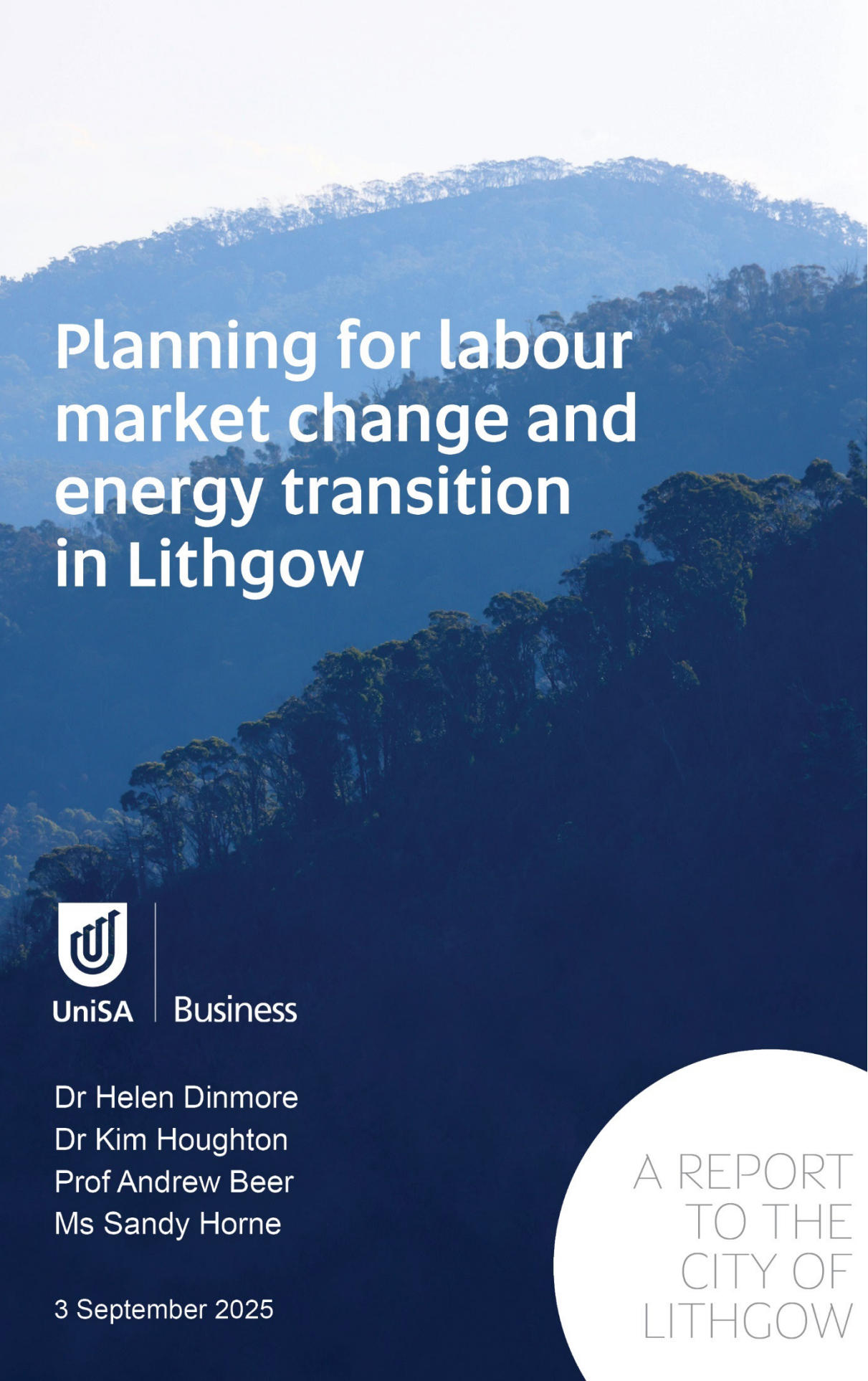




Planning for labour market change and energy transition in Lithgow



UniSA | Business

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A REPORT
TO THE
CITY OF
LITHGOW

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Executive summary

The work underpinning this final report and associated plans was undertaken in response to anticipated change in the City of Lithgow brought about by the closures of its coal mines and coal fired power plant, and to the Action Plan set out in the Lithgow Emerging Economy Transition Plan (2023). Coal industry closures will have important implications for the local labour market, supply chain, economic growth and community as a whole. This presents a significant challenge for the City of Lithgow, which has not seen substantial transformation of its population or economic structure over the past three decades.

At the forefront of preparing for change in Lithgow is the question of the region's adaptive capacity – the capacity of its workforce, community and economy to adapt to the impacts of change. Adaptive capacity refers to the ability of a system, community, or individual to adjust to changes, moderate potential damages, and take advantage of opportunities presented by those changes, especially those related to climate change. It encompasses both the potential to adapt and the resources available to do so, including financial, human, institutional, and natural resources.

As well as bearing many of the impacts, workforces are an essential enabler of the transition to net zero. Since this transition represents a large-scale structural change to the world of work, Lithgow's emerging economy is dependent on developing the right skills in the workforce, and in turn, skills development will protect workers from related economic shocks. However, workers transitioning as a result of a greening economy (e.g. away from jobs in the fossil fuel industry) will not necessarily move into clean energy or 'green' jobs. The issues for communities and individuals are complex. Workers transitioning out of coal-fired power plant and coal mining jobs in Lithgow will have different needs depending on their existing occupations and skills, career stage, household needs and aspirations.

Therefore, there is no one 'fix' for managing Lithgow's transition; rather, a mix of measures is likely to be effective. Where an industry faces complete closure, structural adjustment has two broad objectives: mitigating unemployment following retrenchment; and repositioning the local economy onto a sustainable and prosperous new trajectory. Measures targeted at transitioning the labour force should be comprehensive, rolled out over the transition period, and be informed by a vision for the region's economic future.

Successful transitions management should also include a focus on place. Place-based policies are increasingly being applied to regions undergoing substantial change, including the decarbonisation of the economy. Effective governance is central to the successful implementation of place-based policy, and calls for participation by many stakeholders and a shared vision to guide efforts. Local agency is a key enabling element, best realised when community members participate and use their diverse knowledge and skills to tackle complex problems together. Workers facing retrenchment in Lithgow will need a transition program that is well supported by the NSW Government and backed by local government, the mine, unions and community services.

Workforce transition in Lithgow is also taking place in a broader context of acute skills and labour shortage across Australia. If policy and investment are done effectively, the emerging economy should result in a net benefit for employment and the economy more broadly, with much of this employment growth located in the regions. However, most employment gains are likely to be in medium and highly-skilled occupations. This presents a challenge for Lithgow, where educational attainment currently sits below the national average. Particular groups, such as First Nations people, women, mature age workers and youth face additional barriers to skills acquisition and employment. This report recommends a collaborative focus across education providers and employers on building educational offerings and skills attainment in Lithgow. Those emerging into

the workforce during the transition timeline, such as apprentices and school leavers, will need guidance to position themselves for a job market quite different to the one their parents have known.

That said, the strong base of manufacturing and technical skills in Lithgow is an asset in relation to potential growth, investment and resilience in the manufacturing sector. Manufacturing – particularly as it becomes more technology-driven – relies on a cluster of specialist skills in the region. Alongside an increase in educational attainment and skills for professional occupations, this report also recommends identifying focus industries and developing skills for a smart specialisation cluster, building on Lithgow’s existing strengths in technical trades, engineering, energy and innovation.

Lithgow has experienced difficulties both attracting skilled staff to the region and retaining younger people, with employers emphasising the importance of a home-grown workforce with strong ties to the region to overcome this problem. Lithgow currently has diverse training facilities but some of these are underutilised, while employers note gaps in Lithgow’s training offerings. There is an imperative to build local student demand and learning and career pathways. This report recommends that the different parts of Lithgow’s learning system work together to bring a wider array of high-quality course options to Lithgow.

At the same time, Lithgow’s connections to the wider region, Western Sydney and Sydney need to be improved in order to access educational offerings and labour markets, as well as to attract investment and urban professionals. This will help revitalise the region, address skills shortages and diversify the economy. Housing and transport have direct impacts on education and job opportunities in Lithgow. Any consideration of future workforce training and labour mobility must take into account these two critical issues.

Currently, a lack of clarity about future investment in the region, and uncertainty about the timeline of the mine and power station closures, is contributing to inaction. Many people, including employers, workers and community leaders, are aware that transition is coming, but without a clear picture of the future, are struggling to engage in planning or upskilling for the longer-term. It is important that transition planning starts now, despite these uncertainties, so that Lithgow can both take advantage of the potentially long lead times to closures, and prepare for earlier or more sudden closures driven by market forces.

To move forward, Lithgow needs collaborative leadership, locked-in investment in education and industry, and a new set of shared aspirations – all rooted in community-led, visible actions that make the future feel real and achievable.



Section One: Introduction to the project

This final report examines labour market change and energy transition in Lithgow, New South Wales. This document combines our work on planning for labour market change and energy transition in Lithgow with an audit and four plans:

- the Regional Manufacturing Industry Skills and Training Audit,
- the Regional Workforce Adaptive Capacity Plan,
- the Long-Term Regional Workforce Plan,
- the Long-Term Education and Training Pathways Plan; and,
- the Rapid Response Plan.

In addition to this work, we have developed a set of metrics for Lithgow to measure its progress through this change. These were informed by the evidence base for indicators of socio-economic wellbeing, as well as values and vision expressed by stakeholders in Lithgow.

While incorporated here, the audit, plans and metrics are each stand-alone documents, providing a succinct description of the actions and strategies needed to prepare Lithgow for its economic and workforce future. The work underpinning this final report and associated plans was undertaken in response to anticipated change in the City of Lithgow, as its coal-fired power plant comes to the end of its economic life. While there are aspirations in the coal sector to switch to export from traditional domestic energy supply, our analysis assumes that associated coal mining also is likely to end. Planning and action are needed now, with the first closures – a scaling down of output as the Mount Piper Power Station changes the nature of its role in the National Energy Market – currently scheduled to commence sometime around 2028. More broadly, this change is indicative of a wider transition away from fossil fuels as Australia moves to a fossil-carbon free future (Garnaut 2022). Recent events, including the re-election of the Albanese Labor Government, have meant that the nation's current policy settings will remain, and that expectations around the closure of coal fired power stations will be met.

Closure of major facilities such as a power plant and coal mine has important implications for the local labour market (Dallaire-Fortier 2024), community sentiment (Greenberg et al 2025), the viability of firms within the supply chain and the ability to grow economically in the future. Closures often have significant impacts on communities, bringing forth the need to change to a new economic future. This is a challenge for the City of Lithgow as the city has not seen substantial transformation within its population or economic structure over the past three decades.



This final report does not represent the output of the first and only initiatives undertaken by the City of Lithgow in addressing a coal-free future. The Council has previously engaged in substantial planning and development for this impending economic transformation: it has developed a capacity in identifying emerging opportunities, it has secured central government support and it has prepared a number of documents including the Lithgow Emerging Economy Transition Plan with a focus on:

- building a resilient diverse economy;
- renewable energy;
- manufacturing industries;
- tourism;
- healthcare and social assistance;
- public administration and safety industries;
- supporting the coal transition; and,
- leading for growth.

A substantial portfolio of priority actions has also been developed as part of this exercise.

The analysis in this report has been informed by the recognition that Australia is moving rapidly to achieve its carbon emissions reduction targets, which has ushered in significant change in the electricity supply industry and its workforce. Specifically, the shift away from coal-fired generation, exacerbated by the ageing of many coal plants, has meant that while some elements of the electricity supply chain close, other segments – such as solar and wind power, as well as the reconfiguration of distribution networks – are growing rapidly. New economic opportunities and industries are also emerging across many parts of non-metropolitan Australia as households increasingly embrace remote working (Centre for Population 2021) or relocate away from the largest cities in order to secure lower housing costs or greater amenity (Beer et al 2022). These emerging growth dynamics present new opportunities for localities such as Lithgow to develop and reposition itself and its labour force within growing sectors.

At the forefront of preparing for change in Lithgow is the question of the region's **adaptive capacity** – the capacity of its workforce, community and economy to adapt to the impacts of change. Adaptive capacity refers to the ability of a system, community, or individual to adjust to changes, moderate potential damages, and take advantage of opportunities presented by those changes, especially those related to climate change. It encompasses the resources, knowledge, and institutional structures that enable effective adaptation strategies. This question of adaptive capacity and how best to enhance it has guided the methods and analysis contained in this report. It provides ways of thinking about – and giving life to – adaptive capacity, as well as practical insights into Lithgow's current and future workforce and pathways to transformation.

Section Two: Project methods

This workforce and economic transition-focused project has been informed by a number of specific components, including the review of relevant reports and policy statements from all three tiers of government in Australia, as well as the outputs of relevant international organisations such as the International Labor Organisation (ILO), the European Union (EU) and the Organisation for Economic and Community Development (OECD), as well as the policy documents of the Australian Government and the NSW Government. Key documents have included the Productivity Commission's work on adaptation within regions (PC 2017) and the OECD's work on regions in industrial transition (OECD 2019; 2023). The literature review focused on identifying:

- impacts on the workforce of a greening economy, including skills for jobs of the future;
- best practices and strategies for managing workforce transitions;
- strategic economic development in the Lithgow region;
- relevant government policies and initiatives aimed at supporting workers through economic and structural changes; and,
- challenges faced by specific demographic groups, including youth, older workers, First Nations peoples and women.

Census data and other comparable data sets were interrogated to shed light on the current state of Lithgow's economy, population and labour force. These data also provided insights into change over time through examination of information collected over an extended period of time. Some published work also contributed long-term insights (Beer, Bolam and Maude 1994).

Desktop analysis was supplemented by the collection of primary data, primarily through engagement with key stakeholders both within the region and external to Lithgow. This included interviews with individual firms, business associations, council staff and members, Vocational Education and Training (VET) providers and other representatives of the education sector. Many of the interviews were undertaken in-person, but others were completed either via a videoconference or phone call.



Section Three: Outline of structure

This final report has four key components:

- a **Regional Manufacturing Industry Skills and Training Audit** that was undertaken in consultation with industry, workforce unions and both the vocational education and training (VET) and other higher education providers;
- a **Regional Workforce Adaptive Capacity Plan** that is focused on strengthening flexible innovation and STEAM skills in the emerging workforce;
- a **Long-Term Regional Workforce Plan**, which sits alongside a **Long-Term Education and Training Pathways Plan**. Together these address anticipated skills requirements, training and pathway gaps, potential points of disruption in the transition to the emerging economy and the potential to leverage state and national initiatives to support the community as it transitions to net zero;
- a **Rapid Response Plan** that sets out how best to deliver support services to the community in the event of sudden and/or unanticipated closure of an industry or major employer(s).

Each of these key outputs is presented as a discrete chapter within the larger report. This structure offers the opportunity to consider this body of work as an integrated whole, while also providing stand-alone components that address specific needs.



Section Four: Regional Manufacturing Industry Skills and Training Audit

4.1 Introduction

The Regional Manufacturing Skills and Training Audit is a central part of this project and the necessary background for Lithgow's labour force as it prepares for change. The audit seeks to establish a base line of services and supports currently available in order to:

- identify any gaps in current provision;
- better understand the strengths and weakness of current arrangements;
- provide a map of existing skills and training opportunities in order to identify opportunities for collaboration and/or build additional capacity; and,
- identify the degree to which current services are fit-for-purpose as Lithgow's economy transforms.

This major section also considers the stock of physical assets and services available for industry training, within a broader framework that acknowledges the need to build adaptive capacity in both the workforce and the broader social and economic structure of the City of Lithgow.

4.2 Adaptive capacity and Lithgow's potential

Adaptive capacity is a concept that has become more common in both policy and research circles over the past 20 years, largely as a consequence of the focus on climate change and its impact on humanity in the short, medium and long term (Smit & Wandel 2006; Julhoa & Kruse 2015). Where once the policy and research focus was squarely on how best to avoid, or mitigate, the impacts of climate change, attention is now focused on adapting to a warmer world (Brooks & Adger 2005).

This section considers adaptive capacity and the insights it offers for the reshaping of Lithgow's economy. The workforce is clearly an important part of this capacity, as the flexibility, age and skill sets of the labour force influence both the ability to attract new businesses into a locality, the likelihood of workers finding new employment, and the capacity of existing firms to grow or branch into new markets. However, adaptive capacity is not limited to a simple focus on the labour force. Factors such as governmental support, income, education and the strength of the wider economy are also influential.

This section begins with a discussion of adaptive capacity and its relationship with regional resilience, before moving on to consider both asset-based and institution-based perspectives. The section discusses recent governmental attempts to measure adaptive capacity, focusing in particular on the Productivity Commission's (2017) analysis of transition in regional economies.

The section then moves on to consider questions of measurement, considering both the broad scale attributes that should inform a metric of adaptive capacity for the City of Lithgow as it looks forward over the coming 15 to 20 years, and the types of indicators potentially available.

4.3 What is adaptive capacity?

In broad terms, adaptive capacity is a system's ability to adjust to changes and challenges, particularly in the face of climate change or other environmental stressors. It encompasses both the potential to adapt and the resources available to do so, including financial, human, institutional, and natural resources.

Contemporary policy settings and research frequently refer to adaptive capacity as the ability of a system (e.g. a community, ecosystem, or organisation) to respond to climate change (Hiemenz 2005; Mullan et al 2013; Austin et al 2013), including variability and extreme events. It acknowledges that global climate change is likely to have variable impacts, with some systems at extreme risk, while others may face only moderate adversity, or may even benefit from new opportunities.

Research on the adaptive capacity of economies and society has acknowledged several categories of factors influence the ability to adapt. These include:

- **Financial resources:** The ability to access funding to implement adaptation measures.
- **Human resources:** The availability of skilled personnel, knowledge, and expertise to implement changes effectively and efficiently.
 - **Education** is a key part of human resources as, all else being equal, a more educated population will be more adaptable. Education is also likely to provide the social networks and tacit knowledge needed to bring about positive change.
- **Adaptation options:** This includes the range of available strategies and technologies for adapting to change.
 - Not all places or systems will be able to access to the same range of adaptation strategies. At the regional or urban scale, for example, places with a more vibrant economy and a larger population are likely to be more adaptable than smaller centres with limited incomes and employment opportunities.
- **Natural resources:** The strength and nature of ecosystems and other natural resources is an important component of adaptability. For example, many irrigation-dependent communities in the Murray-Darling Basin system are at risk because of their reliance on annual water allocations, despite the growing variability in rainfall across the basin as a whole.
- **Social factors:** The ability to learn from past experiences, foster innovation, and collaborate across different groups is critical in adaptation as appropriate responses can better prepare both physical assets and community members for change.

Enhancing adaptive capacity is crucial for reducing vulnerability to climate-related hazards and ensuring long-term resilience (Lemos et al 2013; Engle 2011). Some of the ways in which communities have sought to reduce their risk to climate change include:

- **Communities:** developing disaster preparedness plans, investing in infrastructure, and promoting sustainable land use practices able to withstand the forecast changes in the climate.
- **Ecosystems:** can have their adaptive capacity enhanced by maintaining biodiversity, promoting more resilient communities through reforestation or restoring wetlands.
- **Organisations:** are often well advanced in their preparations for climate change, and may have taken steps because they are required to do so under corporate regulations. Strategies include working to build more flexible and responsive organisational structures, investing in research and development, establishing formal adaptation plans and fostering a culture of learning and innovation.

This perspective has been operationalised by a number of authors, effectively testing adaptive capacity as a useful tool in policy development and on-the-ground action (Yohe & Toll 2022; Marzi et al 2018; Engle 2011; Lemos et al 2013).

4.4 Adaptive capacity, regional resilience and regional economies

The term adaptive capacity is well established in research and policy development relating to climate change with both government agencies and research organisations (for example, the National Climate Change and Adaptation and Research Facility (NCCARF)) taking leadership in this area of knowledge. However, the term is used relatively rarely in discussions of regional economies and their transitions, where the emphasis is placed on regional resilience (Bailey & De Propriis 2014; Boschma 2015; Bristow & Healey 2014; Christopherson et al 2010; Colombi & Smith 2012; Cainelli et al 2019; Cellini & Torrisi 2014; Peng et al 2017).

Regional resilience is now a very well-developed body of work with much analysis and conceptualisation undertaken more than a decade ago. Importantly, this has allowed the field to mature beyond the initial stage of conceptualisation to the development of indicators and the testing of metrics.

Key findings in this body of work include the following:

- Acknowledgement of the ongoing value of the concept for both academic research and policy development (Hassink 2010);
- Methods for developing measures of resilience that are meaningful and impactful at the national scale (Eraydin 2016);
- The clear ability of regional resilience to explain differences between regions and places (Hassink 2010);
- Regions will exhibit variable levels of resistance to different types of shock (Gajewski 2022);
- There is a risk of conceptual incoherence in how regional resilience has been used in some instances (Fröhlich & Hassink 2018). To a degree it has become a casualty of its own success, being applied too frequently and broadly;
- Regional resilience is critical in understanding the ability of some localities to respond better than others to major shocks, such as a plant closure (Martin 2012; Martin & Sunley 2020; Martin et al 2016; Nyström 2018);
- Regional resilience is likely to vary with the size of the region (Gheres et al 2018);

- There is a critical role for technology in shaping regional resilience. That is, places characterised by more advanced technology – as reflected in physical assets and skill sets amongst workers – are more resilient (Rochetta & Mina 2019); and,
- National policy settings can influence regional resilience (Duval & Vogel 2008).

More broadly, regional economic resilience refers to a region's ability to withstand, recover from, and reorganise in the face of economic shocks. It's about how well a region can bounce back from crises like recessions, natural disasters, or technological changes. This involves both resisting the negative impacts of shocks and adapting to new circumstances, potentially even developing new growth paths.

As identified in the literature, some of the key dimensions of regional resilience include:

- **Resisting shocks:** Some regions may be able to weather a crisis with minimal impact, while others suffer significant losses.
- **Recovering from shocks:** Even if a region is initially affected, its resilience is measured by how quickly and effectively it can recover to its previous growth path.
- **Reorganising:** Resilient regions often adapt by diversifying their economies, investing in new technologies, or developing new industries, allowing them to grow even after a shock.
- **Evolutionary approach:** Regional resilience isn't static; it's about adapting to constantly changing conditions and reorienting the region's economic structure to new paths.

In addition, a number of factors have been found to influence resilience. These include:

- **Economic diversification:** Regions are generally more resilient when they embrace change and explore new opportunities in all their dimensions, as well as building on existing strengths.
- **Supply chain strength:** A strong and diverse supply chain can help regions withstand disruptions to trade and production.
- **Innovation and technology:** Investing in technology and innovation can help regions adapt to changing economic conditions and create new opportunities.
- **Strong finances and good governance:** The fiscal strength of governments can be pivotal and this may include how well they manage debt and how well they make investments for their future.
- **A flexible workforce:** A workforce that is adaptable and can quickly learn new skills is crucial for resilience.
- **Strong relationships:** Building strong relationships with stakeholders, including businesses, government, and community organisations, can enhance resilience.
- **Location and infrastructure:** Regions with good transport accessibility and a strong infrastructure are generally more resilient.
- **Social capital:** Strong social networks and community-based capital can help regions respond to crises and build new opportunities.
- **Government capacity and trust:** Effective and trusted government can play a significant role in supporting regional resilience.

The above summary makes it clear that regional resilience is a broad-ranging concept of considerable value to policy makers and analysts. It brings together a number of ideas and

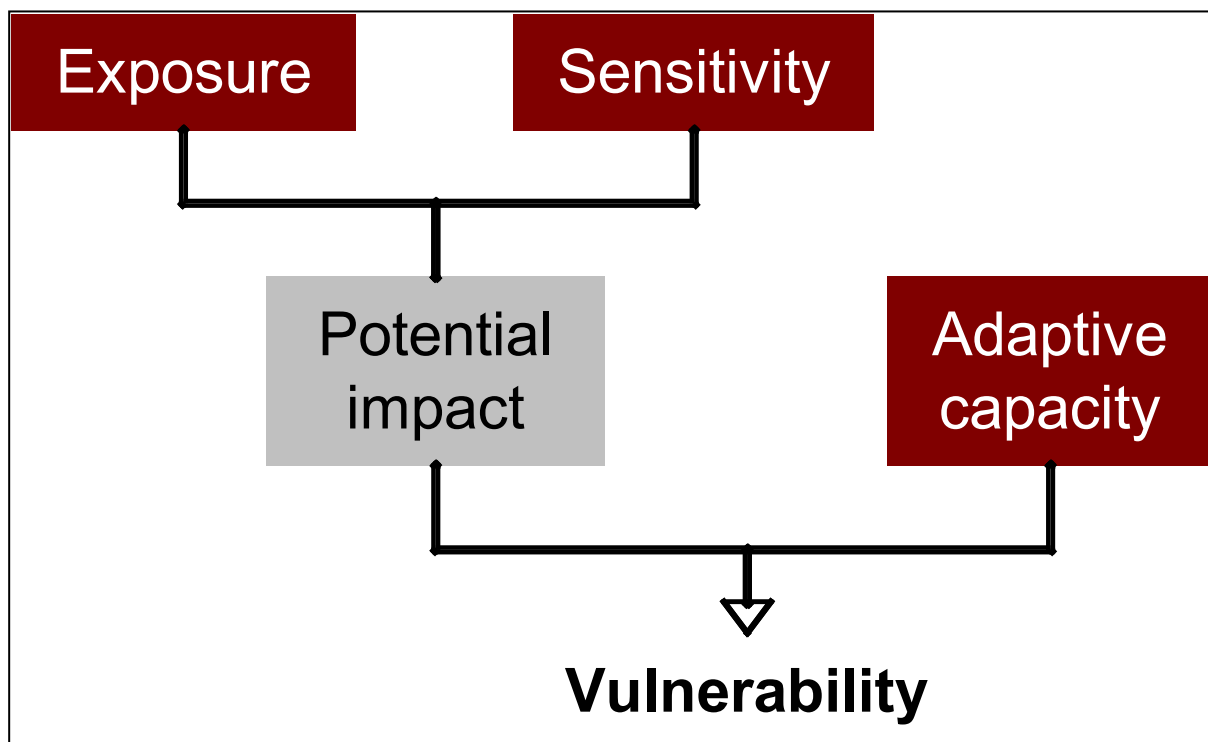
processes that reflect the ability of places to respond to change, or even anticipate change and make adjustments in advance of shocks. It is also a concept that accepts that different types of adverse events are not only possible, but likely. And, it is a truism of the regional resilience literature that efforts to prepare for one type of shock will also provide a solid foundation for responses to unanticipated events.

