



After the Hazelwood coal fired power station closure: Latrobe Valley regional transition policies and outcomes 2017-2020

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Abstract

This paper reviews and evaluates key policy initiatives and strategies designed to strengthen regional economic, social and environmental outcomes in the Latrobe Valley (Victoria, Australia) in the three years following the closure of the Hazelwood power station. Prior to its sudden closure in March 2017, Hazelwood was the most carbon-intensive electricity generator in Australia. The debate over the future of Hazelwood became an icon in the nation's ongoing political struggle over climate and energy policy. Employment and economic outcomes in the three years since closure indicate promising initial progress in creating the foundations required to facilitate an equitable transition to a more prosperous and sustainable regional economy. The Hazelwood case study provides support for a number of propositions about successful regional energy transition including that well managed, just transitions to a prosperous zero-carbon economy are likely to be strengthened by proactive, well integrated industry policy and regional renewal strategies; respectful and inclusive engagement with workers and communities; and adequately funded, well-coordinated public investment in economic and community strategies, tailored to regional strengths and informed by local experience.

Keywords:

social and economic transition; coal fired power; Latrobe valley; Australia

JEL Classification:

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1. Introduction

Public debates about timetables for phasing out fossil fuel industries increasingly highlight the need to strengthen understanding that well managed regional transition strategies have the potential to accelerate the shift to a zero-carbon economy in ways that create new economic and employment opportunities, leaving no workers and no communities behind. This paper aims to contribute to this conversation by reviewing key policy and strategic initiatives designed to strengthen regional economic, social and environmental outcomes in the Latrobe Valley, Victoria, Australia in the three years following the closure of the Hazelwood Power station.¹ This paper is informed by relevant policy documents, journal articles and media analysis as well as by feedback and reflections from key policy actors and stakeholders.

Prior to its sudden closure in March 2017, the Hazelwood power station was the most carbon-intensive electricity generator in Australia. The debate over the future of Hazelwood became an icon of Australia's reliance on coal and a fiercely contested battleground in the bitter, ongoing political struggles over climate and energy policy. The owners of Hazelwood provided only five months' notice before closure. This created significant challenges for local workers, households, businesses and governments seeking to regenerate regional jobs and investment. Our analysis suggests that, while longer notice would clearly have made the task far easier and much hard work remains, employment and economic outcomes prior to the impact of COVID 19 demonstrate promising initial progress in creating the foundations required to facilitate an equitable transition to a more prosperous and sustainable regional economy.

Section 2 of this paper provides an overview of findings from Australian and international case study research on key success factors underpinning well managed regional energy transition strategies. A summary of milestone events in the history of the Hazelwood power station (section 3) is followed by a detailed discussion of the impact and outcomes of key policy and strategic interventions in the three years following the closure of Hazelwood in section 4. The paper concludes with reflections on regional energy transition policy and research priorities.

¹ This paper builds on and updates the earlier publication: Wiseman, J. Campbell, S. and Green, F. *Prospects for a "just transition" away from coal-fired power generation in Australia: Learning from the closure of the Hazelwood Power Station*, CCEP Working Paper 1708, Crawford School of Public Policy, Australian National University, November 2017

All monetary values referred to in this working paper are presented in Australian dollars (AUD).

2. Learning from international experience in regional energy transition policy design and implementation

There is now a large body of research highlighting priority actions required to achieve a well-managed, just and orderly transition from fossil fuels to renewable energy (ILO 2015; Commonwealth of Australia 2017; World Bank 2018; Stone and Cameron 2018; UNFCCC 2018; Spencer et al 2018; Harrahill and Douglas 2019; Pai et al 2020; European Commission 2020a; Beer et al 2020; Oei et al 2020; Green & Gambhir 2020). Key findings from this research include the following:

- Proactive, well planned strategies for a just and orderly phase out of fossil fuels are likely to achieve far better economic, social and environmental outcomes than reactive, emergency action after closures are announced.
- Respectful and inclusive engagement with impacted workers and communities provide an important basis for creating and sustaining the social license for just and rapid decarbonisation.
- Adequately resourced re-employment, retraining and early retirement programs are a key initial step in addressing short term regional transition impacts.
- Mission oriented industry policy and smart specialisation strategies building on regional strengths are an essential foundation for maximizing long term growth in sustainable, high quality employment.
- The sustainable rehabilitation of mine sites and power plants depends on well-coordinated consultation and planning combined with long term funding commitments.
- Continuing to build inclusive and resilient communities post-transition will require strong ongoing public sector investment in health, education, energy, transport and communications infrastructure and services.

Experience from a wide range of jurisdictions suggests that proactive, planned approaches to developing and implementing carefully considered strategies for phasing out fossil fuel industries are likely to achieve far better economic and employment outcomes than reactive, emergency action after closures are announced (Spencer et al 2018; Weller 2019; Eisenberg 2019; Oil Change International 2019; Pai et al 2020; Oei et al 2020). As Sharan Burrow, General Secretary of the International Trade Union Congress notes ‘there are no jobs on a dead planet, but there is no hope and no economy without jobs. A just transition requires us to both engage in dialogue and make sure that no one is left behind’ (Burrow 2015).

The 2020 European Commission review of regional coal transition strategies highlights the importance of taking a long term, evidence-based approach in addressing regional structural adjustment and economic renewal challenges. The Commission review concludes that ‘structural change is a long-term process. Some elements are foreseeable even decades ahead of time (e.g. planned mine closures after mine depletion). And even for those regions who are caught by surprise from sudden changes in framework conditions, some reactive measures need many years or decades to unfold their full impact (e.g. building up the knowledge base in a region for a diversified economy may include setting-up new research and educational facilities). In such transition processes, an overall strategy is important to guide the various stakeholders and decision makers and to align their actions into a coherent and effective approach’ (European Commission 2020).

The importance of respectful and inclusive consultation and engagement with workers, business and communities in fossil fuel dependent regions is a consistent finding across many evaluations of successful regional transition strategies (Eisenberg 2019; Weller 2019; Green & Gambhir 2020). Successful regional transition strategies have generally been carefully tailored to address the concerns and build on the strengths of specific regions and communities with particular attention paid to ensuring inclusion of women, young people, Indigenous people and socio-economically disadvantaged groups (European Commission 2020a).

In Germany *The Commission on Growth, Structural Change and Employment* brought together representatives from key government industry, union, scientific and environmental organisations as well as delegates from coal dependent regions to develop an agreed pathway for a structured coal phase-out for coal-based electricity generation along with concrete measures to address economic and employment challenges in affected regions (Oei et al 2020; E3G 2019).

In Canada, the *Final Report by the Task Force on Just Transition for Canadian Coal Power Workers and Communities* (2018), developed in collaboration with provincial government, trade union, community and business representatives, identified ‘respect for workers, unions, communities, and families’ and ‘worker participation at every stage of transition’ as crucial, foundational principles for effective transition strategies. There is also acknowledgement in the literature of the role of cultural context in a just transition: ‘Energy production in local areas often has a long history, and in some cases, communities strongly identify with their industries as part of their identities. Where it is determined to be relevant by local voices, cultural cohesion and continuance should form a particular strand of participatory dialogue’ (Jenkins 2019, p.11).

As Australian coal transition researcher Amanda Cahill (2019) notes, reflecting on her extensive experience in working with Australian coal mining communities, ‘the only way we’re going to effectively deliver the two seemingly competing objectives of strong climate action and secure livelihoods is to deepen our engagement with regional communities – not just coal workers, but also farmers, local business owners and First Nations groups.’

Recent experience from many jurisdictions provides strong evidence of the value of proactive, carefully coordinated early retirement, retraining and relocation programs as well as pooled redundancy schemes enabling workers from plants scheduled for closure to be offered redeployment opportunities at other power stations which are continuing to operate (Sartor 2018; Jenkins 2019; Latrobe Valley Authority 2019). The *Canadian Just Transition Report* (2018) also recommends the establishment of regional Transition Centres designed to ensure that workers and their families already under stress from job loss or displacement receive personalized, one-on-one, face-to-face assistance to navigate the complex challenges of government programs and service delivery.

