

**Submission
No 185**

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

Name: Professor James Goodman

Date Received: 15 September 2019

‘Addressing the social and political dynamics of energy transition’

Submission to the Committee on Environment and Planning
Inquiry into Sustainability of Energy Supply and Resources in NSW.

Prof James Goodman, A.Prof Tom Morton and Dr Jon Marshall
Climate Justice Research Centre, University of Technology Sydney

'Energy transition' is best defined as a decisive shift away from reliance on fossil fuels for energy, towards renewables. The aim to decarbonise energy is now an urgent priority in the context of advancing climate change. Across the globe, both high and low-income countries are now committed to a substantive shift in energy policy, expressed in 'Intended National Contributions' to emissions-reduction as ratified by the United Nations in 2015. There is increasing evidence that such a transition is actually occurring (van Veelen 2018; BP Statistical Review of World Energy 2018; IEA World Energy Outlook 2017). Costs of renewable energy have fallen faster than expected, and the rate of installation of technologies such as solar PV has consistently exceeded predictions by the IEA, Greenpeace & others (Edenhofer, 2018).

Yet the Paris mandate, to reach 'net-zero emissions' by 2050, presents profound challenges.. In 2018 the UN Environment Program's annual Emissions Gap Report issued the sobering message that the existing national emissions-reduction commitments need to increase three-fold to meet the target of maintaining the global temperature increase below 2°C. Significantly, the report unequivocally identified coal-fired power as the key problem for climate policy and 'the most important cause of carbon lock-in today': coal-fired power stations under construction would have an operating life of at least 30 years and would likely push the world beyond the 2°C maximum increase (UNEP 2018: 22). Responding to the Emissions Gap report, the UN now states that from next year, 2020, no new coal fired power plant can be built anywhere in the world. This is a particularly important message for NSW, which remains heavily dependent on coal-fired power for electricity generation.

The alternative, in the form of renewable energy, is on the table. Advocates of transition stress that technological innovation and the falling price of renewable energy already offer a concrete pathway to solving the "energy trilemma"; the problem of providing an energy supply that is reliable, affordable and environmentally sustainable. But the availability of an alternative does not ensure its uptake at the scale required. The key issue, we would argue, is social legitimacy. To what extent is the urgency of climate action, our dependency on fossil fuels, and the centrality of phase-out, seen as legitimate, and prioritised? How far are the macro policy settings on climate change and energy policy geared to securing active support for transition? How far are they displacing and shifting responsibility, and experienced as

unjust, cynical or corrupted? To what extent do those involved in, and affected by the process of transition, have a stake in the process and a say in its outcomes?

These are questions, not just of energy policy, but also of energy governance. They ultimately force open issues climate democracy, of establishing new socio-ecological relations to secure climate stability. From these flow further questions about “potential transformational impacts” (Bridge et al. 2013, Sovacool 2014; van Veelen, 2018, 644): successive energy transitions have enabled radically different social formations, with contrasting ecological and political impacts. Coal-fired power engendered a mass urban citizenry capable of deepening liberal democracy (Mitchell 2012, Malm 2016). Oil, a fuel that could be easily transported and transformed into plastics, enabled new forms of social organisation, associated with new patterns of settlement and mobility (Mitchell 2012). Today’s transition from fossil fuels is similarly establishing new socio-ecological relations of energy, driven by the underlying climate crisis (Moore 2015). The result is profound social antagonism, but also transformation. As Mitchell argues, in relation to renewables, the “building of solutions to future energy needs is also the building of new forms of collective life” (2012).

There is now a growing scholarly literature which seeks both to explore the emancipatory potential of transition to a decarbonized society based in renewable energy, and to analyse existing examples of transition, foregrounding the “role of social, economic and political power in energy transitions, most explicitly expressed through concepts of energy justice and energy democracy” (Weis et al. 2015; van Veelen, 2018, 644). Within the existing literature on transition and energy democracy, there is for instance a body of scholarship which analyses the dynamics of transition at a local, regional and national level, in Scotland (van Veelen, 2018), Germany (Moss et al, 2014) and the USA (Tomain, 2017).

NSW is a particularly important site for advancing energy transition. The past decade has seen an extraordinary politicization of climate and energy policy, characterized by “toxic political debates, mixed messages and policy backflips [that] have prevented the emergence of credible climate change policy” (Wood, cited in Carabott, 2017). The removal of Malcolm Turnbull as Prime Minister in 2018, and the collapse of the National Energy Guarantee, mean that Australia is now effectively without an energy policy. Yet it appears that an energy transition is underway without, or despite, any policy intervention from the Federal Government. Industry figures describe the pace of this transition as a “once-in-a-lifetime change in the energy supply paradigm” (Macdonald-Smith, AFR, 2018). Investment in renewables in Australia has surged in the last three years.

According to recent modelling, the National Electricity Market will receive 33.3% of its power from renewable energy by 2020 - almost a doubling in renewables’ share compared to 2015 (17.3%) (Green Energy Markets, 2018; BNEF, New Energy Outlook 2018). One recent study suggests that, at current rates of installation of wind and solar, Australia could reach 100 per cent renewables by 2032 (Blakers & Stock 2019).