Writing on regional resilience is not monolithic in that there are a number of different perspectives. Most work takes the view that regional resilience is something places have as a result of their characteristics, i.e. the stock of assets – human capital, physical resources, closeness to major markets etc – that they can draw upon when confronted by adversity. This approach is perhaps best exemplified by a model taken from the Allen Consulting Group (2005). In this model, the vulnerability of a location is a product of:

- its level of exposure to disruptive change (e.g. large-scale closure of coal-fired power plants, and the percentage of the workforce and economy affected);
- the sensitivity of that location: how robust are other elements of the labour market; to what degree are other employment or economic opportunities available locally or as a result of migration to nearby regions? And,
- the ability of the region to adapt.

All of which leads to a measure of vulnerability based on a stock of assets (quality of infrastructure, characteristics of the workforce, presence of sources of investments) and capacities (good governance, highly educated population, strong political connections and influence).

Figure 1. A model of vulnerability to climate change



Source: Allen Consulting (2005)

Alternatively, a number of researchers have advocated for an agency-based approach (see, for example, Bristow & Healy 2014). That is, the ability or inability of localities to take steps to respond to a challenge or disruption, either at that point of time or in anticipation of adverse conditions. Agency-based thinking is a much more dynamic approach, recognising that with sufficient

resources, insight and investment better outcomes can be generated and new economic pathways forged.

It is also important to consider a number of related ideas. There is a considerable body of work in Europe focused on the absorptive capacity of regions (see Fu 2008) which is often used to refer to the ability of firms in a region to take up new technologies to enhance the competitiveness of their business. Similarly, there is a literature on transformative capacity (Wolfram 2016; Wolfram et al 2019), which is defined as the ability to make profound and intentional changes to address challenges and move towards a more desirable state. It's about the skills, resources, and governance structures that enable a region to implement significant changes, rather than just making incremental adjustments.

The concept of transformative capacity is important because many analysts would argue that change at the regional scale is almost inevitably incremental and evident over a significant period of time. Shaping a completely new economic pathway is both alluring for many regions, and difficult to conceive.

Finally, it is worth noting policy debates around institutional thickness and its impact in the context of economics and regional development, as it refers to the level of local institutions and their capacity to support economic activity. Regions that are characterised by strong local institutions, as well as high levels of interaction and collaboration among them and a sense of shared purpose and common values, are thought to be more resilient and adaptable. That is, the local institutions and their ability to work together provide the capacity to respond to adverse circumstances and deliver effective change (see Zukauskaitė et al 2017; Restrepo et al 2019; Keeble et al 1999).

Beer and Lester (2015) developed an indicator of institutional thickness for all of non-metropolitan Australia, with the outcomes broadly showing that places close to the major cities had greater institutional thickness, while those that were remote or very remote were largely bereft of institutional support. These findings reflect much broader trends around disadvantage across Australia – both in terms of business activities and the population as a whole. However, it is also important to note the argument of Rodríguez-Pose (2013) that often it is not how many organisations or institutions work in a region, but instead it is whether they are fit for purpose. Too often they are not (Safford 2004).

4.4.1 Transitions management

The management of a transition to a new economic structure generates significant challenges and, as the Productivity Commission (2017) acknowledged, too often transition management has not been successful in Australia.

Structural adjustment packages (SAPs) are one of the key tools used by Australian governments to respond to disruption. They have been used widely in Australia as a preferred government mechanism for addressing the impacts of industrial change, such as plant closure. However, these types of policies exist in some tension with both regional and place-based policies (Beer 2015). While they are industrial rather than regional policies, they often respond to events whose impacts are regionally concentrated. Nor do they necessarily encompass – or seek to leverage – all the elements of successful place-based policy, even as they target industrial impacts in specific places. Indeed, as some research has shown, structural adjustment measures enacted by centralised government can at times work against the efforts of those with agency ‘on the ground’ in transitioning regions (Beer et al 2023). Structural adjustment packages are often costly policies with substantial regional impacts, but are at times less effective than a regional or place-based policy might have been in supporting the intended objectives, or at odds with what a community

wants for its future and community-led solutions. SAPs have therefore been criticised for being inadequately spatially targeted and for being too short-term to effect the desired change.

However, despite shortcomings in any given policy or set of policies, SAPs have been shown to be beneficial overall. They provide confidence in affected regions for both community members and investors, reduce loss of skills from the labour force, and leave regions better off following transitions that were inevitable in any case.

Beer (2015) identified four types of structural adjustment deployed in regional Australia:

- **Industry restructuring** to support industries as they adjust to new economic conditions, including by exit of non-viable enterprises;
- **Enterprise assistance** to help enterprises remain viable;
- **Labour market programs** to help affected workers transition to new employment;
- **Investment attraction strategies** to increase investment in new or existing enterprises in the affected region.

Research suggests that there is no one 'fix' for transitioning regions, rather that a mix of measures is likely to be effective. Nor will all of these four types of structural adjustment be relevant for a region facing plant closure or the permanent decline of its most dominant industry. For example, industry restructuring is appropriate where the continuing viability of an industry is desirable or necessary. These sorts of measures have been successfully applied to agricultural sectors, addressing points of weakness to create competitive sectors, helping producers to stay viable or exit the sector, and reviving rural and regional economies. Where the industry faces complete closure, structural adjustment has two broad objectives: mitigating unemployment following retrenchment; and repositioning the local economy onto a sustainable and prosperous new trajectory. As such, they offer a suite of measures targeted at transitioning the labour force.

Rainnie, Beer and Rafferty (2018) suggested that successful transitions management should feature:

- **A focus on place.** In localities undergoing transformation, individuals and enterprises have a sense of belonging and inclusion.
- **A focus on governance.** Local decision making is critical to achieving the aspirations of a successful closure.
- **A unified vision for the future.** A clear vision and a set of goals, targets and strategies for turning the vision into reality.
- **Engagement with local institutions.** Dialogue between local institutions that builds trust and creates a 'democratic dividend' to advance the closure process.
- **An emphasis on facilitating assistance for affected individuals.** Targeting assistance to those individuals and groups for whom the closure process will be most challenging.
- **A focus on the local capture of value.** It is not enough to attract new enterprises – long-term sustainability requires the local capture of value, so that the wealth 'sticks' in the region.
- **A consideration of transformation over multiple time frames.** A view of transformation that is attentive to the relations among short-, medium- and long-term responses and outcomes.
- **An acknowledgement of the emotional element of closure processes.** Communities need to have the opportunity to give voice to their feelings and perspectives on the closure process.

Bailey et al (2014), writing in the UK where responsibility for managing plant closures rests more decisively with local agents than it does in Australia, concluded that public policy responses to plant closures must be: (1) multidimensional in that they transcend narrow sector-based concerns and address broader spatial impacts; (2) inclusive in that they build on a broad coalition of economic and social stakeholders; and (3) long-term in that they acknowledge that adaptation takes many years.



4.4.2 Measuring adaptive capacity and progress to transition

The previous sections have introduced a number of high-level concepts critical to planning for the future of a community undergoing change. It is, however, important to develop concrete outcomes from these insights and the development of relevant, community-supported, metrics is one way to bring these ideas to life.

One of the key dimensions of planning for change is developing the means to measure what kind of changes are occurring and how well these changes align with a vision of the future. This kind of reflection empowers communities undergoing transformation, enabling them to celebrate successes, understand unforeseen consequences and course-correct where necessary. As a process, measuring indicators of success helps to re-align communities around shared goals.

Metrics should not just monitor progress but inform and drive it, too. The process of developing metrics is fundamentally values-driven. What is measured should be guided by what is important to the community and what it wants to become. Lithgow as a town and region is facing profound economic change. At the same time, it is reevaluating its relationship to the wider region, to Western Sydney and to Sydney, and asking questions about its identity, its connections, its economy and its lifestyle.

In addition, there are practical aspects to be considered when developing metrics. To ensure viability, selected indicators of progress should:

- be available over time;
- be straightforward and inexpensive to source – e.g. data already held or in the public domain or data readily collected through a simple survey;
- speak to an appropriate understanding of the geography of Lithgow and its economy;
- not be subject to distortions or political bias;
- be evidence-based; and,
- speak to the way positive change can come about.

One way to categorise metrics is as **asset-based** or **agency-based** indicators.

Assets are the properties or characteristics that enable workforce development and/or economic growth, such as: the size and age of the workforce; the level of education; the strength of social bonds; the number of viable businesses; the quality of the local environment; and the availability of affordable housing.

Agency metrics reflect the actions taken to bring about change. Examples include: making grant applications to central governments; hosting trade delegations; providing training and networking events to encourage and support local businesses; and releasing industrial land and investing in industrial developments.

Developing adaptive capacity metrics to inform transition planning

The metrics to measure Lithgow's transformation were developed through a multi-step process that included community consultation.

- **Stage 1.** We consulted established data sources and previous studies focussed on adaptive capacity and its measurement. This stage was undertaken in order to better understand the range of possibilities potentially available for application in Lithgow.

- We examined both agency- and asset-based metrics used in earlier work and from that list developed a comprehensive suite of potential measures to be considered by key stakeholders.
- **Stage 2.** We held a stakeholder workshop in Lithgow, hosted by the Lithgow Emerging Economy Project (LEEP) within the Lithgow City Council.
 - Following an introductory presentation, 28 key partners were presented with the outcomes of Stage 1, including the following list of possible metrics:
 - Value of applications submitted for additional grant funding from central governments
 - Number of trade delegations hosted
 - Training courses held to encourage and support local entrepreneurs
 - Investments into new land and industrial developments
 - Population growth or decline, annually
 - Value of investment in new construction
 - Percentage of students completing Year 12
 - Number of students completing Year 12
 - Number of tertiary education enrolled students
 - Percentage and number of persons with a Cert 4 or higher (including degrees)
 - Percentage of women aged 15-64 working or learning
 - Number of Aboriginal persons completing Year 12
 - Number of jobs locally
 - Unemployment rate
 - Number of households with 2 or more unemployed adults
 - Number of workers shifting into a new occupation or industry
 - Number of persons commuting to Sydney for employment
 - Number of women commencing apprenticeships
 - Number of women completing apprenticeships
 - Number of the women employed in construction, manufacturing and transport
 - Dwelling completions
 - Number of high-profile events hosted (more than 200 pax)
 - Number of businesses participation in growth-generating development, networking and skills acquisition
 - Number of visits by state/Federal politicians
 - Number of vacant shops on the main street on 1 March and 1 September each year
 - Number of charity shops on the main street on 1 March and 1 September each year
 - Number and strength of consultations between the City of Lithgow and Aboriginal persons and groups
 - Number of new business registrations
 - Number and impact of community building initiatives, including actions to improve community-wide mental health
 - Assessment of readiness for ongoing change, e.g. preparation of relevant planning documents that enable access to state or Federal support

- Workshop participants were asked to reflect in groups on what they valued about Lithgow and how they wished to see it develop.
 - The respondents were able to identify key values with respect to Lithgow's future, which can be summarised (not in rank order) as:
 - Community
 - Employment
 - Education
 - Growth
 - Population
 - Connectedness
 - Lifestyle
 - Health and wellbeing
 - Environment
 - Lastly, participants were asked to propose indicators informed by these values.
- **Stage 3.** We collated and analysed stakeholder responses from the consultation and developed a suite of metrics that reflected the priorities expressed. These are presented in Table 1 below.



Table 1. Proposed metrics of progress to a future economy by data source

	DATA SOURCE
Estimated residential population annually	ABS Census; ABS Estimated Residential Population
Number of persons of working age, 15-64 years old	ABS Census; DEEWR Small Area Data https://www.dewr.gov.au/employment-research/small-area-labour-markets
Number of persons identifying as Aboriginal	ABS Census
Number of high school completions	NSW Department of Education
Number of commencements in priority (high value) trades	NCVER; TAFE NSW
Percentage of women aged 15-64 categorised as employed	ABS Census; DEEWR Small Area Data https://www.dewr.gov.au/employment-research/small-area-labour-markets
Number of clubs and social organisations	Annual Lithgow City Council-led register
Number of new business registrations	Australian Tax Office, ABN registrations
Value of investment in improving road or rail connections	NSW State Government Budget papers
Number of dwelling completions by year	City of Lithgow
Perceived quality of environment	Annual on-line survey
Perceived quality of lifestyle	Annual on-line survey
Perceived quality of health and wellbeing	Annual on-line survey
Intention to stay	Annual on-line survey

- These proposed metrics were then mapped against the values highlighted by stakeholders in the workshop, with all reflecting at least one of these core values (Table 2).

Table 2. Matrix of metrics by value

		VALUES								
		Community	Employment	Education	Growth	Population	Connectedness	Lifestyle	Health & Wellbeing	Environment
METRICS	Estimated residential population annually	●			●	●				
	Number of persons of working age, 15-64 years old		●		●	●				
	Number of persons identifying as Aboriginal	●				●				
	Number of high school completions			●						
	Number of commencements in priority (high value) trades			●						
	Percentage of women aged 15-64 categorised as employed		●			●				
	Number of clubs and social organisations	●				●	●	●	●	
	Number of new business registrations	●	●		●	●	●	●		
	Number of businesses participating in growth-generating development, networking and skills acquisition		●	●	●		●			
	Value of investment in improving road or rail connections				●		●	●		
	Area of land held for industrial/commercial purposes				●					
	Number of dwelling completions by year	●			●	●		●	●	
	Perceived quality of environment							●	●	●
	Perceived quality of lifestyle	●					●	●	●	
	Perceived quality of health and wellbeing	●							●	
	Intention to stay	●	●	●	●	●	●	●	●	●

The majority of the proposed metrics can be supported from publicly available data or via partnerships with the responsible government agencies. They can also be updated annually, and in some instances, estimates are available on a yearly basis and can be adjusted at the five-yearly census.

Four of the measures will be populated by an annual on-line survey to be hosted by the Lithgow City Council. Such surveys, which can be conducted using inexpensive tools such as Survey Monkey or more complex software such as Qualtrics, can be used to support ongoing community engagement with the shaping of the city's future, and ways to incentivise community participation should be considered. The surveys can make use of the City's existing communication channels and assets, as well as provide material to be fed into community-wide forums and debates. In all instances, these data should be:

- collected annually for the next decade;
- published on the web and via other channels as a way of supporting the process of building a new economic future;
- provide a foundation for an annual community event to discuss the City's process; and,
- be reviewed annually, with new metrics potentially added as Lithgow's economy develops and the external environment changes.

4.4.2 Place-based policy in transitions management

Place-based policy is an important feature of the way governments seek to advance their economies and promote the wellbeing of their citizens. Place-based policies are evident at the national (Suedekum 2023), sub-national (Pugalis & Bentley 2014) and supra-national scales (Barca 2009), and they have been applied to innovation policies (McCann 2019), community wellbeing (Geatches et al 2023), resilience in the face of climate change (Cutter et al 2008; Bulkeley & Betsill 2005) and industrial development (Bailey et al 2018; Bailey et al 2023a), as well as to issues of environmental management (Edge & McAllister 2009), energy and industrial transition (Beer et al 2020; OECD 2019a) and labour market adjustment (Rainnie et al 2018). They have been promoted as a solution to the challenge of more efficient use of resources (Stead 2014); and as a way of achieving more society-centric governance (Clarke 2017). On occasion, place-based policies have been presented as a reflection of the policy settings evident in one political context – for example, Cohesion Policy within the EU (Suedekum 2023) – but these programs are to be found globally, including amongst the members of the OECD and developing economies (Beer et al 2020). At times, place-based policies have been challenged (see Barca et al 2012) but have remained an acknowledged and relevant policy response, albeit one partially marginalised within economic theory and policy in the recent past (McCann 2023; Suedekum 2023). Recently, place-based policies have become more diverse, stepping away from a focus solely on assisting localities marked by profound disadvantage, and being applied to regions undergoing substantial change, including the decarbonisation of the economy. Place-based policies have emerged as an important component of actions to achieve a 'Just Transition' in the coal and other industries (Healy & Barry 2017), while also being acknowledged as critical in advancing the wellbeing of First Nations persons in jurisdictions that include Japan, Australia, Canada, Sweden and the USA.

More than a decade ago the OECD (2009a) argued place-based policies represented a key component of government action in the face of national and global economic change, an observation that remains relevant with recent research into the twin transitions of 'green' and 'digital' economic transformation noting that these emerging disruptors are likely to further retard

the evolution of already disadvantaged regions, resulting in greater regional disparities (Maucorps et al 2022 p 21). Further, Bachtrolger-Unger et al (2023) argued inter-regional collaborations at the European scale – a form of place-based policy – offered the brightest prospects for reducing differences between regions under the dual influence of ‘digital’ and ‘green’ economic transformation. Place-based policies have expanded over recent years as a response to populism and the adverse impacts of economic policies that focus solely on agglomeration advantages, leaving some localities confronted by significant disadvantage. At the same time, they have also transformed to become more proactive, and targeted to a wider population of regions, a shift that may generate benefits for national economies as they transition, while simultaneously encouraging ongoing political support and adherence to regulations (Suedekum 2023).

In many instances place-based policies are implemented where more conventional – thematic or sectoral – policy mechanisms have not been successful. They may also be perceived to be more effective, efficient and democracy-promoting than the alternative. For example, Bynner (2016) discussed the reasoning underpinning the adoption of place-based policies in Scotland. She linked their implementation to multiple, society-wide agendas, including: the desire to find more efficient ways of supporting those in need in the wake of UK Government imposed austerity measures; a drive to promote innovation in the economy with a consequent boost to productivity; the imperative to improve the co-ordination of government services; and a political priority to devolve power and decision making to communities and front-line staff. Barca (2009) also proposed place-based policies as an effective solution to perceived democratic deficits. These policies he suggested, had the capacity to empower localities while ensuring governments had a visible role in improving the lives of individuals and communities. Similarly, Raco and Flint (2001 p 586) argued local authority decision making in the UK was poorly situated to accommodate active citizen participation in the politics of local service delivery.

Core elements of place-based policy include a focus on one, or a specified cohort, of places; the participation of multiple parties in identifying and delivering solutions; a concern for the welfare or wellbeing of these places and their residents; acknowledgement of the attachment of individuals and communities to the places in which they reside; a recognition of the potential to achieve better outcomes by spanning policy silos and implementing flexible responses; and, the need to accept a longer term perspective as a way of effectively solving intractable challenges.

It is clear that place-based policies must inevitably involve a relationship between a central authority – a senior tier of government, a philanthropic funder etc – and those active locally. This relationship inevitably generates questions about its management, the expectations embedded within it, and the ways in which those involved will seek to achieve an impact. These are questions of governance and, more explicitly, meta governance, which is the subject of the next section of this report.

Multi-level governance and place-based policy

Effective governance is central to the successful implementation of place-based policy. It can take many forms and be delivered through formal or informal mechanisms by a range of partners. It inevitably calls for participation by many stakeholders and a shared vision to guide efforts. Collaborations that span government agencies, the private sector, the community and the not-for-profit or ‘third’ sector are inevitably complex, and over the past three decades scholarship has increasingly focused on questions of governance at a variety of scales and in numerous political systems. This increased focus on governance amongst researchers has in part been a response to the pressing needs of government agencies and policy makers more broadly. For example, Schout

and Jordan (2007) observed the greater attention paid to this topic in the EU reflected increased dissatisfaction with the deployment of regional and regional development funds (p 836). The OECD (2018) has also drawn attention to the need for better governance to inform regional policies, seeking to find ways to balance out aspirations for providing flexibility, stability, accountability, performance, compliance and administrative costs.

Multi-level governance

Multi-level governance as a concept provides an important theoretical foundation for the analysis of the governance of place-based policy because, as McCann (2023) noted, contemporary approaches to place-based policy explicitly draw on models of multi-level governance and delivery. Scholarship into multi-level governance can be traced back to the early work of Marks (1992), with this initial contribution further developed over the following two decades (Marks 1993, 1996; Marks & Hooghe 2000, 2004). Marks (1992) observed that while theories frequently applied to questions of policy suggested government decisions and strategy emerged from an orderly set of processes dictated by the nation-states of the EU, empirical observation suggested policy formation was somewhat fractured and influenced by a broad spectrum of actors. Researchers noted policymaking in Brussels – the centre of EU administration and deliberations – was not restricted to the staff of the European Commission and the representatives of nations included in the European Council and European Parliament. Instead, non-government organisations, provincial governments, and industries worked to shape the outcomes of policy deliberations and did so on an ongoing basis. The concept of multi-level governance – with a constellation of government and non-government agents shaping agendas and determining outcomes through their interactions – was seen to better explain how policies emerged and governments made decisions. It acknowledged the pluralistic nature of decision-making in an environment marked by complexity, fluidity and opaque institutional structures.

Multi-level governance has been widely accepted by academics as a lens through which the decision making of governments can be understood. It has been seen to be especially invaluable in understanding the processes and outcomes of policy formation in complex policy environments. Stephenson (2013) argued this theoretical framing has achieved widespread acceptance in policy making and research circles, and that the rate and pace of take-up of this portfolio of ideas has been without precedent in Europe.

Constructing and managing the meta-governance of place-based policy

As noted by McCann (2023), many contemporary approaches to place-based policy have drawn on the work of the Barca Report (2009), which explicitly posited a meta-governance framework for the successful delivery of place-based interventions. This positioning of place-based policy located central governments as a principal funding source for such policy interventions, while at the same time tailoring policies to the needs of individual regions and sharing decision-making with local authorities and leaders. Suedekum (2023) argued strongly that future place-based policies need to deliver benefits for both regional economies and the nation as whole, noting that the investment in former lignite mining areas of Germany was both substantial – equal to €2 million per affected job or €100,000 per job per year for the life of the program – and was justified given the potential for such regions to experience decades of disadvantage (Celli et al 2023). Writing from the perspective of community services, Geatches et al (2023 p 9) suggested place-based policies need to be: community-led rather than driven by central government agencies or agendas; delivered in a flexible way; embrace a theory of change; and develop mechanisms for the delivery of place-based approaches that provide both stability and a community-facing dimension. From their perspective,

place-based policies were seen to be fundamental to addressing the circumstances of Aboriginal Australians, addressing the increasing disadvantage evident in some regions, resetting trust within communities and affirming interpersonal relationships.

Governance practices are often multi-faceted (Crowther et al 2023), where ‘soft governance refers to building networks and sharing views, whereas hard governance involves implementing targets and reforming institutions’ (p 3). The development of a strategic vision or mission can also be considered a form of soft governance, but overall it is important to first acknowledge the need to construct appropriate governance arrangements, and embrace all elements of governance practice. Approaches that ignore the need for institutional reform and the development of targets, are as unlikely to be successful as ones that does not seek the perspectives of others and establish strong networks.

Risk

Inevitably a significant number of risks accompany the implementation of place-based policy. Suedekum (2023) considered a number of risks, including those associated with extending government intervention to relatively well-off regions undergoing an economic transition. He noted a shift in focus away from helping the most disadvantaged regions could result in the dilution of resources available to those in greatest need. As a counter-balance, he observed the extension of place-based policy to a wider cohort of regions could help build political and community support for the continuation of such measures as more localities would recognise the assistance received, as well as the impact of those actions. Suedekum (2023) acknowledged that place-based policy – as a horizontal equalisation measure – is more exposed to the misuse or misallocation of resources: expenditures are not tightly targeted and the selected programs and actions may not generate positive impacts. One way of managing this latter risk is the development of evidence-based measures that go beyond a simple assessment of outputs and expenditures to fully encompass the outcomes sought in establishing the place-based intervention. However, as Geatches et al (2023) have noted, much needs to be done to advance this agenda.

Beer et al (2020) discussed the impact of ‘faltering expectations’ that may arise when governments and their partners embark on place-based policies that initially generate public support that may then turn to disappointment and disillusionment when progress fails to materialise. More recent work by Beer et al (2023) reported on the outcomes of a survey of the communities most affected by the shutdown of Australia’s automotive industry in 2017 (Beer, Barnes & Horne 2021; Irving et al 2022; Dinmore & Beer 2022). When residents were asked to rate the performance of those charged with leading this process of economic and industrial change, they rated the car manufacturers and central governments (the Australian Government and the state governments of Victoria and South Australia) most poorly, and gave the most favourable evaluations to leaders from the social services sector who played a visible role in delivering support to those in need of assistance.

Unmet expectations may also emerge between the stakeholders involved in the delivery of place-based interventions. These participants may include central governments, local or municipal governments, ‘third sector’ or not-for-profit organisations, the private sector and the community – which may include ‘at risk’ groups such as immigrants, First Nations peoples and other vulnerable populations. Sources of disagreement may include ‘mission drift’ as other priorities emerge and resources are repurposed; the failure of central governments to sufficiently empower and share decision making with those working locally or regionally; emphasising national or system-wide priorities which results in a mismatch between local needs and support provided; the politicisation of delivery and outcomes; and, inadequate resourcing that results in a disconnect between

ambition and achievable reality. Some systems of government may carry greater inherent ‘risk’ than others. For example, Clarke (2017) observed that the establishment of place-based collaboration to achieve societal goals was very difficult in the highly fragmented political system of the USA. She argued the need to involve many relatively small local governments, as well as a substantial number of philanthropic and civil-society organisations, tested the ability to sustain these initiatives over a longer period.

Critically, risk does not sit with governments alone, as the cities, regions, localities and communities subject to place-based policies are also confronted by risk. Eversole (2011) examined the impact of engagement with place-based policies for communities. She argued that too often the processes of implementation brought forward the sharp differences between the functioning of communities and the mechanisms of government. She noted that while communities often expect networked horizontal solutions, governments are challenged to step beyond conventional hierarchical ways of working. Often the processes that should lead to inclusion do not eventuate and their experience of collaboration, participation and community engagement ‘fails to meet their real needs’ (p 54). To a degree this disconnection is a product of an enduring tension between community-building processes that need to focus on long-term capacity building (OECD 2018) and other soft assets, while working within an environment distinguished by an absolute imperative to deliver short-term objectives. In addition, governments and communities operate in contrasting ways, and the experience of co-working with government can be difficult for those living and working locally. Collaboration is almost always on government terms; it can be costly to communities; and too often it exacerbates social disadvantage, as it is those best resourced who can engage, while those in distress are excluded. These differences between governments and communities are cultural and institutional in their nature, not spatial, and as communities participate, they are forced to act in ways that are more akin to bureaucracies.



The enabling elements

Local agency

Local agency is a key enabling element of the governance of place-based policy, where the agency of communities is ‘the ability to act and be the agents of their own development’ (Eversole 2011 p

51). In a much-cited paper on agency, Grillitsch and Sotarauta (2019) argued localities, regions and communities are able to carve out a new development trajectory when new opportunities arise out of technological, social or economic change. These opportunities need to be acted upon by leaders based in that place. This argument is critical in considering the governance and future of place-based policy as these instruments – applied to one domain or another – seek to establish new pathways for their target localities. Importantly, Grillitsch and Sotarauta (2019) showed that the necessary transformational leadership could be found in three places: in the private sector as entrepreneurial leadership; in the public sector where it would find expression as institutional leadership; and within the community, where it would emerge as place-based leadership (Horlings et al 2018). Good governance, therefore, should seek to encourage agency and leadership in all three settings.

