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Prospects for a “just transition” away from coal-fired power generation in Australia: Learning from the closure of the Hazelwood Power Station

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Abstract

Until its relatively sudden closure in March 2017, the Hazelwood Power Station in Victoria’s Latrobe Valley was the most carbon-intensive electricity generator in Australia. It became a symbol of Australia’s reliance on coal and an electoral battleground in the bitter political struggles over climate policy that have raged since the mid-2000s. The announcement by Hazelwood’s owners, French multinational power company, Engie, in late 2016 that it would be closing the plant for commercial reasons, therefore came as somewhat of a shock. We argue that Australia’s political and economic institutions help to explain the autonomous decision of Engie to close the plant, the short notice period, and the lack of pre-closure government transition policy. These institutions discourage long-term policymaking and encourage a disproportionate amount of vote-seeking activity directed at marginal electorates. Straightforward “vote-seeking” is however too simplistic an explanation of the transition policies announced at the time of the Hazelwood closure. Of particular relevance is the fact that, over the last few years, the transition away from coal and towards renewable energy has become a virtual inevitability in the Australian energy sector. One important outcome of this trend has been the shift in position of the Australian union movement towards advocacy for “just transition” policies, bringing it both closer to—and, in some cases, in alliance with—environmental groups.

Absent institutional reform, the most likely means by which coal closures could move closer to “best practice” in Australia is through action by unions and environmental groups to mobilise institutional investors to pressure energy companies to adopt more worker- and community-friendly, “just transition” policies. The most plausible institutional reform path, given Australia’s existing political-economic institutions, would involve the direct regulation of companies’ transition obligations. Yet, the more interventionist the regulatory change, the greater the costs imposed on existing generators and the more politically contentious the reforms are likely to be. In this difficult policymaking environment, an important variable is likely to be the agency of civil society actors in making the *politics* of energy/climate policymaking more conducive to just transition-oriented regulatory reforms. Our case study has demonstrated that the positions of key civil society stakeholders in Australia’s energy debate, including unions, environment groups and to some extent business groups have been converging toward a “just”—or at least an orderly—transition as a dominant political narrative for substantive policies to improve the transition arrangements in the Australian energy sector. Strengthening and perhaps formalising these alliances will improve the incentives for political parties to invest in long-term policies in the energy sector.

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International Coal Transition Research Project *Working Paper*

Prospects for a “just transition” away from coal-fired power generation in Australia: Learning from the closure of the Hazelwood Power Station

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The Coal Transitions Project

The *Australian Coal Transitions Project* is the Australian component of the international research project: *Coal Transitions: Research and Dialogue on the Future of Coal*. This collaborative project brings together researchers from six major coal producing nations (China, India, Germany, South Africa, Poland and Australia) to explore trajectories and policy options with the potential to facilitate well managed and equitable economic transitions away from coal.⁴

The international Coal Transitions project is led by IDDRI (Paris) and Climate Strategies (London). The Australian component is led by the Australian National University's Crawford School of Public Policy, in collaboration with the University of Melbourne's Melbourne Sustainable Society Institute.⁵

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⁴ <https://coaltransitions.org/> The international Coal Transitions project is led by Climate Strategies <http://climatestrategies.org/> and The Institute for Sustainable Development and International Relations (<http://www.iddri.org/>)

⁵ <https://ccep.crawford.anu.edu.au/ccep-research/coal-transition> ; <http://sustainable.unimelb.edu.au/coal-transitions>

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Executive Summary

Until its relatively sudden closure in March 2017, the Hazelwood Power Station in Victoria's Latrobe Valley was the most carbon-intensive electricity generator in Australia. It became a symbol of Australia's reliance on coal and an electoral battleground in the bitter political struggles over climate policy that have raged since the mid-2000s. The federal Parliament enacted a national carbon price in 2011 (following two previous failed attempts to do so, in 2009), which cast a cloud over the future of the Valley's power generation industry. The accompanying transitional assistance package provided generous support to Victorian's brown coal-fired power generators, yet offered minimal transitional support for affected workers and the wider Latrobe community. Meanwhile, the state Labor government in Victoria campaigned on a pledge to close down Hazelwood during the 2010 state election campaign. Both policies were opposed by the Liberal-National coalition. When both federal and state Labor governments lost office in 2013 and 2014 respectively, the federal carbon price was repealed and the state plans to close Hazelwood were rejected. Hazelwood survived.

Yet the iconic power station remained mired in public controversy. When the Hazelwood coal mine caught fire in February 2014, the fire blazed for 45 days and covered the nearby town of Morwell in toxic smoke, precipitating two independent inquiries and renewed calls for the closure of the plant. Yet still no state (or federal) policies with that aim or effect were forthcoming.

At a national level, Australian climate change and energy policy since 2014 has been marked by stasis, uncertainty and conflict, creating significant policy risk for investments in the sector at a time when the National Electricity Market is facing unprecedented challenges from the rapid growth in renewables and the imperative to retire older, coal-fired power stations. Amid the policy stasis, there have been growing calls from civil society for policies that would induce a planned and orderly closure of coal-fired power generation. These have been accompanied by the emergence of a labour union-led and environment movement-backed narrative of "just transition" to a low-/zero-carbon future, the broad object of which is to secure fair transitional support for workers and communities entangled in high-carbon sectors of the economy that need to be phased down as Australia decarbonizes its economy. Unsurprisingly, Hazelwood has loomed large in these discussions about coal closure policy and just transition. Yet, still, no federal or state policy has seriously engaged with the issue of coal closure or energy system transformation.

The announcement by Hazelwood's owners, French multinational power company, Engie, in late 2016 that it would be closing the plant for commercial reasons, therefore came as somewhat of a shock. Perhaps even more surprising was that, following the commercially-originated closure, both the federal Coalition government and the state Labour government came forward with extensive transitional assistance packages for affected workers and the Latrobe Valley community. The Victorian government's assistance package is even more generous than had been offered by the previous Victorian and federal Labor governments to accompany their own proposed or enacted climate policies affecting the region. In fact, it is the largest regional development package ever announced by a Victorian government (Baxendale, 2016; ABC, 2016e).

What explains these recent policy outcomes — which can be conceived as a case of conspicuous "non-policy" followed by a sudden rush of "transition policy"?

We argue that Australia's political and economic institutions help to explain the autonomous decision of Engie to close the plant, the short notice period, and the lack of pre-closure government transition policy in this case.

The Victorian energy generation sector, privatised in the 1990s, is dominated by large (mostly foreign-owned, multinational) corporations that operate within competitive markets and are highly responsive to the demands of their shareholders. Moreover, Australia generally and the Victorian energy sector specifically lacks coordinating (or "corporatist") political-economic institutions that draw firms (employer associations), workers (unions) and governments together to strike the kind of sector-level bargains that are recommended in "best practice" approaches to transition planning. Australia's formal political institutions, moreover, lead to frequent, highly-competitive, polarised, two-party dominated contests at federal and state levels with considerable jurisdictional overlap. These institutions discourage long-term policymaking (e.g. ambitious/stringent climate policy; transition planning) and encourage a disproportionate amount of vote-seeking activity directed at marginal electorates.

Notwithstanding these political institutional constraints, the 2007–2013 period involved considerable experimentation with (somewhat) stringent climate policies at both federal and state levels. Yet the widely-documented political casualties of this era have strongly conditioned Australia's major parties to be much more cautious in their climate and energy policies in the post-2013 period that we focus on in this study. We argue, in particular, that the marginality of the Victorian state seat of Morwell, in the heart of the Latrobe Valley, goes a significant way to explaining the policy outcomes of this period (currently held by the National party by a mere 1.8% margin, Morwell is the 6th most marginal seat in Victoria). Electoral pressures, we argue, both (i) discouraged the introduction or proposal of stringent climate change, coal closure or energy transition policies that would have conspicuously increased the probability of Hazelwood's closure; and (ii) encouraged the kind of large transition policy packages that were announced by the Victorian and federal governments following the exogenous decision to close Hazelwood.

Yet straightforward "vote-seeking" is too simplistic an explanation of the announced transition policy packages. Contextual shifts in material conditions, dominant ideas and the policy preferences of influential elites are likely also to have influenced the transition packages announced. Of relevance to the Victorian state Labor government's position is the fact that, over the last few years, the transition away from coal and towards renewable energy has become a virtual inevitability in the Australian energy sector, with the important result that the Australian union movement has shifted its position to advocating for "just transition" policies, bringing it both closer to—and, in some cases, in alliance with—environmental groups. Both the overall tenor of the state government transition package and some of its specific initiatives were clearly informed by the advocacy of these groups.

Meanwhile, at federal level, the business community has pressured the government for clear climate and energy policy, exposing the sharp divisions and policy indecision within the governing Liberal-National coalition. In this context, the federal government's transition policy response to the Hazelwood closure can perhaps best be understood as a reactive measure to buy the government some credibility in public debates over the Hazelwood closure in Victoria.

What can we learn from this analysis for future energy sector transitions?

One implication of our analysis is that, absent institutional reform, the most likely means by which plant closure could move closer to “best practice” in Australia is through the operation of *market* pressures. For example, Australian unions and environmental groups could attempt to mobilise relevant institutional investors (i.e. those who hold stocks in companies that own Australian, especially Victorian, coal-fired power stations) to pressure such companies to adopt more worker- and community-friendly, “just transition”-style policies for managing the closure of their assets. In other Australian states where governments still own stakes in coal-fired power stations, governments and unions may be able to press more directly for better transition planning, without needing to rely on third party institutional investors.

But unless and until private energy companies are pushed by their shareholders to adopt such “best practice” with regard to mine/plant closure and just transition strategies, institutional reforms will be necessary to alter the incentives companies face. The most plausible institutional reform path, given Australia’s existing political-economic institutions, would involve the direct regulation of companies’ transition obligations. Energy generators already face legal obligations with respect to plant closure, decommissioning and rehabilitation. State governments could strengthen these existing laws/regulations (for example, with respect to closure notice periods, workforce transition planning, and stakeholder consultation processes). Alternatively, entirely new mechanisms could be enacted by state or federal governments to provide incentives for an orderly phase out of emissions-intensive facilities such as coal-fired power generators.

Yet, the more interventionist the regulatory change, the greater the costs imposed on existing generators and the more politically contentious the reforms are likely to be—and this tension is indeed one of the very reasons that energy/climate-policymaking of this more interventionist variety has been so conspicuously absent in the 2014–17 period that we have analysed.

This leads us to our final observation: in this difficult policymaking environment, an important variable is likely to be the agency of civil society actors in making the *politics* of energy/climate policymaking more conducive to just transition-oriented regulatory reforms. Our case study has demonstrated that the positions of key civil society stakeholders in Australia’s energy debate, including unions, environment groups and to some extent business groups have been converging toward a “just” —or at least an orderly—transition as a rhetorical heuristic for substantive policies to improve the transition arrangements in the Australian energy sector. Strengthening and perhaps formalising these alliances will improve the incentives for political parties to invest in long-term policies in the energy sector.

Australia’s mix of political and economic institutions, stakeholders, cultural norms and climate/energy policy “legacies” is unique. One therefore must be careful in generalising these findings and applying these “lessons” to other countries. That said, our analysis is likely to be of significant relevance to countries with similar constellations of political and economic institutions, namely the liberal-market economies of the US, Canada and the UK. The first two of these also share with Australia a federal system of government and a political economy marked by the presence of large fossil fuel industries, which potentially increases the comparability of these countries to Australia when it comes to energy, climate and transition policies.

1. Introduction

Reducing the risks of global climate change is now widely recognised as one of the great ecological, social and economic challenges of our time. The 2015 Paris Climate Agreement, signed by 195 countries, includes objectives that imply the need to achieve a phase out of net greenhouse gas emissions by the second half of this century.⁷ Reducing greenhouse gas emissions at that speed and scale will require a rapid and fundamental transition away from fossil fuel-based energy systems (Stern 2015b)—with the phase out of coal an especially urgent priority. This transition is also being driven by a rapid increase in the capabilities and competitiveness of renewable energy technologies and related innovations in energy systems and storage technologies (Bloomberg New Energy Finance 2017; REN 21 2017).

