been union support for ‘green’ jobs and ‘green’ skills initiatives, whereby industries are transitioned to become more environmentally sustainable and workers are educated and provided the skills needed to assist in and take advantage of ‘green’ economy opportunities (ACTU and ACF 2008). During the global financial crisis and again in the post-COVID recovery period, unions across a range of countries worked with and actively supported ‘green’ stimulus responses of governments to revitalise industries and generate desperately needed jobs (Räthzel and Uzzell 2011). In opening the discourse about the ‘green’ economy and ‘green’ jobs, unions have also sought to make connections to job quality and decent sustainable employment. As noted by the International Trade Union Confederation:

For green jobs to build a sustainable future, they must provide decent work. ... Decent work, as defined by the ILO, indicates that jobs must provide opportunities for men and women to productive work in conditions of freedom, equity, security and human dignity, in which rights are protected and with adequate remuneration and social protection. There is a need for accompanying green job creation policies with a strategy to ensure that these jobs contribute to prosperity and a better living for working people. (ITUC 2013, 3)

The association between ‘green jobs’ and ‘quality’ and ‘decent’ work, however, is not automatic or always strong. All too often, ‘green’ jobs and jobs created out of ‘green’ stimulus programmes are short-term, precarious, and of poor quality, demonstrating that there is nothing inevitable about a sustainable ‘green’ economy that contributes to positive job outcomes or improved conditions for workers (see Stevis 2013; Matteras 2009; Bird Lawton and Purnell 2010). The problem is demonstrated in its most extreme by a recent Australia research report. The Clean Energy Council (2022) report highlighted the existence of modern slavery in the clean energy sectors of solar, wind, and lithium-ion batteries. The OECD (2023) pointed to the large gender imbalance in what they described as green jobs. Less than one-third of green jobs were held by women. How best to address these gender imbalances so that new green jobs become inclusive of women, First Nations people, and other labour market marginalised groups, will require proactive local initiatives by the firms involved in RE projects and the associated training providers. For localities seeking to attract RE projects and investors, the challenge is knowing when or if these RE projects will materialise and how lead firms – which tend to be dominated by global energy firms – will carry out their construction and ongoing operations and maintenance. This information is critical to the planning and development of the local workforce and determining how many decent jobs are likely to be created and for how long. We now turn to the case of climate capitalism in Australia and the challenges for the future of work in the emerging RE sector.

Climate capitalism and the future of renewable industry work in Australia

As the third largest exporter of fossil fuels, Australia’s transition to climate capitalism was never going to be easy (Kurmelovs 2024). Australia’s efforts to develop and implement meaningful climate change policy have been slow and politically divisive and have contributed to the toppling of several governments (Crowley 2021). However, the promise of jobs emerging from the transition to a low-carbon economy has been a common theme for political parties, governments, and other non-government actors wanting to take a more aggressive approach to addressing climate change. In 2008, for example, the

Australian Council of Trade Unions (ACTU) commissioned a report with the Australian Conservation Foundation (ACF) that found over 500,000 ‘green collar’ jobs could be created in energy efficiency and RE (ACTU and ACF 2008). Soon after releasing the report, the ACTU and ACF joined members of the Southern Cross Climate Coalition to campaign for an emission trading scheme, which they maintained, would deliver these jobs (Diesendorf 2009). While such a scheme was introduced by the Rudd–Gillard Labour governments in 2011, it was dumped by the conservative Abbott government three years later. Nonetheless, the prospects of jobs and revitalised industries have continued to feature in policy efforts to advance climate policies.