Effective governance in place-based policy sees government agencies assisting and encouraging the emergence of this agency, and effectively helping localities give life to the development trajectory to which they aspire. Eversole (2011) has argued that local agency is best realised when communities are participants in the governance of initiatives, where they are able to use their diverse knowledge sets to ‘collectively tackle complex policy problems’ (p 53). A number of authors have argued place-based policies can only be successful if there is an institutional structure in place that enables collective local agency to emerge, drive change processes and shape outcomes (Barca et al 2012). Whether this occurs may be dependent on the local economy, demography, national and local political dynamics and structures, as well as ‘a shared sense of place’ (Wellbrock et al 2013 p 420). Wellbrock et al (2013) argued some governmental settings were seen to hamper the reform and repositioning of institutions, thereby retarding the roll out of transformational, place-based processes.

McDonald et al (2013) expressed similar reservations around the capacity to achieve local change through collective action around a shared vision, but concluded from their work in north-west Tasmania that these measures were effective because of their capacity to build political capital within the region and more broadly. In this analysis, the implementation of place-based policies resulted in interactions between those based locally and those based outside the region, as well as between regional actors. In turn, these processes created effective networks of influence which enabled the flow of further resources and decision-making opportunities. Moreover, they concluded that dense networks – that is, those comprised of many, relatively intense interactions – were most likely to be impactful. This in turn suggests that frequent, deeper, and sustained engagements are of greater value in the implementation of place-based policies. In part this arises through the development of shared norms, making possible greater levels of trust, reciprocity, and an openness to change. In a similar vein, Raco and Flint (2001 p 591) argued for the need for ‘democratic governance’ of efforts to improve locality-specific wellbeing, and that such arrangements were dependent on the willing participation of individuals in pursuit of a set of objectives. This argument broadly echoes Sotarauta’s (2015) work on power relations in the leadership of cities and regions, and his argument that civic leadership needs to rely on the power of persuasion, rather than compulsion, incentive systems or other mechanisms to achieve its ends.

Place-based leadership

Over recent years academic research into regional issues has focused a great deal of attention on better understanding how regions change over time: how they grow, transform and reconfigure in the face of both long-term trends and in response to short-term shocks. This agency of change literature (Rekers & Stihl 2021; Grillitsch et al 2022) was both built on, and developed in response to, the literature on Evolutionary Economic Geography (EEG). Whereas work undertaken in the EEG

tradition seeks to understand the development and potential future of a region through reference to its long-standing structural arrangements, including industry composition, workforce skills, access to market and knowledge and other assets, the agency of change literature focuses instead on the processes that allow regions to break away from established pathways and forge new futures.

There is now a considerable body of published research on place-based leadership (see Sotarauta & Beer 2021) and increasingly it is being considered within wider debates on the drivers of economic and social change at the scale of cities, regions and communities. Within this literature, place-based leadership is seen to be a property of groups rather than individuals, undertaken by those *of* the region rather than within the region – that is, conventionally defined leaders living within a region may not be place leaders if their authority extends from their position rather than their relationship with others. Place-based leadership is deeply dependent on the power to persuade others and enunciate a narrative of change; and it may find expression in opposition to more formal sources of authority, such as central government agencies.

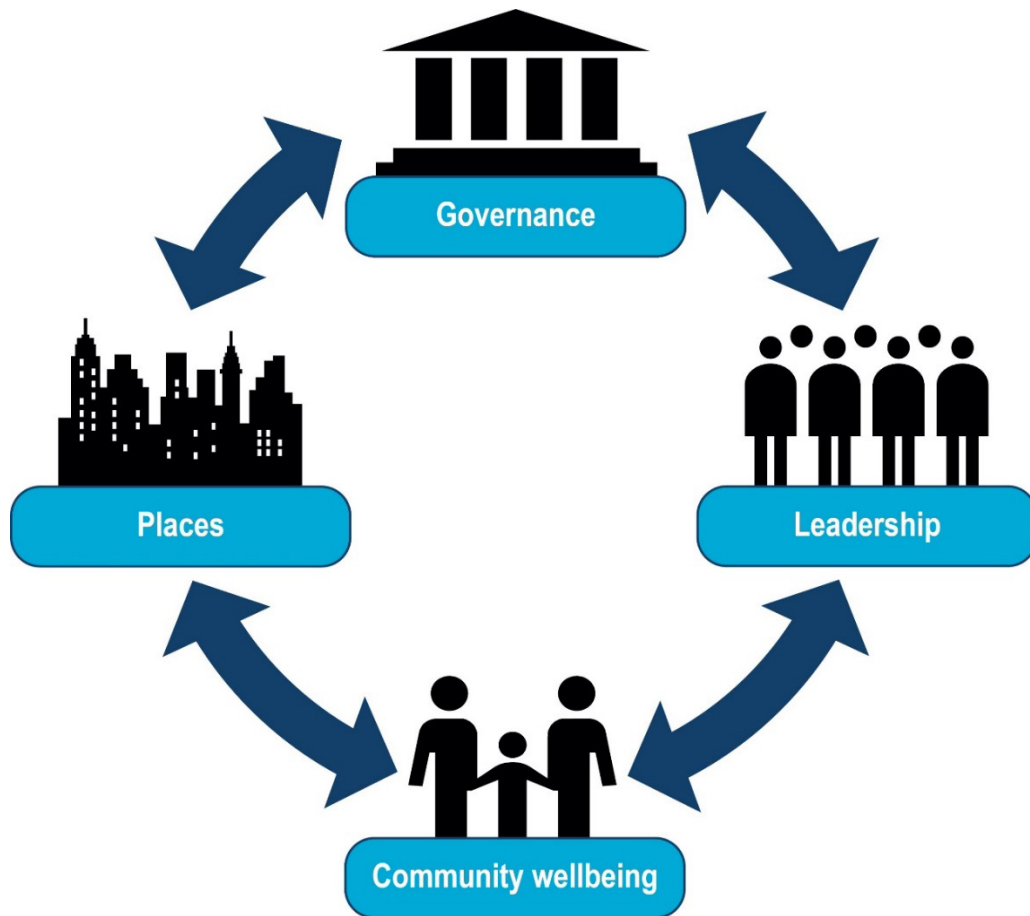
Beer et al (2020) argued leadership, and specifically place-based leadership, was one of the core elements essential for successful place-based policies (Figure 2). Government interventions that seek to advance the welfare of a locality at the scale of a region, city or locality, must both engage the community and empower it in order to maximise positive impacts. Place-based leaders bring with them assets often unavailable to those in either the corporate or government sectors, including:

- Legitimacy and authenticity in the eyes of the community;
- Strong social networks, including bridging and bonding social capital;
- Knowledge of both opportunities and risks;
- The ability to remain engaged in advancing wellbeing in a locality over a long period; and,
- The capacity to envision a process of change that meets the needs and capacities of the region.

Later discussion of the case studies will illustrate the profound differences between place-based policy that includes and gives agency to local leaders, and policy settings that do not. Importantly, place-based leadership is not necessarily restricted to one gender, class or set of interests, and the ability to form leadership networks that embrace diversity can assist in the productive transformation of a region (Figure 3).

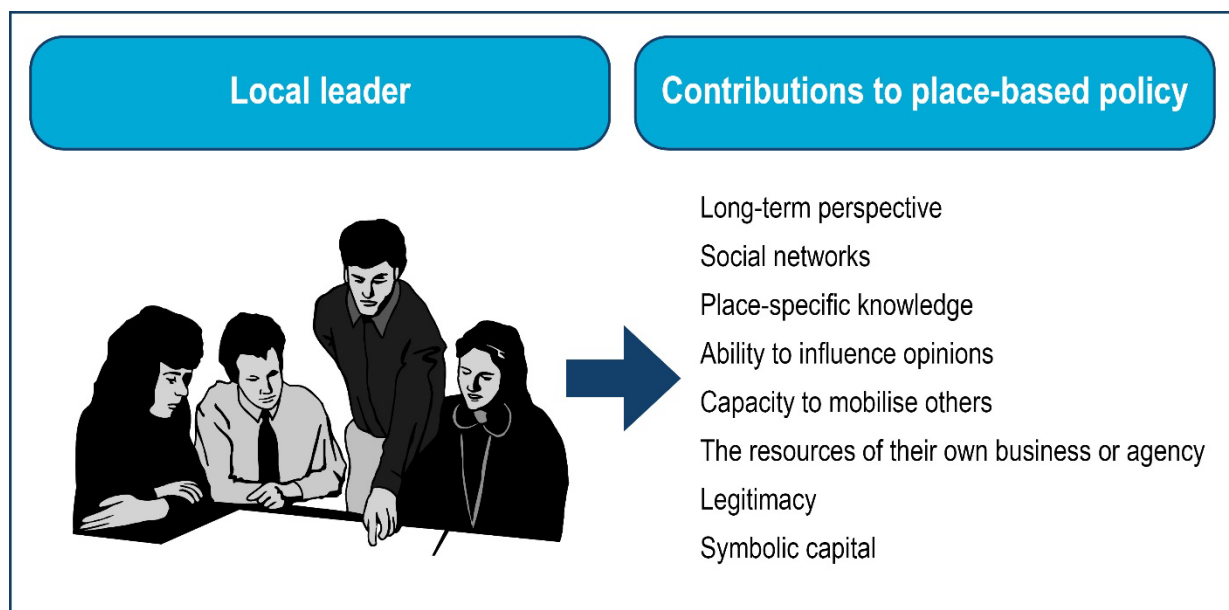
On occasion place-based leadership emerges to fill gaps resulting from fragmented governmental responsibilities, with Clarke (2017) attributing much of the success in delivering an integrated transit strategy and system in Boulder, Colorado, to the work of local business and civic groups. They were able to straddle the challenges of mandates split across the state government and a number of local governments, while also mobilising public agencies within each tier of administration. The challenges of leadership are not limited to place-based policy and can be found elsewhere in horizontal networks in the public, private and community sectors where organisations and individuals seek to work together (Schout & Jordan 2007 p 843).

Figure 2. Place-based policy: core elements



Source: Beer et al 2020 p 18

Figure 3. Local leaders and place-based policy



Source: Beer et al 2020 p 47

Assets

Place-based interventions build on the capacity of individuals and groups based locally to identify and recruit local assets to achieve their aspirations. Assets can be tangible features of the local economy such as a university, research institute or a stock of university spinouts, as well as infrastructure (Bailey et al 2023a). They may also be intangible and include sources of power, networks, capabilities and financial and other resources (Sotarauta et al 2022) that enable positive change to emerge. Sotarauta et al (2022) examined the transition of the economy of Salo, Finland following the closure of the Microsoft facility in that urban centre in 2015. In Salo, positive change was driven locally with the support of the Finnish Government. Local leaders, including the municipal government, were able to capitalise on Microsoft's support for workers who were made redundant and sought to establish their own business. They worked to leverage the financial assistance the company gave to those who left the company voluntarily. These two mechanisms resulted in the establishment of 80 new businesses, half of which were still in operation in 2022. These former employees established their own 'Smartsalo' association to access networks and generate novel business activities, which worked alongside a start-up hub organised to assist newly established firms. Economic and employment growth was further boosted by the purchase of the former Microsoft facility and its re-purposing into an IoT Campus, with that facility almost completely occupied in 2022 by start-up companies, universities and global enterprises.

Resourcing place-based policy

All public policies need appropriate resources to achieve their objectives, and this need is especially acute when efforts are focused on policy integration. Established funding mechanisms may not be able to be repurposed towards this goal. In addition, policy integration requires administrative capacity on the ground, with Schout and Jordan (2007, p 842) noting that "integration" in day-to-day policy processes is actually much more labour intensive than is commonly supposed'. Central governments need to commit both in-kind resources – access to information and networks – as well as make a financial investment. Place-based policy is not an exception to this need for appropriate resourcing, as place-based leadership generated from within the community is a necessary, but not sufficient, condition for success.

It is important to acknowledge that resources may stem from multiple origins, including central governments and their programs, local governments, third sector organisations, as well as the private sector. Many localities, and especially those marked by disadvantage, are unable to address their economic, social and other challenges because they lack the resources to do so. This includes financial resources, but also tacit and codified knowledge, as well as connections or networks that can assist them in taking advantage of global markets. Winterton et al (2014) argued the implementation of place-based policies needs to make the most of a community's relationship with external actors, including governments, if they are to convert their local solutions to positive change. Other authors have noted place-based policies have a tendency to overly emphasise the endogenous drivers of change (Avdikos & Chardas 2016), which further highlights the importance of external connectivity. The resources provided by partners in place-based initiatives may sit outside conventional expectations of what is important for local development. For example, Collinge and Gibney (2010) discussed the central role universities played in the Øresund in acting as a neutral mediator between large pharmaceutical companies and governments as they sought to grow that industry. Other examples could include partners who bring to a coalition a sense of authenticity, or a brand reputation that is valuable in enacting change.

On occasion places can achieve their development objectives by creating ‘cocktails’ of funding from a number of sources – national governments, state/provincial governments, philanthropic organisations, community groups and industries – to support initiatives. Such composite funding is common in Europe, with European Union funding for territorial development – the development of places – commonly dependent upon co-investment by partners. For example, the Berlin and Brandenburg regions of Germany jointly formed innovation clusters, with the European Union providing €15.7 million of the total budget of €33.7 million, with the remainder coming from national or regional funding mechanisms. Other examples include a new financial mechanism for delivering energy in upper Austria, investment in sewerage in Hungary and encouraging business ecosystems in Galicia, Spain.

Too often place-based initiatives have failed to achieve their objectives because resourcing is inadequate, too short term, or withdrawn unexpectedly. For example, Clarke (2017) noted that an initiative to address disadvantaged children in inner-city Denver did not achieve its ambitions because of uncertainties in funding. This project and its implementation were dependent on a charitable organisation – the Piton Foundation – for support. In the early stages of the project, the Foundation worked with other not-for-profit organisations, the Mayor’s office, as well as over 200 practitioners to map out a vision of a better future for children in disadvantaged neighbourhoods. The Piton Foundation was active as the ‘backbone’ organisation in coordinating efforts, and offered cross-sectoral and cross-organisational funding. When the philanthropist supporting the Foundation redirected his investment to a new entity, priorities shifted to a much wider scale, bringing core-elements of the project to an end. As this example demonstrates, resources need to be both adequate and sustained over time.

Targets and evaluation

Finally, policy makers and communities alike need to recognise target-setting and the evaluation of outcomes may serve as an important resource for place-based initiatives. Barca et al (2019) discussed the critical role of setting appropriate goals prior to the implementation of place-based solutions and noted the key role of fit-for-purpose indicators of progress towards these objectives over time. Such aspirations, however, are not easily realised because, as Magro and Wilson (2019) observed, the evaluation of any place-based policy that involves a mix of policy measures can be difficult. Most of these challenges arise from co-ordination and governance issues, and it is therefore necessary to look beyond optimum policy configurations to consider the appropriateness for each context of the strategies put into effect.

The focus on target setting and evaluation inevitably results in questioning how strategy is developed and directed. Under this scenario, evaluations shift from being an operational to a strategic issue, where ‘it becomes a collective intelligence process that is central for avoiding co-ordination failures among different policy levels’ (Magro & Wilson 2019 p 4) and this in turn calls for a process of social learning. This could include processes of stakeholder evaluation rather than conventional evaluation processes. Critically, under this line of argument the objective of evaluation shifts from being an assessment of outcomes – positive, neutral or negative – to serving as a feedback loop that informs continuous improvement. However, targets and their achievement need to remain as a core element of the design of place-based policy, as their absence calls into question the value of such initiatives. In the past some academic evaluations of place-based policies have noted the failure to deliver targets but have argued the ‘soft infrastructure’ – stronger networks, a greater sense of community cohesion – resulting from the intervention constitutes success in and of itself. Such arguments are difficult to sustain in an era of scarce public sector resources.

4.4.3 Case studies

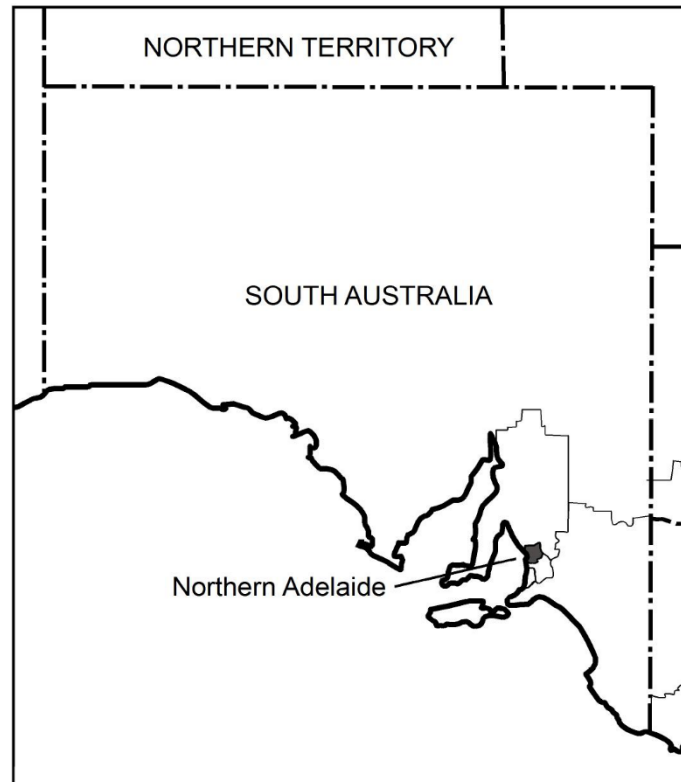
The closure of General Motors Holden in northern Adelaide, South Australia



The Holden Elizabeth site on its last day in 2017

In 2013 and 2014, car manufacturers Ford Australia (Ford), General Motors Holden (Holden) and Toyota Australia (Toyota) announced the impending closures of their Victorian and South Australian manufacturing sites. Ford announced its intention to close in 2016, Holden and Toyota at the end of 2017, signalling the end of Australia's automotive manufacturing industry. From that period a number of structural adjustment programs were implemented by the Australian Federal Government and relevant State Governments in the immediate wake of these announcements, in the period between the announcements and the eventual closures, and extending over three years afterwards. Importantly, the impacts of the closures were concentrated in the regions where the Original Equipment Manufacturers (OEMs) and their supply chains were located: Ford in Geelong (Vic), Toyota in Altona (Vic), and GMH in Port Melbourne (Vic) and Elizabeth (SA).

Figure 4. Northern Adelaide



Assistance was delivered within the broader context of governmental recognition of large-scale economic change and in response to the needs of affected workers and businesses. These crisis interventions complemented other economic strategies seeking to address the challenges of economic transition associated with Industry 4.0 and the impacts of the Global Financial Crisis (GFC). This included the development of new sectors, strategies to encourage the transition to advanced manufacturing, and the creation of jobs through infrastructure development. The provision of Structural Adjustment Programs (SAPs) was driven by needs at a more local level, offering practical assistance to workers in search of employment and to supply chain businesses looking to move to new product lines and markets. The rollout of these schemes was marked by synergies, and at other times discordances, between the aims of Federal and State governments, and the automotive firms.

These SAPs were the latest in a line of government schemes that supported the Australian car manufacturing industry since its inception in the 1940s. Beer (2015) notes a risk of enterprise assistance is propping up enterprises that are not viable in the long-term, and this was certainly the lesson of the car industry. Once the closures had been announced, however, the purpose of specific auto-closure responsive SAPs could be split broadly into the following three categories:

- **Transition services for affected workers and their families.** These provided training and employment services to reskill employees for jobs in other industries and help them secure new positions.
- **Diversification and innovation funding** for supply chain businesses.
- **Job creation strategies.** These included industry sector strategies, funds for investment in affected regions, major infrastructure funding, and start-up initiatives.

While the majority of programs were funded at either a Federal or State Government level, a number of initiatives were jointly funded by Federal and State governments, or by government and

car manufacturers. Critically, the task of industry adjustment was not solely undertaken by Australia's national government or even the three tiers of government – Federal, State and local government. Across the period 2013 to 2018 a number of initiatives embraced action by both the OEMs and governments. On occasion this action was supported jointly, and this includes the series of 'job fairs' conducted in affected regions in the lead up to closure. Other initiatives such as the Ford Transition Program, the Holden Transition Program and Toyota's Drive Program were led by the OEMs, often with the collaboration of the automotive sector unions. Supply chain workers were also able to access transition services.

Transition programs focused on preparing retrenched workers for new employment. Some older workers had trained at the OEMs straight out of school and had never navigated the labour market. These workers needed basic job-seeking tools and skills, such as CVs and computer literacy training. Available services encompassed the following areas, although not all of these were available to all workers at all sites:

- CV, job application and job interview assistance
- Career advice and counselling, including job placement services
- Skills recognition
- Training support, including advice and funding for training courses. This extended to provision of expenses such as travel and equipment. Funding was relatively limited and covered short courses and additional licenses rather than complete reskilling for new occupations. Many workers acquired forklift licenses and white cards to help them find employment in the logistics and construction industries.
- Information on support services
- Wellbeing services including financial advice. Some of these services extended to family members of retrenched workers

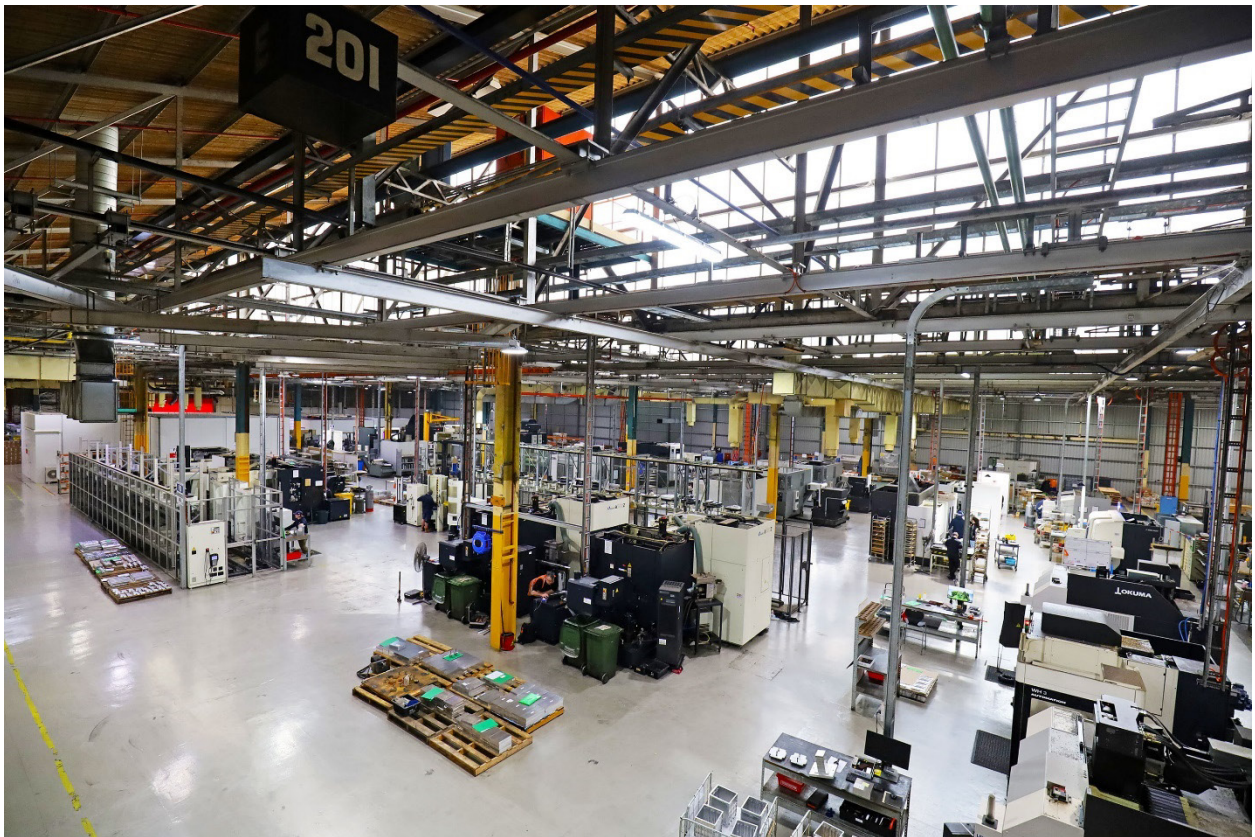
Importantly, these services were available from the closure announcements in 2013–14, through the closures themselves in 2017–18 and for a couple of years afterwards. This recognised that the process of labour market adjustment takes time. A majority of workers accessed some kind of training and most reported feeling satisfied with the training they received (Beer et al 2024).

Place-based policies also emerged as part of the response to this significant economic transition. The closure of GMH in Adelaide would greatly affect the area around Elizabeth in the city's north, an outer suburb where the Holden factory was located for over 50 years. Hundreds of people faced retrenchment from a plant where many had spent their whole working lives, and where people from the same families were often employed, sometimes intergenerationally. Holden was both the dominant employer in Elizabeth and a source of local pride and community identity. The broader area of northern Adelaide is an area of entrenched socio-economic disadvantage and was already characterised by a lower than average employment rate before the loss of its major employer was announced.

To address the potentially devastating local effects of the Holden factory closure, in May 2015 the South Australian Government released 'A shared vision for northern Adelaide: Directions Paper' to initiate its community consultation for an economic and social development strategy called the Northern Economic Plan (NEP). The 2015–16 South Australian State Budget, released shortly after, included \$93m to improve housing, roads and schools in northern Adelaide, plus a range of tax reforms. These also laid the groundwork for the NEP, which was released in January 2016. It was produced in conjunction with the three local councils, City of Playford, City of Salisbury, and City of Port Adelaide and Enfield. The plan responded directly to the impending closure, framing it as a catalyst for strategic economic change that would strengthen the community and improve quality

of life. It identified sectors for growth and emphasised the need to address disadvantage and for the coordination of state and local government services and policies. It detailed \$24.65m of new funding and initiatives in priority areas, such as ‘workforce development and training, innovation and small business development, transport planning, trade and investment, regulation, planning and utility costs, and local industry participation’ (p 7). Crucially, it promised to create 15,000 jobs in the region by 2025.

In the wake of the NEP, an idea of the ‘New North’ of Adelaide has emerged. This has been driven in large part by residential land releases in the northern districts and the building of tens of thousands of new homes. However, the NEP also laid the policy groundwork for heavy state government investment into the region since the plan was released, such as the \$885m Northern Connector, a major road infrastructure investment, and the \$615m electrification of the Gawler metro line. Both of these have helped to reinvigorate the region with new transport links to major labour markets.