This transition promises widespread gains in prosperity for most people (quite aside from the value of mitigating climate change) (Fay et al. 2015; GCEC 2014; Green 2015; Stern 2015b). Yet it also threatens disproportionate costs and losses for some — and in many cases for those who can least afford to incur them (Büchs, Bardsley, and Duwe 2011; Green 2015; Healy 2017; Hills 2012; Newell and Mulvaney 2013; Rosemberg 2010; Swilling and Anneck 2012; Swilling, Musango, and Wakeford 2015). With researchers, policymakers and other stakeholders paying increasing attention to these potential costs and losses, and the transition policies (“just” or otherwise) to ameliorate them (e.g. Caldecott, Sartor, and Spencer 2017), there is a need for theoretically-informed empirical research on the political economy of transitions (Stern 2015a) and of “transition policies” (Green 2017). Without an understanding of the political-economic variables likely to affect transitions and transition policies, “best practice” transition management strategies are likely to gain little traction in all but the most propitious political-economic contexts. By systematically understanding these political-economic variables, stakeholders and policymakers can better tailor their interventions to influence transition outcomes.

This paper aims to contribute to this important research agenda by providing a detailed case study of the closure of Australia’s most carbon-intensive installation, the brown coal-fired Hazelwood Power Station (and its co-located lignite mine) and of the federal and Victorian state government transition policy responses to this nationally significant event.

To explain the closure and the government responses, they must be interpreted in the light of a longer “episode” in the Latrobe Valley’s history dating from roughly 2007—the period in which the prospect of substantial climate change mitigation policy and (more broadly) low-carbon transition have been central features of the federal, state and local political economy in which the Valley is situated.

The politics of the earlier phase of this episode (2007–2013)—spanning the climate policies of the Rudd and Gillard federal governments and up to the repeal of the carbon pricing scheme by the Abbott coalition government—has been extensively discussed in the academic literature, with a number of

⁷ The Paris Agreement includes the objective to “strengthen the global response to the threat of climate change ... by: Holding the increase in global temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels...” (art. 2(1)(a)). Moreover: “In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible ... and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century” (art. 4.1). The latter article has been widely interpreted implying “net-zero” emissions must be achieved within the second half of this century.

works explicitly considering the Latrobe Valley region's role (Chubb 2014; Jones 2014; Snell 2011; Snell and Schmitt 2012; Weller 2012; Weller, Sheehan, and Tomaney 2011; Weller and Tierney 2017), and some analysing the relevant transition policies of this era in detail (Green 2011; Menezes, Quiggin, and Wagner 2009; Wood and Edis 2011).

To our knowledge, however, the more recent part of this episode, from the beginning of 2014, has not been analysed in detail in the academic literature. This period includes the Hazelwood mine fire (February–March 2014), the November 2014 Victorian state election, the energy and climate policy of the Turnbull-led coalition Government (September 2015 onwards), the closure of the Hazelwood power station (announced 1 November 2016, effective 31 March 2017), and the state and federal government transition policy responses to Hazelwood's closure. Accordingly, our descriptive section (Part 2) focuses primarily on the events of this period (Part 2.3) and the actors involved (Part 2.4), albeit set against the historical backdrop of the Valley's industrial development (Part 2.1) and the carbon price wars of 2007–13 (Part 2.2). Evidence informing the descriptive elements of the case study has primarily been drawn from a desktop review of relevant academic and grey literature as well as media commentary.

In choosing appropriate frameworks to analyse the case study, we note the growing scholarly consensus that understanding energy and sustainability transitions requires multiple analytical perspectives (Boschma et al. 2017; Cherp et al. 2017; Geels, Berkhout, and van Vuuren 2016; Lauber and Jacobsson 2016; Scoones, Leach, and Newell 2015; Turnheim et al. 2015). Cherp et al. (2017) have argued that the relative power of alternative theories to explain energy transition outcomes even within a single country varies from historical “episode” to “episode” (see also Geels, Berkhout, and van Vuuren 2016). Accordingly, researchers should be wary of attempting to apply a singular, grand theory; rather, “a good theory of contemporary energy transitions is likely to be an assembly of ‘micro-logics’ of its specific constituent elements combined with an understanding of the applicability of such logics to specific situations and their relationships to each other” (Cherp et al. 2017, 625).

In that spirit, we have chosen an approach to our explanatory analysis (Part 3) that proceeds in two steps. We first discuss the *institutional* context that conditioned the responses of the various agents (Part 3.1). In this analysis, we draw primarily from the historical institutionalist traditions of political science and political economy (see, e.g., Thelen 1999). In the second step (Part 3.2–3.3), we examine more closely the preferences, actions, and interactions of *agents* in the political process during our period of concern to provide more proximate, micro-level explanations of the relevant outcomes. To do so, we draw primarily on the (qualitative) rational choice tradition within political science and political economy, but we emphasise that these agents' objectives, strategies and tactics have been heavily conditioned by the *ideational* legacies of the preceding carbon price wars of 2007–2013.⁸

Our analysis speaks overwhelmingly to the challenges of instituting a more planned, orderly and “just” transition away from coal-fired power generation in Australia. However, it also illuminates some potential opportunities. We conclude, in Part 4, by discussing some implications of our analysis for the avenues by which actors seeking such responses could advance their cause.

⁸ In this, we heed Thelen's advice concerning the combination of rational choice and historical/sociological variants of political institutionalism: “Rather than a full-fledged synthesis, we might instead strive for creative combinations that recognize and attempt to harness the strengths of each approach” (Thelen, 1999: 380).

Our analysis is likely to be of most interest to an Australian and international audience of researchers, policymakers and other stakeholders engaged in debates over energy, low-carbon, sustainability and regional *transitions*, and climate, energy, regional and transition *policy*. In drafting the paper with these diverse audiences in mind, we have erred on the side of additional detail. Some readers are likely to be particularly interested in the details of the Latrobe Valley case, in which case Part 2 is likely to be of primary interest. Scholars of transitions and policy who are more interested in the explanatory analysis and its implications may wish to skim Part 2 and focus their attention on Parts 3 and 4.

2. Case study: the rise and fall of the Hazelwood Power Station

2.1 Historical context

Development of coal mining and electricity generation in the Latrobe Valley

The Latrobe Valley is located in the state of Victoria, approximately 150 kilometres east of the state capital, Melbourne, in a region called Gippsland. The Latrobe Valley is approximately 1,422 km² in size, and includes Latrobe City, one of the four major regional centres in Victoria with a population of approximately 74,000, and four major towns — Morwell, Moe-Newborough, Traralgon and Churchill (Remplan & Latrobe City Council, 2017). The Latrobe Valley is situated on one of the world’s largest brown coal reserves (Geoscience Australia, 2016). The Latrobe Valley coal reserves primarily consist of lignite, a soft brown coal that has a low carbon content and high moisture content. This means that more carbon dioxide emissions are emitted per unit of energy produced compared with the black coal that is mined (for domestic use and export) in Queensland and New South Wales (EIA, 2017). It also means that Victoria’s brown coal is difficult to transport and is therefore not exported. The Valley’s lignite reserves, which are mined from three open-cut mines (Yallourn, Hazelwood and Loy Yang), are used almost entirely for electricity generation for domestic use, with the Latrobe Valley supplying approximately 90% of Victoria’s electricity needs (Latrobe City Council, 2016).

Box 1: Australian coal reserves

Australia had the fifth largest recoverable economic coal reserves in the world in 2015, consisting of both black and brown coal (Geoscience Australia, 2016). 60% of Australia’s demonstrated resources of black coal are located in Queensland and 37% in New South Wales (*Ibid.*) A large share of this black coal is exported, predominantly to Asian markets, with Australia ranking as the world’s largest coal exporter by volume; constituting 30% of global coal trade in 2015; and generating an export value of approximately \$34 billion in 2015-16 (OCE, 2016). Approximately 44,000 people were directly employed by the coal industry in 2015-16 although coal industry employment represents less than 1% of the Australian workforce (OCE, 2016). Australia’s recoverable brown coal reserve is the second largest in the world, and 93% of it is located in the Latrobe Valley (Tomaney & Somerville, 2010).

Discovery of brown coal in the Latrobe Valley was first recorded in 1873, with mining taking place from 1887 (Heritage Council of Victoria, 2008). A Royal Commission into coal use in 1889 confirmed the government’s interest in development of the state’s brown coal resources, which ultimately led to a model of centralised, government-controlled electricity generation and supply in Victoria (*Ibid.*) In 1920, the Victorian Government established the State Electricity Management Commission (SECV) with the mandate to manage Victorian electricity generation and supply, and develop the Latrobe Valley’s brown coal reserves (*Ibid.*) Between 1920 and 1996, coalmining and power generation

operations in the Valley were greatly expanded, with the addition of two further open-cut mines and four further power stations (Hazelwood, Yallourn W, Loy Yang A and Loy Yang B). With this development came additional regional economic growth, employment, and population.

Situated next to the town of Morwell, excavation of the Morwell Open Cut Mine (later Hazelwood mine) began in 1955. Coal from the mine was initially supplied to Yallourn power station, until Hazelwood power station was commissioned. Hazelwood's eight generating units became operational between 1964 and 1971 (*Ibid.*) When it began operation, it was the SECV's intention that Hazelwood Power Station would operate for approximately 30 years (Colebatch, 2017).

The development of the Valley's power industry, its central role in the state's energy security strategy, and the political-economic model that predominated in the industry up until privatisation (described in the next section), is summarised by Weller et al. (2011: 21):

From the outset, the industry developed as a part of the state's essential services infrastructure and operated as a public service. The Valley's energy sector grew with the State and its industrial production. Electricity prices were set by the government in response to cost and political considerations. The communities in the Latrobe Valley were established as company townships set up by the [SECV] to house its then predominantly migrant workforce. Most of the housing in Yallourn, for example, was owned by the SECV and leased to its workforce.

By the mid-1970s, the SECV had developed into a vertically and horizontally integrated government-owned authority that employed over 9,000 people — almost a third of the Valley's labour force. The SECV adopted a typically 'Fordist' organisational form characterised by a robust internal labour market with its own training, promotion and recruitment priorities and "a paternalistic, social welfarist approach to employment organisation and practice" Employment was secure and power industry workers could reliably expect to keep their jobs for their working lifetime. The energy workforce was highly unionised, in what was essentially a 'closed shop' arrangement involving more than 20 different unions. The Gippsland Trades and Labour Council played a crucial role in coordinating the various unions and resolving differences among them.

By 1981, mining and electricity generation in the Valley employed a largely male workforce of over 10,000 employees (Eklund, 2017). In addition, ancillary industries had developed in the manufacturing and services sectors throughout the 1970s (Cameron & Gibson, 2005). The region was prosperous and enjoyed periods of rapid economic growth and full employment (Weller et al., 2011; Fairbrother & Testi, 2002).

The socio-economic resilience of the region during this period is illustrated by its ability to manage a challenging transition for the residents of Yallourn. Having built the town of Yallourn to house up to 5,000 employees of the adjacent Yallourn power station, the SECV decided to close the town in 1969 in order to access the coal reserves discovered underneath the town site (Eklund, 2017). This closure process began in 1985 and concluded between 1995 and 2000, affecting around 4,000 residents, constituting a significant relocation exercise even by global standards at the time (Wadley & Ballock, 1980). While residents formed a movement with union support to protest against the relocation and "Save Yallourn", the decision ultimately went ahead. A key justification for this decision was the SECV's charter to provide electricity at the lowest cost possible consistent with other objectives — highlighting the historical tension between the interests of the workers and residents of the Valley on the one hand and the imperative for a cheap, secure energy supply for Victoria (*Ibid.*). However, as

Wadley & Ballock (1980) note, the SECV's Yallourn relocation process were quite positive despite these conflicts, with a lengthy notification period for residents and a strong commitment to maintenance of employment opportunities.