As Stone and Cameron (2018, p.15) conclude in their review of learning from international coal transition initiatives, ‘particularly important issues for workers tend to be managing the risks of a loss of professional pride, socio-economic status, and personal identity that is tied

to their wage level, professional responsibility and role in a specific company, the family and social networks are part of the economic life of the community.’

Recent Australian and international experience also strengthens understanding that broad political support for accelerating the phase-out of coal relies on coal dependent communities and workers being fully convinced that there is strong and lasting commitment from all levels of government to create secure, high quality and long-term alternative employment opportunities (Rodriguez-Pose 2017; Cahill 2019; Jotzo and Wiseman 2020). A growing body of Australian and international research highlights the significant employment creation potential of a well-planned transition to a low emissions economy (ILO and ILS 2012; ACF & ACTU 2016; Garnaut 2019; Jacobson et al 2019; BZE 2020; Briggs et al 2020).

As the UNFCCC *Just Transitions Report* (UNFCCC 2018, p.17) notes, the job-creating potential of environmentally sustainable energy transitions cannot, however, be taken for granted. ‘Strong proactive industry policy and strategic leadership from government and organized labour are needed to ensure transition strategies do indeed deliver high quality, secure, long term jobs - jobs that provide adequate incomes and social protection, safe working conditions and respect for rights at work.’

‘The likelihood that the overall net employment outcome will be positive should not obscure the reality that far-reaching mitigation policies will change global, regional and national economies in potentially profound ways and severely disrupt the lives of affected workers and their communities. Regions which lack diversification, which have a limited capacity for innovation, or whose economic mainstay is vulnerable to decisions made elsewhere will face the greatest challenge, as will workers with skills that are in less demand or who are unable to acquire new skills’. (UNFCCC 2018, p.17)

While reaffirming that ‘managed well, transitions to environmentally and socially sustainable economies can become a strong driver of job creation, job upgrading, social justice and poverty eradication’ the International Labour Organization (2015, p.4) also cautions that, ‘the job-creating potential of environmental sustainability is not a given: the right policies are needed to promote green industries while ensuring decent work within them.’ Similar analysis and concern leads the UNFCCC (2018) report on *Just Transition of the Workforce and the Creation of Decent Work and Quality Jobs* to note the importance of creating ‘decent jobs, provide adequate incomes and social protection, safe working conditions, respect for rights at work and effective social dialogues’ (p.14).

Learning from recent European regional transition experiences highlights the importance of proactive, mission oriented economic diversification and renewal strategies informed by ‘Smart Specialisation’. The most successful regional economic renewal and smart specialisation strategies commonly include the following components (Boschma et al 2017; Foray and Goenaga 2013; Coenen et al. 2018; Veldhuizen et al 2020).

- analysis of the regional context and potential for innovation (including an assessment of technological infrastructures, local, inter-regional and global linkages, the entrepreneurial environment, and potential for collaboration across the business and wider community);

- development of appropriate governance arrangements to provide 'collaborative leadership', encompassing all types of stakeholders, including industry, government, education and research, community and workers;
- development and communication of a long-term vision of the regional economy, society and environment that can be shared by all stakeholders;
- through a process of 'entrepreneurial discovery', setting priorities for investment in a limited number of innovative research areas and technologies, including social and organisational innovation;
- development of a road map and action plan for implementation, exploring collaboration with other regions and encouraging experimentation through pilot projects and evaluation before more substantial investment is made; and
- mechanisms for formative, developmental and summative monitoring and evaluation need to be embedded from the outset, allowing for ongoing adaptation and refinement of the transition strategy.

Marques and Morgan (2018) identify a range of governance and capability obstacles which need to be overcome in enabling successful implementation of regional economic renewal and smart specialisation strategies. These obstacles include resistance from incumbent industries; limited policy design and policy implementation capabilities in regional and provincial governments; persistent assumptions that technology innovation alone will be sufficient to drive regional diversification; and the lack of co-ordinating capacity and political will required to drive co-operative governance and multi-level collaboration between public and private sector, universities and civic society agencies.

Sufficient funding needs to be available to carry out rehabilitation of mine sites and regions to an acceptable standard and in line with community expectations (Lamb et al 2015). Governments therefore need to ensure that coal mining and power generation companies allocate sufficient funds to support site rehabilitation and just transitions strategies before they relocate or go bankrupt. While mine rehabilitation has the potential to be a valuable source of employment for workers formerly employed in the coal fired power industry, it is important that there is clear understanding that these jobs are likely to be short term and that long term employment and economic development strategies are also essential. The economic renewal strategies designed and implemented in the Ruhr region provide a useful example of the ways in which, with proper planning, initial investment in the remediation and rehabilitation of regional environments in the wake of plant and mine closures can provide a strong platform for developing long term environmental protection and environmental services industries (Galgoczi 2014).

The impact of coal transitions on households, communities, contractors and businesses affected by plant closures extends well beyond workers directly employed in plants and mines (Della Bosca & Gillespie 2018). Particular attention therefore needs to be paid to addressing the employment and community support priorities of vulnerable individuals including women, low income households, and Indigenous communities.

Many recent research studies also demonstrate the ways in which women in communities impacted by coal industry closures frequently face additional pressures due to the impact on households of increased substance abuse and gender-based violence as well as heightened

demand for health and community services (World Bank 2018). Care is therefore needed to ensure that women are fully engaged and consulted in coal transition planning and that employment opportunities and community services infrastructure recognise and address the particular challenges faced by women in navigating the transition process.

Samantha Smith, coordinator of the International Trade Union Confederation Just Transition Centre draws on extensive experience of coal phase out strategies and debates in emphasizing the critical importance of long term investment in health, education and community services and infrastructure as well as in broader economic diversification, industry policy and labour market programs. ‘Deindustrialization can tear apart the economic and social fabric of communities, starting a vicious spiral where a declining tax and revenue base means less funding for public services, more employers and workers moving away, and fewer and fewer jobs left. Reversing this cycle and revitalizing communities takes plans and sustained effort. It also takes investment in infrastructure, public services, schools and training facilities and hospitals – in short, all of the things that draw employers and families back to the region.’ (Smith 2017, p.7).

3. Historical context, operation and closure of the Hazelwood Power Station

A detailed account of the historical context and development of coal fired power generation in the Latrobe Valley is provided by Jotzo et al (2018). Table 1 provides a summary overview of milestones in the historical context leading to the construction, operation and closure of the Hazelwood Power Station.

Table 1: Milestones of the Hazelwood power station

1887	Mining of brown coal commences in the Latrobe Valley
1920	State Electricity Management Commission of Victoria (SECV) established to develop and manage Latrobe Valley energy generation
1921	Yallourn power station commences generating electricity
1964-1971	Hazelwood power station’s eight generators become operational, with expectation they will operate for approximately 30 years.
1981	Latrobe Valley coal mining and power generation operations employ over 10,000 workers
1994	Victorian government announces privatization of SECV
1994-2001	Over 8000 workers formerly employed in Latrobe valley power generation industry lose their jobs. Full time employment in Latrobe Valley falls by 9%
1996	Victorian Liberal governments sells Hazelwood (for \$2.35 billion) to privately owned Hazelwood Power Partnership (led by UK firm, National Power)
2004	Victorian Civil and Administrative Tribunal upholds challenge by environmental organisations to Latrobe Planning Scheme decision enabling Hazelwood to operate after 2009. Hazelwood ultimately allowed to expand following further Ministerial intervention
2007	Rudd Labor Government announces establishment of Emission Trading Scheme