A precision component manufacturing company at Lionsgate Business Park

The 127 ha former Holden site was taken over by Melbourne-based commercial developer Pelligra in 2017, and became South Australia’s largest industrial park, Lionsgate Business Park, its name a nod to the iconic Holden badge. Its assets include high voltage power, large concrete hardstand areas and huge engineered buildings rather than warehouses. These enable the use of heavy machinery, efficient floor layouts and business expansion, as well as manufacture of large structural items. Although it was challenging to attract businesses until a critical mass of tenants was in place, March 2025 saw 32,000 visits to Lionsgate, which now has about 800 employees on site. It hosts a wide variety of businesses, including manufacturers of plastics, staircases, shutters and blinds, structural steel, precast concrete, pipes, and precision components for defence, aerospace, medical, electronics and commercial engineering. Other industrial businesses include solar battery assembly, caravan repair, security, wool storage, a mushroom farm, logistics and

haulage. In addition, it houses workplace health and safety services, and non-clinical staff relocated from the local hospital to make room for more beds. A 9,000 sqm gym, the largest in the southern hemisphere, is now under construction at the park.

The diverse businesses Lionsgate now hosts are testament to the capability of the site as well as the vision for its reuse and stakeholder commitment to its success. Positive relationships have been key, particularly between the private owners, the onsite team and the local council. The onsite team consists of ex- Holden employees with valuable empirical knowledge of the site, while the local council has been active in referring tenants to the park. Federal ministers and MPs have also been instrumental in raising awareness of Lionsgate and what it can deliver.

Importantly, employment outcomes in Adelaide's north have shown some improvement since the closures. These very closely mirror changes in employment outcomes for the greater Adelaide area in the same timeframe. For example, full time employment in both the Adelaide North SA4 and Greater Adelaide areas have remained at around 54% across the 2016 and 2021 census periods. While unemployment remains higher and median income remains lower in the north than in the Greater Adelaide area, both areas have seen about a 30% reduction in unemployment and just under a 25% increase in median income between 2016 and 2021 (ABS Census 2016 & 2021). Arguably, place-based policy and transitions management have been able to mitigate the worst impacts of the closure of the Holden plant and the loss of this important employer, resulting in local labour market impacts that are aligned with those in the wider regional economy.

Regional innovation in Moravia, Czechia

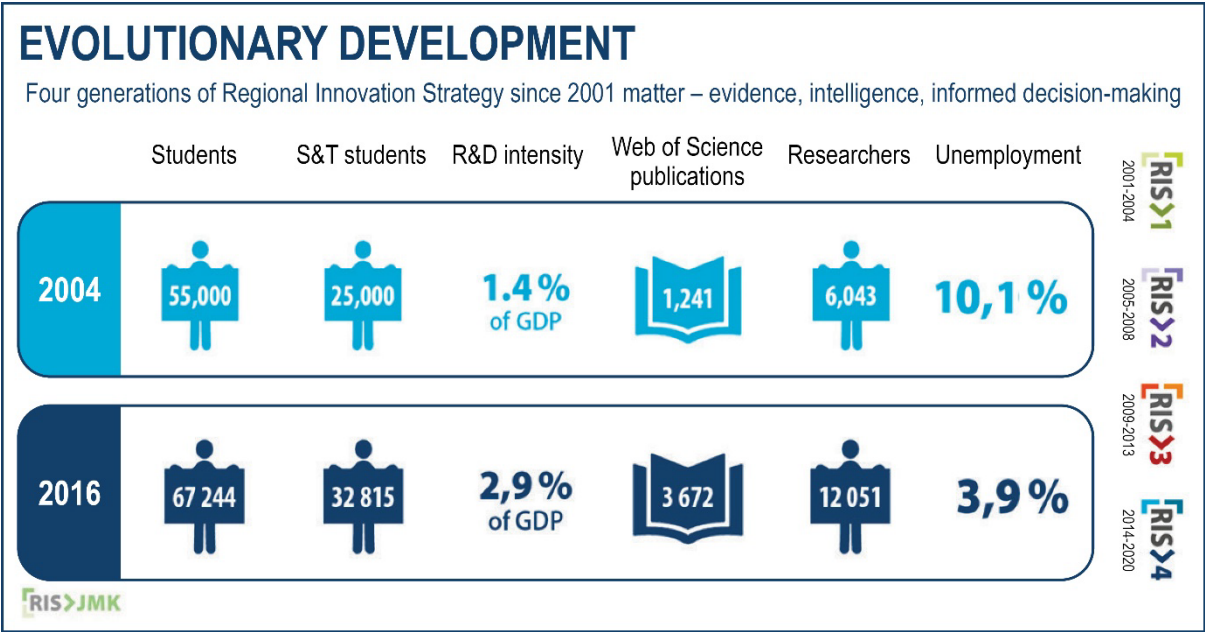
As Blažek and Květoň (2021) have argued, Moravia and its cross-border partner Silesia, have witnessed substantial economic and institutional change since the collapse of state socialism in the 1980s (Figure 5). These former brown coal mining regions have experienced a decline in low and medium value-added manufacturing and a rise in employment in services. As cross-border communities, both are remote from the core of their national economies and capitals. In Moravia an important component has been institutional change, and this has included both the very formal structures of government as well as those that are more inclusive and reliant on collaboration between partners. Czechia (commonly known in English as the Czech Republic) abolished state socialism in 1991, and this included the local system of administration – the Regional, District and Local Committees of the Communist Party – in order to move away from the symbolism and reality of the past (Blažek & Květoň 2021). New forms of self-government were not established until 2001, resulting in a decade-long hiatus in regional self-determination. The absence of a formal government structure, however, allowed space for other entities to emerge, including a union of the leaders of heavy industry in the region (focused on North Moravia) and a regional development agency (covering both Moravia and Silesia) financially supported by the EU in 1993 through pre-accession funding (Blažek & Květoň 2021).

Figure 5. Moravia, Czech Republic



Within this broader region some parts – notably South Moravia – have achieved notable success in moving away from low value to high value industries and employment, as illustrated in Figure 6 below.

Figure 6. Measuring progress with place-based approaches in South Moravia



Source: Beer et al 2020 p 64

The region's pathway to this level of achievement started in 2003 when the three universities in the region joined with the Regional Office and the City Office of Brno to establish The South Moravian Innovation Centre – JIC (Beer et al 2020). Drawing on contemporary conceptualisations around regional innovations systems (Cooke et al 2011), this newly established body set out to oversee the development of a leading-edge innovation system in the region. As documented by Beer et al (2020)

its mission was to provide a set of support services targeting firms, especially start-ups and later also mature companies. It set out to develop a range of support measures for start-ups and SMEs, as well as networking initiatives. The JIC sought to develop and steer the Regional Innovation Strategy while also running four business incubators. Over time the portfolio of activities of the JIC broadened and it became subject to a regular policy learning cycle. The working groups originally used during the elaboration of strategic documents were gradually engaged in a permanent process whereby the stakeholders (both from public and private sector) oversaw the implementation of approved projects, and proposed new projects and activities (Beer et al 2020 pp 63–64).

The realisation of these goals was to be delivered by working with key stakeholders and leaders, and by establishing and supporting networks both within the region, and with other regions. In addition, 'a special effort was devoted to the development of a favourable institutional framework for innovation, including the promotion of trust and an overall 'atmosphere' in the region' (Beer et al 2020 p 64). Critically, the JIC chose to concentrate on a limited number of high-value, knowledge intensive sectors, including:

- advanced manufacturing and engineering technologies;
- precision instruments;
- the development of software and hardware;
- pharmaceuticals;
- medical care and diagnostics; and,
- technologies for the aircraft industry (Beer et al 2020 p 64).

The foundation of the JIC in regional innovation systems was combined with a focus on smart specialisation strategies, especially through a focus on encouraging research and development activity and collaborative working amongst entrepreneurs.

Beer et al (2020) drew attention to the three major achievements by the JIC and its work in creating a regional innovation system appropriate to South Moravia. First, it created an environment in which local entrepreneurs and local companies have been able to grow, and this resulted in a rapid rise in the number of start-ups and emerging technology firms. Second, the JIC has served as an avenue to focus public sector resources on research into new technologies – including ICT – and the development of appropriate skills within the workforce. This has encouraged inward investment with Honeywell establishing its largest Research and Development centre in Europe in Brno in premises vacated by an exiting foreign investor. The attraction of this anchor tenant (Bailey et al 2023b) has generated new opportunities for local firms to access global markets and encouraged other major firms to collaborate regionally. Finally, the JIC and the relationships it has built, alongside the knowledge it has developed around the capacity of the region, has ensured the effective use of EU structural funds, which were pivotal in the restructuring of the region. Blažek et al (2019) observed more than €700 million was invested in the construction of research centres and related infrastructure, including four centres of excellence and 11 regional centres of applied research over a three-year period, adding 1,500 researchers to the region's knowledge assets.

It can be argued that two factors contributed to the success of South Moravia in contributing to the transition to a knowledge-focused economy. As Beer et al (2020, p 65) commented, the 'South Moravia case shows the key role of trust among the regional stakeholders, but ... this trust took a considerable effort and time to develop.' Long-term success stemmed from modest initial expectations, the acceptance of failure on occasion, a results orientation tempered by a focus on learning and experimentation, and close collaboration between funders and implementation agencies to ensure lessons are learnt, and practice improved. Trust took a decade to build as 'such placed-based approaches do not offer quick solutions, but as the South Moravia example illustrates, the benefits occur only after a period of intensive and coordinated effort by key regional actors' (Beer et al 2020 p 65). Secondly, the JIC and its success was enabled by the support of key stakeholders, including the Regional Government Office. Leaders of the JIC were careful to ensure government support across electoral cycles by briefing all political parties and building a consensus around its value.

While the discussion above has focused on South Moravia, the pattern of positive change is evident across Moravia as a whole. The Regional Innovation Scoreboard produced by the European Commission (EC 2023) shows that the broader Moravia region (CZ07) is a 'moderate innovator' region that has improved its position by almost 20% over time. Relative to the EU as a whole it is seen to be strong in non-R&D innovation expenditures; product innovation; business process innovation; public/private co-publications; innovative SME collaboration; employment in innovative enterprises; and, employment in knowledge intensive industries. This is a remarkable set of metrics for a region that until relatively recently was dependent on unsophisticated industrial manufacturing and coal. Drawing on their interviews with key informants in the region, Blažek and Květoň (2022) attributed this success to the quality of leadership available from the public, community and private sectors, as well as an enduring commitment to change. They noted that

leaders had ambitious visions, and exerted a significant and multifaceted effort to cultivate the business and innovation environment, ranging from setting up various platforms to streamlining administrative procedures the interviewees in Moravia-Silesia repeatedly emphasized the importance of a proactive and enthusiastic leadership with vision, supported by a political stability. All this resulted in noticeable and widely acknowledged improvement of the institutional framework over the last five to six years in this region (Blažek & Květoň 2022 p 11).

The attraction of Hyundai into the region was seen to be a key marker of the success of both the institutional framework and the strategies pursued. Other contributing factors included the important role of universities as active participants driving the process of a change towards a knowledge economy, and, potentially, the relative peripherality of these places. Distance from the capital may have enabled both a sense of self sufficiency and a freedom of action that may not be available to more central regions.

4.5 Workforce and training needs in the Lithgow region



This report and the plans it contains respond to the Action Plan set out in the Lithgow Emerging Economy Transition Plan (2023), otherwise known as the LEEP. The LEEP is an in-depth exploration of the current workforce and economic profile of Lithgow and of new opportunities for diversification and growth as the coal industry winds down. This exploration has resulted in an Action Plan for meeting these objectives, with short-term (0–5 years), intermediate (5–15 years) and long-term (15+ years) actions identified across the whole of economy as well as individual sectors, transition, governance and integrated planning. The work in this report and its associated plans is directly aligned with, or should inform, the following actions from the LEEP:

Whole of economy

ACTION	TIMEFRAME	DESCRIPTION
Establish a regional skills baseline	0–5 years	Undertake a regional manufacturing industry skills and training audit in consultation with industry and the VET and university sectors.
Engage in regional workforce planning early, and align with priority economic growth areas	0–5 years	Undertake a long-term regional workforce plan identifying likely skills requirements, training and pathway gaps, other opportunities, and potential disruptions, leveraging state and national approaches and initiatives, and engaging local manufacturers, schools, vocational and higher education organisations, peak bodies and unions.
Focus workforce development on skills to improve adaptive capacity	0–5 years	Develop a regional workforce adaptive capacity plan for focusing on strengthening flexible, innovative, and STEAM skills in the emerging workforce. Facilitate university, TAFE and industry partnerships to complement and stimulate innovation opportunities.
Understand skills issues and future needs	5–15 years	Engage in forums and with appropriate coordinating agencies on the skills and training agenda, focusing on regional skills requirements for renewable hydrogen, and advanced manufacturing opportunities.

Transition

ACTION	TIMEFRAME	DESCRIPTION
Establish a rapid response framework for any unplanned early closures	0–5 years	Early planning of a rapid response hub for the provision of information on commonwealth employment and other support services in the event of an unplanned early closure.
Embed processes for formal dialogue between industry, transition governance arrangements, and other key government agencies on closure planning	5–15 years	Formalise dialogue arrangements between key industry actors, the governance vehicle and other key actors and agencies on closure planning and repurposing. Framework discussions should include: a. early intervention, b. tailoring assistance to the family unit of displaced workers including workers in the displaced supply chain, c. placement assistance, d. skills assessments and training, e. supply chain management, f. site decommissioning and re-use, and g. broader community support and assistance.
Engage early following any announcement of a closure	5–15 years	Facilitate where possible early and ongoing workforce support, including skills recognition, training, career planning, assistance for redeployment, and financial and personal counselling on the announcement of any closures.

(Source: LEEP pp 92–95)

As noted by the LEEP, workforce analysis is a vital step in planning for transition. Given the extended timeframe of transition in the Lithgow region, this should include the capabilities of both the current and emerging workforce, as workers at different career stages will be impacted by the transition in different ways. In addition, any workforce transition plan should consider both the needs of power plant and mine workers, whose employment will be directly impacted by closures, and the needs of the wider regional workforce, who will be indirectly affected by the closures as the economy transitions.

The LEEP identifies six industries with growth potential in Lithgow, or that are foundational and likely to continue to provide employment to a large section of the local community. These are in sectors that

‘align with Lithgow’s demographic trends, are existing specialisations, have demonstrated a local competitive effect in the recent past, or may derive some competitive or comparative advantage from the natural endowments, infrastructure, and human capital present in, or adjacent to, the LGA. These sectors were also considered for their capacity to absorb capital, benefit from infrastructure investments, and grow at inorganic rates.’ (p 12)

The key areas of focus are:

Industrials		Tourism	Health, Social and Public Services		Other sectors
Electricity, Gas, Water and Waste service	Manufacturing	Retail, accommodation and the creative arts	Health Care, Ageing and Social Assistance	Public Administration and Safety	The broader diversified economy
Key points - Existing electricity, transport and ICT infrastructure. - Natural endowments (e.g. water resources, solar resources etc.) - Workforce with transferable skills Potential Defined pivot from coal fired electricity generation to renewable energy. Including development of solar power, pumped hydro, battery storage and green hydrogen production.	Key points - Strong history as a centre of industrial innovation and manufacturing - Workforce with transferable skills - Existing transport infrastructure Potential Established clean manufacturing hub including: Defence and related metal fabrication and components, Renewable energy component manufacturing and clean technology innovation, Circular economy manufacturing, Transport equipment manufacturing, and Food processing.	Key points - Natural assets - Aboriginal and industrial heritage assets - Presence of creative arts - Cost differential - Proximity to Sydney, complement to neighbouring regions Potential Lithgow leverages its natural endowments, creative arts community, and develops its built environment to become a destination that attracts visitors from the Greater Sydney area and from the Central West. This will provide a wide range of jobs, particularly for younger demographics, offsetting the ageing trends in the region.	Key points - Established, well integrated foundational economic activity - High and increasing demand for services, including from Lithgow and the wider region's ageing population. Potential Maintaining health and ageing services and establishing an innovation economy around ageing and early childhood, positioning Lithgow as a city at the forefront of ageing, considering child-centric and intergenerational connection approaches, developing a health precinct masterplan, integrating services, enabling research collaboration, and attracting investment.	Key points - Established foundational industry, including state-wide public services - Geographic positioning - Cost advantages relative to Sydney Potential Maintaining the presence of established public administration and public services industries in Lithgow as a stable base of a broader more diversified economy.	- Agriculture, forestry and fishing - Administrative and support services - Construction - Education and Training - Financial and Insurance Services - Information Media and Telecommunications - Professional, Scientific, and Technical Services - Rental, Hiring and Real Estate Services - Retail Trade - Transport, Postal and Warehousing - Wholesale Trade Ensuring policies and planning do not limit opportunities for growth

(Reproduced from LEEP p 20)

The LEEP also explores workforce implications for these development pathways, including skills required. The following sections of this report explore these implications in more detail, incorporating demographic data, analysis of current and projected workforce needs, an audit of training and education facilities and insights from our interviews with participants.

4.5.1 Workforces at the frontline of the emerging economy

The transition in Lithgow away from coal is a local chapter of a global story of transition away from fossil fuels, as nations strive to meet emissions targets and fulfil the UN's Sustainable Development Goals. As well as bearing many of the impacts, work forces are also an essential enabler of the transition to net zero. The International Labour Organization (ILO) views the labour force as key to tackling climate change, since the transition to net zero represents a large-scale structural change to the world of work. In Australia and elsewhere, a new green economy is therefore dependent on developing the right skills in the workforce, and in turn, skills development will protect workers from related economic shocks. The transition towards greener economies and societies is also an opportunity to further the decent work agenda as part of a 'just transition' (Strietska-Ilina & Mahmud 2019).

However, workers transitioning as a result of a greening economy (e.g. away from jobs in the fossil fuel industry) will not necessarily move into clean energy or 'green' jobs. The issues for communities and individuals are complex. There may not be clean energy opportunities in the right location, the timing of opportunities may not be right for those seeking new employment, and individual skills, preferences and circumstances will all come into play as workers navigate a post-fossil fuel labour market. It's important, then, that transition services and strategies are appropriately targeted and tailored (JSA 2023b) and that skills development strategies respond to a broad range of future work possibilities.

There are many types of worker transitions. An involuntary worker transition occurs because of industry adjustment or retrenchment. Jobs and Skills Australia (JSA) have classified different types of transitions that workers can expect to face as the fossil fuel industry is replaced by renewables.

Types of involuntary transitions

Type of transition	Extent of change	Example	Type of supports
Changing work type	Same employer and occupation, but the focus shifts.	Petroleum refining moving towards biofuels.	In-house people management. Minor upskilling and familiarisation.
Changing worksite	Worksite closes but similar opportunities exist with same employer. Requires relocation.	Individual coal mine or power station closures.	In-house people management. Relocation support.
Changing employer	Employer retrenches staff due to changing needs. Requires job searching for same role.	Individual coal mine and power station closures but others exist.	Retrenchment supports to find new job.
Changing industry	Limited opportunities within same industry, or wanting to learn about new markets and trends. Can apply majority of skills to new industry.	Electrician moving from coal power station to renewables.	Retrenchment supports to find job in new industry. Upskilling likely.
Changing occupation	Limited opportunities within same occupation. Requires major reskilling or upskilling.	Power plant operator.	Retrenchment supports and major reskilling.
Exiting the labour force	Leaving employment.	Unemployment, unplanned early retirement, full-time study or short-term breaks from employment.	Specialist financial advice for workers. Employment services for partners.

(Reproduced from source: JSA 2023b p 137)

4.5.2 Skills shortages

Workforce transition in Lithgow is also taking place in a broader context of acute skills and labour shortage across Australia. This is not a new problem. Existing skills shortages were exacerbated by the Covid-19 pandemic and have been caused by a range of factors: slow population growth and ageing; technological change (e.g. increasing automation, new communication technologies); the emergence of new growth industries; Australia's competition for skilled migrants; skills and experience mismatch with available jobs; and barriers to workforce participation, including reduced labour mobility. These can be affected by factors like a lack of affordable housing or poor rental availability, ineffective recruitment systems, limited access to education and training, limited access to childcare, and constraining welfare rules (e.g. the number of hours a welfare recipient may work) (ACCI 2022).

Aside from these structural factors, employers report a lack of necessary skills among individual applicants for jobs. Most commonly, these are insufficient experience, training, qualifications, technical skills or soft skills. High employment means employers also find themselves competing for employees from among a small pool of applicants (Strietska-Ilina & Mahmud 2019).

The NSW government has also reported on widespread skills shortages across the state, both current and projected, acknowledging that the NSW economy is changing in profound ways. Among these key changes, significant employment growth is expected in digital and information technology, energy transition and construction, and over 90% of new jobs created over the next 10 years will require post-secondary qualifications, mostly Certificate III or above (NSW Dept Education 2024). Meanwhile, more immediate solutions are required to address critical skill shortages in the following areas: construction (housing and infrastructure); net zero and energy transition; the care and support economy; agriculture and agrifood; and advanced manufacturing.

4.5.3 Impacts are concentrated in regional labour markets

The NSW Department of Education recently reported that ‘[t]he state’s most significant skills and training challenges are concentrated at the regional level and directly impact the strength and resilience of local communities.’ (2024 p 17) Regional labour forces experience higher rates of unemployment, even as regional employers have difficulty recruiting the right workers into available jobs. Those who do work are more likely than the urban population to receive low pay and experience job instability. Meanwhile, the national shift towards more highly skilled jobs has created additional challenges for the regions, where there has been an increase in the share of Skill Level 2–4 occupations (where VET is the primary pathway) as well as the shift towards Skill Level 1 occupations seen in cities (JSA 2024a, JSA 2024d, NSW Dept Education 2024).

Alongside this growth in a skilled workforce, a number of other factors are driving labour market challenges in the regions. Populations have grown following the Covid–19 pandemic, although lower population density in the regions compared to urban areas still creates weaker labour markets, even as housing availability has become critically low (Houghton et al 2023). Many regions also have an ageing population, which results in not only a reduced workforce but a higher dependence on the care sector. The attainment of a university qualification is lower in the regions and this pathway is currently not meeting local skills needs. Meanwhile, VET remains an important pathway in the regions but delivery costs can be high and barriers to access remain (JSA 2024d).

Although the impacts of decarbonisation will be concentrated in the regions and keenly felt by regional workforces, the transition to clean energy are also likely to create many regional jobs. Skills development is crucial to taking advantage of these opportunities. However, many of these new jobs will be in the construction phase of renewables infrastructure, highlighting the importance of a long-term vision for skills and employment in affected communities.

4.5.4 What do we know about skills needs?

Understanding skills shortages

JSA monitors skills shortages at the national and regional level. It manages the Occupation Shortage List (OSL), formerly the Skills Priorities List (SPL), which is published annually. The OSL covers over 900 occupations and assesses whether they are in shortage, primarily measured via the rate at which employers are able to fill vacancies. In 2023, over a third of occupations were in shortage nationally, including 66 occupations newly in shortage since the previous year. This reflects a year-on-year trend of increasing shortages, mainly among highly-skilled occupations. Shortages eased a little in 2024 but remain at one third of occupations (JSA 2024 OSL).

To understand what drives skills shortages and how to address them, it is important to be aware of the five skills levels assigned to occupations by OSCA (these replaced the ANZSCO classifications in 2024):

SKILL LEVEL	COMMENSURATE WITH QUALIFICATION	SUBSTITUTE WORK EXPERIENCE FOR QUALIFICATION?	RELEVANT EXPERIENCE/ ON THE JOB TRAINING ALSO REQUIRED?
1	AQF Bachelor degree or higher qualification	At least five years	In some instances
2	AQF Associate Degree, Advanced Diploma or Diploma	At least three years	In some instances
3	AQF Certificate IV, or AQF Certificate III including at least two years of on-the-job training	At least three years	In some instances
4	AQF Certificate II or III	At least one year	In some instances
5	AQF Certificate I, or compulsory secondary education	In some instances, no formal qualification or on-the-job training may be required	For some occupations a short period of on-the-job training may be required in addition to or instead of the formal qualification

(Adapted from <https://www.abs.gov.au/statistics/classifications/osca-occupation-standard-classification-australia/2024-version-1-0/conceptual-model>)

Over a long period, Australia's job market has seen an increase in higher-skilled occupations as the nation shifts towards a service-based economy. The two decades leading up to 2020 saw huge growth in service-based industries such as: health care and social assistance; professional, scientific and technical services; education and training; construction; and public administration and safety. In the same period, the percentage of Skill Level 1 jobs grew from one quarter to a third of labour market share, while reductions were seen in Level 3 and Level 5 (unskilled) jobs. Post-pandemic, especially since the second half of 2022, skills shortages nationally have become even more extensive. Since 2020, the highest employment growth has been in Skill Level 1 occupations (NSC 2021).

JSA has developed an occupation shortage driver typology that is helpful for understanding the primary cause of worker shortages in different occupations:

CLASSIFICATION	DEFINITION
Long training gap	Few qualified applicants per vacancy and a long training pathway – corresponding to a Certificate III or above
Short training gap	Few applicants per vacancy and a qualification less than a Certificate III is required
Suitability gap	Enough qualified applicants, but they are not regarded as suitable due a lack of needed skills and experience
Retention gap	Below average rates of retention, potentially reinforced by low numbers of new applicants per vacancy and poor working conditions that lead to high staff turnover
Uncertain/Unknown	There may be cases when the shortage driver is uncertain

(Adapted from JSA 2024a)

It is important to note that these drivers may appear in combination, pointing to a complexity of (possibly interrelated) issues that need to be addressed.

JSA identifies three macro-level trends shaping the economy and demand for skills:

- Growth of data and digital technologies, including generative AI
- The net zero transformation
- Growth of the care and support sector

It also observes that:

- Skills shortages are worse in regional and remote areas
- Highly gender-segregated industries and occupations are more vulnerable to shortages
- Many large employing occupations are in national shortage

(JSA 2024d)

Skills for a changing economy

The major forces shaping our economy are leading to new occupations, many of them highly skilled. According to JSA:

Emerging roles are not simply a new title for a role that has existed for some time. They are also not a prediction of a role that might appear in the future. Emerging roles represent a new field of work, the use of an established skill in a new context or a distinct specialisation within an existing role. One important criterion of emerging roles is that they require a new or diverse skill set. This could include skills new to the whole labour market, or a new blend of established skills not traditionally used together. Emerging roles have appeared in Australian labour market data for the first time in recent years or are growing quickly from a small base (JSA 2024b p 5).