Recently, the Australian think-tank Below Zero Emissions released a report claiming that building ‘clean tech manufacturing’ in Australia alone could create up to \$215 billion in revenue and 53,000 new jobs by 2030 (Achenza 2024). Australian economist, Ross Garnaut, who has been influential in shaping energy and carbon-emissions policymaking over many years, has made the case for Australia to become a RE superpower with ‘its greatest impact on employment and incomes in rural and provincial Australia’ (Garnaut 2022, xiv). The opportunities for regions to secure significant jobs and business activity benefits from RE projects are predicted across a growing number of studies (e.g. ACTU 2022; AEMO 2022; BZE 2020; IRENA 2022; RepuTex Energy 2021; WWF 2020). Recent proposals to concentrate RE development in regional Renewable Energy Zones have further reinforced the notion of regional renewable job growth and demand for local skills (Commonwealth of Australia 2023, 114). Hines et al (2024) argue that the Australian government’s response to the ‘decarbonising imperative’ involved state capitalist, large-scale transformations in regional Australia, promising lots of jobs. The hydrogen-driven Renewable Energy Industrial Zones and offshore wind farms fit precisely into this picture. This spatial characteristic is coming to define Australia’s emerging climate capitalism in which a diverse coalition of actors – state agencies, politicians, corporate executives, consultants, and technical experts – promise investment, jobs, and revitalisation of regional economies (Briggs et al 2020).

Determining how many ‘green’ jobs have been created or currently exist in Australia, is not an easy task. Not all data sources define ‘green’ jobs similarly or draw on the same data and methodology, so claims cannot be considered comparable, only indicative. The International Renewable Energy Agency (IRENA 2022), for example, used Australian Bureau of Statistics figures on employment in RE to claim that there was a total of 26,850 RE jobs in 2020. They claimed that this represented a 27% increase over the previous 12 months and 120% over the previous 10 years. Rooftop solar PV systems remained the largest single group accounting for 13,070 Full Time Equivalent (FTE) jobs or nearly 50% of RE employment. Next came Solar PV Large (4740), Wind (3240), and Hydro (3060). Overall, however, IRENA reported that there was a lack of systematic reporting on RE employment data. The Clean Energy Council, in its Report *Skilling the Energy Transition* (CEC 2022), suggested that, while already employing around 30,000 people in the sector, it expected that, if all RE projects in the pipeline at the time of the report writing went ahead, a further 50,000 jobs would be generated.

The predicted strong growth in ‘green’ jobs has also raised concerns about possible labour and skill shortages, which may delay projects and run the risk of Australia being unable to meet its targets. The Albanese government’s *Working Future* drew on projections produced by Deloitte for Jobs and Skills Australia showing that the occupations key to the clean energy workforce will need to increase by around 30% by 2033 to deliver the net-zero transformation. This represents an increase of 213,000 workers. The clean energy supply workforce alone was projected to increase by around 127%. The report maintained that the occupations key to the clean energy workforce would need to increase by around 30% by 2033. One of the obvious ‘in-demand’ occupations of which there is concern about skill shortages, is electricians. Jobs and Skills Australia estimates that Australia will need approximately 26,000–42,000 more electricians in the next seven years (JSA 2023b).

The fact that many of these jobs are expected to be in regional areas, presents additional skills challenges and will require a substantial uplift in education and training to ensure that job opportunities can be accessed by local workers. Who will benefit from this bounty of RE jobs in regional Australia is subject to considerable debate, with concerns raised about the prospects of reinforcing existing labour market inequities. Historically, Australia's energy workforce has been overwhelmingly male-dominated and homogenous. Evidence from Jobs and Skills Australia (2023b) confirms that Australia's emerging clean energy workforce is also becoming predominantly male. When women do work in clean energy, they are overrepresented in administrative and design-based roles, rather than trade-qualified and engineering ones. How to support women, First Nations, and other underrepresented workers to access new 'green' jobs will no doubt be an ongoing challenge as will be attracting and retaining labour, skilled or otherwise in regional areas. However, we believe that the issues, problematic and challenging as they are, run deeper due to the nature of climate capitalism that is emerging, which enshrines corporate power in the low-carbon economy. Multinational corporations (MNCs), even those which dominate the fossil fuel economy (e.g. Engie, China Light and Power, Siemens) are being pursued and encouraged to take part in transitioning the economy in general, and regions dependent on fossil fuels more specifically. We now turn to what this might mean for the quantity and quality of Australian 'green' jobs.