Privatisation of the electricity generation sector

During the 1980s and 1990s, Australia transitioned from a highly protected to a relatively open economy, with Coalition and Labour governments at both state and national levels committed to tariff reduction, corporatisation, privatisation and other microeconomic reforms. Weller et al. (2011) cite the Industry Commission's 1991 electricity industry review as an expression of this trend, as it recommended the divestment of the state's generation and distribution assets and the establishment of a national electricity market. By this time, Victoria's generation capacity was significantly over-supplied, and prices were above efficient levels (Simshauser, 2005). By the end of the 1980s, up to 45% of the SECV's annual earnings were going towards paying its debt (HMFIR, 2016c).

In 1994, the Victorian government announced that the SECV would be disaggregated and the Hazelwood power station privatised (Cameron & Gibson, 2005). The SECV was converted into an entity called Generation Victoria in 1995, which was later separated into five state-owned businesses, one of which was Hazelwood Power Corporation (Engie, 2017c). In 1996, the Victorian government sold Hazelwood Power Corporation for \$2.35 billion, to Hazelwood Power Partnership — a private consortium led by the British firm National Power — which took over the operations of the Morwell Open Cut mine and Hazelwood Power Station (Engie, 2017c; Heritage Council of Victoria, 2008).

Though hailed by some as a microeconomic success story (Simshauser, 2005)⁹, the process of privatisation had an enormous and lasting adverse impact on the Latrobe Valley region. These impacts began even before the disaggregation and sale of the SECV, as reforms were implemented by state Labor governments in the 1980s to improve productivity and raise the sale price of the plant assets prior to privatisation. These reforms included a reduction in direct employment, an increase in the proportion of contract work and a voluntary redundancy programme (Voluntary Departure Package). One consequence of these measures was a shift in workforce demographics as an unexpectedly large number of younger workers took up the Voluntary Departure Package payout on offer and left the region altogether, leading to a sharp reduction in local house values (Barfoot & Zaghlool, 2017; Weller et al., 2011).

By the end of the privatisation process, approximately 8,000 workers had lost their jobs and the Valley had become the most disadvantaged region in Victoria, with full-time employment in the region falling by 9% between 1994 and 2001 and a large increase in outward migration from the region occurring as job-seekers searched for alternative work (Tomaney & Somerville, 2010; Giurco et al., 2011; Weller et al., 2011). Between 1991 and 1999, the number of residents receiving unemployment benefits increased by 78.2% (Rainnie et al., 2013). These developments led to an increasingly negative media portrayal of the Latrobe Valley and a feeling by some members of the community of being "*let down by the government*" (Rainnie et al. 2013: 39). The privatisation also left a legacy of distrust in

⁹ Recent analysis by The Australia Institute has also provided evidence that productivity of the electricity supply industry as a whole has actually fallen considerably under privatisation with a significant expansion in the employment of marketing staff and middle managers (Richardson, 2017).

government which has strongly conditioned the reactions of the workforce and community to current debates about the future of coal mining and power production (*Ibid.*).

The privatisation process of the 1990s was followed by the development of an extensive series of government plans and policy statements aiming to re-position the Valley and decrease regional dependence on the electricity and resources sectors.¹⁰ However, despite some diversification (into the community services and retail sectors in particular), these initiatives have had limited success and the regional economy has remained dominated by the electricity generation sector, leaving it highly vulnerable to power station closures (Weller et al., 2011). Cameron & Gibson (2005) note that the dominant economic development approach by the Latrobe City Council and state government has been to attempt to attract alternative large-scale industries such as call centres, food processing, magnesium smelters and industry parks. The limitation of such approaches is epitomised in the attempt to attract National Foods, which opened a dairy processing plant in the Valley in 1996–97 and received approximately \$1.5 million in government incentives. While 700 new jobs were promised, only 120 jobs eventuated, many of which were in fact filled by inter-state transfers from other plant closures (*Ibid.*). Having said that, Weller (2012: 1267) argues that diversification strategies in the 2000s were partially successful at inducing growth in “population-related services (health, welfare, education and retailing), forestry and the timber products sector. State government offices, a government call centre, a university campus and multiple state and federally funded community and social development services have supported this new path.”

2.2 The long shadow of carbon pricing: 2007–13

Though climate change had been a subject of policy interest for many years, it was not until the 2007 federal election that major policies to reduce greenhouse gas emissions were central to national and Victorian political debate. The ratification of the Kyoto Protocol and the introduction of a national, economy-wide greenhouse gas emissions trading scheme were key election commitments of the Rudd Labor government elected in 2007.

The Latrobe Valley’s economic dependence on emissions-intensive coal mining and power generation industries makes the region particularly vulnerable to the adoption of greenhouse gas emissions reduction policies. The Latrobe Valley was identified in the Garnaut (2008) National Climate Change Review as the region that would be most acutely affected by the adoption of a price on carbon (as it would be by other emissions reduction policy options such as ‘payment for closure’ schemes and renewable energy subsidies: Ward & Power, 2015).

Initially, the reception of the Rudd Government’s carbon pricing plans in the Valley was mixed. On the one hand, the now-privately-owned power corporations ran a ruthless public campaign against the carbon pricing plan, both stoking and playing into local fears about yet further job losses and economic disadvantage in the Valley (and also playing to wider Victorian fears about electricity price rises and energy insecurity) (Chubb, 2014, chap. 2; Snell, 2011: 155). It is however important to remember that by this time more than three-quarters of the industry’s peak workforce had already been lost, due mainly to the privatisation process. The solidaristic social relations in the industry that existed in the

¹⁰These include the Latrobe Valley Ministerial Taskforce, established by the Victorian Government in 2000; The Latrobe Economic Development Strategy 2004-2008; Latrobe 2021 – The Vision for Latrobe Valley, by the Latrobe City Council; and The Latrobe Valley Industry and Employment Roadmap in 2012 by the Victorian Government.

SECV era had also been largely dismantled by the privatisation process and its effects, leaving many remaining unions and workers distrustful of the (mostly foreign-owned) multinationals that now owned the power stations and sceptical of their scare campaigns (Chubb, 2014: 64–65). Some in the community felt that a wider low-carbon transition was inevitable and could provide an opportunity for regional regeneration, especially if carbon pricing policy was accompanied by transitional assistance involving supportive regional investments (Chubb, 2014: 65–66). In this context, there were opportunities for the government to forge alliances and win over at least some sections of the Valley community, if only they had engaged (Chubb 2014, 27–30, 62–67).¹¹

However, as the complex bureaucratic and turbulent parliamentary processes associated with the development of the Rudd Government’s carbon price wore on, sentiment in the Valley solidified against the Government. In a poorly conceived strategy, the Rudd Government sought to pacify the scare campaigns of the generators by offering the industry increasingly generous—and poorly justified—financial assistance totalling billions of dollars (Chubb, 2014, chap. 2; Green, 2011). Meanwhile, the Government refused to discuss the regional impacts of carbon pricing or to engage with stakeholders in strongly-affected regions such as the Latrobe Valley (Chubb, 2014: 23–31). The Rudd Government’s final carbon pricing package would have provided \$9–12.5 billion (in aggregate) worth of free carbon permits to the generators (Macintosh et al. 2010: 208) and minimal regional assistance to affected workers and their communities.

Ultimately, Rudd’s scheme was voted down twice in the senate and was abandoned by the Government soon after the unsuccessful Copenhagen climate conference in December 2009. The Scheme’s abandonment triggered a dramatic loss of confidence in the Rudd Government and set in motion a series of political events that culminated in the elevation of Julia Gillard to the Labor leadership and hence Prime-Ministership (Chubb, 2014: 84–120). Seeking to put the troubled legacy of carbon pricing politics behind her government, during the 2010 election campaign Prime Minister Gillard infamously promised that she would not introduce a carbon tax. But the political realities of needing the support of the Greens and numerous independents to form a minority Government after the 2010 election led to the establishment of a cross-party committee (which the coalition did not join) to design a carbon pricing mechanism, effectively reversing the “no carbon tax” promise in the eyes of the public (Chubb 2014, chap. 6).

At the same time, the Hazelwood Power Station’s smokestacks had become a potent symbol of climate policy failure that was being used by environmental groups to mobilise public support for its closure (Chubb 2014, 37–38; Lesman, Macreadie, and Gardiner 2011, 6). With federal climate policy in disarray, the Victorian state Labor Government — which was also facing an election in 2010 (on 27 November) and a strong challenge by the Greens in the longstanding Labor-held seat of Melbourne — committed to a Climate Change Action Plan that included using state funds to purchase the phased closure of Hazelwood power station (Lesman et al., 2011: 6). Hazelwood’s closure, and environmental policy more generally, was an issue on which the Liberal-National opposition coalition sought to

¹¹ One prominent vision for the Valley’s future at this time, which did receive some government support, was for what might be called a “lower-carbon coal future”, centred on new “clean coal” technologies that, many hoped, would enable the continuation of brown coalmining and power generation in a more carbon-constrained regulatory context. A centrepiece of this vision was the development of Carbon Capture and Storage (CCS) capabilities in the region, which were supported by state and federal governments (Giurco et al., 2011). A \$10 million CCS pilot project was, for example, established in Hazelwood in 2009, but only captured 25 tonnes of CO₂ per day — just 0.05% of the station’s emissions (Hickson, 2009: 66).

differentiate itself by opposing Hazelwood's closure in the interest of protecting local jobs (Lesman et al., 2011: 12). The Labor government was surprisingly defeated at the 2010 election by a narrow margin, suffering a state-wide swing against it of 6.8% (primary vote) (Lesman et al., 2011: 22). In the Latrobe Valley heartland seat of Morwell — which had been lost to the National Party's Russel Northe in the 2006 state election after being held by Labor for the preceding 36 years — Labor suffered a massive 12.1% (primary vote) swing against it (ABC 2010). An internal Labor Party review of the 2010 election campaign concluded that the policy of closing Hazelwood was a key contributing factor in the Morwell result (Griffin, 2011: 65).

But while the incoming Liberal-National coalition government in Victoria had no intention of closing Hazelwood or introducing significant climate policy (Snell, 2011: 152), in mid-2011 the federal committee established by the Gillard government announced its climate change plans. These included a new federal carbon pricing mechanism as well as a “contract for closure” programme that would use federal funds to purchase the closure of coal-fired generating units, alongside \$5.5 billion (in aggregate) worth of cash and free carbon permits for coal-fired generators (Chubb, 2014: 204–9; Green, 2011: 478–83). The Gillard Government's transitional assistance package initially included a \$200 million “regional structural adjustment fund”, some of which would have inevitably made its way to the Valley. This did little to quell popular resentment of the scheme in the Valley, which by this stage was considerable, but it raised hopes among the few groups in the Valley that remained committed to regional diversification away from coal and had sought government assistance for projects in that vein (Chubb, 2014: 209, 224–27). However, it subsequently became clear that this regional funding was in fact tied to the implementation of the “contract for closure” program, which was axed before any contracts were signed. Ultimately, only \$15 million was made available for regional diversification projects, dashing what little hope remained in the Valley for a forward-looking diversification plan (Chubb, 2014: 234–39).

The carbon pricing mechanism would enter into law in 2011 and begin operating on 1 July 2012. However in September 2013 the Labor Government was soundly defeated at a federal election by the Tony Abbott-led coalition, whose central campaign promise was to “axe the [carbon] tax” (Chubb, 2014: chaps. 10–11). As one of its first acts in office, the Abbott Government secured repeal of the carbon pricing mechanism, effective 1 July 2014—after just two years of the scheme's operation. With staunchly pro-coal and anti-climate action coalition governments in power at both federal and state level, by late 2013 there appeared little near-term prospect of new climate policy or of another significant power station or mine closure in the Valley.