The most recent emerging roles in the Australian labour market have been identified by JSA under four themes, which broadly reflect economic trends. Below are listed the most in-demand of the roles under each theme, representing strongly growing new occupations:

Health, Care and Medical

- Community Mental Health Worker
- Mental Health Practitioner
- Allied Health Assistant

Data and Technologies

- Cloud Developer
- Solutions Architect
- Automation Engineer

Science and Engineering

- Reliability Engineer
- Logistics Engineer

Net Zero

- Electric Vehicle Technician
- Sustainability Consultant
- Battery Design Specialist

(JSA 2024b)

Various attempts have been made by organisations in Australia and internationally to model and predict workforce needs for the transition to clean energy and net zero. These use different methods and make different assumptions, based on different plausible scenarios for the future that are informed by policy settings and global emissions agreements, as well as the factors shaping local economies. Some useful findings have emerged from this body of work that can guide choices about future work directions for Lithgow's current and emerging workforce. This section gives an overview of what we know so far about occupational and skills changes as a result of green transition.

The good news is that the shift to clean energy is likely to result in jobs growth. Indeed, if policy and investment are done effectively, the green transition should result in a net benefit for employment and the economy more broadly. Much of this employment growth will be regional.

Of course, the picture for workers on the ground is more complicated. In terms of reskilling for emerging roles, the ability of workers to move out of vulnerable occupations and into new ones is dependent on many factors. Working lives are not just shaped by skills but by individual aspirations, interests, identities, values, training accessibility, preferred work conditions including pay, and other social factors like family and household needs.

In the short term, new green jobs may not arise where fossil fuel jobs have been lost and they may not be long-term. There is expected to be high employment in the construction phase of green energy infrastructure, concentrated in regional and remote areas, creating opportunities for workers willing and able to undertake a short term move or fly-in-fly-out. Modelling has projected workforce gaps across building and engineering trades needed for this construction phase and for the later maintenance phase.

Sectors will vary in the degree of occupational change during the green transition. Jobs will likely be impacted across employment areas such as: fuels and storage; transport; energy performance; manufacturing and processing; land use and the circular economy. The most significant development of new occupations is expected for the renewable energy sector. Here the demand for

skills can be seen across the supply chain, from research and development, to manufacture, to installation or construction, to operation.



One important aspect of preparing our workforce for the emerging economy is understanding skills requirements and the kind of reskilling that might be required, especially for emerging occupations. The ILO reports that there will be employment gains at all skill levels (low, medium and high) but that most gains will be for medium and highly-skilled occupations (ILO 2019). At the same time, some existing jobs will be lost. The ILO describes three broad outcomes and the reskilling that may be required for each:

1. Some jobs destroyed in one industry will be replicated in growing industries – workers may be able to move from one industry to another, keeping the same occupation. Those keeping an existing occupation may still need to reskill or upskill in order to work with new products or materials or to expand their skillset.
2. Some jobs will be lost but there will not be openings for them in other industries – these workers retain core and transferable skills, but may also need training to change occupations.
3. New occupations will be created, requiring new bundles of skills, which may in turn require formal training. These will be available to new workforce entrants as well as those changing occupations. They might be hybrids of existing occupations, combined in new ways.

Using a similar set of concepts, JSA has produced a guide to possible transition pathways for the largest fossil fuel electricity generation occupations:

CURRENT OCCUPATION	COMMON INDUSTRIES	MOST COMMON REAL-WORLD TRANSITIONS	SIMILAR OCCUPATIONS (SKILLS SIMILARITY)
Power Generation Plant Operator	On Selling Electricity and Electricity Market Operation Electricity Distribution Alumina Production Hydroelectricity Generation Other Electricity Generation	Earthmoving Plant Operator Electrical Distribution Trades Workers^ Machine Operators nec	Boiler or Engine Operator (HIGH) Electricians (HIGH) Fire Protection Equipment Technician (HIGH) Gas or Petroleum Operator (HIGH) Electrical Engineering Technician (HIGH) Electrical Distribution Trades Workers^ (HIGH) Production or Plant Engineer (HIGH) Lift Mechanic (MEDIUM)
Electrician (General)	Electrical Services Electricity Distribution Other Heavy and Civil Engineering Construction Domestic Appliance Repair and Maintenance Rail Passenger Transport	Electrical Engineering Technician^ Electrical Engineer Electrical or Telecommunications Trades Assistant Automotive Electrician Electrical Distribution Trades Workers^ Airconditioning and Refrigeration Mechanic Electronic Instrument Trades Worker^ Labourers Technicians and Trades Workers nec Motor Mechanic	Electrician (Special Class) (HIGH) Electronic Instrument Trades Worker^ (HIGH) Lift Mechanic (HIGH) Electrical Engineering Technician^ (HIGH) Electrical Distribution Trades Workers^ (HIGH) Electrical Engineering Draftsperson (HIGH) Telecommunications Trades Workers (HIGH) Power Generation Plant Operator (HIGH) Electronic Equipment Trades Worker (HIGH) Mechanical Engineer (HIGH)
Fitter (General)	Other Machinery and Equipment Repair and Maintenance Iron Ore Mining Other Automotive Repair and Maintenance Other Specialised Industrial Machinery and Equipment Wholesaling	Fitter and Turner Diesel Motor Mechanic Motor Mechanics Miner Fitter-Welder Mechanical Engineer Mechanical Engineering Technician Maintenance Planner Metal Fabricator^ Mine Deputy	Metal Machinist (First Class) (HIGH) Welder (First Class) (HIGH) Toolmaker (HIGH) Precision Instrument Maker and Repairer (HIGH) Metal Fabricator^ (HIGH) Precision Metal Trades Workers (HIGH) Metal Casting, Forging & Finishing Workers (HIGH) Product Assemblers (HIGH) Sheetmetal Trades Workers (HIGH) Engineering Patternmaker (MEDIUM)

Electrical Engineer	Engineering Design and Engineering Consulting Services Electricity Distribution Electrical Services Other Heavy and Civil Engineering Construction Electricity Transmission	Electrician Electronics Engineer Electrical Engineering Technician^ Mechanical Engineer^ Computer Network and Systems Engineer	Production or Plant Engineer (HIGH) Engineering Technologist (HIGH) Mechanical Engineer^ (HIGH) Industrial Engineer (HIGH) Electrical Distribution Trades Workers (HIGH) Electrical Engineering Technician^ (HIGH) Electrical Engineering Draftsperson (HIGH) Telecommunications Engineering Professional. (HIGH) Materials Engineer (HIGH)
Mechanical Engineer	Engineering Design and Engineering Consulting Services Other Heavy and Civil Engineering Construction Manufacturing, nfd Motor Vehicle Manufacturing Iron Ore Mining	Engineering Manager Mechanical Engineering Technician^ Construction Project Manager Motor Mechanic (General) Civil Engineer	Production or Plant Engineer (HIGH) Industrial Engineer (HIGH) Engineering Technologist (HIGH) Materials Engineer (HIGH) Structural Engineer (HIGH) Mechanical Engineering Technician^ (HIGH) Electrical Engineers (HIGH) Chemical Engineer (HIGH) Geotechnical Engineer (HIGH) Aeronautical Engineer (HIGH)
Metal Fabricator	Iron Smelting and Steel Manufacturing Basic Non-Ferrous Metal Manufacturing, nfd Manufacturing, nfd Structural Steel Fabricating Other Heavy and Civil Engineering Construction	Welder (First Class)^ Fabrication Engineering Trades Workers nfd Fitter (General)^ Mechanical Engineering Trades Workers nfd Truck Driver (General) Sheetmetal Trades Worker^	Welder (First Class) ^ (HIGH) Metal Casting, Forging & Finishing Workers (HIGH) Metal Machinist (First Class) (HIGH) Fitter (General)^ (HIGH) Precision Metal Trades Workers (HIGH) Toolmaker (HIGH) Sheetmetal Trades Workers^ (HIGH) Structural Steel Erector (HIGH) Product Assemblers (MEDIUM) Engineering Production Workers (MEDIUM)

Electrical Engineering Technician	Electrical Services Electricity Distribution Scientific Testing and Analysis Services Other Heavy and Civil Engineering Construction Oil and Gas Extraction	Electrician (General) ^ Electrical Engineer^ Electronic Engineering Technician^	Electrical Engineering Draftsperson (HIGH) Mechanical Engineering Technician (HIGH) Electronic Engineering Draftspersons & Technicians^ Civil Engineering Technician (HIGH) Electrician (General) ^ (HIGH) Electrical Engineers^ (HIGH) Mechanical Engineering Draftsperson (HIGH) Electronic Instrument Trades Worker (General) (HIGH) Electrician (Special Class) (HIGH) Engineering Technologist (HIGH)
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^ occupations that appear in common real-world transitions and skills similarity (columns 3 and 4)

(Reproduced from Jobs and Skills Australia 2023b pp 144–147)

Both core skills and occupationally-specific technical skills will be required for green jobs, with the level of change dependent on the skill level of the job. For example, a low-skilled worker may need to adapt to a new environment, materials and procedures, while a highly-skilled worker may need an entirely new formal qualification. As the ILO notes, however, ‘new skill sets almost necessarily build on existing skill sets, and new occupational standards and qualifications are seldom, if ever, built from scratch with a blank sheet of paper, but rather adapted from existing standards and learning outcomes’ (Strietska-Ilina & Mahmud 2019 p 113).

JSA reports that the most critical roles within the clean energy workforce are trades, technical occupations and engineering professionals. Highest growth rates to 2030 are expected for Telecommunications Trades Workers, Electronics Trades Workers and Electrical Engineering Draftspersons and Technicians. The demand (in terms of numbers of available positions) for Electricians and Construction Managers is likely to increase the most in the same period. (JSA 2023a) These are all among the 38 occupations identified by the JSA as critical to the clean energy transition:

Technicians and Trades Workers

- Architectural, Building and Surveying Technicians
- Civil Engineering Draftspersons and Technicians
- Electrical Engineering Draftspersons and Technicians
- Other Building and Engineering Technicians
- Automotive Electricians
- Motor Mechanics
- Aircraft Maintenance Engineers
- Metal Fitters and Machinists
- Structural Steel and Welding Trades Workers
- Plumbers
- Electricians
- Airconditioning and Refrigeration Mechanics
- Electrical Distribution Trades Workers
- Chemical, Gas, Petroleum and Power Generation Plant Operators
- Telecommunications Trades Workers
- Electronics Trades Workers

Managers

- Policy and Planning Managers
- Research and Development Managers
- Construction Managers
- Engineering Managers
- Production Managers

Professionals

- Marine Transport Professionals
- Architects and Landscape Architects
- Urban and Regional Planners
- Chemical and Materials Engineers
- Civil Engineering Professionals
- Electrical Engineers

- Industrial, Mechanical and Production Engineers
- Mining Engineers
- Other Engineering Professionals
- Agricultural and Forestry Scientists
- Chemists, and Food and Wine Scientists
- Environmental Scientists
- Geologists, Geophysicists and Hydrogeologists
- University Lecturers and Tutors
- Vocational Education Teachers
- Occupation and Environmental Health Professionals

Labourers

- Structural Steel Construction Workers

(JSA 2023b)

However, supply gaps are expected for some critical trades unless there is a significant increase in VET completions. The largest of these is for Electricians, but scenario modelling also points to future shortages of other critical roles if training and education pipelines do not keep pace with demand.

The importance of core skills should not be overlooked as workers look to transfer their existing skillsets to new jobs or train for new occupations. In a study of skills for green transition, the ILO has summarised both the core skills required for green jobs and the most in-demand skills in growing occupations in growing industries:

Core skills required for green jobs

Required across the labour force:

- Environmental awareness and respect
- Adaptability
- Teamwork
- Resilience
- Communication and negotiation skills
- Entrepreneurial skills

Required in medium to high-skilled occupations

- Analytical thinking (including risk and systems analysis)
- Coordination, management and business skills
- Innovation
- Marketing
- Consulting
- Networking, IT and language skills
- Strategic and leadership skills

(Adapted from Strietska-Olina & Mahmud 2019)

Most in-demand core skills in growing industries (across multiple skill levels)

- Physical abilities
- Writing
- Microsoft Office
- Customer handling
- Communication
- Teamwork/collaboration
- Attention to detail
- Organisational skills
- Scheduling
- Computer literacy
- Work area maintenance
- Cleaning
- Building effective relationships
- Problem solving

(Adapted from Strietska-Olina & Mahmud 2019)

4.5.6 Barriers to training or reskilling

Delivering regional education and training

Access to post-school education and training opportunities can be a barrier for students in the regions. High delivery costs (especially for training that can be capital and equipment intensive, or in thin markets that lack a critical mass of enrolments), sparse coverage of training organisations, difficulty attracting and retaining teachers and trainers, and housing and transport costs compound the challenges (DEWR 2024).

VET is a key pathway for skills development and vital to Australia's prosperity as the need for skilled tradespeople expands. However, sectors like manufacturing and construction are already being affected by decreasing apprenticeship rates, and these must be addressed if Australia is to meet skills needs now and in the future. VET is especially important in the regions, where it tends to be driven by local labour market and industry needs. Regional VET students have lower attainment in foundational skills such as language, literacy and numeracy (LLN) and are more likely to undertake lower-level qualifications, with Certificate III qualifications attracting the highest enrolments (JSA 2023c).

Universities will play an increasingly crucial role in skilling regional workforces, given the ongoing shift towards highly skilled jobs. Universities offer fundamental professional qualifications and will provide new qualifications targeted to emerging sectors and occupations. However, regional universities cannot currently meet skills gaps in professional occupations where shortages persist. Attainment of university qualifications is currently lower in the regions than in capital cities, with regional enrolments declining over the last five years (JSA 2024d).

Recent policy developments call for system reform in regional education and training to address these challenges. Increased investment in VET was promised in the National Skills Agreement in 2023, which may help to meet the higher cost of training delivery in regional Australia. Better

cohesion and coordination in the tertiary education system, along with more flexible program design facilitated by collaboration between higher education, VET and industry, would lead to clearer pathways into the workforce and better matching of skills to industry needs, especially in thin markets. Employers can be incentivised to participate in training, while work experience during training is shown to improve employability outcomes for students. Training and education in the regions could be more community-led, responding to local skills needs and utilising existing infrastructure belonging to industry through direct partnership (Griffin & Andrahannadi 2023).

Barriers and issues for cohorts

First Nations people

VET pathways are important to First Nations employment in the regions. Enrolments of First Nations students in regional and remote areas is higher than in capital cities, reflecting a higher share of the population in those locations. However, just as there are challenges recruiting and retaining the VET training workforce across the regions, a lack of First Nations or culturally-competent non-First Nations trainers can present a barrier to successful delivery of these programs.

First Nations people experience a slowly improving but persistent socio-economic disadvantage that is reflected in, and compounded by, educational and employment outcomes, such as lower overall employment and educational attainment, lower participation in STEM, fewer highly remunerated roles and an income gap across all skill levels. It is vital that the strengths and priorities of First Nations communities are leveraged so that they do not disproportionately bear the costs of net zero transition or miss out on its benefits. The green transition represents an opportunity to address persistent structural inequities in the energy workforce. Currently, First Nations workers are well-represented in the coal mining sector but concentrated in lower-skilled, lower-paid roles. Graduate qualifications are essential to avoid replicating this in the clean energy sector, so additional barriers to accessing tertiary education off-country will need to be addressed. First Nations people are also overrepresented in the criminal justice system, which represents a barrier to employment, both in general but also in relation to the licensed electrical and engineering occupations that will be plentiful in a greening economy. Addressing this will require reconsideration of eligibility requirements for First Nations workers for holding these licensed trades and professions.

First Nations employment is high in, and critical to, the carbon lifecycle workforce, encompassing forestry, the circular economy, carbon capture and living biomass. Restoration of country is a critical step in the decommissioning of mine sites, suggesting a future workforce need and opportunity relevant to the Lithgow region.

Women

Many industries and occupations in Australia are highly and persistently segregated by gender. This means that more than half of Australia's workforce is employed in industries where most employees are either male or female. This issue will have an impact on Lithgow's economic transition for a number of reasons.

Gendered occupations and industries are more likely to be in skills shortage. Most occupations currently in skills shortage have a gendered workforce, according to recent analysis. (JSA

2024a). Regional and remote areas, with lower population density, tend to have more occupational gender segregation than cities (JSA 2024d). Opportunities in the Lithgow labour market are currently dominated by the Mining and Health Care & Social Services sectors, both of which are highly gender segregated (nationally, the Mining workforce is 79% male and the Health Care & Social Assistance workforce is 77% female) (JSA Industry Profile 2024).

Unless effective measures are taken to address it, occupational gender segregation presents two risks in the emerging economy:

- Women may miss out on the economic growth created by a greening economy. The current clean energy workforce in Australia is predominantly male, and while most jobs lost in fossil fuels will be male-dominated, most new jobs in the clean energy sector will also fit the characteristics of traditionally male jobs (Strietska-Ilina & Mahmud 2019). Gender segregation is an underlying cause of the pay gap, which is persistent in occupations likely to grow in a green transition, such as Technicians and Trades Workers (27.5% gap), Labourers (14.9% gap) and Machinery Operators and Drivers (both 13.5% gap). This is reflected in the VET system, where most of the students in training that leads to higher-paying occupations are male and most of the students in training that leads to lower-paying occupations are female (Skills and Workforce Ministerial Council 2024). Women are also underrepresented in higher-paying leadership roles.
- Given the projected shortages in so many of the technical skills required for the green transition, increasing the participation of women in male-dominated occupations is essential for meeting the skills needs of a growing green economy. Commencements for many of the qualifications critical to the clean energy sector are highly gender-skewed. For example, males currently account for 94% of electrician apprenticeship commencements and 93% of Electrotechnology Engineering commencements (JSA 2023b).

However, numerous barriers currently exist for women who wish to enter male-dominated trades or engineering roles, including:

- Inflexible work arrangements, low pay and inadequate support and on-site amenities for women.
- Employer discrimination, such as the perception that women lack the physical strength needed for manual trades.
- Poor workplace safety including shockingly high levels of sexual harassment and a lack of mechanisms for addressing this. 71% of women in the energy sector have experienced workplace sexual harassment in the last five years, making it among the most unsafe sectors for working women (Teh et al 2022).
- Cultural norms both in and outside industries, including a lack of visible role models, family attitudes and advice from educators, mean that many young women don't see a viable career in these areas. Within industry, women report having less access to career advancement, pay rises or mentoring. Without a critical mass of women and girls in training, in the workplace or guiding other women through training and career choices, there is a lack of peer support and difficulty effecting cultural change.

Importantly, issues around occupational gender segregation are complex and have impacts beyond male-dominated workforces. At the same time as many men are losing their jobs in the fossil fuel industry, feminised sectors such as Health Care & Social Assistance, where positions

like Personal Care Assistants are in high demand but mostly occupied by women, are experiencing critical shortages. Men leaving male-dominated industries characterised by higher pay and masculine cultures may not readily take advantage of these local job opportunities, however, where they may experience stigma, lower pay and worse working conditions than they are accustomed to, even though (white) men joining feminised industries tend to advance in their careers more quickly due to gender bias in their favour, a phenomenon known as the 'glass escalator'. (JSA 2023b) Women leaving the coal industry may find themselves constrained in their work choices and pay, as might women looking to alter their work arrangements in response to a male partner losing a coal industry job. These are all structural factors that will play a role in shaping the choices and pathways of individuals and their households as the Lithgow community navigates the labour market post-closure.

Mature age workers

Outcomes for workers aged 55 and over following plant or industry closure have been shown in Australia to be closely related to asset wealth, specifically home ownership. Many workers who have had long, stable careers in well-paid industries have accumulated housing wealth and security. Those who have not paid off their mortgages are sometimes able to use large redundancy payments to achieve this, and many then seek early retirement. In a relatively small regional labour market, plant closure therefore carries considerable risk of a loss of important skills and experience.

Conversely, older workers with less stable career histories, who do not own significant assets such as housing, are more vulnerable to financial insecurity and poor wellbeing post-closure. These workers need employment and can find themselves navigating a labour market characterised by precarious and low-paid work as well as discriminatory attitudes. Older workers are at risk of longer periods of unemployment as they find it harder to find a new job after becoming unemployed. Many older workers experience persistent rejection when applying for jobs and are often told they are too experienced or overqualified for roles. This is confirmed by employers as a common reason for a decision not to employ an older applicant, along with out-of-date skills or concerns about health and fitness or their match for the existing workplace culture, which may be dominated by younger employees. Some hiring managers express reluctance to hire staff older than they are. Concerns about retirement age and the potential for professional development have also been cited. Indeed, it is accepted among some HR professionals that older people are not readily considered by employers, who advise older applicants to hide their age on applications. However, this cannot overcome discrimination at interview stage (AHRC 2016).

Around a fifth of people aged 65 and older would like to work but have stopped looking for employment due to these persistent barriers. Older workers may also be disincentivised from working by rules regarding how much they can earn while in receipt of the pension (JSA 2024c).

Impacts of plant closure on older workers and on the labour force are important considerations for transitioning regions. Regions with an older demographic may feel the impacts of closure more acutely if those with needed skills are lost from the workforce. Older workers bring many recognised benefits to workplaces, including their experience and skills, a strong work ethic and positive attitude towards work and their peers. One recognised strategy for attracting and supporting older workers is the provision of flexible and part time hours and the option to work from home (JSA 2024c).

Youth

Young people are particularly vulnerable in the labour market, for a range of reasons. Many young people lack the work experience that employers require and/or practical, job-specific skills, even when they have a qualification. Young people are often employed in jobs with more precarious working conditions, such as low pay, part-time or casual hours and fewer benefits. These roles often lack opportunities for professional development and career advancement. This can be exacerbated by a lack of professional connections and mentors to help them find job opportunities, secure stable employment and make the right career choices. Younger workers are even more vulnerable during economic downturns, when employers are likely to prioritise more experienced workers in a competitive job market. The automation of lower-skilled jobs also affects younger people for whom these might previously have been entry-level positions and an opportunity to gain foundational skills in their chosen field of work.

For young people in the regions, these issues are compounded by a lower number and variety of job opportunities. Many regions experience seasonal fluctuations in employment that can particularly affect lower-skilled jobs available to young workers, such as in the agricultural or tourism sectors. Regional areas might have a limited number of industries or businesses, constraining professional networks and the chance for young people employed in the regions to gain a breadth or depth of experience and skills. This can limit their career prospects, especially in sectors like technology, creative industries and some specialised professional fields, which tend to be clustered in urban areas, and also career progression.

In regional areas, limited transport options can also present a barrier to employment and this increases with remoteness from employment hubs. The same can be said of training opportunities. While there are now many online training offerings from tertiary providers, as well as opportunities for hybrid or remote working, many regional areas still face the ‘digital divide’, with slower internet speeds and less access to technology. These issues can lead to out-migration to urban areas with thicker labour markets, where young people might also be attracted by more social opportunity and higher wages. The wage gap between urban and regional areas can then discourage young people from returning.

While all these challenges are real, young people are well-placed to find new opportunity in a changing economy. They do not have to reskill from existing, possibly well-established career paths, but can anticipate change and plan for careers accordingly, supported by appropriate training, mentorship and career guidance. The greening economy offers many choices for youth, especially in sectors related to renewable energy, sustainability and environmental conservation, as innovators and entrepreneurs, and in research and development. Areas where young people can expect to find career opportunities include:

- Technical trades, especially electrical trades
- Green energy and climate tech startups
- Sustainable farming
- Agritech
- Circular economy
- Environmental conservation and land management
- Sustainable transport
- Sustainable architecture and construction

- Smart cities and green urban planning
- Environmental education and advocacy
- Green finance and investments
- Ecotourism

By pursuing careers in areas like these, young people can both benefit from and play a crucial role in driving Australia's transition to a greener, more sustainable economy, and in the transition of their regions to a prosperous future.

4.5.7 Lithgow's workforce and wider community

The ABS Census of Population and Housing provides an important set of insights into the changing nature of the labour market in Lithgow. The 2021 Census is the most recently released data, with preliminary results from next year's Census likely to be available from 2027.

The most recent Census provides important insights into the number of hours worked in Lithgow, the employment status of households, the balance between full time and part time work by gender, educational attainment, as well as income and industry. Each of these will be discussed in turn.

Table 3. Employment, hours worked, City of Lithgow, 2021 Census

<i>Employed people aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
0 hours (away from work)	586	7.1	331,611	9	787,382	6.5
1-19 hours	1,219	14.7	504,158	13.7	1,681,120	14
20-29 hours	1,005	12.1	400,415	10.9	1,373,403	11.4
30-34 hours	608	7.3	247,088	6.7	908,031	7.5
35-39 hours	1,679	20.2	751,277	20.4	2,487,056	20.6
40-44 hours	1,658	20	768,161	20.9	2,448,402	20.3
45 hours or more	1,387	16.7	617,176	16.8	2,159,645	17.9

Note: Records the number of hours worked in all jobs held during the week before Census Night for employed people aged 15 years and over. This excludes any time off but includes any overtime or extra time worked.

Table based on place of usual residence

As Table 3 demonstrates, hours worked in Lithgow in 2021 closely mirrored Australia-wide patterns. There was a slightly higher percentage of workers away from work entirely (and this may well have been a consequence of Covid-19) and a slightly lower percentage working more than 45 hours per week. But overall, there was a very close fit between local patterns of work and the national picture.

Table 4. Employment status of couple families, City of Lithgow, 2021 Census

<i>Couple families where parents or partners were aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
Both employed, worked full-time	702	16.4	382,754	21.7	1,234,626	22.2
Both employed, worked part-time	169	4	83,120	4.7	264,182	4.8
One employed full-time, one part-time	876	20.5	320,350	18.2	1,155,042	20.8
One employed full-time, other not working	456	10.7	217,325	12.3	692,497	12.5
One employed part-time, other not working	292	6.8	111,828	6.3	339,960	6.1
Both not working	1,218	28.5	403,262	22.9	1,163,744	21
Other	337	7.9	181,101	10.3	449,640	8.1
Labour force status not stated	226	5.3	64,433	3.7	253,286	4.6

Note: The ABS Labour Force Survey provides the official estimates of Australia's labour force. More information is provided in Comparing 2021 Census and Labour Force Survey.

Table based on place of enumeration

Table 4 provides data on the employment status of couple households with one or more children. It is clear from these data that there is a significantly lower percentage of two adult families in which both work when compared with both NSW and Australia as a whole. The percentage where both adults were not working was also substantially higher than for the nation or all of NSW, and this may reflect the age of the population (with older households less likely to work, or the impact of pandemic, with those working in factories or mines unable to work from home). Other patterns of employment arrangements – for example, one parent working the other not – broadly mirrored national and state-wide trends.

Further insights into labour force participation are provided in Table 5. Once again it is evident that the broad pattern of employment and workforce arrangements in Lithgow mirrors national and whole-of-state trends.

Table 5. Employment status, City of Lithgow. 2021 Census

<i>People who reported being in the labour force, aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
Worked full-time	4,718	53.7	2,136,610	55.2	7,095,103	55.9
Worked part-time	2,829	32.2	1,151,660	29.7	3,962,550	31.2
Away from work (a)	753	8.6	395,888	10.2	991,758	7.8
Unemployed	483	5.5	189,852	4.9	646,442	5.1

Note 1: Calculated percentages represent a proportion of people aged 15 and over who reported being in the labour force in the area.