2010	Victorian Labor Government commits to phased closure of Hazelwood. Victorian Labor Government loses election
2011	Gillard Labor government announces carbon price and regional structural adjustment fund to facilitate phase out of fossil fuel industries
2012	French corporation Engie becomes majority owner (72% share) of Hazelwood, with Japanese multinational Mitsui holding 28%
2013	Abbott Liberal-National Coalition government elected
July 2014	Abbott government repeals carbon price
February 2014	Hazelwood mine fire burns for 45 days, leading to significant environmental and health impacts on Latrobe Valley communities
2014	Victorian Liberal-National government establishes first enquiry into Hazelwood mine fire
November 2014	Labor wins Victorian election. Establishes second enquiry into Hazelwood mine fire
May 2015	Second Hazelwood mine fire enquiry reopens with expanded terms of reference including health and mortality impacts of the fire
April 2016	Victorian government increases coal royalties from 7.6 cents to 22.8 cents per gigajoule (in line with royalties in other coal producing states)
May 2016	Engie CEO advises French Senate that Engie is assessing a number of possible actions regarding Hazelwood, including sale and closure
June 2016	Engie asset manager, George Graham advises Latrobe Valley public meeting that 'I can categorically say that there is no decision to close Hazelwood.'
28 October 2016	Commonwealth Energy Minister, Josh Frydenberg reconfirms his understanding that 'no decision has been made to close Hazelwood.'
3 November 2016	Engie announces closure of Hazelwood. Commonwealth government commits \$43 million to assist workers affected by Hazelwood closure
November 3 and 4 2016	Victorian government commits \$266 million for regional transition strategies and establishment of Latrobe Valley Authority
29 March 2017	Hazelwood stops producing electricity
10 May 2017	Victorian government announces \$20 million Worker Transfer Scheme
20 November 2019	Victorian Supreme Court finds <i>Hazelwood Power Corporation</i> guilty of breaching sections 21 and 23 of Occupational Health and Safety Act 2004 in relation to the 2014 leading to fines of more than \$1.9 million
May 25 2020	Hazelwood chimneys demolished

A range of research studies also highlight the ongoing legacies and impacts of Latrobe Valley privatisation processes and outcomes on post-Hazelwood political and policy debates. Duffy and Whyte (2017), Harrahill and Douglas (2019) and Doig (2019) note, for example, a range of ways in which the privatisation policies of the 1990s left many Latrobe Valley workers and community members deeply cynical and suspicious of government promises about regional

economic renewal plans and strategies. These perceptions of abandonment and mistrust were further reinforced by the physical harm and emotional distress which many community members experienced as a result of the 2014 Hazelwood mine fire.

On 9 February 2014, a fire ignited at Hazelwood coal mine in Morwell, one of 70 fires burning in Victoria that day (Lord 2014; Doig 2019). The fire burned for 45 days with conflicting and contradictory advice provided by authorities to local residents during that time (Yell and Duffy 2017). Following reported adverse health outcomes, measures were put in place by key government agencies to attempt to address residents' concerns about mine fire-related health impacts. These included the provision of advice to population sub-groups considered vulnerable to smoke exposure, as well as health assessments for residents with mine fire-related health concerns.

An independent inquiry into the incident was announced in March 2014 and concluded in September 2014 (Hazelwood Mine Fire Enquiry 2014). Mounting community pressure prompted the investigation of mine fire-related health impacts (Smith and Yell 2019) and resulted in funding for the Hazelwood Health Study in November 2014, a ten-year health study of local residents impacted by the mine fire (Monash University 2016). Both physical and psychological impacts have been documented, particularly in vulnerable sub-populations (Hazelwood Mine Fire Enquiry 2014, Mayberry et al 2020).²

In May 2015, the newly elected Labor state government committed \$30 million to reopening the Hazelwood Mine Fire Inquiry, establishing new Terms of Reference and implementing all recommendations (Andrews 2015). In 2016, the Hazelwood Mine Fire Inquiry delivered a finding that the fire likely caused additional deaths in the Latrobe Valley (Environmental Justice Australia 2016). Consequently, the occupational health and safety authority, WorkSafe, prosecuted the Hazelwood mine operators on 12 occupational health and safety-related charges. Over 50 victim impact statements were submitted by Latrobe Valley residents (EPA Victoria 2020). In December 2019 following an eight-week trial, a Supreme Court of Victoria jury found the mine operators guilty on ten of the 12 charges (WorkSafe 2019). In May 2020, the Supreme Court of Victoria fined the mine operators \$1.9 million for "an entirely foreseeable event" (Asher et al 2020).

The 2010 Victorian Labor Government commitment to phase out Hazelwood had the potential to provide an initial basis for commencing discussion with key stakeholders about longer term transition planning. This opportunity was, however, lost as a result of the Labor government's defeat in the 2010 Victorian election with Hazelwood's owners (Engie), Commonwealth and State governments all continuing to deny that closure was imminent.

In May 2016 the Engie CEO advised the French Senate that Engie was assessing a number of possible actions regarding Hazelwood, including sale and closure. In June 2016, Engie asset manager, George Graham advised a Latrobe Valley public meeting that 'I can categorically say

² The Hazelwood Health Study (2020) has found that in the six months after the mine fire, there was a 62% increase in risk of death from cardiovascular conditions and an 88% increase in deaths from Ischaemic Heart Disease (IHD). In total there were 26 cardiovascular-related deaths in Morwell attributed to this six-month, post-mine fire period. These 26 cardiovascular deaths represented 38% of all cardiovascular deaths in Morwell during this six-month period.

that there is no decision to close Hazelwood.’ On 28 October 2016, Commonwealth Energy Minister, Josh Frydenberg reconfirmed his understanding that ‘no decision has been made to close Hazelwood.’ On 2 November 2016 the company continued to deny that there was an imminent closure announcement. On the morning of 3 November 2016 Engie sent Hazelwood workers a text message to tell them to come into work to hear an announcement. Wendy Farmer, co-founder of *Voices of the Valley* notes that many workers, a large number of whom were unable to attend the meeting due to the short notice, generally believed a partial closure was going to be announced and were shocked to find out that Hazelwood was to close (Farmer 2020).

4. Latrobe Valley regional renewal policies and strategies in the three years following the closure of Hazelwood

The following section provides an overview of key policy interventions and strategic initiatives designed to strengthen social, economic and environmental outcomes in the three years following the closure of the Hazelwood power station.

Transition governance and planning

The history of the Latrobe Valley in the period between the privatization of the State Electricity Management Commission of Victoria (SECV) in 1994 and the closure of Hazelwood in 2017 was characterised by numerous, largely unsuccessful attempts to design and implement long term regional structural adjustment plans and strategies (Weller 2017; Weller 2019; Snell 2018; Harrahill & Douglas 2019). Critical assessments of these regional renewal strategies point to a number of reasons for their limited impact.

Coles et al (2017) point to constraints arising from poorly integrated, siloed approaches to strategy design and governance. Weller (2017 and 2019) argues that expanding the scope of regional boundaries well beyond the area in which most electricity generation and coal mining industry workers live and work significantly reduced opportunities for input from individuals and organisations most directly impacted by economic restructuring and industry closures. Weller also notes the impact that expansion of regional boundaries had on redistributing and diluting resources allocated to address the impacts of power sector and mining job losses.

The most significant challenge has arguably, however, been the difficulty of designing effective long term economic renewal and diversification strategies in the absence of clear signals from government and industry about the likely timetable for the phasing out of coal fired power generation (Latrobe City Council 2017; Coles et al 2017; Snell 2018; Harrahill & Douglas 2019).

As Latrobe Valley Authority (LVA) CEO Karen Cain notes, ‘right up until the day of closure there were still people in the community believing that somebody would stop this from happening. We had workers still believing that they would have a job. So what happens when we have announcements like this – it really doesn’t matter which industry or community – we really run through a grieving process....If we’d had more time - and again we come back to the

shortness of the response here - we probably could have been doing more early work on where job creation was occurring and understanding where the opportunities were for more direct links to the skills and experience of the workers and not having to play catch up on that' (Cain 2020b).