2.3 Hazelwood's demise and government responses: 2014–2017

The 2014 Hazelwood mine fire

In February 2014, the Hazelwood coal mine caught fire as a result of embers from nearby bushfires. The mine fire burnt for 45 days and covered the nearby town of Morwell with acrid smoke and ash before emergency services were able to extinguish it (HMF, 2014). Over 7,000 emergency services personnel, in addition to hundreds of Hazelwood employees and contractors, were involved in fighting the fire (HMF, 2014). The 2014 Inquiry into the impact of the mine fire noted that ‘from 9 February 2014 until 25 March 2014, the local community was overwhelmed by smoke and ash from the Hazelwood mine fire. People were affected in many ways. Smoke and ash produced by the Hazelwood mine fire resulted in a number of distressing adverse health effects for Morwell residents, some of

whom may continue to be affected into the future. Many people and local businesses have also experienced financial impacts for a range of reasons.’ (HMFI 2014, 22. See also EJA 2014)

Residents of Morwell were not immediately evacuated, and the health warning for Morwell South residents was not upgraded to advise vulnerable residents to leave temporarily until almost a month after the fire had commenced (ABC, 2014). Many residents were frustrated by the limited information provided regarding health risks, particularly given the uncertainty over medium and long-term health impacts (ABC, 2014).

Following the fire, the (Liberal-National) Victorian Government appointed an independent Inquiry which found that information about the impacts of the fire provided to the community was too late, contradictory and poorly explained and that inconsistent protocols were employed (including where carbon monoxide levels were deemed unsafe for firefighters but not for the community) (HMFI, 2014). The Inquiry also found that GDF Suez, the operator of the mine, was ill-prepared for the fire; had insufficiently identified risks to Morwell and the surrounding community and had failed to adopt adequate risk control measures (*Ibid.*)

There was, however, significant dissatisfaction amongst the Latrobe Valley community with the outcome of this initial inquiry. In response to the fire some members of the community formed an advocacy group (*Disaster in the Valley*, later re-named *Voices of the Valley*), which presented new data to the Inquiry, the Coroner, the Minister for Health and the Opposition Labor Party. Analysis of this data by an independent statistician concluded that there was an 80% probability that death rates in the areas closest to the mine fire over the relevant two-month period were higher than average (EJA & Voices of the Valley, 2015: 3). The Department of Health’s conclusion that these deaths were within normal variation was in turn disputed by the second Hazelwood mine fire Inquiry (discussed below) (*Ibid.*: 4).

In the November 2014 state election, the coalition government was defeated by Labor. Labor’s election platform, though containing numerous policy commitments pertaining to climate change, renewable energy and regional development, contained no policy commitments to reduce greenhouse gas emissions from coal, or concerning the direct closure of Hazelwood. In light of discontent about the Government’s perceived delayed response to the health concerns of residents living with the consequences of the mine fire, it was expected that National Party MP (and by then, government minister) Russell Northe would face a challenge to retain the seat of Morwell (Lesman and Darby 2015, 32). In the event, Northe survived an 11.5% swing against him (based on new electoral boundaries) to retain the seat by a margin of 1.8% (ABC, 2014). However, the swing turned Morwell into the sixth most marginal seat in the state and the third most marginal seat not held by Labor (Victorian Electoral Commission, 2014).

Following the change of government, the newly elected Labor Government re-opened the Hazelwood mine fire Inquiry in May 2015 (DPC, 2016). The Inquiry’s expanded terms of reference included investigating whether the fire had contributed to an increase in deaths, potential measures to improve the community’s health, mine rehabilitation and bond options (DPC, 2016). Evidence presented to the Inquiry noted that the Latrobe Valley has relatively poor health outcomes on several indicators and

has one of the highest levels of particulate matter pollution¹² in Australia (EJA, 2014; Environment Victoria, 2017b; HMFI, 2016a). Similarly, former electricity sector workers from the Valley have been found to contract mesothelioma at a rate seven times the national average (Lee et al., 2009).

The re-opened Inquiry found (while noting the difficulty of attributing specific deaths to specific causes) that smoke from the mine fire was likely to have contributed to deaths in the community, sparking discussion of potential class action proceedings (HMFI, 2016a; Kinsella, 2015; ABC, 2016c). The Inquiry made a number of recommendations to the Victorian government, including the strengthening of rehabilitation bonds and the establishment of a designated Latrobe Valley Health Zone (HMFI, 2016b). In February 2016, Worksafe Victoria charged GDF Suez (now Engie) with 10 alleged breaches of workplace safety, including a failure to prevent the community being exposed to risk (ABC, 2016c). In March 2016, the Environment Protection Authority also indicated that it would be initiating legal action against the owners of the Hazelwood mine.¹³

The closure of the Hazelwood power station

Prior to its closure in 2017, Hazelwood was one of the oldest coal-fired power stations in Australia, with its oldest units aged 52 years and its newest, 42 years (Colebatch, 2017). Given its high emissions intensity, Hazelwood was widely known as “Australia’s dirtiest power station”, responsible for an estimated 16 million tonnes of CO₂ equivalent pollution per year (Jotzo & Mazouz, 2015; EV, 2017; ACF, 2016). Ward & Power (2015) estimated that the true social short-run marginal cost (SRMC) of Hazelwood, taking into account the external costs of carbon emissions and air pollutants, was more than 20 times the private SRMC that the station actually faced, imposing an estimated external cost of \$900 million per annum. While the SECV had planned for Hazelwood to be retired in 2005, the station had been privatised by the time this deadline arrived and the Victorian Labour government authorised an extension of operations until 2030 (Fyfe & Tomazin, 2005). This included approval for an extension of the mine (requiring the removal of 16 homes), on the condition that the power station was upgraded to become more efficient and meet a tightened pollution cap (*Ibid.*). Several changes in branding and share ownership of Hazelwood Power Partnership have occurred since privatisation, with the majority owners since 2012 being French multinational Engie (formerly GDF Suez) holding a 72% share, and Japanese multinational Mitsui the remaining 28% (Engie, 2017b).

In April 2016, the Victorian government announced an increase in coal royalties from 7.6 cents to 22.8 cents per gigajoule of energy. This brought the Victorian coal royalty rate (which had not been increased in ten years) into line with coal royalty rates in other Australian coal producing states (ABC, 2016f).

In May 2016, the global CEO of Engie reported to a French Senate committee that it was assessing a number of possible actions regarding Hazelwood, including sale and closure of the mine (De Clercq, 2016). This statement increased speculation regarding an anticipated closure announcement. ‘Engie continued to maintain however that no formal decision had been made, with Engie asset manager, George Graham advising a June 2016 Latrobe Valley public meeting that ‘I can categorically say that there is no decision to close Hazelwood.’ (Galetta, 2016; ABC, 2016a; ABC, 2016b). On 28 October

¹² One of the most common sources of air pollution dangerous to humans that is caused by coal-burning for electricity generation, amongst other sources (Environmental Justice Australia, 2014).

¹³ See <http://www.abc.net.au/news/2016-03-15/epa-to-charge-hazelwood-owner-over-coal-mine-fire/7246706>

2016 Commonwealth Energy Minister, Josh Frydenberg reconfirmed his understanding that no closure decision had been made (Wright, 2016; ABC, 2016b). However, on 3 November 2016, Engie announced that it had indeed decided to close the power station permanently on 31 March, 2017 (Engie, 2016). This announcement provided only 5 months' notice for workers and the community.

Engie consistently emphasised that the decision to close Hazelwood was made on a purely commercial basis noting, in particular, the increasingly large costs required to ensure continued safe and viable operation (Engie, 2016). Given the age of the Hazelwood power station, Victoria's work safety body required upgrades and repairs to 5 of its 8 boilers in order to meet health and safety standards, at a cost estimated by Engie of \$400 million (Borschmann, 2017; Andersen, 2017). The response from Engie management included the view that "given current and forecast market conditions, that level of investment cannot be justified" (Engie, 2016). In the period leading up to the closure there were a number of last-minute calls for the government to intervene and for options to keep Hazelwood open to be investigated. Engie responded that these suggestions were too costly and too late to be feasible (Andersen, 2017). Engie also confirmed (to a Senate Committee hearing) that it received no expressions of interests from other firms to buy Hazelwood (Colebatch, 2017).

The Hazelwood power station stopped producing electricity on 29 March, 2017. Engie has estimated that the cost of rehabilitation of the site will be \$439 million for the mine site and \$304 million for the power station—and that it would take one year to decommission, three years to demolish, and 30 years until the site is returned to the Victorian government (Andersen, 2017). Engie also announced that up to 250 workers would remain working at the power station and mine to rehabilitate the sites between 2017 and 2023, involving 130 Engie employees and 110-130 contractors in 2017–18 and an unconfirmed number of employees and subcontractors from 2019 (Engie, 2016). Engie announced at the same time as the Hazelwood closure that it planned to appoint a financial advisor to put Loy Yang B forward for sale (*ibid.*) In contrast to the rationale given for closing Hazelwood, the CEO of Engie Australia cited the company's global strategic decision to withdraw from all coal-fired power stations and invest in renewable energy as the reason for the proposed sale of Loy Yang B (Borschmann, 2017).

Responses from state and federal governments

On the 3rd November, the day of the closure announcement, the Federal Government announced it would provide a \$43 million package to assist workers affected by Hazelwood's closure (Department of Environment and Energy, 2016). This included \$20 million to support local infrastructure, a \$3 million labour market structural adjustment package — including re-training, active job-seeking assistance and other support — and \$20 million as part of a *Regional Jobs and Investment Package*, focused on local job creation, diversifying the regional economy and building a highly-skilled workforce via projects determined by community input (Gordon & Preiss, 2016; Department of Environment and Energy, 2016).

The Victorian Labor Government responded to the Hazelwood closure by announcing the largest regional assistance package in Victoria's history (Baxendale, 2016; ABC, 2016e).¹⁴ The initiatives announced are described in Box 2. On the day of the closure announcement, the Victorian

¹⁴ In May 2016, prior to the closure announcement, the Victorian Government committed \$40 million in its state budget to a Latrobe Valley Economic Development Program to assist the region to transition from coal-fired electricity generation (Regional Development Victoria, 2017).

Government announced \$22 million in assistance for workers in the Latrobe Valley region and the establishment of the Latrobe Valley Authority to lead work on economic transition strategies (Box 2, items 1 and 2). The day after the closure announcement, Victorian Premier Daniel Andrews announced an additional \$224 million of funding aimed at promoting economic growth, business investment and job creation in the wider Valley community (Box 2, item 3), bringing the Victorian Government's total support package to \$266 million (Baxendale, 2016; ABC, 2016e; Andrews, 2016a).

Subsequently, the Victorian Government announced additional funding for a range of infrastructure-related projects in the region aimed at meeting sustainability, social equity and community well-being objectives (Box 2, items 4–8), as well as two additional schemes to support coal/electricity sector workers in the Valley who had lost their jobs (Box 2, items 9 and 10). The Government has also announced a number of institutional innovations to improve state government capacity in relation to the Valley. These included a Cabinet taskforce to develop an economic growth plan for the Valley (Priess & Morton, 2016), the Latrobe Valley Authority (Box 2, item 2) and a new GovHub complex in the region (Box 2, item 11).

Box 2: Initial Victorian government Latrobe Valley transition policy initiatives¹⁵

- 1. \$22 million in support services for affected workers**, including financial and emotional counselling, education and training programs; support in identifying new business opportunities; the establishment of a Worker Transition Centre (in partnership with the Gippsland Trades and Labour Council) and an expansion of the Back to Work program that assists business in the Valley (Andrews, 2016a).
- 2. \$20 million to fund the establishment of a new Latrobe Valley Authority (LVA)** to lead work on economic transition strategies (*Ibid.*)
- 3. Establishment of an Economic Growth Zone**, including the local government areas of Latrobe City Council, Baw Baw Shire and Wellington Shire (Andrews, 2016b). This package consisted of two major components — a \$50 million Economic Growth Zone to encourage businesses to re-locate to the Valley via financial incentives such as stamp duty concessions and fee reimbursements to be administered by the LVA, and \$174 million for a Community Infrastructure & Investment Fund to finance local infrastructure projects (Andrews, 2016b; Gordon & Priess, 2016).
- 4. Energy efficiency upgrades:** \$5 million has funded energy efficiency upgrades to 1,000 homes of low-income and vulnerable Valley residents (ABC, 2016e).
- 5. Morwell Hi-Tech Precinct:** \$17 million was allocated to the development of an innovation precinct in Morwell through collaboration between Federation University, Federation Training, Morwell Tech School, the Victorian Government and Fujitsu (Andrews, 2016c). The precinct is intended to focus on the energy, food and fibre, health and professional services industries, and expected to create 80 jobs in its construction and hundreds of full-time hi-tech jobs in the future (*Ibid.*).
- 6. Redundancy scheme:** \$20 million was allocated to a scheme to encourage older workers from the remaining operational power stations to take redundancy packages, thus providing opportunities for younger Hazelwood employees (Anderson, 2017).