Note 2: The ABS Labour Force Survey provides the official estimates of Australia's labour force. More information is provided in Comparing 2021 Census and Labour Force Survey.

(a) Counts employed people who reported 0 hours of work the week before the Census or did not state their hours of work.

Table based on place of usual residence

There are considerable differences between Lithgow, NSW and the Australian population as a whole with respect to the level of educational attainment (Table 6). Residents of Lithgow were much less likely to hold a Bachelor's degree or above than for the state or the nation. Indeed the percentage of degree holders in Lithgow was less than half the national or state-wide rate. Lithgow also lagged its comparators with respect to diplomas and advanced diplomas, but was relatively stronger with respect to trade qualifications – specifically certificates at levels 3 and 4.

As might be expected, fewer individuals had completed Year 12 when compared with the population broadly, with a substantially higher percentage of the population leaving high school with Year 10 qualifications. Compared to national and state averages, a much higher percentage of Lithgow residents reported leaving school at Year 9 or earlier.

The vocational orientation of education and skills attainment in Lithgow stands out clearly in the data from Lithgow, and may hold significant implications for the workforce as it transitions to a new future.

Table 6. Level of highest educational attainment, City of Lithgow, 2021 Census

<i>People aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
Bachelor Degree level and above	2,023	11.6	1,838,502	27.8	5,464,631	26.3
Advanced Diploma and Diploma level	1,314	7.5	616,322	9.3	1,946,738	9.4
Certificate level IV	731	4.2	216,768	3.3	719,425	3.5
Certificate level III	3,191	18.3	771,009	11.7	2,617,766	12.6
Year 12	1,851	10.6	954,987	14.5	3,104,116	14.9
Year 11	672	3.9	212,538	3.2	958,803	4.6
Year 10	2,954	17	698,390	10.6	2,086,306	10
Certificate level II	29	0.2	4,703	0.1	13,687	0.1
Certificate level I	0	0	764	0	2,614	0
Year 9 or below	2,008	11.5	487,855	7.4	1,490,444	7.2
Inadequately described	435	2.5	184,252	2.8	506,259	2.4
No educational attainment	41	0.2	64,827	1	175,844	0.8
Not stated	2,172	12.5	549,965	8.3	1,694,773	8.2

Table based on place of usual residence

Table 7. Industry of employment, top responses, City of Lithgow, 2021 Census

<i>Employed people aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
Coal Mining	577	6.9	20,960	0.6	49,616	0.4
Aged Care Residential Services	281	3.4	80,859	2.2	258,274	2.1
Supermarket and Grocery Stores	259	3.1	92,329	2.5	299,810	2.5
State Government Administration	251	3	55,670	1.5	174,336	1.4
Local Government Administration	239	2.9	47,068	1.3	156,402	1.3

Table based on place of usual residence

Table 7 presents data on the most frequently reported industry of employment in Lithgow, with comparator rates then provided for NSW and Australia. It is evident in these data that coal mining is much over-represented in Lithgow relative to the wider economy, and that other employment is dominated by relatively low paying service employment – aged care provision and low-end retail work. Public administration is clearly a disproportionately large industry

relative to national benchmarks, and while it is variable, it is reasonable to expect that much of that employment will be relatively low waged.

These industry data need to be considered against the information on educational attainment set out in Table 6. There may be a poor match between the skills held by the labour force and the major employers, outside coal mining.

It is also clear (Table 8) that median wages are substantially lower in Lithgow relative to NSW and Australia, approximately 25 percentage points below the national and state-wide medians. This pattern is evident across personal, family and household income, suggesting a potentially more vulnerable workforce.

Table 8. Median weekly incomes, City of Lithgow, 2021 Census						
<i>People aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
Personal (b)	\$632	N/A	\$813	N/A	\$805	N/A
Family (c)	\$1,658	N/A	\$2,185	N/A	\$2,120	N/A
Household (d)	\$1,196	N/A	\$1,829	N/A	\$1,746	N/A

(a) Incomes are collected in ranges. The medians are then calculated using information from the Survey of Income and Housing.

(b) Excludes people aged 15 years and over who did not state their income.

(c) Excludes families where at least one family member aged 15 years and over did not state their income.

(d) Excludes households where at least one household member aged 15 years and over did not state their income.

Personal income data is based on place of usual residence

Family and household income data is based on place of enumeration

Data on occupation are provided in Table 9, and as expected skilled trades, and personal and community services are over-represented relative to national benchmarks, while professional employment is less than half the state-wide average. Labourers, as well as machinery operators and drivers are also more frequently enumerated than expected based on state-wide trends. Overall, the occupational data speaks to a workforce that works with its hands rather than its head, and in relatively low paid roles.

This risk of disadvantage in Lithgow is further exacerbated by the relatively low rate of engagement in paid work (Table 10) where there is an eight percentage point difference between the City and the state-wide rate.

Table 9. Occupation, Most Frequent Responses, City of Lithgow, 2021 Census

<i>Employed people aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
Technicians and Trades Workers	1,377	16.6	436,589	11.9	1,554,313	12.9
Community and Personal Service Workers	1,161	14	390,779	10.6	1,382,205	11.5
Professionals	1,112	13.4	952,131	25.8	2,886,921	24
Clerical and Administrative Workers	1,068	12.9	480,612	13	1,525,311	12.7
Labourers	945	11.4	300,966	8.2	1,086,120	9
Machinery Operators and Drivers	936	11.3	222,186	6	755,863	6.3
Managers	935	11.3	536,820	14.6	1,645,769	13.7
Sales Workers	629	7.6	294,889	8	986,433	8.2

Table based on place of usual residence

Table 10. Participation in the labour force, City of Lithgow, 2021 Census

<i>People aged 15 years and over</i>	Lithgow	% Lithgow	New South Wales	% New South Wales	Australia	% Australia
In the labour force	8,790	50.4	3,874,012	58.7	12,695,853	61.1
Not in the labour force	7,389	42.4	2,341,417	35.5	6,888,081	33.1
Not stated	1,245	7.1	386,728	5.9	1,200,851	5.8

Note 1: Calculated percentages represent a proportion of people aged 15 and over in the area.

Note 2: The ABS Labour Force Survey provides the official estimates of Australia's labour force. More information is provided in Comparing 2021 Census and Labour Force Survey.

Table based on place of usual residence

Lithgow has a population structure, workforce and economy that is relatively stable and could be interpreted as lacking dynamism. If we look back 30 years and compare key demographic and workforce indicators with 2021, a high degree of convergence is evident.

Beer et al (1994) undertook case study analysis of Lithgow as part of a wider study into regional cities across Australia and found:

- Lithgow's total population at the 1991 Census stood at 12,000 persons, which suggests there has been no growth over the past three decades;
- the City's population structure in 1991 was dominated by males aged 30–34 and females 25–29, with relatively smaller numbers of children and a relatively small cohort of older residents.
 - Lithgow's population appears to have aged in place, and the pattern of young people leaving Lithgow has persisted;
- The 1991 Census data showed that the City's workforce was dominated by coal mining and manufacturing;
 - Coal mining remained the single largest employer at the 2021 Census, but residential aged care and retailing had risen to the second and third most substantial employers;
 - Several of the major employers documented by Beer et al (1994) appear to have left Lithgow over the intervening three decades;
 - Tertiary sector employment (eg financial and professional services) was largely absent from Lithgow in 1991 and remained a significant gap in the workforce and economic activity at the 2021 Census;
 - Beer et al (1994) noted that tourism was a small industry in 1994, and it remains an industry of relatively modest scale to date, despite the considerable potential for nature and experience based visitation;
- At the 1991 Census there were 4,950 people in the work force, compared with 5,297 at the 1986 Census and 5,674 persons at the 1981 Census. This contraction was notable at that time, and there were clear parallels between the decline in population in Lithgow and falls in the size of the work force.
 - As noted above, the workforce has now grown to over 8,000 persons, which much of that expansion taking place through increased female participation in the formal workforce and higher rates of casual/part time employment.
- Substantial public sector employment was evident in the 1991 Census data for Lithgow, and again in the 2021 Census;
- In 1991 the work force of Lithgow had one of the highest rates of skilled trade qualifications in Australia, but relatively low levels of tertiary education.
 - This trend remains evident to this day;
 - In addition, in 1991 there was a notable gap between the qualifications held by men and women;
- In 1991 Lithgow had a relatively low unemployment rate compared with Australia as a whole (noting that 1991 was a recession) but 2021 the unemployment rate in the City was slightly above the national figure;
- When compared with the national average, Lithgow's population exhibited lower rates of formal education at both the 1991 and 2021 Censuses; and,
- Household incomes were relatively low when compared with national averages in both 1991 and 2021.

4.5.8 Manufacturing capability in Lithgow

The strong base of manufacturing and technical skills in Lithgow is an asset in relation to potential growth, investment and diversification in the manufacturing sector. The LEEP provides an overview of the sector and its potential, with a focus on the expansion of existing strengths such as advanced component manufacturing and metal fabrication, renewable energy components and clean technology innovation, and transport equipment manufacturing. Part of this landscape of potential is the proposed Greenspot industrial development at the old Wallerawang power station site and the possibility for it to expand manufacturing in the region. Fully developed, Greenspot hopes to host around 3,000 jobs, mostly in large-footprint industrial businesses.



However, manufacturing – particularly as it becomes more technology-driven – relies on a cluster of specialist skills in the region. This is a critical juncture for Lithgow; although investment drives jobs growth and can attract people to the region, attracting investment is also to some extent dependent on existing local workforce capability. In terms of workforce planning, both for transition from the mines and power station, and for those emerging into the workforce during and beyond the transition period, there is still much uncertainty about skills needs. Lithgow can focus now on building the core skills needed for new manufacturing jobs as well as a degree of responsiveness into its training and education pathways.

A number of businesses manufacture a wide range of products in Lithgow, including confectionery at the Ferrero Australia factory, which employs around 100 people. However, the most promising growth area is in high-skilled manufacturing, for which Lithgow has a solid base. Our interviews highlighted the way that manufacturing is becoming increasingly specialised and technology-based, for example in robotics, CNC machining and 3D printing. The Thales workforce is trained in high-skilled composite materials manufacturing and its capability

extends beyond small arms to anything mechanical, e.g. renewables components such as the motors that drive solar panels. Thales fitter-machinists are trained to an advanced level, including in robotics, as well as secondary niche skills such as chemistry and metal plating. Although Thales apprentices begin in trades, when fully trained their skillset ‘blurs the boundaries between trades and engineering – it’s advanced manufacturing with a human in the loop.’ Thales has capacity to scale up its manufacturing operation and has recently made significant investment in new machinery capability in advanced and composite metals fabrication.



The rate of technological change in the industrial sector will be an increasing challenge for workforce transition. As manufacturers continue to upgrade their processes and equipment, the skills gap may grow for technical mines and power plant workers looking to work in the manufacturing sector.

Another issue facing the sector is Lithgow is workforce retention. Highly-skilled workers who have been trained in the workplace can take many years to reach full skill and productivity. It is vital that Lithgow can provide career pathways in the region to avoid attrition to other labour markets. Skilled trades workers may be drawn out of the region permanently, as they fill skills shortages elsewhere, or temporarily, as workers undertake contract employment on projects such as the construction of renewables infrastructure in other regional and remote locations.

However, some manufacturers in the Lithgow region highlighted their need now for a mix of lower-level skills alongside this growing need for tech-based skills, including for harder manual work that requires technical experience, or labourers with only basic skills. One manufacturer said although their process was becoming steadily more IT dependent, they currently manage this by buying in specialist IT help as needed from within the region.

On-the-job training was preferred and being successfully rolled out by most manufacturers and large trades employers we interviewed, including for apprentices and regardless of the skill level being acquired. This model is common in Lithgow because it is seen to produce work-ready graduates with hands-on technical experience, the maturity required for the world of work, and skills shaped to employer needs and standards. As one interviewee described:

“Our pathways are internal. Apprentices do a Cert III in Electrotechnology. They can do an advanced diploma from a trade base without going to university. It’s nationally accredited and they get paid while they do it. They gain the advantage of a depth of functional knowledge over other graduates.”

The LEEP notes the potential of a training and advanced manufacturing precinct at the Thales site. The Thales facility is unique in Australia in its capability, and the training potential of both its infrastructure and experienced workforce is currently underutilised. In partnership with universities, and with the appropriate government funding, engineering students could complete placements, gain work experience or conduct postgraduate research. Thales could also train machinists for other sites that do not have the capacity to train.

4.5.9 Lithgow’s training and education facilities

Lithgow is home to one regional university campus (University of Notre Dame), a TAFE campus and two high schools (Lithgow High School, La Salle Academy) plus a K–12 school in nearby Portland (Portland Central School). Some Registered Training Organisations (RTOs) also operate in Lithgow. The Western Sydney University (WSU) campus in Lithgow closed permanently in June 2025. Its campus is in good condition and likely to fall under the control of Lithgow City Council. It has large facilities (see below) as well as numerous classrooms, consulting rooms and some accommodation for visitors.



Interviews and site tours have shown that Lithgow has a wide variety of training facilities – both generalist and specialised. Overall, it appears that these facilities are somewhat underutilised and that to activate a wider range of training, a mix of funding and student interest is needed.

There are some large training facilities that are underutilised, for example:

- TAFE Notre Dame and the former WSU building have nursing simulation rooms which are underutilised; and,
- TAFE Lithgow High School and the former WSU building have commercial cookery kitchens which are underutilised.

While the facilities are not fully exploited, each of these providers reported periodic difficulties in attracting sufficient student numbers in courses aligned with existing and growing employment opportunities. For example, data analysis and interviews showed shortages of tradespeople, nurses and care workers, but training providers report low student enrolment and completion numbers. WSU reported that its initial training offerings in Lithgow in business services, nursing and engineering did not meet enrolment expectations. Facilities are available, but the key concern for Lithgow's labour market transformation is building demand for training and support through to completion in these future-focused careers.

Alongside the student numbers constraint, funding also needs to be secured. TAFE reports that it has the ability to respond to changing industry needs, but that funding to a campus to cover new programs needs to be provided by the State Government through TAFE NSW. Notre Dame has also reported that it is open to working with others in the education and training system to expand its offerings in Lithgow, particularly into nursing.

The LEEP explores employment growth potential in Lithgow's traditional industries – the *industrials* of utilities and manufacturing – and site assessments have demonstrated the strong training base in this sector. But the LEEP also highlights the expected growth in tourism, health and business services, and site assessments have shown that there are limited post-school offerings in Lithgow itself to acquire qualifications in these 'new economy' industries. This means that there are very limited opportunities for residents to gain these qualifications *in Lithgow*. Remote learning or relocation are their main options, and both these tend to have low local retention rates. Completion rates are generally lower for fully remote learning (without local support through a study support centre) and relocation for learning often leads to people not returning once their qualification has been completed.

Among its post-school offerings, Lithgow lacks a 'soft-entry' community college or independent adult education model of delivery, in which students can undertake short courses to acquire or enhance basic skills, try out areas of interest, or build confidence before transitioning into further study. Delivery of 'bite-sized' content in an accessible, affordable context could help to improve foundational skills for local jobseekers, such as digital literacy, and could also make further qualifications appear more readily accessible to mid-career or career transitioning adults.

University of Notre Dame – Lithgow Clinical School

Notre Dame has good-quality facilities for eight fourth-year graduate students each year. It is affiliated with the University of Sydney Medical School and provides clinical placements. Most student learning time is spent with their clinical supervisor (hospital, aged care or GP).



Facilities include:

- 120 seat lecture theatre
- 3 treatment rooms for seeing patients (currently used for paediatric patients)
- Clinical simulation room with high-tech dummies for teaching
- Large meeting room
- Board room
- 4 ensuite bedrooms and a common room for students.

The Notre Dame health discipline covers medicine and nursing and it is looking to grow allied health. Notre Dame established the Lithgow Clinical School to help solve the distributional challenge of doctors and reduce metro specialisation and placements by providing practice-based pathways in regions, which it has achieved successfully elsewhere. There is potential to increase its rural footprint in nursing training and it sees its Lithgow campus as ideally placed for clinical development of graduates, with good links with the LHD and local hospital as well as Katoomba and Bathurst for placements. Its nursing offering is currently small but will start growing in 12 to 18 months. Notre Dame reports that its teaching infrastructure currently has more capacity.

In terms of promoting health careers, the Notre Dame campus has previously hosted a full-day session on health careers, which was well-attended. It reports a good relationship with Lithgow

Red Cross, local high schools and the education department. It has worked in other regional centres on engaging Year 6 students and parents in tertiary options and explored the possibility of linking with migrants in the regions, including refugees.

Interviewees in the health sector repeatedly emphasised the difficulty of filling positions, attracting people out of Sydney and the need for Lithgow to 'grow its own' health workforce. High-level skills need to be locally led and supported and educational offerings need to better match regional needs and industry profile, which is characterised by high proportions of social disadvantage, which brings chronic disease and premature death. There is a need for a higher flow of students at the hospital overall, which will require the provision of student accommodation, not just training facilities. Considerations raised include:

- a need for more student midwives
- a need for more nurse practitioners in aged care – these currently often come from nursing and midwifery, but there are challenges retraining a small workforce
- career planning opportunities for nurses, including specialised career pathways, to help stop the 'flow to shiny buildings in metro areas'
- a need for more investment in programs and facilities to support career advancement
- a need for better partnerships for health education with WSU and CSU to nurture a local medical workforce, including doctors and nurses.

There are big opportunities for research, including in health care innovations and delivery and in the health impacts of regions in transition. These can provide learning tools.

TAFE/ VET

The Lithgow TAFE campus upgraded its facilities in 2024 with investment from the NSW Government, as part of a state-wide TAFE facilities upgrade and a government strategy to meet growing demand for construction and manufacturing courses in the region. This included a workshop for carpentry apprentices and new equipment for welding and metal fabrication courses.

The Lithgow Skills Centre is a partnership between HVTC (representing Centennial), EnergyAustralia and Skillset (representing Thales) for first year trades apprentices, in which mechanical and electrical apprentices undertake a six-month training program at TAFE.

Lithgow campus facilities include:

- Carpentry Workshop
- Commercial Kitchen
- Computer Labs
- Electrotechnology Workshop
- Engineering Workshop
- Simulated Early Childhood Practice Centre
- Simulated Residential Aged Care Environment
- Training Bar
- Training Café
- Training Restaurant
- Student facilities incl. student lounge, laptop borrowing and a connected learning point

At the time of writing, TAFE NSW offers 14 courses on campus in Lithgow:

- Certificate II Career Preparation
- Certificate II Construction
- Certificate II Hospitality
- Certificate III Hospitality
- Certificate III Electrotechnology Electrician
- Certificate III Pathways to Further Study (year 11 equivalent course)
- Certificate III Career Advancement
- Certificate III Engineering Mechanical Trade
- Certificate III Carpentry
- Certificate III Individual Support (Ageing)
- Course in Skills for Further Learning and Engagement (skills in reading, communication and technology)
- Diploma Community Services
- Construction Industry White Card
- Non-Friable Asbestos Removal

A further 12 courses offer a combination of campus, online and workplace training:

- Cert II Animal Care
- Cert II Workplace Skills (Foundational)
- Cert II Aboriginal Languages for Interacting with Others (Wiradjuri)
- Cert III Engineering – Fabrication Trade (Boilermaking/welding)
- Cert III Animal Care Services
- Cert III Library and Information Services
- Cert III Early Childhood Education and Care
- Cert III School Based Education Support
- Cert IV School Based Education Support
- Cert IV Business (Administration)
- Food Safety Supervision Skill Set
- Diploma Early Childhood Education and Care

A further 3 courses offer a mix of live online classes and on-campus training:

- Provide Responsible Gambling Services
- Cert III Early Childhood Education and Care
- Cert IV Tertiary Preparation

Over 200 additional courses are available to Lithgow students in an online-only learning format, some of which offer peer connection through live classes and some of which offer an entirely flexible delivery module without scheduled class attendance. These cover a wide range of subject areas and skill levels all the way up to degree level.

Civil construction courses (machining) are very popular and oversubscribed. The Diploma of community services will run again in 2025 as it is very popular. However, enrolments are low in some courses, for various reasons. Numbers are low for the new carpentry course, which needs more marketing. There were just seven enrolments for nursing in 2024, perhaps due to duplication with other providers. The campus has a large training kitchen, but there are no commercial cookery courses due to falling student interest since Covid-19. Childcare and aged

care courses are fully online but less popular in this delivery format. TAFE reports high non-completion rates for fully online courses, particularly the self-paced ones rather than ones offering a scheduled online class component. Given the lower completion rates for fully remote learning, introduction of a wider offering of in-person courses may be necessary to meet Lithgow's future skills needs. TAFE NSW restructured in 2024, moving to a statewide, faculty-based delivery model intended to enable more efficient allocation of resources as need arises.

It is possible to rent space and facilities at the TAFE Lithgow campus, but fees are high.

The larger and more established employers in Lithgow report little trouble in securing a pipeline of apprentices and trainees, with little or no need for advertising. There is a split, however, between those employers who prefer taking Year 10 leavers and those who prefer Year 12 leavers:

“We are looking for attitude and aptitude and prefer Year 12 finishers to Year 10 as they have a bit more maturity. But they need a lot more STEM exposure and experience at school than they are getting in Lithgow.”

“Some employers are not interested in school-based apprenticeships – they want the apprentices on site early. School-based apprenticeships work better with smaller employers who don’t need the apprentices onsite all the time.”

“We take apprentices every year – we like to grow our own workforce. ... We don’t mind taking people from Year 10 compared with Year 12. If school doesn’t suit them, that’s okay by us. Some of our apprentices go on to do degrees.”

There is awareness of the difficulties that flow from encouraging all students to go through to Year 12, even those committed to doing a trade apprenticeship. Lithgow High School has a ‘middle road’ designed to bridge Year 10 leavers into a Year 11 completion which combines a compressed HSC along with a head start on an apprenticeship. La Salle too has developed a non-ATAR pathway in Years 11 and 12, including school-based apprenticeships and traineeships. A wider implication is that many Year 7 students start high school expecting to finish at Year 10 and are not really engaged in learning at school.

The push for all students to complete Year 12 is not working for those that are committed to an apprenticeship. There is a structural problem with pushing young people to start apprenticeships after Year 12 in that wages are very low in the first year compared with the needs of an 18-year-old first-year apprentice who is likely to be driving, socialising as an adult and may well be wanting to live out of home. Starting at 16 without these expenses was a justification for the low starting wage, but is creating a disincentive for older starters.

While some employers prefer to train trades apprentices onsite, many trades are also undertaken at TAFE, which offers electrical and mechanical trades on the Lithgow campus. TAFE has successfully partnered with major industrial employers in the area. However, employers were looking for some improvements in the programs they were using, namely:

- There were concerns from employers about work readiness of TAFE graduates and their ability to shift from a student to a worker mentality, in terms of issues like punctuality, problem solving and a 'whole of job' ethos. The result is a perceived gap in 'employability' between TAFE graduates and those who have been employer-trained.
- Employers felt that TAFE needs better facilities. There is no tech base at Lithgow campus and TAFE has struggled to be resourced properly for trades and equipment.
- Employers were worried about the loss of some on-the-job training modules due to safety issues, as it reduced the quality of the training.

For other kinds of training offered by TAFE, employers who have been otherwise happy with TAFE outcomes see gaps in the local training offerings, such as welding (currently offered in Mount Druitt or Orange) and forklift tickets (currently obtained in Penrith by some). TAFE has funding for heavy industries training in Illawarra. However, interviewees reported that it was expensive to use TAFE compared to RTOs and that they were overly 'bureaucratic', making them difficult to work with.

Two other RTOs are known to operate in Lithgow. Verto conducts outreach to schools, which comprises participation in careers days and information about VET qualifications and pathways. Verto offers a 'Practical Skills for Work' program for HSC graduates covering six qualifications: first aid, RSA, RSG, food hygiene, white card, café skills. Verto offers three courses in Lithgow (RSA, RCG and Advanced Responsible Conduct of Gambling) and a wide variety of courses online. Verto is looking to expand the range of face-to-face training, especially for carer qualifications.

Rail services company SSR owns an RTO called National Rail Training, which delivers a two-year traineeship in train driving. The course is highly practical and attracts generally older workers with trades qualifications, such as ex-diesel fitters and mechanics. The course is structured to appeal to mid-career transitions as students are paid to learn, currently around \$75,000 per year. The program currently has 80 trainees, 4 or 5 of whom are from Lithgow.

High schools

There is a significant educational disadvantage in Lithgow, stemming from high levels of socio-economic disadvantage. Interviews reported that 43% of students at Lithgow High School (LHS) are in the lowest socio-economic quartile and another 20% are in the next quartile. Students from higher socio-economic backgrounds often attend private school outside of Lithgow.

Interviewees noted challenges meeting the needs of these cohorts. Smaller class sizes can make streaming difficult, although LHS has implemented ability grouping in core subjects, with benefits for all students. Interviewees reported challenges maintaining a breadth of subjects with lower student numbers. There is limited access in Lithgow to specialist support and diagnoses for students with higher needs, such as paediatric specialists.

Secondary educational attainment in Lithgow is strongly shaped by its culture as a 'trades town' and the expectation of mining jobs. There are low levels of aspiration for university education and careers requiring university-acquired qualifications, with continuation at school beyond Year 10 at around 50% and well below the NSW regional average. However, Lithgow's secondary schools are taking positive steps to address these issues and appear highly attuned to the

needs of students and focused on the future of the town. Many interviewees expressed support for and recognition of their efforts and agreed that schools will play a vital role in reshaping the culture of Lithgow with regard to work and careers as transition approaches.



La Salle Academy, Lithgow

Both LHS and La Salle Academy have developed alternative pathways for students to reduce the numbers leaving after Year 10 to take up apprenticeships and traineeships. LHS offers a condensed vocational program that delivers a Cert III and HSC at the end of Year 11. It is also possible for RTOs to run in-class programs through teachers so that students can get accreditation. LHS has also developed a non-ATAR program in Year 11 and 12. La Salle now offers three pathways for students through to year 12 – a work pathway, a university pathway and a trades pathway. It is acknowledged that running Certificate courses in schools impacts on TAFE enrolments.

There are numerous other initiatives. A large proportion of LHS students are First Nations, and staff at LHS are accessing Wiradjuri language and culture programs through CSU. LHS teachers run the STEM program at the Adaptive Skills Hub, which students from both schools attend. La Salle facilitates student attendance at job fairs, work placements, speed dating events with industry, mock interviews and other hands-on engagement activities, including taking the students to software developer Atlassian in Sydney each year to hear about alternative career pathways and be exposed to a different working environment. Late in 2024, LHS was nominated by the NSW Dept of Education to deliver its High Potential and Gifted Education (HPGE) program, which will result in facility upgrades and other supports funded by a \$6m grant.