Investment, MNCs, and the jobs question

As argued previously, Australia's approach to advancing climate capitalism in Australia mirrors new state capitalism strategies aimed at intervening in production arrangements but in ways that stabilise markets and restore private capital accumulation (e.g. derisking, market-directing). In the case of RE projects, there is a reliance on MNCs to provide investment, expertise, and job creation. In this scenario, Australia's renewable industry will be increasingly integrated global circuits of production, finance, infrastructure, and corporate ownership. Currently, four out of the five largest companies involved in Australia's solar power generation industry are headquartered overseas: FRV (Saudi Arabian-owned), Neoen (French-owned), Wirsol (German-owned), Enel (Italian-owned), and AGL (Australian-owned). In the construction of wind generation, the story is similar with the top five major companies being foreign-owned or in joint ventures with overseas companies: Vestas (Denmark-owned), CATCON (Australian/US-owned), Siemens (Spanish-owned), Monadelphous (Australian-owned), and Zinfra (Chinese and Singaporean-owned) (IBISWorld 2024a; 2024b).

The role and influence of multinational corporations in finding solutions to the climate crisis is not without controversy. Christophers (2024, 376) argues that the role of the private sector is unlikely to be at all positive:

[T]he reason for favouring public ownership would not be – as it so often is – objection to rampant private sector profiteering. It would be the opposite. Our position would be that private sector needs to be stripped of responsibility for renewable energy generation because renewable energy generation is not – or is it typically expected to be – consistently profitable enough for the private sector to develop it as urgently and massively as we need.

Sean Sweeney (2021) points out that, in the current situation, even when they do get involved, RE companies could be more part of the problem than they are part of the solution. The basic difficulty is that on the producer side in wind and solar, for example, the first thing that stands out is just how oligopolistic these sectors are. More broadly, 'the fact is that the scale of production required to meet climate targets is physically

beyond the capacity of the handful of countries and companies that currently dominate the renewables sector' (Sweeney 2021, 4). Christophers (2024) concurs, pointing out that private sector investment in RE is dominated by private equity organisations, not famous for their social and environmental credentials.

The influence these powerful organisations will have over the direction and implementation of RE projects will be significant, with implications for the quantity and quality of RE jobs. In anticipation of such challenges, some state governments have introduced local content rules that require lead firms to locally source workers, services, and manufactured products when constructing RE projects. The Albanese government's Future Made in Australia legislation also includes similar 'community benefit' requirements for firms receiving government funding. They aim being to encourage global firms to rely less on their global supply chains and expertise overseas in the construction of local projects, so that dividends are delivered to local businesses and workers. The success of local procurement policy in delivering meaningful local outcomes impacts will depend on how well they are designed, as well as the existing capabilities of local industry and the workforce.

Whether services, manufactured goods, or workers are sourced locally or not, the business models and practices these firms have relied upon in other markets, are unlikely to be substantially altered. When the Victoria Government contracted the Dutch-based MHI Vestas to build the Ryan Corner Wind Farm in Southwest Victoria, it was expected that they would source wind towers from Australia's only manufacturer of wind towers located only 65 km from the construction site. Much to the anger and disappointment of the local firm and workers, Vestas decided to import the wind towers from their contractor in Taiwan. According to Vestas, this was necessary as the 'the Portland-manufactured tower plates cost about 40 per cent more than alternatives' (Sakkal 2021).