¹⁵ This is not a comprehensive list of all programs and projects initiated under the Victorian Government's announcements.

7. **New Energy Jobs & Investment Prospectus:** \$500,000 and 1 full-time-equivalent employee over 2 years to develop tools to encourage investment in small, medium and large scale renewable energy projects — including an investment prospectus for large scale renewable energy projects outlining local workforce, resource and infrastructure availability, and support for local business owners to assess potential savings from solar system installation (Victorian Government, 2017).
8. **Gippsland Line Upgrade:** In addition to the package, a \$345 million upgrade to the Gippsland Rail Line is being undertaken, creating a project office located in the Valley and an expected 400 jobs (Noonan, 2017b).
9. **Worker Transfer Scheme:** A \$20 million Latrobe Valley Worker Transfer Scheme (described in Part 2.4, below) was established via an agreement between labour unions, the Victorian government and electricity generators, announced on the 10th May, 2017.
10. **Public housing upgrade:** \$7.8 million will be invested in the upgrade of 224 public housing properties, creating 80 construction jobs and including the use of more efficient building supplies and utilities to reduce energy bills for tenants and overall environmental impact (LVA, 2017).
11. **GovHub complex:** the construction of a new GovHub office complex in Morwell is scheduled to begin in 2018 and to be completed in 2020, creating 100 jobs (Noonan, 2017a). Once completed, the site is expected to be a base for up to 300 staff, including 150 public sector jobs with positions advertised in the 12 months from the announcement to enable local job-seekers to apply (*Ibid.*) The site will serve as the head office for the Earth Resources Regulation staff responsible for mine rehabilitation and regulation (*Ibid.*)

2.4 Impact on key actors and stakeholders

We now outline the positions and actions of some of the key stakeholders impacted by the Hazelwood closure. Drawing on the conceptual framework developed by Green (2017), we consider here the stakeholders most affected by a structural change and therefore most likely to make “transition claims”—claims on state and government resources to avoid or reduce losses associated with a structural change—and/or be implicated in transition policy. In addition, we discuss the role of the environment movement in light of its contributions to the debate over transition, even though it is not directly affected by the closure. This descriptive analysis of stakeholders in the transition provides the basis for analysing the political economy of transition in Part 3.

Hazelwood workers and their unions

The direct impact on the lives and livelihood of power station employees and their families is a highly significant outcome of the closure of a major power station such as Hazelwood. At the time of the closure announcement, Hazelwood directly employed 750 workers — 450 employees and 300 contractors, and in the 2016 financial year, Engie reported payments to employees of approximately \$36 million (Engie, 2017b; Engie, 2017c: 11). The average tenure of Hazelwood workers was 25 years, with an average age of 52 (Cowan, 2017). While the workforce of the Latrobe Valley has a lower level of tertiary-educated employees than Victoria’s average, it has a greater number of employees with vocational qualifications, and many workers have developed industry-specific skills on the job despite

a lack of formal qualifications (Giurco et al., 2011). The characteristics of the Hazelwood workforce present significant challenges for transitioning to well-paying jobs with similar standing, quality and location, given the older demographic and specific (and sometimes informal) skill sets.

In addition to the obvious consequences for employment and financial security, the experience of redundancy typically also involves significant psychological and social impacts for workers and their families (Brand, 2015). A key aspect of many Hazelwood workers' experience has been a feeling of lost identity (Langmaid, 2017a). Many workers have spent their whole careers at Hazelwood, with generations of their family also having worked in the electricity sector in similar roles (Cowan 2017). The psychological impact on workers of the station's closure adds to the long-standing stress caused by chronic uncertainty over Hazelwood's future as well as the more pressing uncertainty created during the five months following the closure announcement (Langmaid, 2017a).

Support for a proactive and planned approach to climate change mitigation has been a longstanding and shared view of the trade union movement. The Australian Council of Trade Unions (ACTU) adopted a *Policy on the Greenhouse Effect* in 1991. The union most engaged in the coal sector is the Construction, Forestry, Mining & Energy Union (CFMEU), whose Mining & Energy Division (M&E) represents members who are overwhelmingly employed in the coalmining and power generation sectors.¹⁶ M&E has actively engaged in climate change policy developments since the early 1990s. The CFMEU has been a long-time supporter of market-based climate mitigation policies and worked to educate its members about the importance of carbon pricing. During the political struggles over carbon pricing of the Rudd-Gillard era, this position created tensions between the Union's executive and many of its members employed in the Latrobe Valley's power stations, who had significant concerns about their job security (Chubb 2014, 64–66; Snell 2011, 158). During this period, M&E's main strategy for securing the continued viability of coalmining and coal-fired power generation — and hence the jobs of its members — was to lobby federal and state governments for policy and funding for the research, development, demonstration and deployment of various “clean coal” technologies, in particular “carbon capture and storage” (CCS) (Snell, 2011: 157).

Australian (and international) CCS initiatives have, however, experienced significant cost blow-outs, and delays with many projects having been abandoned, resulting in increasing doubts about prospects for these technologies (Kuch, 2017; Marshall, 2016). At the same time renewable energy technologies continue to experience strong cost reductions, global coal demand has stagnated, numerous Australian coal-fired power generators have closed, and, Australian power generation companies have broadly accepted the inevitability of the decline of coal-fired power generation in Australia. In this context, M&E's position has shifted toward a “just transition” narrative, with a focus on ensuring that plant and mine closures occur in a planned manner and that initiatives are in place to support the redeployment and retraining of workers, along with wider regional investment and employment initiatives (CFMEU, 2017).

In this respect, the CFMEU / M&E has engaged and aligned with the wider Australian trade union movement's criticism of the lack of a clear transition plan for Hazelwood workers and emphasised the need for an orderly phase-out, a longer notice period, and proactive economic development and structural adjustment strategies. The 2016 ACTU policy paper, *Sharing the challenges and*

¹⁶ The employees of Hazelwood are represented by several unions, including the CFMEU; the Electrical Trades Union (ETU); and the Australian Manufacturing Workers' Union (AMWU).

opportunities of a clean energy economy: A Just Transition for coal-fired electricity sector workers and communities, proposed: a national, federally-coordinated plan; a mechanism for the orderly retirement of power stations; and the establishment of an independent statutory *Energy Transition Authority* to coordinate industry-wide job pooling and redeployment schemes, pre-closure re-training, early retirement access, and structural adjustment planning and support.

The union movement's focus on a "just transition" narrative has also facilitated a more cooperative relationship with the environment movement. In 2016 the ACTU co-published a paper with the Australian Conservation Foundation (ACF) presenting modelling demonstrating that more jobs would be created under a scenario of strong action towards clean energy and energy efficiency, compared with a business as usual or "medium action" scenario. The joint statement by the ACTU and ACF announcing this report noted "too often Australians are told they must choose between jobs or cutting pollution ... this report shows, this is a false and destructive choice for Australians." (ACF & ACTU, 2016).

The union movement has focused much of its Latrobe Valley advocacy work on securing a multi-employer redeployment pool, with a coalition between the Gippsland Trades and Labour Council, the CFMEU, ETU, Professionals Australia and AMWU pitching the idea to the Victorian Government in September 2016 following ongoing speculation about Hazelwood's closure (Plummer et al., 2016). This advocacy work was successful, with the announcement on the 10th March 2017 of a Latrobe Valley Worker Transfer Scheme, brokered by the Victorian Government, for 150 former Hazelwood workers (ACTU, 2017b). Energy Australia, AGL and Engie all joined the scheme, with the first redeployed worker from Hazelwood beginning work on the 1st May 2017 (ACTU, 2017a).¹⁷ In response to the announcement of the Worker Transfer Scheme, the CFMEU gave credit to the Victorian Labor Government, noting that "the State Government has filled the Federal Government's leadership vacuum and come up with a workable plan for the Latrobe Valley" (CFMEU, 2017).

*The local community — including households and businesses*¹⁸

The closure of Hazelwood has also had significant impacts on the broader Latrobe Valley community — including on local labour markets, businesses, government and other community service providers. The closure of Hazelwood is likely to have had some positive health outcomes resulting from the reduction in pollutants and improved air quality. As Jotzo and Mazouz (2015) note, it is also likely that the profitability of the remaining coal fired power generators in the Latrobe Valley will have increased as a result of Hazelwood's exit due to higher wholesale electricity prices. Negative impacts from the closure, in addition to the job losses noted above, are likely to include reduced business income as well as increased pressure on community service and health providers (Weller et al., 2011).

In the 2016 financial year, Engie reported payments to employees of approximately \$36 million and payments to suppliers of approximately \$38 million, representing substantial gross regional product that would be spent in the community (Engie, 2017c: 11). In fact, Weller et al. (2011) found that almost

¹⁷ There were in fact ultimately three separate agreements, one for each company. The ACTU and CFMEU remained critical that each company sought significant "trade-offs" and continued to emphasise the importance of establishing an Energy Transition Authority with the power to co-ordinate and compel company participation on fair terms.

¹⁸ The local community is here defined as all members of the Latrobe Valley community in their capacity as residents, workers/job-seekers, consumers and citizens, as well as local businesses (excluding the owners/operators of Hazelwood), local community organisations and the local government.

one in three of the higher-paid jobs in the region were those in the electricity sector and associated industries, and that every job in this sector could sustain up to four additional jobs in the service and retail industries. A 2016 report by the Committee for Gippsland cited modelling by GHD which claimed that the loss of 1,400 jobs from the forecast closure of power stations across the Gippsland region would result in the loss of an additional 1,771 jobs (CfG, 2016).¹⁹ The Hazelwood closure also has the potential to exacerbate existing labour market and income inequalities, noting that the regional unemployment rate was already 11.2% at the time of the closure (Plummer et al., 2016; Lazarro, 2017b). It is also important to note the higher proportion of women in the region working in more insecure and lower-wage sectors including retail, community services and tourism, compared to the male-dominated, higher-paid electricity sector (Lazarro, 2017b; Weller et al., 2011). Levels of disadvantage within the Latrobe Valley region are often highlighted by the relatively high proportion of people receiving income security benefits and Healthcare cards. However, the individuals and families whose income is slightly above the eligibility threshold for Healthcare cards are also a particularly vulnerable — and often over-looked — part of the community who face significant employment and income challenges.

The influx of unemployed Hazelwood workers into the regional labour market is likely to create increased competition for jobs with some risk that this will have a ‘ratcheting down’ effect, reducing job opportunities for lower skilled and vulnerable workers (Weller et al. 2011: 6). The challenge of managing these employment risks in a geographically isolated labour market are well illustrated by the announcement in May 2017 of the closure of the Morwell timber mill, when 160 workers were told that the mill was no longer viable and was likely to close due to a timber shortage following the 2009 Victorian bushfires (ABC, 2017a).

Increasing anxiety and uncertainty about employment and community futures is also likely to create significant psychological and emotional impacts on Latrobe Valley residents (Brand 2015). A local resident and community advocate highlighted this psychological impact, saying: “[The people of the Latrobe Valley] want jobs, and they want the hope of jobs, so the morale or the psychology of the valley is linked to that ... This despondency, this gloom that’s over us at the moment, won’t be lifted until we can see a vision for that”²⁰ (Lazarro, 2017b). The theme of uncertainty and its corrosive impact is felt as much by the wider community as it is by the workers. As Voices of the Valley Vice-President, Ron Ipsen observed, “People aren’t afraid of change, they’re afraid of uncertainty”.²¹

While the Latrobe Valley is situated across two local government areas — Latrobe City Council as well as Baw Baw Shire, this paper focuses primarily on the Latrobe City Council, as all Latrobe Valley coal mines and power stations are located in its jurisdiction. We include local government in our “communities” category because it is more appropriately conceived as a transitional claimant acting on behalf of the community, rather than as a government initiator of transition policy (as with the state and federal governments).