Current LHS facilities include:

- STEM labs with 3D printers, large object scanner
- Two large kitchens
- High-tech farm bot to teach automated farming
- Augmented reality welders for training
- Harvard University-supported neuro feedback equipment to help retrain troubled brains
- Wellbeing hub and all-day breakfast

- Adventure sports on school grounds: mountain biking, bouldering and abseiling
- Agricultural program with variety of animals

In addition, an expanded theatre and new seating is on order, and the school is seeking funding for three high-needs tutorial rooms for highly disruptive students.

La Salle has a trade training centre offering woodwork and metal work. All students try these in Year 7 and 8. Metal work, woodwork and graphics can be chosen as electives from Years 9 to 12. The school has a five-year plan to offer quality hospitality training, a canteen and an innovation hub. A theatre and dance/rehearsal space with sound studio are coming in 2025.

Adaptive Skills Hub / STEM programs

Most people interviewed for this project – both educators and employers – highlighted the growing value of STEM skills in the Lithgow labour market. Any initiatives to increase this capacity would align with state and Commonwealth policy goals, and as such, may be eligible to secure further and ongoing government funding. The Adaptive Skills Network, which opened late in 2024, is a collaboration delivering a special program for 38 high school students at the Adaptive Skills Hub. This is based around drone building and programming and will lead to project management competencies. The curriculum was developed by LHS staff and funded by NSW DET.

Most employers interviewed commented that they need more STEM competencies in their workforce and were supportive of STEM programs in Lithgow to promote interest and skills in IT, robotics and digital technologies. Any STEM program should be tailored to community needs, and highlighting the practical relevance of skills and building a narrative about future jobs should be part of it. There are a variety of ways in which it could address short and long term needs.

“There is much more to health than nursing.”

Building STEM confidence and interest is a foundation for a variety of careers, not just in the industrial sector, as already noted. Digital skills in health will be critical in managing future needs—for example, building capability in assistive technology and smart homes could help extend independent living. Specialties in this area, such as STEM/technology training facilities that relate to health as well as back to old industrial strengths, could bring people to Lithgow.

Finally, it was noted that a focus on STEM should also acknowledge the need for better basic digital literacy in Lithgow’s workforce, which is lacking, e.g. basic software skills for everyday tasks in the workplace.

Recommendations: Addressing two pressing constraints

1. Building student demand and local learning pathways

“We’re not good at creating career pathways. TAFE and employment agencies need to be more creative. We are still cannibalising staff from other places and countries. These are structural problems, not provider problems.”

Employers and education providers expressed openness to collaboration to improve work experience exposure, local career pathways, support for transition and increasing the expectation and importance of delivering locally. Many in the health sector are already collaborating, showing the possibilities in this space, for example:

- Notre Dame medical students work with the doctors at the private hospital
- The private hospital participates in Year 10 and Year 12 Career Days and offers Year 10 work experience
- The public hospital is part of the Health Inspirations program for Year 11 students, which brings senior students in for 2-3 days to experience jobs in health, allied health and administration, including inpatient services for disadvantaged young people.
- High School principals are on the Notre Dame advisory board, enabling them to work together on recruiting into medical school.
- Three Trees runs a Community Services Expo with schools and ITAB, where students try different things and talk with peers who work in the sector.
- Westfund provides dental and optical checks in schools and uses the opportunity to talk to students about potential health careers. This visibility in the school has been quite good in attracting dental assistants; students may not otherwise know these opportunities exist.
- Notre Dame works with high school students in various ways, including inviting them to events on campus, facilitating meeting with young medical students to talk about pathways and involving students as actors (patients) for training exercises.

Barriers:

The Lithgow Notre Dame facility is training some eight graduate medical students each year, most of who go on to practice in regional settings, often as rural generalist GPs. The limiting factor for these student numbers is the availability of clinical supervisors, so it is critical for this learning asset that the stock of experienced medicos in and around Lithgow is maintained.

While the Health Inspirations program has been good for promoting nursing and allied health, few Lithgow secondary students aspire to higher-skilled medical careers, e.g. doctors and dentists. Better targets and strategies are needed to engage high school students, including earlier exposure to health careers. The vital role of work experience placements was noted, but these have dropped off since Covid-19. The Health Inspirations program could run two or three times a year, rather than once, to help address this. A reluctance among both students and their parents to undertake work experience in aged care was noted.

2. Funding and collaboration

Interviews revealed a willingness among different parts of Lithgow's learning system to work together. We recommended leveraging this willingness in order to bring a wider array of high-quality course options to Lithgow.

TAFE is an important part of the vocational learning system and has capacity to work with other partners, especially partnering to deliver specific training under a model in which TAFE alone doesn't cover all aspects. TAFE can be funded for special projects and can bring together the right training providers in a locality, although this is not part of TAFE's usual operations. Core funding for TAFE's courses come from the NSW Government – either TAFE NSW Training

Services or other agencies with a particular interest in training provision for their needs. If funding is available TAFE can deliver short courses even with small numbers.

TAFE can support Lithgow's VET learning needs into the future, but first it needs to demonstrate need and future employment numbers. So it is important for Lithgow TAFE to be able to make a strong business case for funding any desired new training. To that end, Lithgow TAFE needs a better understanding of the future to deliver what's needed. It needs good quality information on where the workforce is going from the perspectives of both prospective students and employers.

A Lithgow Workforce Forum is recommended in the action plans accompanying this report, as a mechanism for strengthening relationships between training providers, potential students (via schools) and employers. Stronger relationships across the learning system will help develop the evidence base for additional training courses by validating demand from both students and from employers.

4.5.10 Current workforce needs in Lithgow

Trends

Top occupations in Lithgow

Over the last 20 years there have been big changes in the mix of occupations of people working in Lithgow. Lithgow is no longer the trades town it used to be – trade occupations are still very important, but there has been much more growth in other occupations. The scale of change can be seen in the table below which shows the number of people working in Lithgow in each occupation in 2021, the growth since 2006 and recent trends in job vacancies in the wider Central West Labour Market Region. To highlight the changing mix of occupations for jobs located in Lithgow itself, the data uses the number of jobs located in Lithgow LGA rather than the jobs done by Lithgow residents.



The table shows that the biggest growth has been in services industries, especially Community and Personal Services Workers (job numbers up 41% over 15 years), Managers (up 26%) and Professionals (up 25%).

Community and Personal Service Workers assist Health Professionals in the provision of patient care, provide information and support on a range of social welfare matters, and provide other services in the areas of aged care and childcare, education support, hospitality, defence, policing and emergency services, security, travel and tourism, fitness, sports and personal services.

Managers plan, organise, direct, control, coordinate and review the operations of government, commercial, agricultural, industrial, non-profit and other organisations.

Professionals perform analytical, conceptual and creative tasks through the application of theoretical knowledge and experience in the fields of the arts, media, business, design, engineering, the physical and life sciences, transport, education, health, information and communication technology, the law, social sciences and social welfare.

Trade employment also grew over this period, though at a lower rate of 4%.

	2021	Growth since 2006	Vacancy growth 2019-24
Managers	952	26.3%	81.8%
Professionals	1141	23.9%	56.6%
Technicians and Trades Workers	1228	4.2%	79.1%
Community and Personal Service Workers	1041	41.4%	113.5%
Clerical and Administrative Workers	1028	9.2%	49.3%
Sales Workers	587	-6.1%	83.2%
Machinery Operators and Drivers	915	0.4%	104.9%
Labourers	769	4.5%	47.9%
Inadequately described	74		
Not stated	62		
Not applicable	0		
Total	7796	13.8%	

Source ABS Census 2006 to 2021, jobs in Lithgow

By way of comparison, Orange is a larger and more diversified job market and showed much more growth in higher wage occupations. Employment of Professionals increased by 69% over the period, Managers grew at a similar rate to Lithgow (26%) and generally lower-paid Community and Personal Service workers numbers grew by 87%. Unlike Lithgow, employment of Tradespeople in Orange increased substantially (up 32%) as did employment of Machinery Operators & Drivers (up 23%). In interpreting the comparisons with Orange it is worth noting that Orange had a different economic and population starting point from Lithgow and a different population growth pattern (faster growth) post-2006.

The following table presents information on employment trends by more detailed occupational classifications to show more clearly where growth in employment occurred in Lithgow between

2006 and 2021. The data is based on the ABS Census and counts people working in jobs located in Lithgow LGA.

The table shows that the occupations with the largest growth in worker numbers over the 15-year period were in the services sector, especially in healthcare, community services and business services. Five of the ten highest growth occupations were professions. This trend gives a good indication of the longer-term employment demand growth trajectory of Lithgow's workforce.

Number of people working in each occupation in Lithgow, 2006 and 2021 – top 10 by growth (number)

Occupation (ANZSCO 2 digit)	2006	2021	Growth
Carers and Aides	245	437	192
Specialist Managers	269	406	137
Inquiry Clerks and Receptionists	181	304	123
Health Professionals	226	310	84
Office Managers and Program Administrators	100	155	55
Protective Service Workers	179	233	54
Not stated	10	62	52
Legal, Social and Welfare Professionals	72	121	49
Business, Human Resource and Marketing Professionals	105	148	43
Hospitality, Retail and Service Managers	270	308	38
Total	6,852	7,796	944

Source ABS Census 2006 to 2021, jobs in Lithgow

The table below shows the occupations with the highest percentage growth between 2006 and 2021. It shows high percentage growth in occupations with low employment numbers like ICT professionals and other (not defined) professionals, as well as growth in larger occupations like Carers and Aides, Inquiry Clerks & Receptionists and Specialist Managers. The table gives a good indication of the scale of longer-term structural changes affecting Lithgow's occupational mix.

Number of people working in each occupation in Lithgow, 2006 and 2021 – top 10 by growth (percentage)

Occupation (ANZSCO 2 digit)	2006	2021	Growth (%)
ICT Professionals	15	32	113.3%
Professionals, not defined further	3	6	100.0%
Machinery Operators & Drivers, not defined further	20	36	80.0%
Carers and Aides	245	437	78.4%
Legal, Social and Welfare Professionals	72	121	68.1%
Inquiry Clerks and Receptionists	181	304	68.0%
Sports and Personal Service Workers	44	73	65.9%
Inadequately described	45	74	64.4%
Chief Executives, General Managers and Legislators	30	48	60.0%
Office Managers and Program Administrators	100	155	55.0%
Specialist Managers	269	406	50.9%
Total	6,852	7,796	13.8%

Source ABS Census 2006 to 2021, jobs in Lithgow

Implication: The implication for workforce development is that Lithgow's workforce needs to diversify its qualifications to fill higher-skilled roles alongside technical and trades roles.

Recruitment

Employer recruitment patterns reflect this significant change in occupations. Analysis of advertised vacancies gives a good indication of what employers are looking for and how the workforce needs to develop.

Starting at the regional scale, it is clear that over the last five years there has been an increase in the number of employers in the Central West region^[1] who are looking to hire Community & Personal Service Workers, with more than double the number of vacancies in 2024 as in 2019. Vacancy growth has also been high for Professionals (up 82%) and Managers (up 57%). But employers are also looking to recruit into low overall growth occupations like Machinery Operators & Drivers (vacancies up 105%), Tradespeople (up 79%) and Sales Workers (up 83%).

Implication: The implication here is that recruitment activity has been high for occupations that have seen overall growth, but it has also been high for occupations seeing little overall growth. This suggests high rates of churn in occupations like Machinery Operators & Drivers and Tradespeople. High rates of churn are costly for both employers and employees and this is an issue that the region should address.

^[1] Central West SA4 comprises the following LGAs: Lachlan, Bland, Parkes, Forbes, Weddin, Cowra, Cabonne, Blayney, Orange, Bathurst Regional, Mid Western Regional, Lithgow, Oberon. Lithgow accounts for almost 10% of the regional population.

Advertised job vacancies in Central West Region 2019–2025

Recruitment activity peaked in 2023 at almost 1,800 vacancies per month, more than doubling from the pre-Covid level of around 800 per month. As Australia's economy then slowed, so did recruitment activity in the Central West, falling to around 1,100 total vacancies in Feb 2025 – still higher than the pre-Covid level.

Looking within this activity shows how much of recruitment has been targeting Professionals, Trades and Community & Personal Services occupations. The service industries (Managers, Professionals, Community & Personal Services, Clerical & Administrative, and Sales) have accounted for at least 65% of all job advertisements in the Central West since 2019.

Advertised job vacancies by occupation in Central West Region 2019–2025

Top vacancies

In February 2025 the 10 occupations with the highest number of vacancies across the Central West are shown below.

	Vacancies
Sales Assistants (General)	52
General Clerks	42
Aged and Disabled Carers	33
Registered Nurses	32
Other Miscellaneous Labourers	28
Child Carers	24
Motor Mechanics	23
Truck Drivers	21
Welfare, Recreation and Community Arts Workers	21
General Practitioners and Resident Medical Officers	21
Retail Managers	20
Metal Fitters and Machinists	19

Source: Jobs and Skills Australia Internet Vacancy Index <https://www.jobsandskills.gov.au/data/internet-vacancy-index>

Estimates for Lithgow LGA suggest that the occupations in greatest need in February 2025 were a mix of professionals, service workers and trades:

	Vacancies
Carers and Aides	6
Automotive and Engineering Trades Workers	4
Medical Practitioners and Nurses	4
Sales Assistants and Salespersons	4
Education Professionals	3
General-Inquiry Clerks, Call Centre Workers, and Receptionists	3
Legal, Social and Welfare Professionals	3
Cleaners and Laundry Workers	2
Drivers and Storepersons	2

Food Trades Workers	2
Health Diagnostic and Therapy Professionals	2
Hospitality, Retail and Service Managers	2
Other Labourers	2

Source: Regional Australia Institute, Regional Jobs Guide https://www.regionalaustralia.org.au/Web/Web/Toolkits-Indexes/Regional_Jobs_Guide.aspx?hkey=6064557e-b227-42a4-b111-687fb40f56eb

Based on population distribution in region and not taking account of industry mix, according to Regional Australia Institute [Regional Jobs Guide](#)

Vacancy rates

The vacancy rate gives an indication of the intensity of labour demand across occupations as it divides the number of current vacancies into the number of workers in each occupation.

Occupations seeing the greatest relative recruitment activity across the Central West in February 2025 were:

	Vacancy rate
Mining Engineers	4.40%
Social Workers	4.40%
Civil Engineering Professionals	4.00%
Welfare, Recreation and Community Arts Workers	3.90%
Other Miscellaneous Technicians and Trades Workers	3.90%
Other Miscellaneous Labourers	3.80%
General Practitioners and Resident Medical Officers	3.40%
Occupational and Environmental Health Professionals	3.20%
Physiotherapists	2.80%
Cafe Workers	2.50%
Human Resource Professionals	2.50%
Motor Mechanics	2.10%
General Clerks	1.90%
Occupational Therapists	1.90%

Source: Jobs and Skills Australia Internet Vacancy Index <https://www.jobsandskills.gov.au/data/internet-vacancy-index>

Estimates for Lithgow LGA suggest that the top 10 highest vacancy rates were:

	Vacancy rate
Engineers	1.94%
Jewellers, Arts and Other Trades Workers	1.44%
Health Diagnostic and Therapy Professionals	1.4%
Legal, Social and Welfare Professionals	1.2%
Food Trades Workers	1.12%
Medical Practitioners and Nurses	1.03%
Other Labourers	0.91%
Carers and Aides	0.86%
Automotive and Engineering Trades Workers	0.84%

Source: Regional Australia Institute, Regional Jobs Guide https://www.regionalaustralia.org.au/Web/Web/Toolkits-Indexes/Regional_Jobs_Guide.aspx?hkey=6064557e-b227-42a4-b111-687fb40f56eb

Implications: Recent trends and current recruitment needs highlight the imperative for Lithgow's workforce to develop a mix of professional, trade and service sector skills. Workers with these skills will be able to fill local jobs, and also have options for working in other parts of the Central West region.

Priority skills and qualifications for the City and wider region are:

- Engineering
- Health (GPs, nursing and allied health)
- Food trades and automotive trades
- Carers and welfare workers.

There is high demand for Skill Level 5 and 4 (bachelor degrees and diplomas) and for Skill Level 3 (AQF Cert III and IV). Carer and other community support occupations typically require Skills Levels 2 or 1.

Lithgow currently has good health and aged care infrastructure, and as our analysis of employment trends shows, strong demand for health and community and personal services workers, including carers. Like many regional areas, Lithgow's population is ageing slightly faster than the national rate, indicating that this demand will not only continue but increase, especially if Lithgow grows as a retirement destination. It's a trend that local health providers are acutely aware of as they struggle with current workforce shortages, which directly impact service delivery in Lithgow such as access to aged care packages and some allied health services. In interviews, local health providers emphasised the ongoing issue of staff shortages and a reliance on international workers, especially registered nurses. How Lithgow will fill these needs into the future is also seen as closely linked to training and education provision in the town.

Taken together, our interviews suggested that different areas of local health provision present a mix of challenge and opportunity. An ageing population will also increase demand in certain areas, such as cardiology, ophthalmology and other specialist health services. However, Lithgow currently has good access to nurse practitioners and geriatricians at hospital. Opportunities in Lithgow for employment in allied health roles are mixed. For some services, such as OT, there is little opportunity due to long-term incumbency of local providers. Other services such as skin checks, dermatologists and speech therapists are not available in the town in an ongoing capacity, suggesting a gap, as appointments sell out fast when they pass through. A proportion of local GPs are nearing retirement and there is a shortage of new GPs coming into town; many of the GPs and specialist staff at Lithgow Hospital are FIFO. Lithgow has a large First Nations population, so there is an imperative to target and fund First Nations-led health services.

There is genuine support in the town from health educators and providers and from those working in non-health sectors for a new health precinct that would diversify services and grow educational and training offerings in the town. As one interviewee pointed out, 'health is not

controversial’ as an investment in the way that proposed energy projects in the region have proven to be.

Ongoing needs of the coal mines and coal-fired power plant

Although the coal industry across the region is expected to close, operations at mines in the Lithgow region – Clarence, Airly and Springvale – and the Mount Piper Power Station are ongoing, with staged closures scheduled until 2040. However, government policy shifts, market trends and investor preferences, and applications for mine extensions introduce uncertainty into this timeline, which could see closure dates extended or even brought forward. Longer and uncertain lead times present a difficult juncture for both jobseekers and workforce planning. The mine cannot transition workers while it is still operating, and for the immediate future, must actively recruit its trades, engineering and supervisory workforce to meet operational needs. This in turn has similar implications for the many businesses in Lithgow that supply and service the mines.

It is important that transition planning starts now, despite the uncertainty of these timelines. Longer lead times to closure create a fantastic opportunity for long training pathway reskilling, and for shaping new skills sets and career paths for those emerging into the workforce in the next 10-15 years. At the same time, it is important that Lithgow acknowledges and prepares for the fact that owner-initiated closures could happen at any time. This occurred in the Latrobe Valley, when French energy multinational Engie, then owner-operator of the Hazelwood coal mine and power station, announced plans to close both just six months ahead of the 2017 closure date, citing market factors as the basis for its decision. At the time of the announcement, the local community had expected the industry to operate until 2025.

4.5.11 Pathways, opportunities and challenges for Lithgow’s transitioning labour market

A regional workforce

There are several signs that Lithgow sits in a regional labour, skills and business market. The LEEP places Lithgow’s transition strategy and its workforce implications in a wider regional labour market that extends to neighbouring centres, the Blue Mountains and even Western Sydney. For the most part, we found this view supported by Lithgow’s employers and education providers. Many employers noted that the majority of their workforce live 20–30 minutes’ drive from their place of employment, while others referred to workers commuting from Bathurst or the Blue Mountains as ‘local’.

However, many emphasised that attracting staff to the region can be difficult, including trainees and apprentices. There were mixed views on whether Lithgow can attract people out of Sydney. For engineering graduates, Lithgow offers work in a less remote location than many other sites, making it easier to attract them. For others with university qualifications, distance from Sydney is an obstacle. One employer said they had difficulty getting technicians to come out to Lithgow from Sydney to fix machines. For health, it was seen as better to train people with ties to the region because they are more likely to stay, but this is not currently happening as much as it needs to be. At the moment, Lithgow does not offer internships for medical graduates and so they leave and build lives elsewhere. Difficulty in attracting more experienced doctors to practice regionally was also noted.



There were also mixed views on Lithgow's potential as a Sydney satellite or tree-change for professionals. Transport links were seen to be the key issue, and people's views were shaped by how optimistic they were about improvements to roads and rail. The rail link was seen as a plus, but currently too slow to offer a genuine commuting option. One view is that Lithgow will 'blossom' once road infrastructure is improved to link the region with the Badgery's Creek development; another is that such improvements are unlikely ever to happen.

A trades town

Interviewees were keen to emphasise that trades and mine jobs are central to careers thinking and pathways for many families in Lithgow. In terms of transitioning the emerging workforce and the community's overall adaptive capacity, this is a key issue requiring both practical and cultural change. Drop off in high schools after Year 10 is common, with at least 50% of young people leaving to pursue trades.

Mines are well paid

A key challenge for the transitioning workforce and a factor that will shape many decisions is the relatively high pay in the mining sector. This will have an effect on household employment arrangements and workers' decisions to stay in Lithgow or seek mining work elsewhere. Even where local redeployment of coal industry workers is possible from a skills and opportunity perspective, the wages penalty is likely to present a challenge. The mining sector is also highly unionised. Previous studies of retrenchment from well-paid, unionised jobs, such as those in the automotive manufacturing industry, have shown that workers struggle to find jobs with comparably good conditions, leading to employment churn, ongoing precarity and even loss of skills as people turn to other employment opportunities that better meet their expectations (Dinmore & Beer 2023). The provision of decent work must therefore be a core consideration of any job creation strategy in the Lithgow region. Indeed, the creation of decent work and quality jobs – as opposed to just 'any jobs' – is a key objective of just transitions.

Who will be impacted and what will they need?

Closure of the Airly, Clarence and Springvale mines will result in over seven hundred direct job losses. The LEEP also estimates that impacts of this on the Lithgow economy could result in more than 2,000 further job losses in other sectors. It is important to note that there is potential for all sectors to be affected in the event of economic decline, including service sectors like retail and hospitality. As previously noted, even if there is strong redeployment of mine workers into other local jobs, the overall spending capacity of households formerly supported by higher-paying mine jobs may be reduced.

The mining workforce is large and varied. It is constituted primarily of electrical trades, mechanical trades, labourers, office staff, and professional staff with expertise in areas such as geology, engineering and the environment. There are also many qualified deputies (underground team leaders), a small number of technicians, and apprentices in electrical and mechanical trades. 25% of this workforce are women.

Jobs will also be lost from the Mount Piper coal-fired power station, which is scheduled to close in 2040. It currently employs around 200 staff, including apprentices, in trades, engineering, administrative, operator, production and professional roles.

Workers facing retrenchment will need a transition program that is well supported by the NSW Government and backed by local government, the mine, unions and community services. In terms of reskilling for new employment, workers transitioning out of coal-fired power plant and coal mining jobs are likely to fall into one of three categories:

1. Employment in a similar job in another large or medium employer. Depending on their qualification, these workers may need recognition of prior learning, and/or minimal training, e.g. the acquisition of a licence, and/or on-the-job training in a new work environment.
2. Employment in jobs that are less similar to their mining sector jobs. These may still be in the industrial sector or in another sector entirely. These workers may require access to more substantial training.
3. Self-employment. These workers could require new licenses, training in business skills, funding for equipment or other start-up costs, and opportunities to network.

Because of the long timeframe associated with transition, it is also relevant to consider workforce needs from the point of view of career stage. Those in mid-career are likely to need the highest level of transition support and may also feel the most pressure to find secure alternative employment quickly in order to meet their financial obligations. Some mine and power plant workers over 50 years of age may decide to retire or semi-retire, in which case their skills will be lost from the labour market. Lastly, those emerging into the workforce during the transition timeline, such as apprentices and school leavers, will need guidance to position themselves for a job market quite different to the one their parents have known.

Our interviewees offered numerous useful insights about the local job market that are applicable to our three categories of ex-coal industry workers.

For **Group 1**, who may transfer their existing skills to similar jobs with minimal training, engineering opportunities may exist beyond the mines in the region's quarries, as well as in

numerous medium-sized engineering firms which currently supply the mines but may look to diversify. Trade skills could be leveraged into manufacturing, construction and renewables (depending on investment). As elsewhere in Australia, there is an ongoing need for construction labourers, project managers and trades across the Central West region, for both commercial and residential construction projects. This presents a reskilling opportunity for workers exiting the mines and supply chain.

Local manufacturing relies on the clustering of specialist skills in the region and on logistics. These are enhanced by large transport flows through the region by truck and rail; at least one railroad service operator is expanding and employing and training maintenance operators. Technology may facilitate remote or hybrid work for some, especially those in white collar occupations. Staff will also be needed after mine closure for land rehabilitation.

One challenge for this group is the rate of technological change in the industrial sector. While many current employees in the mines and supply chain are ‘people who are keen to go out and get their hands dirty’, firms are upgrading systems to be increasingly based in technology. Over the transition timeline, this change is likely to accelerate. Workers looking to join engineering firms that have successfully diversified away from the mines will need to retrain.

Both decision-making and training provision will be more complex for **Group 2**, who may consider reskilling for other occupations and/or industries. While it is true that many opportunities exist in service sectors, these are very different to jobs in the mines, power plant and supply chain. Mining and parts of the service sector are among the most gender-segregated sectors in Australia, with mining dominated by men and the service sector by women, especially lower-paid service roles in retail, personal care and community services. This is reflected in relatively poorer pay and conditions in these services roles compared to well-paid mine jobs, in addition to lower prestige. While some of these service roles are ‘hands-on’ to a degree and require physical strength (e.g. caring), they are people-oriented and fundamentally different to industrial jobs. Previous studies of retrenchment in male-dominated industries shows that even where there are plenty of job opportunities in service sectors, uptake is low, as these positions do not align with workers’ preferences, aspirations and financial needs.

For higher-paying service jobs, for example in professional services or health, a barrier for retrenched workers is the time required to reskill. These roles are qualification-based, usually requiring multiple years of study. Especially for mid-career workers with significant financial commitments, there are barriers to taking up lengthy retraining and/or entry-level pay post-qualification. This does not mean that the closure of coal in Lithgow and the repositioning of the economy is not an opportunity to address ongoing shortages in service roles and the health sector. Rather, it is more likely that these roles may be filled by younger people emerging into the workforce over the next ten years. There should be a focus in the education pipeline on the shaping of career pathways and provision of appropriate foundational skills, while retrenched mining sector workers looking to switch into these kinds of jobs will need quality careers counselling and support with training beyond short courses, and in some cases, recognition of prior learning. Moreover, their training pathways will need to commence well ahead of the closure date.