On 3 November 2016, 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 and \$20 million as part of a Regional Jobs and Investment Package, focused on local job creation, diversifying the regional economy and increasing workforce skills (Gordon & Preiss 2016; Department of Environment and Energy 2016).

On the day of the closure announcement, the Victorian Government announced \$22 million in assistance for workers in the Latrobe Valley region and the establishment of the Latrobe Valley Authority (LVA) to lead work on economic transition strategies. 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. 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 (Baxendale 2016; ABC 2016; Harahill and Douglas 2019). This included additional funding of \$345 million for upgrades to the Gippsland rail line. Details of these various funding initiatives including are summarized in Table 2.

Table 2: Initial Victorian government Latrobe Valley transition funding and policy commitments

Measure	Monetary amount	Percentage of total funding
Establishment of <i>Community Infrastructure & Investment Fund</i>	\$174 million	25.1
Establishment of <i>Economic Growth Zone</i> , covering Latrobe City Council, Baw Baw Shire and Wellington Shire to encourage businesses to re-locate to the Valley via financial incentives such as stamp duty concessions and fee reimbursements	\$50 million	7.2
Construction of new <i>GovHub</i> office complex in Morwell	\$30 million	4.3
Support services for affected workers, including financial and emotional counselling, education and training programs; establishing a <i>Worker Transition Centre</i> and expansion of the <i>Back to Work</i> program to assist regional businesses	\$22 million	3.2
Establishment of the <i>Latrobe Valley Worker Transfer Scheme</i> via an agreement between labour unions, the Victorian government and electricity generators	\$20 million	2.9
Establishment of the <i>Latrobe Valley Authority</i> to lead work on economic transition strategies	\$20 million	2.9
Development of a <i>Morwell Hi-Tech Precinct</i> through collaboration between Federation University, TAFE Gippsland, Gippsland Tech School and Latrobe City Council	\$17 million	2.5

Upgrade of 224 public housing properties	\$7.8 million	1.1
Energy efficiency upgrades to 1,000 homes of low-income and vulnerable households	\$5 million	0.73
Development of a <i>New Energy Jobs & Investment Prospectus</i> to develop tools to encourage investment in small, medium and large-scale renewable energy projects	\$500,000	0.07
Upgrade to the Gippsland Rail Line	\$345 million	50
Total	\$691.3 million	100

The Government also announced a number of institutional innovations to improve state government capacity in relation to the Latrobe Valley. These included a Cabinet taskforce to develop an economic growth plan for the Valley (Preiss & Morton 2016), a new GovHub complex in the region and the establishment of the Latrobe valley Authority

The Latrobe Valley Authority

The most significant new regional governance initiative established in the Latrobe Valley following the closure of Hazelwood has been the Latrobe Valley Authority (LVA 2019; Snell 2018; Harrahill and Douglas 2019). The LVA was established by the Victorian Government in November 2016 with the aim of ‘leading the transition and transformation of the Latrobe Valley by working for and with workers, business and the community to transition to a strong future through response, recovery and long-term strategic work’ (Cain 2020a). LVA CEO Karen Cain has identified the following principles and priorities as central to the development and implementation of the LVA work program (Cain 2020a):

- Enabling and broadening multi-level governance and leadership;
- Identifying and building on regional economic and community strengths and capabilities;
- Drawing on evidence and learning from successful regional innovation strategies both locally and internationally;
- Facilitating collaborative partnerships; and
- Maintaining a strong focus on evidence-based action and outcomes.

In personal correspondence with the authors (2020b), Cain emphasises the importance – and the difficulty – of rebuilding the capabilities of policy makers and community members in working collaboratively and in evidence-based policy making. ‘Collaboration and partnership’ Cain (2020a) argues, ‘is not just about asking people their opinion. That is too simplistic. That’s not evidence-based, that’s opinion based...’. She also goes on to highlight the value of moving quickly to ensure that stakeholders see practical and tangible benefits from consultative engagement and collaborative partnerships: ‘You can tell people all you like that there’s a problem. They can either dismiss that out of hand or argue the point with you and walk away...but by working with people in small ways on things that matter to them and that are really important, you can actually demonstrate the application of partnership and collaboration and connectedness that’s got some mutual benefit (Cain 2020b).

A summary overview of program and policy initiatives designed and led by the LVA is included in Table 3. Evidence in relation to outputs and outcomes is drawn from the 2019 LVA Community Report (LVA 2019).

Table 3: Latrobe Valley Authority policy and program initiatives and outcomes 2016-2019

Policies and programs	Outputs and outcomes
Worker Transition Service	74% of former Hazelwood workforce in employment or not looking for work
Worker Transfer Scheme	90 Hazelwood workers found ongoing employment
Back to Work Scheme	1245 payments made to support reemployment
Latrobe Valley Community Forums	Involved over 1000 community members. Key priorities identified economic development; innovation and jobs; and improving liveability and community services.
Community and Facility Fund	\$20 million supporting 186 community projects and 50 events
Sports infrastructure upgrades	\$78 million for eight projects
Major sports events and community outreach	23 major events; 90 school visits; 17 clinics; 12 workshops
Supply Chain Transition Program	52 companies executing plans; 34 companies completed; seven Economic Facilitation Fund grants
Home Energy Upgrades	810 home assessments
Good Money outlet	1062 no interest loans; 274 low interest loans
Growing Regional Opportunities for Work (GROW)	68 business registered
GROW People	Pilot program supporting 14 people experiencing barriers to employment
Access New Industries	17 training programs; 112 people completed
Ladder Step Up program	82 participants; 40 in jobs post-program; 30 re-engaged in education; 30 matched to mentors
Gippsland Jobs Hub and volunteering website	Hub and website established
Latrobe Youth Space	59 programs and events; 7204 participants
New Energy Jobs and Investment Prospectus	Nine grants awarded to seven businesses
Latrobe Valley Business Support Service	Connecting local businesses with services
Smart Specialisation Project	New industry partnerships explored including food and fibre; renewable energy; health and wellbeing; and the visitor economy.
SEA Electric	Work underway to identify factory location
Health and community sectors workforce development	Federation University establishing new allied health courses
Internationalising education	Four secondary schools registered for international student programs
Industry education partnerships	906 school students participating; 20 industry partners providing real world learning experiences
Gippsland Hi Tech Precinct	Construction underway
Latrobe GovHub	Construction underway; jobs advertised

Community forums convened and organized by the LVA in 2018 and 2019 identified the following community and regional priorities:

- Jobs: Create future jobs; social inclusive employment; local procurement to support local jobs
- Livability, community and events: attracting visitors and events; strong connected and livable communities; population growth
- LVA: continue beyond 2020; the accessibility, local content and knowledge of the LVA; continue to broker partnerships
- Future skills and innovation: skills for our future; building our competitive edge; driving our innovation
- Collaboration: working together; building networks

A series of approximately 200 'community postcards' returned to the LVA in 2019 by community forum attendees and other community members sought responses to a range of questions about LVA and Latrobe Valley trends and priorities (LVA 2019b). While not a fully representative sample of regional views, the survey results do provide some indication of trends in local priorities and perspectives.

Responses to the question 'Who is impacted by the work the LVA has facilitated' led, for example, to the following responses: 'It is having a positive benefit for our entire region': 43%; 'It is having results for my local community': 40%; 'It is benefiting me': 15%; 'Not sure': 2%. Responses to the question 'How confident are you in the future of the region compared to 2 years ago' led to the following responses: 'A lot more': 45%; 'A bit more': 44%; 'About the same': 8%; 'A bit less': 2%.

The most important aspects of LVA's work were identified as: Working on the economic future of the region (70%); Improving the livability of the region (65%) Working together through partnerships (63%) Building on the strengths of the community (60%) Identifying and responding to what matters in the community (50%); Giving the community a voice (40%) and Supporting local leadership (30%)

Karen Cain (2020b) summarises her view about the future priorities and role of the LVA in the following way. 'Our hope is - and this is about the legacy part - and about how we see our role is to set up the conditions in the community for continued growth and sustainability with a strong system that will be able to continue to adjust and innovate and grow.....business and government and research and education institutions and community groups working together in an integrated and collaborative way. If we could establish that as the way its done and build that in as the DNA in the places we operate we'd be very happy.'