Latrobe City Council has, nonetheless been extremely active in identifying and exploring economic transition policy options. In 2010 and 2013, the Latrobe City Council published the policy documents

¹⁹ While the specific numbers in this report need to be seen in the context of modelling commissioned with the aim of highlighting the employment and business risks of the Hazelwood closure, it is clear that the indirect employment impacts of the closure are likely to be significant.

²⁰ Ray Burgess, Morwell resident and local campaigner

²¹ Ron Ipsen, Voices of the Valley Vice-President and campaigner

Positioning Latrobe City for a Low Emission Future and Securing Our Future, which outlined a proactive approach to creating economic growth and transition to a low carbon economy and identified a number of State and Federal Government funding priorities. A third report, *A Strength-Led Transition*, launched in December 2016, drew on the results of extensive community consultation to outline further proposals for building on regional economic strengths and facilitating economic diversification and transition in the Valley (Latrobe City Council, 2016). In May 2016, the Council adopted a new economic development strategy, *Latrobe City Council Economic Development Strategy 2016–2020*, which focused on education and training; branding and image; and investment attraction, aiming to position the Latrobe Valley as the Engineering Capital of Australia (*Ibid.*). This report also includes reference to ongoing Council support for the use of ‘clean coal’ technologies such as CCS to enable zero-emissions brown coal generation in the Valley (*Ibid.*)

Box 3: Earthworker Cooperative solar hot water manufacturing factory²²

A number of regional community groups have been exploring options for alternative employment generating initiatives.^{23, 24} Earthworker Cooperative (EWC) — a community-led initiative working to provide local, sustainable, wealth-creating jobs—has established a worker-owned solar hot water manufacturing factory in Morwell to provide an example of the innovative models that can simultaneously contribute to community, worker and environmental well-being.

The EWC raised capital and purchased the manufacturing equipment and intellectual property required for the venture, and developed a detailed feasibility study for a unique business model based on the development of a collective market for solar hot water systems via agreements with unions. This model is based on the inclusion of a clause in enterprise bargaining agreements by which workers can choose to use their wage increase to order solar hot water, realising savings on energy bills in the long run. This clause has already been implemented in a number of local workplaces. The EWC has also secured agreements with regional plumbing businesses to manufacture solar water tanks that can be used to replace old systems as they fail, creating a future stream of work.

EWC has also secured a partnership with the Bank Australia credit union, which will provide low-interest loans to households to support them in purchasing solar hot water. The Cooperative is hoping to secure a government procurement order for the provision of solar hot water systems in public housing, offering an opportunity to reduce electricity bills for low-income residents while supporting local workers and reducing pollution, and has started a petition to garner support for this government action.

²² Sources: Earthworker Cooperative (2017a); Earthworker Cooperative (2017b); Earthworker Cooperative (2017c); MEFL (2017); Brown (2016).

²³ A number of groups act as the voice of residents of the Latrobe Valley towns and region, including Voices of the Valley (<http://www.votv.org.au/>), Advance Morwell (<http://www.advancemorwell.org.au/>), the Baw Baw Sustainability Network (<http://www.bbsn.org.au/>), and the Latrobe Valley Sustainability Group (<http://www.latrobevalleysg.com/>).

²⁴ For example, Voices of the Valley has advocated for the need for diversification of employment sources in the Valley (including the potential for legacy grid infrastructure to form the basis of a State Energy Innovation Centre around renewable energy and storage), and Advance Morwell has raised the need for incentives to assist in accelerating that diversification process (VotV, 2016; ABC, 2016d).

Household and business energy consumers

The downstream impact of the Hazelwood closure on Victorian and Australian household and business energy consumers has been the subject of intense political debate, both prior to and following closure.

The CEO of the Australian Industry Group (AiG), Australia's peak industry association, called a week before Hazelwood's closure for "an 11th hour solution to keeping Hazelwood operating in some form", citing concerns over the reliability of electricity supply and the price of energy, particularly for manufacturers (AiG, 2017). He raised concerns regarding the number of businesses that may close due to the flow-on impacts of rising energy costs, the lack of "proper sequencing" of integrating renewable energy sources into the energy market prior to the closure to ensure reliable energy supply, and the need for incentives encouraging individuals and large energy users to be more energy efficient and reduce demand during peak usage (ABC Radio, 2017).

The AiG is part of a broader coalition of energy interests calling for an emissions intensity scheme (EIS) to incentivise investment in power stations and a reduction in emissions (Morton & Gordon, 2017). The Business Council of Australia, has also argued that "Victoria needs a managed transition away from coal-fired electricity generation ... to minimise the risks of this transition on system security and individual communities" (BCA, 2016). The electricity generators that own the remaining power stations in the Valley (AGL and Energy Australia) have both supported the call for an EIS and have highlighted the need for a planned transition, with an Energy Australia spokesperson stating "we need an orderly, realistic transition from large, older coal-fired power stations" (Ludlow, 2017). A spokesperson for AGL argued "It is important that all states work with the Commonwealth on a national plan for an orderly retirement of high emitting ageing thermal infrastructure" (Watson, 2016).

Hazelwood's closure has played into a broader national debate about energy policy that intensified throughout 2017. Part of the reason this debate has been so politicised is that energy prices have continued to rise sharply. Australian household electricity prices rose by 63% in real terms in the decade since 2007–2008 (ACCC, 2017) and bills were forecast to rise by a further \$78 on average over the course of 2017 (AEMC, 2016). Victorian household electricity price increases were predicted to rise between 6.5% and 11.5 % during 2017 (Downes, 2016). In June 2017, major Australian energy providers also forecast household electricity price rises of between 10 and 20% for New South Wales and Queensland (Ibrahim, 2017). The primary cause of recent electricity price rises has been hotly contested with blame variously being attributed to lack of certainty about government energy policy priorities, over-investment in energy network infrastructure, rising gas prices, over-ambitious renewable energy targets and the closure of coal fired power stations, including Hazelwood (Independent Review, 2017; Clean Energy Council, 2016).

Undoubtedly, the removal of supply associated with the closure of a large coal-fired power station will, other things being equal, raise the wholesale price of electricity. Seizing on this fact, the federal government, along with some sections of the fossil fuel industry, has attributed the recent rises in energy prices to the closure of coal-fired power stations such as Hazelwood and sought to blame state Labor government policies for causing such closures.²⁵ However, an extensive body of evidence,

²⁵ For example, on October 17th, 2017 Prime Minister Turnbull announced that the federal government would not be proceeding with a Clean Energy Target and would instead be implementing a 'National Energy Guarantee' focusing on affordability and reliability of supply. In that statement, the Prime Minister fiercely criticised state Labor government policies designed to accelerate the closure of coal fired power stations (ABC, 2017b).

including from the most recent report on energy pricing from Australia’s competition watchdog (ACCC, 2017) suggests that the primary driver of increased energy prices has, rather, been excessive investment in energy network infrastructure (known as ‘gold plating’).

Environmental movement

A number of Australian environmental organisations have been advocating for more than a decade for both the closure of Hazelwood and for a regulated, forward-planned transition plan to support workers and communities. These organisations include the Australian Conservation Foundation (ACF), Friends of the Earth Melbourne (FoEM), Environment Victoria (EV) Beyond Zero Emissions (BZE), Greenpeace and 350.org. The ACF has for example advocated a number of measures, such as the establishment of a body to coordinate input from all stakeholders through a transition plan; proactive economic diversification processes; assistance for training, re-location and other costs; and scheduled closure of power stations driven by shareholder and investor pressure and/or regulation on the basis of emissions intensity or age (ACF, 2016).

The ACF has also collaborated closely on these issues with the ACTU, as outlined above. Activists from FoEM have been very active in the Latrobe Valley, with representatives going to the Valley to meet and organise with local communities. FoEM has supported a number of ideas by local organisations, including the solar hot water factory by Earthworker Cooperative (see Box 3), and the Transition Centre proposed by Voices of the Valley, discussed above.²⁶ Environment Victoria has also played a significant role in working with local communities and in policy development. In addition, the Climate and Health Alliance highlighted the potential health co-benefits for the community as a result of the closure, in particular the elderly and those with asthma, respiratory or cardiovascular illnesses (Davey, 2017).

Despite ongoing collaboration with the Latrobe Valley community and consistent advocacy for a planned, orderly, regulated, just transition that includes long lead times, worker and community assistance, and proactive economic development and structural adjustment plans, there have, inevitably been mixed views within the Latrobe Valley regarding the extent to which environmental groups were prioritising the environment and action on climate change over jobs and thus the well-being of workers and communities.

3. Explaining the Hazelwood closure and government responses

“Best practice” concerning the closure of mines and electricity generation plant advises long-term planning, long closure notice periods, and close collaboration between the closing companies, workers/unions, government and community stakeholders on the socio-economic dimension of the transition process, so that the costs of closure can be reduced and equitably shared (Caldecott et al., 2017; Laurence, 2006; Neil et al., 1992). Yet, as our description reveals, none of these recommendations was heeded in the period preceding Hazelwood’s closure (i.e. in the roughly three-year period that constitutes the focus of our case study, described in section 2.3, above), despite widespread calls by numerous community, environment, union and even business groups for similar forms of proactive government stewardship of the phase-out of coal-fired power generation and

²⁶ It has also advocated upgrading the rail link between Melbourne and the Valley, a residential energy efficiency retrofit program in Gippsland, an investigation of the commercial viability of geothermal in the Valley (FoEM, 2016).

regional renewal in the Valley. After the closure decision was announced, the federal and state governments came forward with transition policy packages totalling \$43 and \$266 million, respectively. In this section, we offer a preliminary explanation of these outcomes.

3.1 Australia's economic and political institutions: conditioning actors' strategic responses

As noted, "best practice" concerning mine/plant closure emphasises long-term planning and extensive cooperation between stakeholders with potentially conflicting agendas (especially business, unions, government and communities). Accordingly, it makes sense to begin our explanatory analysis by considering the institutions (sometimes referred to as "institutional capacity") that condition the strategic interactions between such actors in the Australian political economy generally, and in the energy sector in particular. Our central claim here is that the relevant Australian economic and political institutions are not conducive to the kind of long-term planning and stakeholder interaction required for "best practice" mine/plant closure.

The comparative political-economic study of advanced capitalism has shown that the political-economic institutions — e.g. those pertaining to corporate governance, finance, the labour market, education/training, and social welfare — tend to function in complementary ways within countries, yielding distinct "varieties of capitalism" (Hall and Soskice, 2001). One "ideal type" variety of capitalism is the "coordinated market economy" (CME) that characterises most continental western European countries. This model relies strongly on coordinating institutions that enable close, within-sector cooperation between industrial firms *inter se*, and between firms and unions, financial institutions and relevant government agencies. These institutions foster the trust and confidence among diverse actors necessary for firms to raise "patient" finance to make long-term capital investments, for workers to make long-term investments in industry-specific skills, and for all to engage in planned, incremental innovation to accommodate changes in market conditions and government regulations / state imperatives (Hall and Soskice, 2001). CMEs thus possess institutions that are well-suited to achieving "best practice" mine/plant closure. Australia, by contrast, is closer to the ideal type of a "liberal market economy" (Hall and Soskice, 2001). Australia's political economy is characterised by

weakly organised business groups and unions, mechanisms for the decentralised determination of wages (at the level of enterprises), a competitive labour market with high labour turnover, a financial system heavily dependent on capital markets, a strong emphasis on competition and anti-trust, and an unwillingness of the state to interfere with the investment and production decisions of private firms. (Parker 2006, 213, footnotes omitted).