With capital accumulation continuing to be the driver of climate capitalism it is hard to see how 'green' jobs will be any different from other jobs when it comes to the challenges of realising decent work. Manufactured components (e.g. solar panels, turbines, wind towers) will be imported, and wind and solar farms will be built with outsourced contractors and contingent labour wherever possible. There is also the prospect that these projects may rely on fly-in-fly-out (FIFO) workers if local workers are perceived as not sufficiently skilled. Whitfield (2023), quite rightly, questions if anything has really changed in this transition to the green economy:

[R]enewable energy has become the ultimate neoliberal model – markets, private capital, private ownership, competition, state support in procurement/auction programme and funding research, whilst venture capitalists and private equity companies adopt flimsy Environment, Social and Governance (ESG) green washing, offshoring for tax avoidance and operate free trade of capital and companies with limited transparency and accountability. (Whitfield 2023, 11)

Whitfield argues that there are other political economy realities at play. First, markets are sustained by a myriad of organisations with a collective interest in minimising regulation and employment rights. They equally campaign for outsourcing and privatisation. Second, the role of private equity firms and the privatisation of energy generation and distribution create the corporate infrastructure for the renewable sector and allow the fossil fuel companies to continue 'business as usual'. Finally, the financialisation, marketisation, and privatisation of public infrastructure and services include the privatisation of many publicly owned energy organisations, go together with the promotion of PPPs.

Conclusion

In this article, we outlined what climate capitalism might mean for the quantity and quality of jobs in the RE industry in Australia. It is expected that multinational energy firms will play a key role with the state being an initiator and promoter and primarily as a de-risker of private sector investment. State ownership is viewed as the last resort (see CEDA, 2024). This means a major role for PPPs in various guises. However, the reality of the RE sector is that this means largely PPPs involving MNCs (see Whitfield 2023).

The questions regarding what sort of jobs emerge, in what numbers, and where and who gets them, come down to old issues of local actors negotiating with international concerns. Questions of process and personnel and their respective 'green' credentials become increasingly remote. This also raises questions about the sustainability of local economies at the forefront of these developments. For regions currently reliant on heavy carbon-intensive industries, the new orthodoxy holds out hope for the future regarding jobs and regional development. However, the reliance of the 'new' climate capitalism on MNCs and PPPs raises matters of some concern. The question many communities are currently asking, however, is whether the renewable projects they were promised will ever be realised or if more powerful influences will undermine these initiatives.

Questions of housing provision (amid a national housing crisis) and impact on local communities are crucial. The debate around fly-in-fly-out (FIFO) workers and its impact on families and communities, is a case in point. Community sustainability in its deeper sense (see Adamson et al 2023) for Deep Place analysis) involves moving far beyond jobs and growth to issues associated with the foundational economy. This debate has barely started in Australia (see Rainnie, 2021). We have raised elsewhere the issue of the depoliticisation of just transitions (see Rainnie and Snell 2024a). Here the issue becomes even broader with questions regarding the number and nature of jobs associated with new RE reduced once again to little more than 'jobs and growth' associated with 'diversifying' the regional economy and stimulating investment and business opportunities.

The transition to a low-carbon economy will result in both job loss and job growth and is likely to be uneven in these occurrences. New industries and skills will be required, but many skills and jobs will continue to be relevant with many occupations largely unchanged. Ensuring 'green' jobs are 'quality' and 'safe' jobs presents challenges, and despite the promises of the green economy, dangerous and poorly regulated work involving unscrupulous employers and poor training is not going to be foreign to the low-carbon transition. In Victoria, for example, a worker was recently killed when a turbine blade fell and crushed him while working on a Vestas wind farm. The Australian Workers' Union blamed Vestas for the death due to its practice of transferring safety obligations to subcontractors who lacked the necessary training (AAP 2024). Putting aside claims that green jobs can be differentiated from other jobs, employment in the green economy will in practice be no different from that in other Australian sectors that are controlled by multinational corporations and impacted by workplace transformations flowing from contracting out and reliance on global supply chains. How far the Albanese government and other state governments are prepared to strengthen industrial policy and regulation around local procurement, training, and decent work in relation to the various RE projects to be led by multinational corporations will be key factors in shaping how many, and what quality, are jobs in Australia in the green future. Although 'community interests' figure in the aims and objectives of the governments Future Made in Australia policy, Treasurer Jim Chalmers has made it clear that the policy is about increasing the alignment between economic and security interests (Coorey 2024).

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