Employment transition and economic renewal policies

Initial steps in supporting workers impacted by the Hazelwood closure included the establishment of the *Worker Transfer Scheme* and the *Worker Transition Service* (LVA 2019a).

The *Worker Transfer Scheme* provided \$20 million to facilitate the employment of former Hazelwood power station workers in other Latrobe Valley businesses (Charalambous 2019). At the time of closure 450 workers with an average tenure of 25 years and an average age of 52 were employed by Engie at Hazelwood (Poole 2017). The *Worker Transfer Scheme* aimed to secure the reemployment of 150 of these workers. By June 2019 96 Hazelwood workers had been reemployed at other plants as a direct outcome of the resources provided through the Worker Transfer Scheme. This included 49 workers at Loy Yang A (AGL), 18 at Loy Yang B (Alinta) and 29 at Yallourn Power Station (Energy Australia).

The *Worker Transition Service (WTS)* was designed to provide information, training and support to assist retrenched workers find new jobs, start up new businesses or move into retirement. The WTS was established as a partnership with employers, unions, employment agencies, adult education providers and accredited training agencies to ensure workers were provided with integrated one stop shop support long term. The WTS was initially open to all former Hazelwood employees as well as contractors, supply chain employees and their family members. Access to the WTS was later opened up to workers from the ASH Timber Mill in Heyfield, Carter Holt Harvey Timber Mill, Brancourt Cheese Factory and Growing Regional Opportunities for Work (GROW) Gippsland participants.

Gippsland Trades and Labour Council (GTLC) Secretary Steve Dodds (2020) highlights the role of the GTLC in working in partnership with the LVA to maximise the effectiveness of the WTS. The GTLC was a key intake point for workers made redundant, offering one-on-one peer support with GTLC project officers providing employment advice and assistance, resume writing, and mental health support. Dodds also notes that enabling a labour market skills provider, in this case the Gippsland Employment Skills Training Centre to operate in the workplace prior to closure was an important contribution in securing a smooth transition for redundant workers.

By mid-2019, 306 of the 850 workers who had participated in the WTS were in full time work with 35 in part time work; 307 were casually employed and 185 were unemployed (Whittaker 2019; Charalambous 2019, Dodds 2020). As of mid-2020, the WTS had also supported 1484 individuals with personalised plans put in place to support individuals and families requiring emotional and other personal support. 911 workers had obtained 2814 Nationally Accredited Qualifications and licenses. The WTS had provided over 4835 sessions of educational advice; 812 sessions of career advice; 2391 sessions of employment market advice; and 3675 sessions of resume and interview advice. Workers received retraining and skills development through the WTS in a wide range of trades and skills including Construction Induction, Rail Induction, First Aid, Work in Confined Spaces, Work Safely at Heights, Traffic Management, Asbestos Removal, No Go Zone Spotters, Heavy Rigid Truck Licence, Elevating Work Platform, and Forklift (Dodds 2020).

The WTS continues to support a range of workers across the Latrobe Valley and has now been expanded to work with other redundant and long term unemployed workers across the region. This includes unemployed youth, culturally and linguistically diverse workers, workers with disabilities and recently released offenders.

The period between 2016 and 2019 was also marked by a range of discussions and proposals in relation to longer term economic investment and employment opportunities. The following summary of announcements and commitments provides some indication of the scale and scope of these initiatives:

December 2016: Latrobe City Council (2016) publishes *A Strength Led Transition* outlining strategic priorities for strengthening Latrobe Valley economic growth and resilience; education and training; and community liveability, connectedness and wellness.

April 2018: Australian and Victorian governments announce funding to support the establishment of a Latrobe Valley demonstration plant exploring the viability of producing hydrogen from coal (Lazzaro 2018).

May 2018: Victorian government confirms \$25 million in funding to construct the Latrobe Valley GovHub accommodating up to 300 government employees (Andrews 2018). Planning for the GovHub initiative outlines plans to employ 150 workers from Parks Victoria and EPA Victoria as well as Earth Resources regulation staff working on the Hazelwood Mine Rehabilitation project. Design options for the GovHub facility were announced in July 2019 (Inside Construction 2019).

May 2018: Victorian government announces \$2.7 million in grants from the *Economic Facilitation Fund* to five local businesses (Victoria Valley Meat Exports, Mercus, Riviera Farms, Trafalgar Medical Centre, Gibson Groundspread)

July 2018: The LVA releases the *Latrobe Valley New Energy Jobs and Investment Prospectus* (LVA 2018). The Prospectus begins by identifying three areas for investment for new energy technologies in the Latrobe valley: Clean Energy, Energy Supply Chain and Workforce Capabilities and New Energy Products and Services. Investment projects with significant potential for generating economic and employment renewal identified in the Prospectus include:

- Optimising the potential of the Latrobe Valley's extensive transmission network infrastructure and surplus energy distribution capacity;
- Supporting the development of the *Star of the South* proposal for up to 250 wind turbines off the Gippsland coast. This project has the potential to generate new investment of \$8 billion, creating 12,000 jobs during the construction phase as well as 300 ongoing jobs;
- Supporting the development of a range of solar energy projects and opportunities;
- Supporting the development of bioenergy opportunities, building on the significant biomass resources produced by the agricultural sector;
- Strengthening regional supply chain capacity and workforce capability for solar hot water, solar PV and offshore wind industries;
- Supporting ongoing exploration of opportunities for optimising improved management of onsite wastewater and energy demands;
- Supporting ongoing exploration of opportunities for building on experience and expertise in energy efficiency, energy storage and demand management; and

- Strengthening investment in energy solutions for local towns not currently connected to the grid.

August 2018: Announcement that Solar Victoria will be based in Morwell (Whittaker 2018; Bassano et al 2018). Solar Victoria will be responsible for a \$1.3 billion plan to provide half-price solar panels to 650,000 Victorians over the next ten years and solar hot water system rebates to 60,000 households, with the potential to create 50 new local jobs.

September 2018: Announcement that Latrobe Magnesium will build a plant in the Latrobe Valley generating magnesium from the fly ash of coal plants. The plant has the potential to directly employ 374 local workers (Sundich 2019).

October 2018: Victorian government announces commitment to support the construction of the SEA factory manufacturing electric vans and minibuses. This factory, to be built in the Latrobe Valley, has the potential to employ up to 500 local workers and assemble 2,400 vehicles annually (Vorrath 2018). SEA Electric and TAFE Gippsland have also announced a collaborative project to develop training for prospective EV industry employees.

October 2018: The LVA releases the *Regional Action Plan: Embedding GROW principles across the Gippsland region* (LVA and ArcBlue Consulting 2018). This report draws on the Growing Regional Opportunities for Work (GROW) economic development framework designed to redirect procurement spending towards local business; create jobs through local inclusive employment approaches; and cultivate impact funding and investment opportunities. The development of the Latrobe Valley GROW strategy has been informed by over 120 regional stakeholder meetings and 20 participant workshops. Ongoing development and implementation of the GROW project will involve collaborative input from 28 organisations including state and local government, business, education and training, Indigenous community organisations.

March 2019: Announcement of the 300MW Delburn Wind Farm project to be developed by OSMI (Vorrath 2019). This project has the potential to generate electricity for 220,000 homes (around 10% of the electricity generated by Hazelwood).

December 2019: Release of the LVA Latrobe Valley Community Report, *Transitioning to a Strong Future: November 2016-November 2019*.

As noted in the above overview of LVA initiatives, Smart Specialisation frameworks and processes have played a central role in the development and implementation of post-Hazelwood regional economic renewal policies. The following section provides an overview of the origins and impacts of Smart Specialisation strategies deployed in the Latrobe Valley in the period following the closure of Hazelwood.