These features of the Australian political economy are antithetical to the kinds of long-term planning, cooperation, investment and incremental innovation associated with "best practice" plant/mine closure.

It is important, however, to go beyond the general characteristics of Australia's political economy and to investigate specific sectors, as the political-economic institutions may vary from sector to sector within a given country (Parker, 2006). The energy sector performs "essential service" functions, has a high degree of state involvement and regulation, and of necessity involves long-term investments in infrastructure. These features suggest that the Australian energy sector may be less "liberalised" / more "coordinated" than the average Australian industry. While this is true, the Victorian electricity generation sector is relatively liberalised compared with other Australian states. As discussed in our

case study, the privatisation process left the Valley's coal-fired power generators owned predominantly by consortia of multinational corporations responsive to predominantly foreign shareholders, whose primary interest lay in maximising near-term profits through leveraging debt on the asset values of the plants, and who have operated the plants using a minimum of direct employees while relying extensively on contracting and labour hire arrangements (Weller, 2012: 1268).

These features of the Victorian electricity generation sector largely explain the generators' political behaviour in the carbon pricing years, i.e. seeking to extract maximum "compensation" from governments through a combination of private lobbying and public scare campaigns (Chubb, 2014; Snell, 2011). Moreover, they explain why the companies have been, on the whole, disinclined to invest in incremental innovation of the kind that might have made their facilities more competitive under a *low* carbon price, let alone the kind of high-risk innovation into radical new technologies (such as CCS) of the kind that the CFMEU had promoted in the hope of securing the industry's future in a *highly* carbon-constrained regulatory environment. Likewise, these sectoral features also arguably go a long way to explaining Engie's commercial decision to close Hazelwood with a short lead-time and minimal consultation with unions or government before the closure announcement, and its disinclination to undertake costly incremental upgrades of the plant absent a strong commercial case for that investment.

The lack of institutional capacity to engage in "best practice" mine/plant closure is also a product of Australia's basic political institutions, of which three sets are most pertinent to the present analysis.

First, Australia's electoral system is majoritarian. State and federal governments are formed by the party with a majority of seats in the lower house of the relevant parliament,²⁷ and the composition of lower houses is determined by preferential voting in single-member districts. These electoral institutions favour the two major parties — Labor and the Liberal-National coalition,²⁸ which dominate the control of executive government at both federal and state levels. They also incentivise parties to spend a disproportionate amount of their resources (including policy attention when in government) on marginal electorates.

Second, Australia has a federal system comprising three levels of government, with authority largely divided between state and federal level. This leads to "vertical" competition and blame-shifting between state and federal governments. The degree of opportunistic competition and blame-shifting (or their opposites, cooperation and credit-taking), between state and federal level political parties depends on the specific combinations of parties that are in power at a given time, and the particular issue in question. But the potential exists for "diagonal" party competition to occur, when opposing parties are simultaneously in power at state and federal level (as has been the case, for example, in Victoria since November 2014²⁹) and where jurisdictional authority overlaps with respect to the issue in question.

²⁷ Queensland and the two territories have unicameral parliaments, but these jurisdictions are not relevant to our case study.

²⁸ The Liberal and National parties are here considered as one party as they almost always act as a conservative coalition.

²⁹ This remained the case as at the time of publication of this paper, in November 2017.

States are predominantly responsible for the regulation of the energy³⁰ and resources sectors (though the federal government is also heavily involved in both sectors). Both federal and state governments effectively have significant powers over climate change and regional development. As such, there is always potential for not only horizontal, but also vertical and diagonal party competition and blame-shifting with respect to the issues relevant to our case study. In fact, party competition on these issues is three-way: energy, resources and climate change are key electoral issues for Australia's third largest party, the Australian Greens, which holds upper house seats in the federal parliament and many state parliaments³¹ and which poses an electoral threat—mainly to Labor—in a number of inner-city lower house seats in major cities (especially Melbourne and Sydney) at both state and federal level.

Third, federal elections occur triennially (with a degree of flexibility), and Victorian state elections occur quadrennially at fixed intervals. While there are no term limits at either level, Australian governments experience a significant amount of turnover (which is partly explained by the relatively non-politicised, independent process by which electoral boundaries are set).

Overall, these three sets of political institutions make it especially electorally costly for governments to commit to long-term policies that impose perceived costs in the short term (for which they are likely to be blamed) but promise benefits in the longer term (for which an opposing party or a higher/lower level of government may be able to take credit at the time the benefits are realised) — especially where the costs are concentrated on electorally powerful groups and the future benefits are diffuse, poorly understood and perceived to be subject to uncertainty as to whether they will materialise (Jacobs 2011, 2016). Since climate/energy policies that aim to decarbonise the energy sector by directly regulating (by whatever mechanism) coal-fired power generators tend to entail precisely these intertemporal and distributional trade-offs, this creates a strong disincentive to introduce such policies (Bernauer 2013; Hovi, Sprinz, and Underdal 2009). By contrast, spending initiatives (e.g. regional development and renewable energy subsidies) tend to have more salient, near-term “winners” and to impose less salient and more diffuse costs, making them more popular and less politically risky (Jenkins 2014, 473–74; Karplus 2011; Rabe 2010). Moreover, Australia's political institutions make it difficult for governments to enter into the kinds of stable, cooperative arrangements with both unions and firms at the sectoral level that conduce to long-term sectoral transition planning and technology-intensive incremental innovation. Instead, Australia's institutions promote broadly class-based alliances along left-right partisan lines, as between labour unions and the Labor party on the one hand, and owners of capital and the Liberal-National coalition on the other.

This relatively fixed institutional context conditions the behaviour of governments (and firms and unions) and thus goes a significant way to explaining the behaviour of the Victorian and federal governments with respect to coal transition policy and the Hazelwood closure. But it cannot fully explain that behaviour, since relevant policy preferences vary between parties, and have even varied within political parties over time under the same broad institutional constraints. Within these institutional constraints, agents have objectives and make strategic and tactical choices about how to achieve them under conditions of uncertainty — and these objectives and choices are shaped by ideas, values, norms and learning from the experience of previous interaction with other agents. For our

³⁰ The electricity sector is partly regulated by a complex inter-state institutional structure governing the National Electricity Market, a physical market connecting the eastern and southern states.

³¹ The upper house of Australia's bicameral federal parliament and (where applicable) bicameral state parliaments is based on proportional representation in multi-member districts, which makes it easier for minor parties to win seats.

purposes, it is instructive to consider the ideational legacies of the bitter political struggles over carbon pricing between 2007 and 2013 (see Part 2.2, above). This period involved a series of experiments with various novel policy paradigms and instruments, each with their attendant patterns of politics (due, e.g., to different sectoral, temporal and spatial distributions of losses and gains; different framing possibilities etc.), which played out in one of the most volatile and combative periods of Australian politics in living memory (Chubb, 2014). The politics of this period have profoundly shaped the objectives, strategies and tactics of relevant agents in the subsequent period that is the focus of our case study (i.e. 2014–17).

With this context in mind, we turn now to consider the political behaviour of the Victorian Labor government and Federal Coalition Government (and related civil society actors in each case) with a view to providing a more agent-based, rational choice-oriented perspective on the policy decisions we are analysing.

3.2 The Victorian Labor Government response

The regulated “market”-based policy paradigm embodied in the (federal) Labor party’s various attempts at carbon pricing proved to be politically disastrous for Labor nationally. One of the policy’s political liabilities was the uncertainty of its implications for regional communities dependent on emissions-intensive or energy-intensive industries, such as the Latrobe Valley: since these implications were mediated by a mix of the policy’s design and stringency, firms’ response strategies, and accompanying state and federal transition policies, the implications could not be fully anticipated in advance (Weller, 2012). This inherent feature of the carbon pricing policy paradigm, combined with the near absence of transition policy directed toward the Valley’s communities and workers, bred fear and mistrust in the Valley that was adroitly exploited by political opponents of the proposed schemes (see Part 2.2).

Meanwhile, the political retreat from the Rudd-era carbon pricing scheme by federal Labor (under Julia Gillard) in 2010 prompted Victorian Labor to experiment with a fundamentally different, “state-planned” or “command and control” policy paradigm, involving the payment of state funds for a predictable, phased closure of Hazelwood. Yet this also backfired in the Valley, contributing to a massive electoral swing against Labor in the state seat of Morwell that saw the National Party consolidate its position in this former Labor stronghold at the 2010 state election (Griffin, 2011: 65).

It is not hard to understand why Victorian Labor, subsequent to the 2010 election, was cautious about committing to climate and energy policies that would directly and adversely affect the Valley’s generators. Instead, Victorian Labor has opted for a “pro-renewable energy” climate policy paradigm consisting of subsidies and favourable regulations for wind and solar energy (while these have an indirect effect on coal generators through the operation of the NEM, they are not widely perceived to be “anti-coal”).³² This more cautious strategy probably helped Victorian Labor return a stronger showing in Morwell in the 2014 election, in which the incumbent National party suffered an 11.5% (two-party preferred) swing against it to retain the seat by a slender 1.8% margin. (A perceived

³² This approach was partially replicated by Federal Labor at the 2016 federal election, though the party committed to numerous additional climate change policies of greater significance for the electricity sector, including a “baseline and credit” emissions trading scheme for generators and a phased closure of coal-fired power stations using a market mechanism (Australian Labor Party, 2016: 14–21).

weakness on coal/Hazelwood may, however, have hurt Labor in inner-city Melbourne, where it lost the prized seat of Melbourne to the Greens.³³)

With Morwell now the sixth most marginal state seat in Victoria, and the second most winnable potential gain for Labor at the 2018 election,³⁴ the Government has an extremely strong electoral incentive to avoid imposing near-term costs and to confer near-term benefits on the residents of the Valley. In this light, it is easy to see the electoral logic of the Government's concerted "non-policy" with respect to generator closure, followed by its large regional investment package.

But while rational electoral calculations surely help to explain these outcomes, a simple "vote-seeking" (Downs, 1957) explanation is insufficient for at least two reasons. First, "vote-seeking" through conspicuous public expenditure can, in the eyes of voters (both those receiving the benefits and those paying for them), easily be perceived as "vote-buying" (with a negative valence) absent a narrative for the expenditure that is perceived by voters to be legitimate (see, e.g., Chubb, 2014 on voter perceptions of the Gillard Government's "household compensation" package that accompanied the 2011/2012 carbon price). Second, political preferences are also shaped by elite interests/interactions, and in this area Labor's position is likely to be influenced by the union movement and (to a much lesser extent) by environmental groups. Accordingly, Labor's positions cannot be understood without reference to wider socio-technical and economic shifts affecting the Australian electricity sector, and to related ideational shifts emerging within relevant segments of civil society.

In recent years, the expansion of renewable energy, the closure of numerous coal-fired power stations and the waning of interest in CCS have produced a consensus among key civil society stakeholders that renewable energy sources will inevitably replace coal as the dominant source of Australia's electricity (see Part 2.4, above).³⁵ This dawning inevitability has led the union movement to all but abandon hopes of a CCS-led, "clean coal" future for Australia, and to instead turn its attention to ensuring a "just transition" for workers and communities affected by these changes (see Part 2.4). This strategic shift has, in turn, brought the union movement into closer alignment with the environment movement, which has itself been receptive to a more cooperative paradigm of climate politics after the bruising years many environment groups spent defending the Rudd-Gillard carbon price schemes to no avail (see, e.g., Chubb, 2014: 174–79). "Just transition" arguably provides a powerful narrative through which the labour/union, social justice, and environment movements on the left can cooperate substantively around a shared vision of socially responsible decarbonisation.

While there is little prospect of a similar rapprochement between the political *parties* on the left, the strategic shifts in the union and environment movements just described have informed both Labor and the Greens' respective positioning on energy/climate issues in recent years, bringing them *de facto* closer together in both rhetoric and substance. For example, both parties' 2016 federal election manifestos included commitments to a "just transition" and significant policies, funds and institutional

³³ The Greens won a second seat, Prahran, from the Liberal Party by just 267 votes, making Prahran the most marginal seat in the state, with a margin of just 0.03%. The contest was unusual because Green candidates tend to be more competitive in Labor-controlled, left-leaning electorates, rather than wealthier, conservative strongholds.