This surge has been driven largely by private-sector investment linked to State-based incentives to support renewables, community initiatives, and domestic and commercial rooftop solar installation, which is currently experiencing an unprecedented boom (Parkinson 2019a). It is remarkable that this has occurred in the absence of any coherent climate or energy policy framework at the Federal level: according to Gero Farrugio, global head of renewables at Rystad Energy, Australia’s energy transition is “clearly not being driven by policy, it’s being driven by economics, commercial factors, and the corporate power purchase

agreement sector” (Macdonald-Smith, AFR, 2018). Yet some industry commentators warn that the current boom in renewables is fragile. While a national ‘Renewable Energy Target’ continues to provide structural support for investment, despite the reduction in targets legislated by the Abbott government in 2015, Bloomberg New Energy Finance and others predict that investment in renewables will “fall off a cliff” after 2020 unless emissions targets are increased or new incentives are provided (Clean Energy Regulator 2016; Chalmers, ABC, 2018; Ludlow, AFR, 2018; Yeates & Latimer SMH 2018). Yet the sector seems to have gained its own momentum: the Business Council of Australia’s Energy and Climate Change Committee is reportedly considering a “go-it-alone” strategy for businesses in the energy sector, involving a “self-regulated package of measures that would reduce greenhouse gas emissions, restore energy reliability, and improve investor stability” (Coorey et al, AFR, 2018).

Transition ‘from below’ is becoming a major disruptor of the heavily concentrated and corporatized energy sector. The expansion of small-scale rooftop solar and home battery storage threatens to undermine the market dominance of the major energy companies, and creates challenges for the management of the national electricity grid. The CEO of AEMO, Audrey Zibelman, has warned that unplanned growth in rooftop solar will “hurt the stability of the grid”, and that falling demand for electricity on sunny days could “force coal plants out before their scheduled retirements” (Potter & MacDonald-Smith, AFR, 2018).

In the absence of effective Federal policy, energy transition in Australia is unfolding in an extremely volatile investment environment, which in turn poses major challenges for energy governance. This volatile situation raises important questions about the future of transition, and how issues of energy justice and energy democracy will be addressed. As borne-out in the Australian context, debates about who pays for the transition, and who stands to benefit - for instance from anticipated “green jobs” in the newly-emerging industrial sectors - are critical in shaping the logic of political contention. With the simultaneous “phase-out” of fossil fuels, the issue of “just transition” for coal regions has become a key political fulcrum. In Australia, the Federal Labor Opposition and the ACTU, the peak union body, have proposed the creation of a Just Transitions Authority to manage the phase-out of coal. In terms of “phase-in”, issues of “energy democracy”, and associated models for distributed and socialised provision (Jungjohann & Morris, 2017), are increasingly on the agenda. Climate NGOs, unions, and local communities are becoming key agents in advocating for, and implementing, varying models of socialised energy transition. These models are themselves hotly debated and contested, with questions of social ownership, agency and legitimacy at the heart of these debates.

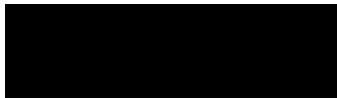
These issues are not unique to Australia. As Szulecki (2017) notes, all around the world “energy governance is at a crossroads, facing inevitable change, perhaps even a ‘third industrial revolution”, but these challenges also create opportunities for change. As Kern & Rogge (2016) note, historic energy transitions have not been consciously governed, whereas today a wide variety of actors is engaged in active attempts to govern the transition towards low energy carbon systems. The transition from a centralized, mostly fossil fuel-based power sector, towards a distributed renewable energy system brings with it the emergence of a significant number of small and medium power producers (Szulecki, 2017: 22). Individuals, cooperatives, small companies or local communities are able to invest in and benefit from the development of renewable energy sources. Technological innovation and the falling price of renewable energy and infrastructure creates the possibility for social innovation and political intervention. Over the last two decades, according to Szulecki, individual citizens and

communities have gained new roles, “evolving from passive consumers to active *prosumers* of energy – most often not yet self-sufficient, but simultaneously producers and consumers of energy [...] The increasing role of societal actors, such as prosumers, energy cooperatives, or not-for-profit organizations in advancing renewables, and also in politicising, contesting and transforming the existing policies, has led to some to the coin the term ‘energy democracy’ (Szulecki, 2017: 22).

At the Climate Justice Research Centre we have been involved in researching these dynamics in an international context. We undertake comparative analysis, including with India and Germany. Germany is often cited as a model for the promotion of renewable energy and adoption of a new energy regime. The share of renewable energy in the national electricity supply has grown from 6% in 2000 to 36% in 2017 targeting 40 to 45% by 2025 (BMWi 2018). A decisive factor in driving the German energy transition has been the creation of political legitimacy enabling institutional change and technology deployment. The German energy transitions demonstrates the important interplay between “top-down” and “bottom-up” as drivers for the transition, and how these may strengthen or undermine the political legitimacy and social acceptance of energy sector transformation. These issues are particularly salient in Germany at present since the release in February 2019 of the final report of the “Coal Commission” which sets the date for Germany’s exit from coal by 2038, and outlines a detailed framework for transition in Germany’s coal mining regions, stating that they should “remain energy regions in the future”, where the development of innovative technologies such as electricity storage & renewable energy sources should be supported”, and coal-fired power plant sites should be converted into industrial parks” (Egenter & Wehrmann, 2019).

We would hope that the NSW Government can learn from examples of energy transition around the world, recognise the scale of the challenge that faces us, and address crucial social dynamics it entails. From our perspective, social justice and social ownership has to be at the heart of the energy transformation, to sustain it as a social process at the scale required. In this NSW can deepen society-wide engagement with the transition, which, as we have noted, appears to be already underway, notwithstanding the many obstacles that have been put in its way.

Sincerely,



Prof James Goodman
(and on behalf of A/Prof Tom Morton and Dr Jon Marshall)