Economic transition through region-based innovation policy: ‘The Gippsland Smart Specialisation Strategy’³

In addition to applying established approaches to regional development such as direct financial support for workers and their families affected by the closure of Hazelwood, the LVA has initiated innovative ways to transition the region’s economy. Drawing from experience in the European Union (EU), the LVA introduced the policy concept of ‘Smart Specialisation’ – a more inclusive, place-based and long-term oriented regional innovation approach. Gippsland was the first region outside Europe to be registered to the Smart Specialisation Platform which is organised by the European Commission. Goedegebuure et al (2020) summarise the approach in the following way: ‘Smart Specialisation represents an evidence-based, collaborative approach to stimulating place-based innovation focused on distinctive local assets which had potential for competitiveness in key [global] markets.’

The ideas around this novel regional innovation policy approach, generally known as ‘Smart Specialisation’, have been informed by the work of the ‘Knowledge for Growth group’ established by the European Commission in 2007; debates initiated by the OECD (2009) and a report on the reformed EU cohesion policy for the European Commission (Barca, 2009). Only a few years later, Smart Specialisation became the standard in EU regional innovation policy with development of a Smart Specialisation strategy becoming a central condition for access to regional funds. Since 2014, the Smart Specialisation approach has been applied across Europe in more than 150 regions. To support these numerous regional strategies, over 67 billion Euro has been made available as part of the European Structural and Investment Funds as well as other forms of national and regional funding (European Commission 2020). A key goal is to increase the effectiveness of EU investment in Research and Development (R&D) by reducing overlap and duplication of projects (Foray 2015).

Smart Specialisation can be interpreted as an answer to the often sectoral, spatial and contextual ‘blindness’ of previous innovation policy approaches. Critically discussed in academia and practice were aspects around ‘one size fits all’ solutions (Tödtling and Trippl 2005; OECD 2009), often linked to a narrow focus on a limited number of high-tech industries (e.g. information and communications technology, biotechnology, nanotechnology); missing interaction between policy levels and a lack of wider inclusion of stakeholders. Thus, the EU is aiming at a ‘smarter’ prioritization and resource concentration of R&D in a variety of industries and activities that are most likely to effectively transform existing economic structures and show potential for competitive advantage.

Smart Specialisation is not primarily about identifying innovative activities within established industries or sectors. The emphasis is rather on merging ideas from different fields. This paradigm shift goes back to research in Economic Geography finding that regions are more economically thriving if they can develop new complex innovations that are related to existing activities and regional skills and competences (Boschma 2016; Boschma & Frenken 2006; Frenken et al 2007). A turning point at the international level was the widely influential OECD publication ‘Regions Matter: Economic Recovery, Innovation and Sustainable Growth’ which (OECD 2009). For more than ten years, under the umbrella term of Smart Specialisation

³ This overview of the development and implementation of Smart Specialisation initiatives in the Latrobe Valley has been prepared by Sebastian Fastenrath from the Latrobe Valley Smart Specialisation research team.

regions have been seeking new solutions. New definitions and understandings emerge and Smart Specialisation in practice is ahead of the theories around it.

Probably the most significant contribution that Smart Specialisation has made to the ongoing debate on regional innovation policy is the concrete concept on *how* prioritisation can be designed and organized. The novelty within the discussion in innovation policy follows a place- and evidence-based approach – considering region-specific economic and institutional structures and competences. Smart Specialisation stands for capacity building to create new ‘specialities’ through discovery and experimentation within new domains to “initiate structural changes in the form of diversification, transition, modernisation or the radical foundation of industries and/or services” (Foray 2015, p.1).

The underlying key mechanism of a Smart Specialisation Strategy is the so-called Entrepreneurial Discovery Process (EDP) – an approach in which policy makers and administration are “prepared to listen to entrepreneurs, researchers and citizens in order to identify priorities and facilitate the emergence and growth of new activities” (Foray 2015, p.3). In contrast to a government-steered top-down approach, the EDP is understood as a mobilising action and a process of learning - bundling knowledge and ideas for actions through a variety of stakeholders. Building new cooperation within regions and cross-sectoral thinking is at the heart of 3S.

How the Smart Specialization approach has been applied in Gippsland

The Smart Specialisation initiative for Gippsland has been developed in partnership with a team from the University of Melbourne and RMIT University. This group brings together expertise in the fields of regional development, innovation policy, the role of tertiary education in stimulating innovation, and socio-economic transitions in Australia and Europe. Drawing on insights from implementation processes in the EU, the work on the Gippsland Smart Specialization Strategy (G-S3) is conceptualized around exploration and engagement within the so called ‘quadruple helix’, a structure of stakeholders linked to the four domains of public sector, industry, research/tertiary education, and community. This approach resonates with the global trend towards a more open and connected understanding of innovation, focusing on collective problem-solving through sharing of knowledge, skills, assets and other resources. Building a Gippsland-based innovation system that engages and links local industries, communities and organisations is at the heart of G-S3. The LVA provides an institutional platform for connecting and orchestrating these stakeholders and activities. Based on the specific Gippsland context, four key themes were identified for initial exploration: Food and Fibre, New Energy, the Visitor Economy, and Health and Wellbeing.

In the period up to the end of 2020 the Gippsland Smart Specialisation project has engaged with over 3,000 individuals and organisations (see Goedegebuure et al 2020). It has been important to build trust to break down institutional path dependencies and sectoral silo thinking in the region. The personal interaction and knowledge generation between stakeholders has proven to be crucial as data on regional innovation processes is lacking in Australia. The EDP process provided a better understanding of the opportunities and challenges in the region. This process has laid the foundation for a longer-term resilient development of a regional innovation eco-system in Gippsland. To overcome the lack of

integrated innovation systems and institutional capacity in Gippsland, bridging gaps through driving collaboration and knowledge exchange between industry, government, education/research and communities was the key.

The exploration around the four identified themes for Gippsland's transition was conducted in a structured way. The engagement activities through the G-S3 team followed the idea of 'Discover, Define, Develop and Deliver'. This structure was applied for each of the themes by setting up, organising and conducting Steering Committee Meetings, Regional Ecosystem Analyses Interviews, Entrepreneurial Discovery Workshops and Innovation Groups. While in-depth insights and practical learnings could be found for all four themes, particularly promising were the outcomes within the theme of 'New Energy'. Proposals for concrete projects in the context of bio-energy; geothermal energy; community energy; and smart grids have been identified through an assessment process by 'Innovation Groups'. These consist of representatives of local councils and state government, community groups, industry, and universities. These projects have the potential to transition parts of the energy industries into a more sustainable and long-term future of Gippsland.

While these activities clearly catalysed novel regional collaboration, international activity in the context of G-S3 initiative has also paved the way for greater international information sharing and cooperation. A 'study mission' was organised to the Netherlands and Germany in June 2019 to experience how these approaches to place-based innovation play out in the EU, and what lessons stakeholders have learned from their ongoing engagement with regional innovation systems (see Fastenrath et al 2020). This experience helped a delegation from Gippsland to recognise innovation opportunities in their home region, but also to see the importance of their initiatives in the global context meeting the commitments of the UN Paris Agreement. There is an ongoing dialogue between representatives and businesses in Gippsland and the Netherlands (Wilson 2020).

The experience in Gippsland resonates with the work of a range of researchers who have recently pointed out that Smart Specialisation has the potential to drive a more normative-oriented regional development that looks beyond a solely economic growth paradigm (Coenen & Morgan 2020; Tödtling & Trippl 2018; Uyarra et al 2019). As other initial examples show, the Gippsland case demonstrates that Smart Specialization is a valuable framework to drive place-based policy-learning and innovation-system building (see Trippl et al 2019). The achievements so far are a result of strong partnerships which have developed between the LVA, the GS3 Project Team, and business, government, community and education/research institutions. The openness of the LVA for this experimental collaborative policy approach can be interpreted as a policy disruption.