³⁴ Three of the more marginal seats are already held by Labor, and one is held by the Greens in a seat that is not realistically winnable by Labor (see previous footnote): (Victorian Electoral Commission, 2014).

³⁵ See, e.g., many of the submissions to the Senate Inquiry into the Retirement of Coal-Fired Power Stations: http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Coal_fired_power_stations/Submissions (accessed 15 September 2017).

innovations to facilitate an orderly and socially just transition away from coal-fired electricity for affected workers and communities (Australian Labor Party, 2016: 21–22; The Greens, 2015: 18–19). This convergent stance on “just transition” was again reflected in the parties’ similar recommendations in a recent Senate Inquiry into the retirement of coal-fired power stations in Australia (Environment and Communications Legislation Committee 2017, 69–71, 80). Substantive differences between the two parties’ climate policies remain over policy mechanisms, policy stringency, and the timing of decarbonisation, but the (*de facto*) convergence in policy preferences relative to the carbon price war era is substantial.

These ideational and strategic shifts on the left of politics, in the context of palpably changing material conditions in the Australian electricity sector have provided a crucial legitimising narrative for Victorian Labor’s large-scale transition policy in the Valley. The just transition narrative, moreover, appears to have legitimised and strengthened the position of various community groups and local councils in the Valley that have been active in lobbying for regional development assistance of the kind that was ultimately provided by the Victorian Government.

With material conditions, electoral interests, elite interests and a socially legitimate cultural narrative aligned, the exogenously determined closure of Hazelwood provided a “policy window” (Kingdon, 2014) through which the Victorian Government’s substantial transition policy package could be steered.

3.3 The federal Coalition Government response

The coalition’s response package is more difficult to explain, but can arguably best be seen as a defensive/reactive political move in response to the latest in a series of events in the energy sector that were already damaging its electoral credibility.

The political legacy of the carbon price wars on the behaviour of the Liberal-National coalition is more complex and nuanced than is the case with Labor. The current Prime Minister, Malcolm Turnbull, a moderate liberal committed to climate policy, was also “burned” by the politics of carbon pricing: he strongly advocated emissions trading and sought to negotiate bipartisan passage of Kevin Rudd’s emissions trading scheme bills through Parliament in 2009, only to be ousted by his party-room colleagues, who installed as leader the virulently anti-carbon-pricing and pro-coal Tony Abbott. Mr Abbott went on to become Prime Minister in 2013 and to repeal the carbon price, but after two years as Prime Minister, the unpopular Mr Abbott was ousted by his party-room, to be replaced by Mr Turnbull. It is not a gross oversimplification to characterise these two figures as representing internal factions within the Liberal-National coalition party room and cabinet that have strongly opposed views on a range of issues relevant to climate and energy policy. These internal party divisions have effectively prevented the Turnbull Government from introducing any significant energy or climate policy reforms, let alone ones that would adversely affect the coal industry. The announcement, on 17 October 2017, of the Turnbull government’s decision to reject the Finkel Review’s recommendation for a ‘Clean Energy Target’ and replace it with a ‘National Energy Guarantee’ provides the strongest indication yet that the balance of power in the Federal coalition has now swung decisively in favour of the latter group of MPs, who are staunchly pro-coal and strongly prioritise action to maintain the reliability and affordability of energy (ABC, 2017b).

The ideological battles of the carbon price era, and the subsequent climate/energy policy stagnation, have also affected the positions and behaviour of various business interests. The investment-stalling uncertainty caused by the absence of overarching federal climate policy has coincided with and exacerbated a range of challenges facing the NEM associated with the over-supply of coal-fired power generation capacity and the continued growth in renewables (see above). In this context, and as noted in Part 2.4, above, significant sections of the business community including the Australian Industry Group and the Business Council of Australia have consistently called for a clear and stable climate/energy policy solution. A combination of market-related structural challenges and business pressure for reform has, in turn, helped keep the politics of energy and climate change on the public agenda, exposing internal divisions and policy deficits within the Government.

In this context, the federal Coalition (in government) and its state-level colleagues (in opposition) have sought to blame Victorian Labor for Hazelwood's closure and to delegitimise Labor's transition policy response (see above, Part 2.4). For example, the Federal Minister for the Environment claimed that Engie was "driven out of town" by the decision of the Victorian government to triple the brown coal royalty and establish a 40% renewable energy target, which he labelled "an ideological approach" that "traded away blue collar jobs in the regions to win green votes in the city" (Gordon, 2016; Baxendale, 2016).

The federal government's \$43 million regional support package for the Valley can in this context arguably best be understood as an attempt to buy itself enough credibility in the debate over energy transition to criticise Victorian Labor, and to deflect attention and criticism away from its own policy failings and internal divisions in the energy/climate domain.

4. Conclusion

This paper has provided an in-depth case study of the political economy of transition policy (and its absence) surrounding the closure of Australia's most carbon-intensive coal-fired power generator, the Hazelwood power station. The case study is particularly insightful for its representation of the interplay between the following three sets of phenomena: (i) climate policies in the stationary energy sector (and, more generally, structural forces tending toward the decarbonisation of energy systems); (ii) the spatial distribution of the costs of such policies (or wider structural changes) in regions with a high dependence on carbon/energy-intensive industries and associated patterns of politics; and (iii) the role of transition policy as a mediating variable between (i) and (ii). As the world decarbonises — or rather, in order for it to decarbonise — social-scientific attention to the interaction of these three phenomena must be an urgent priority. It is hoped that our analysis has contributed fruitfully to this important agenda.

In this concluding section, we draw out some implications of our explanatory analysis that may be informative to stakeholders in the Latrobe Valley. Insofar as similar conditions and variables exist in other regions/contexts, these implications may also apply to them.

In our explanatory discussion, we argued that the decision to close Hazelwood and the absence of "best practice" can largely be explained by the nature of the political-economic institutions governing Victoria's energy generation sector. These institutions determined the kinds of organisations primarily responsible for making decisions about power station closure and shaped both the strategies of such organisations and their interactions with other key stakeholders, such as unions, government and the

local community. Having privatised its power generation sector in the 1990s, private (mostly multinational and foreign-owned) corporations owned the Valley's generation assets, including Hazelwood. Unsurprisingly, these private companies made their own decision about how to maximise their profits within the bounds set by existing laws and regulations.

What does this imply about the potential for future coal plant closures in Australia to be managed in a more consultative, planned and orderly fashion? One implication is that, absent institutional reform (discussed below), the most likely means by which plant closure could move closer toward best practice is through the operation of *market* pressures. For example, there is increasing interest globally among major institutional investors in using their influence as shareholders to push the managers of carbon-intensive energy companies to adopt "just transition" strategies as they decarbonise their asset portfolios. As Robins (2017) notes:

Some investors have started to integrate the implications for workers and communities into their climate engagement. CalPERS [a large Californian pension fund], for example, has done this in its work with US utility companies. Furthermore, unions, through the Committee on Workers['] Capital, have developed Shareholder Resolution Principles that require companies to deliver plans for decarbonisation along with social dialogue.

With resolutions calling on US corporations to publish climate scenarios winning 62% support at Exxon and 67% at Occidental this year, the next step is to incorporate the social implications of the transition more explicitly into proactive shareholder engagement strategies, for example, around scenario analysis and corporate strategy (including the design and implementation of employment plans).

While such initiatives are in their infancy, they point to an opportunity for Australian unions and environmental groups — possibly via their international counterparts — to engage with institutional investors who hold stocks in companies that own Australian coal-fired power stations. The aim would be to mobilise institutional investors to pressure such companies to adopt more worker- and community-friendly, just transition-style policies for managing the closure of their assets. Robins (2017) suggests a number of reasons why enlightened institutional investors, with their long-term investment horizons, should be motivated to adopt such shareholder engagement strategies. Given the size of the Australian superannuation sector, Australian super funds could potentially be a prominent target of such mobilisation efforts. In other Australian states where governments still own stakes in coal-fired power stations, governments and unions may be able to press more directly for better transition planning, without needing to rely on third party institutional investors. In any case, analysis of the prospect for such market-based initiatives toward just transition would be a useful avenue for future research.

A second implication of our analysis is that, unless and until private energy companies are pushed by their shareholders to adopt such "best practice" with regard to mine/plant closure and just transition strategies, institutional reforms will be necessary to alter the incentives companies face. Two broad institutional reform strategies appear to be theoretically possible: one focusing on background political-economic institutions; another on specific regulatory changes relevant to plant closure/transition.

Under the first of these approaches, governments could try to create new or alter existing institutions so as to increase the level of strategic coordination between energy firms, governments, unions and affected community stakeholders, effectively making governance in Australia’s energy sector more “corporatist”. The idea would be to facilitate better transition planning indirectly, by engineering deeper forms of interaction between stakeholders so as to improve information flows and build trust and cooperation over time. However, given the nature of Australia’s entrenched political and economic institutions, lack of recent historical experience with corporatist power-sharing arrangements, and the current energy/climate policy polarisation between the two main political parties, the prospect of a near-term corporatist turn in Australian energy/climate governance seems dim.

The second approach, involving the direct regulation of companies’ transition obligations, is more concordant with Australia’s political-economic institutions.³⁶ Under this approach, the idea would be for state or (ideally) federal governments to strengthen existing laws/regulations governing the closure obligations of energy companies, or enact new laws to regulate closure. Companies already face legal obligations with respect to plant closure, decommissioning and rehabilitation. These could be strengthened, for example, with respect to closure notice periods, workforce transition planning, and stakeholder consultation processes. Alternatively, entirely new mechanisms could be introduced to provide incentives for an orderly phase out of emissions-intensive facilities such as coal-fired power generators (see, e.g., Environment and Communications Legislation Committee 2017: chap. 3; Jotzo and Mazouz, 2015). Of course, the more interventionist the measure, the greater the costs imposed on existing generators and the more politically contentious the reforms are likely to be — and this tension is indeed one of the very reasons that energy/climate-policymaking of this more interventionist variety has been so conspicuously absent in the 2014–17 period that we have analysed.

This leads us to our final observation: in this difficult policymaking environment, an important variable is likely to be the agency of civil society actors in making the *politics* of energy/climate policymaking more conducive to just transition-oriented regulatory reforms. Our case study has demonstrated that the positions of key civil society stakeholders in Australia’s energy debate, including unions, environment groups and to some extent business groups have been converging toward a just or at least orderly transition as a rhetorical heuristic for substantive policies to improve the transition arrangements in the Australian energy sector. As we have argued with respect to Victoria, this civil society action provided a rationale for, at least, some significant *ex-post* transition policy when political and electoral conditions were ripe, as they were following the Hazelwood closure announcement.³⁷

In conclusion, from the perspective of “best practice” approaches to managing the transition away from carbon-intensive energy, the unfortunate takeaway from this case study is that Australia’s

³⁶ As Alan Jacobs has noted, “Comparative analyses of policy making under uncertainty suggest that actors view institutional context and policy design as substitute solutions to the problem of long-run commitment. Policymakers tend to select inflexible policy designs in the absence of robust institutional devices for managing uncertainty ...” (Jacobs, 2016: 447).

³⁷ It remains to be seen whether the government transition policy packages for the Valley will themselves have a transformative effect on the politics of energy and climate change in Australia, but such a “positive policy feedback effect” (Pierson 1993) is a distinct possibility given the scale and direction of investments, at least in the Victorian package. Future research could usefully track the political effects of these interventions as they are implemented over the coming months and (potentially) years.

transition is likely to be far from “optimal”. However, the case study has also shown that opportunities for mitigating the effects of decarbonisation on affected workers and communities through policy channels will inevitably arise. Motivated stakeholders can increase the likelihood of such policies being implemented by forging cross-sectional alliances under the umbrella of “just transition” and lobbying governments, while at the same time working through market channels.

As has so often proved to be the case in Australian energy and climate policymaking over the last decade, opportunism seems likely to be more effective than optimisation.

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