While it is too early to conclude about the success (job creation and regional wellbeing) in the long term, the innovative approach to regional development has created a "positive story of change" (Beer et al 2020, p.60). The initiative in Gippsland has been important to demonstrate that collaboration generates significant benefits for the community (see Beer et al 2020). The process has also uncovered other structural challenges in developing new approaches to regional development. It has become clear for example that the lack of data is hindering further evidence-based policy making. To gain more knowledge about the state of innovation in Gippsland, the LVA initiated a Business Innovation Survey, which was one of the

first conducted in Regional Australia (see Fastenrath & Goedegebuure 2020). It is envisaged that the more detailed insights into innovation activities (e.g. skills, collaboration, structure of businesses, R&D, markets) in Australia's regions can help to better inform and support single businesses, industry sectors and policy makers.

Investment in community services infrastructure and rehabilitation of mine sites

As noted in Table 2, initial Victorian government and LVA investments have included a strong emphasis on community services and community infrastructure investment. This decision has been informed by the view that successful regional energy transitions depend on engaging with and supporting all impacted households and community members. Karen Cain (2020b) notes that this view has not always had unanimous support, with some stakeholders holding the view that the focus of 'just transition' policies should primarily be on the reemployment of mine workers. 'But we know when you have disruption like this it's not just about mineworkers, it's the community in general – and the supply chains and other associated business. A *community transition* - which is what we talk about - is about benefit for everybody. Yes absolutely support for workers impacted - but it can't be just be about that. I don't think a just transition is just about a single workforce' (Cain 2020b, emphasis added).

Voices of the Valley President. Wendy Farmer builds on this reflection about the crucial importance of respectful and inclusive community engagement strategies in the following way, 'Don't give us false hope. Don't promise things that can't happen. We need to go on this journey together. We need support from politicians for the change that needs to happen in the Latrobe Valley. We can't do it by ourselves; we need you on the journey. But make sure that journey is where the community needs to go.' (Johnson 2018)

The Victorian Government's *2020 Latrobe Valley Regional Rehabilitation Strategy* (DJPR 2020) recommended that the development and implementation of mine site rehabilitation strategies should be informed and guided by the following vision, outcomes and implementation principles:

Vision: The Latrobe Valley coal mines and adjacent land are transformed to safe, stable and sustainable landforms which support the next land use.

Outcomes:

- People, land, environment and infrastructure are protected;
- Land is returned to a safe, stable and sustainable landform;
- Aboriginal values are protected;
- Community are engaged, and their aspirations inform the transformation;
- Long term benefits and future opportunities to the community are optimised; and
- An integrated approach to rehabilitation and regional resource management is adopted.

Implementation principles

- Fire risk of rehabilitated land should be no greater than that of the surrounding environment;

- Mine rehabilitation should plan for a drying climate. Rehabilitation activities and final landforms should be climate resilient;
- Traditional Owner involvement in rehabilitation planning should be developed in consultation with Gunaikurnai Land and Waters Aboriginal Corporation;
- Mine rehabilitation and regional land use planning should be integrated, and the rehabilitated sites should be suitable for their intended uses;
- Requirements for ongoing management to sustain a safe and stable landform should be minimised as far as practicable;
- Any water used for mine rehabilitation should not negatively impact on Traditional Owners' values, environmental values of the Latrobe River system or the rights of other existing water users;
- Community should be consulted on rehabilitation proposals, the potential impacts, and have the opportunity to express their views; and
- Ground instability and ground movement risks and impacts during rehabilitation and in the long-term should be minimised as far as practicable.

Mine and power station owners indicated a strong preference for mine rehabilitation strategies based on filling the mine void with water. Other stakeholders, particularly those involved in farming and irrigation, expressed significant concerns about this approach, noting that up to 3000GL of water would be needed to completely fill the mine voids, with no economically viable sources for this water other than the Latrobe river system and underground aquifers (Bell 2020). By comparison, Sydney Harbour holds approximately 500GL of water.

In announcing its decision to close Hazelwood, Engie made a commitment to decommission the power station infrastructure, retaining an on-site workforce of 130 direct employees as well as drawing on the work of up to 200 contractors. Engie estimated that rehabilitation of the mine would take around two years with four years required to remediate adjacent land. While some local community members were keen to retain the power station infrastructure, a heritage protection application was rejected in 2018. The eight iconic chimneys of the Hazelwood power station were demolished by Engie in May 2020 (Whittaker 2020a). The first of the four Hazelwood dredgers was demolished in October 2020 with plans finalised to demolish the remaining three dredgers by the end of 2020 (Whittaker 2020b).

Economic and employment trends

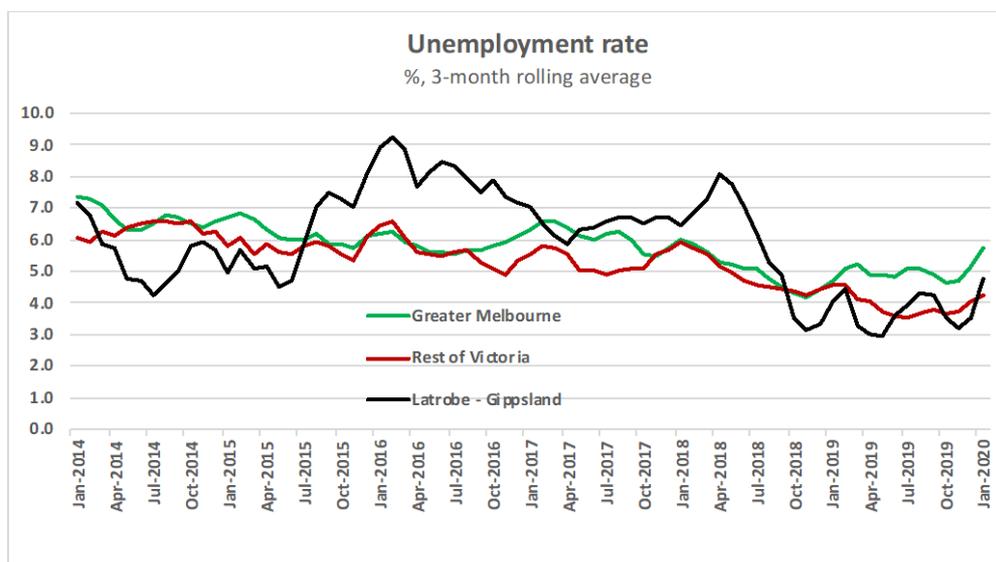
The period immediately following the closure of Hazelwood was marked by deep anxiety about the social and economic impacts of a sharp rise in regional unemployment. Concern about the impact of the loss of 750 jobs from the closure of Hazelwood was further heightened by the announcement that an additional 200 jobs would be lost as a result of the closure of Morwell's Carter Holt Harvey timber mill. Many former power industry workers and community members also expressed considerable initial scepticism about government policy and funding commitments given the previous history of multiple unsuccessful economic renewal strategies (Lazzaro 2017; Watanabe 2019).

Burke et al (2019) note a general trend towards increased unemployment (of approximately 0.7%) in the months following the closure of Australian coal fired power stations between 2012 and 2017. Unemployment in the Latrobe-Gippsland area (as defined as a statistical area by the Australian Bureau of Statistics) however fell somewhat following the closure of Hazelwood, from an average of 7.8% in the 12 months preceding the closure in March 2017 to an average of 6.4% in the 12 months following the closure (ABS 2020a). This was higher than the unemployment rate in the capital city Melbourne and the rest of the state of Victoria (Figure 1). After a brief spike in early 2018, the unemployment rate in the Latrobe area then fell to an average of 4% from mid-2018 to the end of 2019, just below that of the rest of Victoria.

Statistics for total number of employed people and participation rates (ABS 2020b) indicate that the fall in unemployment from mid-2018 is attributable to a greater number of jobs, with the total number of people employed increasing by around 6,600 or 5% during the period July 2018 to June 2019, compared to one year earlier. The overall participation rate remained unchanged.

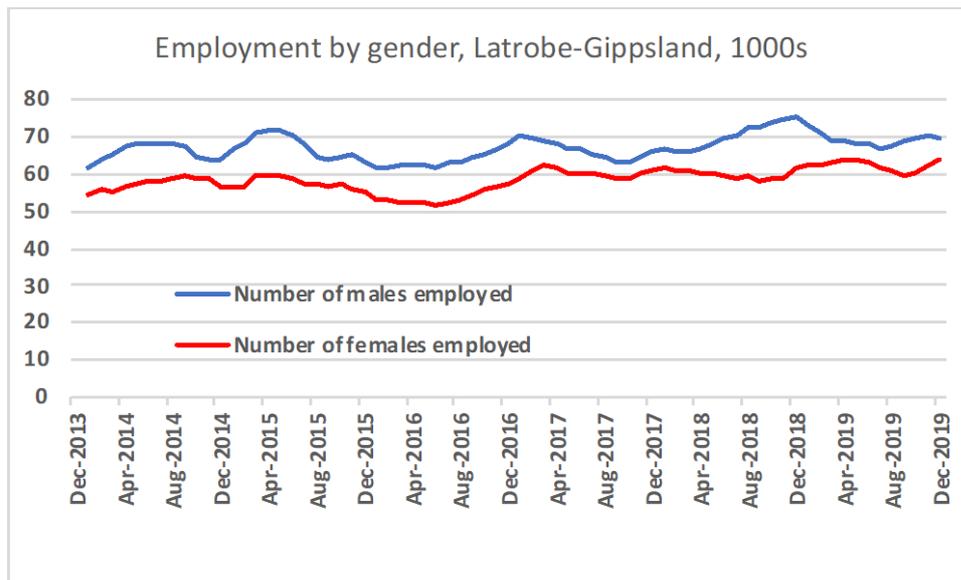
The reduction in the unemployment rate from mid-2018 occurred to about the same extent for both male and female unemployment rates. However, the large majority of the net increase in employment since early 2018 was males. Comparing the period mid-2018 to mid-2019 to the preceding year, there were around 5,600 more men in employment and about 1,100 more women (total employment in the region was around 133,000). During the same period, male workforce participation increased and female participation decreased, hence there was little difference in unemployment rates between the genders. While understanding of the precise contribution of policies and programs designed to address the employment impacts of the Hazelwood closure require further detailed research these employment trends suggests promising results from the initial investment in regional labour market and economic transition strategies.

Figure 1: Unemployment rate, 2014-2020: Latrobe-Gippsland and other regions of Victoria



Data: ABS (2020a)

Figure 2: Employment by gender 2013-2019: Latrobe-Gippsland



Data: ABS (2020b)

ABS 2020, Labour force status by Age, Labour market region (ASGS) and Sex, October 1998 onwards, 6291.0.55.001 - RM1, Australian Bureau of Statistics.

ABS 2020, Labour Force, Australia, Detailed, 6291.0.55.001, Table 16. Labour force status by Labour market region (ASGS) and Sex, Australian Bureau of Statistics.

Continuation of these trends is confirmed by data provided in the 2019 LVA progress report *Transitioning to a Strong Future* with the number of workers employed in the Latrobe region rising by 10,600 in the period between September 2016 and October 2019. Between September 2016 and October 2019 unemployment fell from 7.1% to 4.0% in Latrobe Shire; 3.4% to 2.1% in Baw Baw Shire and 4.8% to 2.1% in Wellington Shire. Latrobe City Mayor (and retired coal miner) Graeme Middlemiss, tempered his observation that the Latrobe Valley had in his view done 'reasonably well' to replace the jobs lost at Hazelwood with the concern that 'high-wage, high-skilled' power industry jobs were continuing to be replaced with 'lower wage' positions (Whittaker 2019).

Improvement in economic and employment trends as well as in community and business confidence has of course been significantly affected by the impact of the COVID pandemic (Randello 2020). LVA CEO Karen Cain argues that the impact of the pandemic highlights the importance of further strengthening a focus on the most vulnerable households and workers: 'We got to a really good place with employment numbers and participation in employment and that has been impacted again – with the greatest impact on the most vulnerable. So, we're doing some very careful engagement with places like neighbourhood houses...where people who struggle go to engage for trusted relationships.'(Cain 2020b)

Conclusion

This paper has reviewed policy initiatives in the post-Hazelwood closure period in order to clarify policies likely to maximize equitable and resilient social and economic outcomes in regions facing the challenge of phasing out coal-based industries and employment.

Latrobe Valley workers, households and communities have faced a wide range of economic, employment, health and wellbeing challenges in the three years since the closure of Hazelwood. All of these challenges would clearly have been easier to manage with longer notice of power station closure enabling more coordinated, proactive planning and a more inclusive conversation about immediate responses and longer term priorities.

Initial reductions in Latrobe Gippsland unemployment, from 7.7% in October 2016 to 4% in October 2019, and growth in the number of workers employed (increasing by 10,600 between September 2016 and October 2019) provide promising evidence of the positive impact of an integrated package of labour market, infrastructure investment and economic renewal policies and programs (ABS 2020a).

More broadly the regional policy and strategic interventions undertaken in the Latrobe Valley between 2017 and 2020 also confirm findings from regional transition research initiatives in many comparable international jurisdictions. A well-managed, just transition to a prosperous zero-carbon economy depends on proactive, mission-oriented industry policy and regional renewal strategies; respectful and inclusive engagement with workers and communities; and adequately funded, well-coordinated public investment in economic and community strategies, tailored to regional strengths and informed by local experience.

The establishment of the Latrobe Valley Authority has provided an important institutional foundation for collaborative and evidence based multi-level governance and policy implementation. Investment of significant resources in the Worker Transfer, Worker Transition and Back to Work schemes facilitated a range of re-employment and retraining opportunities for many retrenched workers. The Growing Regional Opportunities for Work and Smart Specialisation policy making processes and frameworks have assisted in the identification of collaborative partnerships and investment priorities with the potential to build on regional economic strengths including in energy, food and fibre, health and wellbeing and the visitor economy.

Much hard work clearly remains with many future challenges intensified by the ongoing social and economic impact of the COVID 19 pandemic. Adequate, well integrated investment will be required to enable the sustainable rehabilitation of mining and power station environments. Careful planning and well-coordinated policy implementation will be an essential basis for further strengthening regional skills and capabilities and for ensuring equitable access to health, educational and community infrastructure. Future honing of evidence-based policy and program priorities is also likely to benefit from strategies which strengthen the capacity of policy makers to draw on local experience and expertise as well as the results of detailed, long term quantitative and qualitative research and evaluation studies.

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Centre for Climate and Energy Policy Webinar

After Hazelwood: what can be learned from Latrobe Valley regional transition policies?

Brief for presenters

Date and time 8 Dec 2020, 12.00-1.00pm

Location:

<https://anu.zoom.us/j/84892363474?pwd=N3BDNIQzRVY1YTY5L1BVSWFk0drQT09>

Meeting ID: 848 9236 3474

Password: 123123

Description:

In this webinar we review and evaluate key policy initiatives and strategies designed to strengthen regional economic, social and environmental outcomes in the Latrobe Valley in the three years following the closure of the Hazelwood power station. We find that employment and economic outcomes in the three years since closure indicate promising initial progress in creating the foundations required to facilitate an equitable transition to a more prosperous and sustainable regional economy.

Facilitation/chair: Frank Jotzo

Running order

12.00 Official start

12.02 Frank Jotzo: Welcome

12.04 John Wiseman, Overview of paper

12.16 Sebastian Fastenrath, Smart Specialisation

12.24 Karen Cain

12.32 Wendy Farmer

12.40 Moderated Q&A

1.00 close