That said, some workers will be able to reposition themselves for jobs in new industries through shorter courses, for example in hospitality or other practical vocational skills. Quality training that provides job-ready qualifications and skills, and the opportunity to undertake this training

while still working is of utmost importance for this group, who will also benefit from careers counselling.

Group 3 will also require guidance and short-course training. Workers from this group may build a small business idea around existing skills, e.g. an electrical tradesperson may take up the opportunity to go into business as a self-employed electrician. Those with an interest in this pathway will benefit enormously from training in small business development, planning, practices and management, accounting, marketing and digital literacy, and may in some instances require licenses, memberships or accreditations to conduct their chosen business. They would also benefit from small grants for start-up costs such as equipment. However, some may take the opportunity to start a small business in another area of interest, providing either services or products. While this group will also benefit from business skills training, they may need to undertake additional short courses.



With the focus in the LEEP on tourism development in Lithgow, opportunities exist for this group in building the local workforce capability needed to grow tourism offerings such as food and beverage outlets, accommodation and other services. Networking opportunities will be vital as the community develops and pursues a vision for this type of development. The skills required for a full range of offerings in a vibrant tourist destination are varied, including:

- Customer service
- Event management
- Commercial cookery
- Food and beverage service
- Marketing and promotion
- Sales
- Small business management
- Environmental management
- Sustainable tourism practices

In addition to these more general skills, local knowledge and specific technical skills may be required by people looking to work as tour guides or run experiences.

Skills Case Study: Mountain biking tourism in Tasmania

The transformation of the town of Derby from decline into a world-class mountain biking destination is a remarkable example of how communities can harness their unique resources to foster economic development. A former tin-mining town in northern Tasmania, Derby has been revitalised by investment into mountain biking tourism. The rise of Derby as a destination is well known as a case study in coordinated, strategic tourism investment and leveraging a region's natural assets: its 80km-plus trails were funded by all three tiers of government, and the spectacular natural environment around Derby, including old-growth forest, is central to the tourist experience offered by the town. Tourism in Derby is now supported by numerous small businesses in the town, providing food and beverage, accommodation to suit all budgets, and services like bike sales, repairs and hire, shuttles to trails and guided tours. As such, Derby is also a case study of the more community-led aspects of tourism development and how relevant business skills and opportunities can be developed and supported.

Derby's establishment as a mountain biking destination occurred in the context of broader strategic development of the sector in Tasmania. The 'Blue Derby' trails opened in 2015, following over a decade of planning and building. In 2017, with its Tasmanian Cycle Tourism Strategy, the Tasmanian Government outlined its commitment to growing the state's cycle tourism sector. To achieve this, it identified three priorities: the development of infrastructure such as tracks, routes and trails; business support and education; and marketing and developing the Tasmanian cycle tourism experience. This strategy included funding projects to expand and improve Derby bike trails and a \$4.2m Cycle Tourism Fund available to local government, industry stakeholders and peak bodies for strategically-aligned projects, programs and initiatives (TAS Dept of State Growth 2017).

To leverage proximity to the successful Blue Derby trails, two major mountain bike trails projects were completed in neighbouring St Helens in 2019, about an hour's drive from Derby. In anticipation of their opening, local government released an Industry Toolkit for the local community in collaboration with both commonwealth and state governments. The toolkit articulated a vision for St Helens and the goal of 'working together as a community' to attract mountain bike tourism and its economic benefits. The toolkit is a resource pack for community members and local businesses, providing information on the trails, mountain biking as an activity and what mountain biking tourists need and value. It also provided information and further resources on the skills required by tourism businesses, such as customer service, marketing, social media, business accreditation (Tourism, Bike Friendly, Ecostar, Accommodation Star Ratings) and business data collection, as well as a guide to business support and advice, such as useful contacts, training, networking opportunities and small business grants (Kingthing 2019).

One initiative to help local businesses leverage the cycle tourism market has been the 'Bike Friendly Business Program', run by Tourism Industry Council Tasmania (TICT), the peak body for the state's tourism industry. With the goal of developing a bike-friendly business community, the program provides accreditation for small businesses. The program builds business knowledge through workshops and networking events designed to connect businesses, maximise referrals, and enhance cycle tourists' experience, in turn building Tasmania's brand as a cycle tourist destination.

Leading change

Lithgow is a place caught between legacy and opportunity – a community at the crossroads of change. The question of who is leading Lithgow's transformation – as well as who should lead it, and how it should be done – was a central theme of many interviews.

The highly politicised nature of the transition away from coal was recognised as a factor that is making this process more challenging and divisive, at a time when local leaders need to collaborate. In addition, there are structural and cultural barriers to change in Lithgow. Overall, people and organisations in Lithgow are ready and willing to play a role in the transformation of the region, but many currently feel discouraged or frustrated by a lack of direction and by fragmented leadership at an institutional level.

A need to understand the industrial future of the region

“What will smart people hang around for?”

A lack of clarity about future investment in the region is contributing to a lack of action with regard to the transition. This includes uncertainty about the timeline of the mine and power station closures. People are aware that transition is coming, but many don't know how soon they should act upon this knowledge, or what they should do. This includes employers and workers. Without a clear picture of the future, many struggle to engage in planning or upskilling for the longer-term. There is a perception that some community members are in denial. Many businesses and organisations are open to adaptation, but need incentives and clearer guidance. It is also felt that government needs to support transition, including in the supply chain, but it is currently hard to predict timing. Uncertainty about proposed upgrades to transport links is another complicating factor (e.g. the shelving of the Blue Mountains tunnel), as upgrades would have a significant impact on the accessibility of wider labour markets and educational opportunities, as well as on the ability of Lithgow to attract workers or tourists in the future.

There is a strong need for investment in industries beyond coal to build community confidence and give stakeholders the impetus to act. Policy settings also need much more clarity and consistency. Various views were offered on what would set Lithgow on the best trajectory: a new, large employer; the attraction of more outsiders into the region as a Sydney satellite; the development of tourism; or new industrial land releases. There is wide support for the creation of the proposed health precinct and an expansion of health education in Lithgow.

“People aren't functioning well in this period of uncertainty – a clearer vision or pathway would be great.”

Cultural barriers to change

“It would be good to dispel the idea that you'll get a mine job because your dad has one. Local bias can run pretty deep. Lithgow might not be big in area, but it's big in memory.”

The region's skill base reflects legacy and will need to re-orient to the future. Lithgow identifies strongly as a 'trades town' with clear pathways into the mines. Around half of its young people leave school after Year 10 to take up apprenticeships. There is a clear need for a new set of aspirations and to transform careers thinking and pathways. Both secondary schools are leading this undertaking, with new offerings designed to meet the needs of students who want to take up trades while encouraging them to stay at school for longer. Many school initiatives are also looking to expand local students' sense of career possibilities, by showcasing university education and professional and high-skill service jobs, for example, or through the STEM program at the Adaptive Skills Hub. A number of interviewees commended the schools for these programs and felt strongly that school is the most appropriate and effective place to challenge and reshape Lithgow's orientation towards trades careers.

“The older, parochial view is that if the population only grows at 1%, why bother with this transition? I don't see it that way. The transition is happening already.”

Some interviewees said attitudes in Lithgow could be overly negative or passive at times. This has resulted in a sense that the transition is a problem for 'someone else' to fix. This in turn is exacerbated by uncertainty about the future – without a collective vision, it is hard for people to embrace change. It has also proved easy to alienate parts of the community on controversial issues, for example, renewables investment. People need a line of sight to different futures, and help imagining themselves in that future. Civic renewal projects can create visible symbols of modernisation, but even these have been compromised by bureaucratic failures.



A need for more and better collaboration

“We need a tripartite agreement that this region needs a 20-year plan. We won’t get there if we continue to act in a politically fragmented way.”

In discussions with the community, it was clear that there is an appetite for greater local leadership and that the City of Lithgow was seen to be a natural forum for that leadership to find expression. Community members agreed that, to date, this had not emerged to the desired degree and that the council could better express its leadership through:

- Improving its internal processes to greater efficiency and productivity, for example, more speedy planning approval processes.
- Demonstrating greater harmony within the council and between elected members and council staff.
- Taking a more strategic approach towards shaping the future of the city; taking greater ownership of the LEEP process and better aligning its role and mission with the values of the council as a whole. It was felt that this process of alignment would ensure greater impact by the LEEP, while also encouraging others in the community to take up the outcomes of this work.

“To make the change Lithgow will need to harness a lot of community leaders.”

Interviewees from diverse organisations – education providers, health and aged care providers, industry, government and networks – expressed a desire to play their part in transition. At the same time, they tended to convey the sense that they were waiting for other key stakeholders to act. While more certainty about future jobs in the region will help to combat this, meaningful collaboration needs to be implemented between council, educational institutions, employers, employees, professional bodies, government agencies, community organisations and youth voices, following the evidence on place leadership. In particular, training and education providers will need to work with institutions and industry to co-design a workforce pipeline. At present, no one is really coordinating training for in-demand non-trades jobs, such as higher-skilled community services and health (nursing, allied health, GP and specialists).

Leadership needs to be local, visible, and trusted, not imposed from outside. At the same time, there must be efforts to bridge the divide between local leaders and state and federal government, whose policy decisions and investments will play a significant role in shaping the region’s future. This will enhance Lithgow’s ability to advocate for investment and transition support in ways that align with community values and vision, and that local leaders and services can actively support ‘on the ground’.

In summary, Lithgow is not resistant to change, but the community currently feels stuck between a declining industrial past and an unclear future. There is interest in transition planning, and even a growing sense of urgency for some, but a lack of the information and certainty needed to propel this. Younger generations are influenced heavily by family and local cultural narratives. Opportunities exist, but need their own supporting narrative. To move forward, Lithgow needs collaborative leadership, locked-in investment in education and industry, and a new set of shared aspirations – all rooted in community-led, visible actions that make the future feel real and achievable.

Housing and transport

Both housing and transport were frequently mentioned as having a direct impact on education and job opportunities in Lithgow. Any consideration of future workforce training and labour mobility must take into account these two critical issues.

“Proximity to Sydney is a benefit, but distance from Sydney is an obstacle.”

Consideration of public transport and commuter links should be central to transition planning in Lithgow. Proximity to Sydney suggests potential for the region to attract tourists and remote or hybrid workers. On the other hand, lack of public transport connections, and the distance between Lithgow and neighbouring centres was frequently noted as a barrier to education and workforce attraction and retention. It was also raised as an issue in relation to the transition, as transport links currently limit access from Lithgow into wider labour markets, such as Western Sydney and Sydney CBD.

As noted earlier, Lithgow sits in a regional labour market that extends to neighbouring towns and centres such as Bathurst. However, road and rail journeys to Sydney exceed two hours and can be unreliable. Policy backflips on infrastructure projects such as the Blue Mountains tunnel and highway upgrade continue to place a question mark over commute times in the future. For example, driving time to the new Western Sydney Airport and associated industrial development is currently around one and a half hours, making this a long potential commute for Lithgow workers looking to access job opportunities promised in the new precinct.

It was felt that the distance between Lithgow and Sydney contributes to ‘brain drain’, as students moved for university study. Likewise, it makes traineeship programs designed to provide hands-on experience for engineering and health students challenging to sustain. For students looking to access TAFE courses, travel to neighbouring campuses such as Bathurst is a barrier, with very infrequent buses and trains that take over an hour. Western Sydney University’s regional Lithgow campus struggled in mid-2025 after struggling to remain viable, while Notre Dame’s health campus is successful but small. Better connections to other employment and education centres, both regional and urban, would greatly enhance opportunities in Lithgow.

“Housing is the big problem, really.”

Many interviewees emphasised that a lack of housing contributes to workforce issues in Lithgow, with some raising it as a very serious concern. Problems cited include a lack of rentals and student housing, not enough well-located housing especially in proximity to employers like the hospital, the problem of the ‘missing middle’ (very few medium density or serviced apartments). There is some on-site accommodation for health workers (e.g. visiting doctors and specialists) and students at various locations, but more housing should be integral to health precinct plans.

Adjacent to this is the issue of ‘liveability’ in Lithgow, which needs improvement. Suggested needs for development include nightlife, a cinema, late night food and shopping for shift workers, better streetscapes, retail and services.



PLAN 1:

Regional Workforce Adaptive Capacity Plan

Plan 1: Regional Workforce Adaptive Capacity Plan

For Lithgow's workforce, adaptive capacity means adapting to a post-mining labour market and capitalising on upcoming work opportunities. This plan will help set up the foundations so that Lithgow people can prepare for and respond to workforce stresses, changes and future opportunities.

The plan is framed around the principle that Lithgow people will need to have:

- **Means** to craft the skills they need to access the jobs they want in future
- **Motive** to keep looking for new options
- **Opportunity** to craft the skills, qualifications and networks they need in Lithgow

Growing the City's population is critical to offset ageing of the existing workforce and bringing greater employment diversity through a larger economy. Current projections are for low population growth, and strategic planning needs to go beyond this to plan for steady population growth and associated scaling up of social services and infrastructure. A larger population and local economy will help buffer Lithgow against future challenges. Part of the population growth strategy should be raising the level of international migration into Lithgow.

Along with a larger population, Lithgow needs to plan for a larger and more diverse workforce, with greater depth in terms of the range and variety of lifelong careers pathways in the City and region. Lithgow needs to build on its specialisations and claim a role in the regional economy that is greater than being a dormitory or satellite city vulnerable to volatility in its bigger neighbours to east and west.

The common thread through the aims and actions for long-term workforce development and long-term training uptake is greater collaboration between employers and training providers. To increase adaptive capacity, Lithgow needs a Lithgow Workforce Forum to bring together members of the learning ecosystem – maybe by industry sector. At present, while many training providers share a concern about low enrolment numbers and many employers share concerns about recruitment difficulties, there is no mechanism in Lithgow to develop a cohesive rather than individualised approach. A cohesive approach is essential to address systemic blocks that are bigger than any one provider or employer can fix.

Workforce Adaptive Aspirations

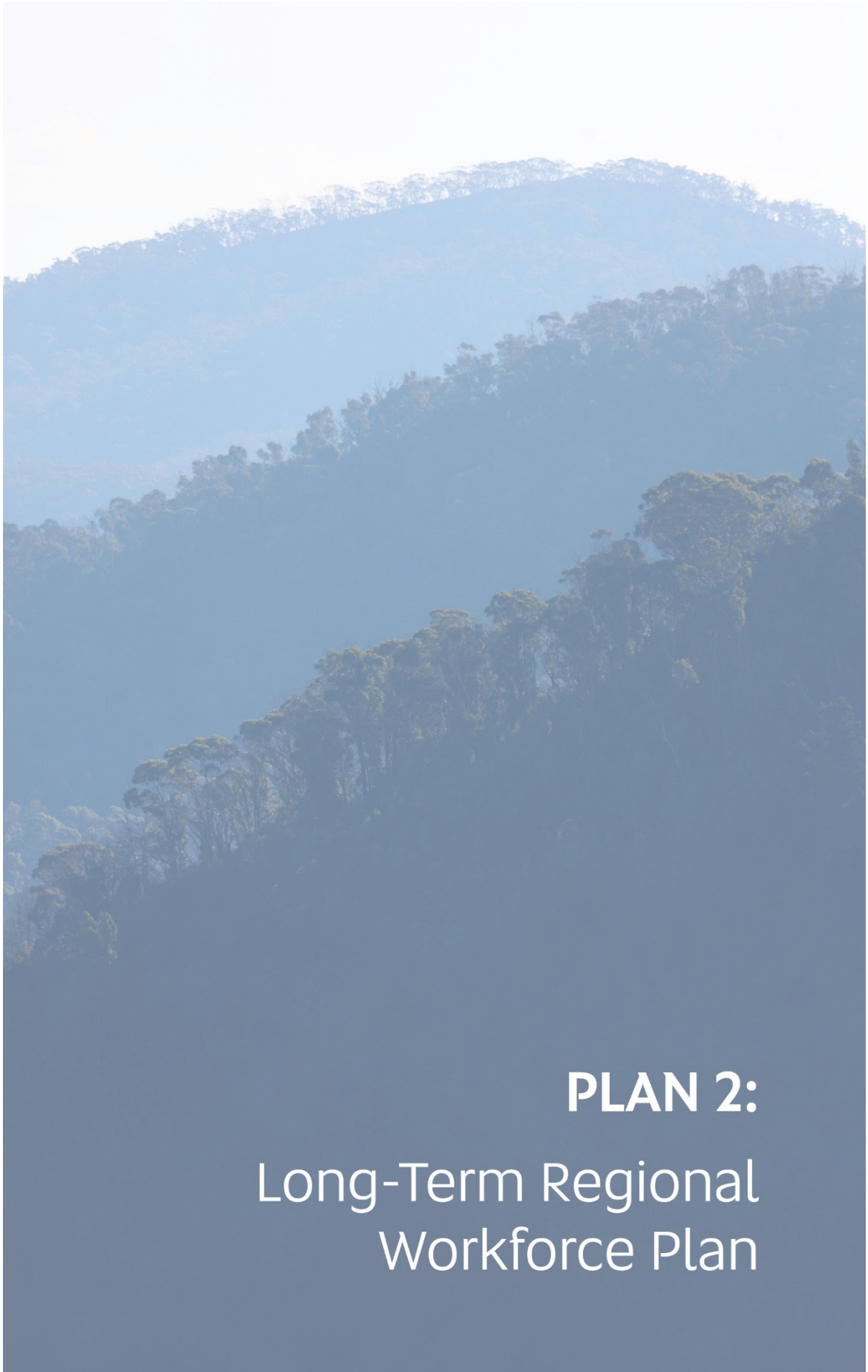
AIM	ACTIVITY	Resourcing and priority
A larger workforce, more skilled workers and lower unemployment	Develop metrics and targets aligned with this vision for the Lithgow workforce, including targets for First Nations and women workers	Approx. \$60,000 High priority
Monitor progress	Embed and monitor metrics in planning for the future. Publish and promote outcomes	LEEP Team Approx. \$10,000 High priority
Build a foundation of aspiration amongst high school students – better communication of emerging and future opportunities, in school and out of school. Needs collaboration between schools, universities, TAFE, employers and families	Develop and implement a program to ramp up work experience and career exposure opportunities for HS students from Year 7 on. One week each term each year	Approx. \$250,000 annually Medium priority
Increase the percentage of Year 12 completions and university enrolments	Develop and implement initiatives that support post-school learning familiarisation (to complement on-site work experience)	Development of program approx. \$80,000 Implementation of program approx. \$280,000 annually for three years Medium priority
Ongoing tracking and analysis for predicting (structural) changes and planning ahead with localised employment forecasts and an annual review of metrics	Annual review of high growth occupations in Lithgow and region	LEEP Team Medium priority
Attract professionals to live in the region	Promote lifestyle and affordable living Develop incentive packages	Development of promotional collateral and incentive packages program approx. \$65,000 Implementation of program approx. \$350,000 annually. Low priority

Workforce Adaptivity Means

AIM	ACTIVITY	Resourcing and priority
Employer engagement consultation forum linking employers and training providers, strategic and medium-long term	Lithgow Workforce Forum	Approx. \$40,000 annually Medium priority
Coordination of learning supply – establish a mechanism/foundation/forum that links across providers. Improve access to training providers and opportunities in Lithgow	Training provider group to activate the stated openness to greater collaboration in a relatively small market	LEEP Team Medium
Coordination across employers in key industries to collaborate on industry-wide responses to workforce development challenges	Industry sector employer groups – starting with manufacturing, tourism and health/caring industry	LEEP Team Medium
Simplify skills transfer through availability of support to access independent skills assessment, identify gaps and means to close gaps	Implement local skills assessment support, either face-to-face or through a digital tool (like former Cwlth developed “Skills Match”)	Approx. \$135,000 annually Low priority
Utilise subsidies and incentives	Develop targeted scholarships to encourage study in priority areas	Development of program approx. \$80,000 Implementation of Program approx. \$160,000 annually Medium priority

Workforce Adaptivity Opportunity

AIM	ACTIVITY	Resourcing and priority
Pathways – develop and publicise pathways into qualified occupations for young people, older workers and returning workers	Feasibility study into a Lithgow community college or expansion in Lithgow of ACE (Adult and Community Education) or WEA (Workers Educational Association) for lifelong learning	Approx. \$85,000 Medium priority
Strengthen support – personal and professional. Work with network connectors to bridge learning support into employment	Funding for deeper support for skills transition and development through peer support, mentors especially for First Nations and first in family	Approx. \$280,000 annually Medium priority
Facilitate long-pathway retraining	Education providers to offer and promote part time courses for higher qualifications Employers to facilitate time off for study	Development of program approx. \$125,000 Implementation of program approx. \$220,000 annually Low priority



PLAN 2:
Long-Term Regional
Workforce Plan

Plan 2: Long-Term Regional Workforce Plan

This plan complements the Regional Workforce Adaptive Capacity Plan and Long-Term Education and Training Pathways Plan, by setting out actions to grow a diverse and resilient workforce in Lithgow. Importantly, this is not an either-or approach: while its context is the vision, already outlined, for a larger, more connected Lithgow population, with more career pathways and higher educational aspiration, it is also one that leverages Lithgow's current strengths in trades and 'hands-on' orientation to work.

The plan responds to key challenges and opportunities in Lithgow's workforce today as well as those projected for the region's post-mining future. These include: the need to address workforce shortages by increasing and diversifying skill attainment, and better matching skills to jobs; the opportunity to leverage connection with the wider region, Sydney and Western Sydney; and the prospects created by strengthening specialisations and synergies between sectors.

A key issue for Lithgow's longer term workforce development is its road and rail connections with Sydney and, in particular, Western Sydney. The quality of these has long been a concern for business owners, leaders and residents, and long-awaited improvements are fundamental to the growth and development of potential businesses and employment opportunities in the region.

More skills, higher skills, needed skills

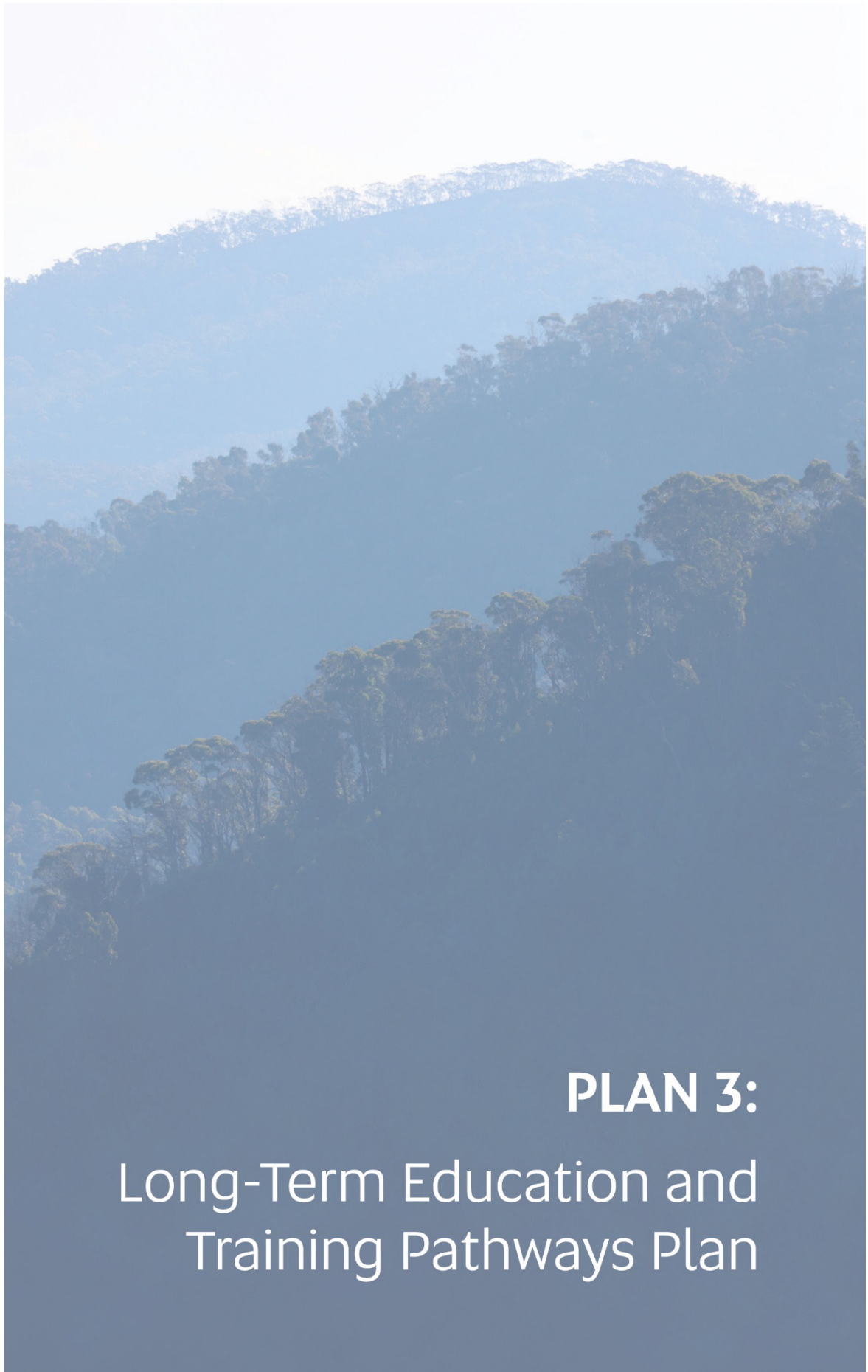
AIM	ACTIVITY
Raise aspirations and accessibility of post school education and training options	Links to AC Plan
Population growth to enable viable provision of training for a wider range of qualifications	Links to AC Plan
Data-informed workforce planning	Links to AC Plan
Simplify skills transfer	Links to AC Plan
Strategic coordination and consultation to meet current and projected skills demand, through the Lithgow Workforce Forum	Links to AC Plan
Develop and publicise occupational pathways, including STEM careers	Links to AC Plan

A more connected workforce

AIM	ACTIVITY	Resourcing and priority
Strengthen local connections – support development of professional networks	Liaise with the Chamber of Commerce to create events themed around Lithgow's growth and specialisation areas	Approx. \$15,000 annually High priority
Strengthen digital connections – widen hybrid working opportunities, enable e-commerce, and enhance networking and innovation	Evaluate internet and mobile data access in the region; identify barriers Create community co-working hubs with remote work infrastructure Partner with employers Sydney and Western Sydney to create remote work job pathways	Evaluation approx. \$35,000 Medium priority Co-working hub approx. \$35,000 (net) annually High priority
Strengthen physical connections – to labour markets in the wider region, Western Sydney and Sydney	Conduct a comprehensive audit of bus, rail and road transport options for commuters to and from Lithgow, including travel times, frequency of public transport and costs. Investigate adequacy of these for commuter needs to key job markets. Pilot a subsidised commuter service to major job hubs	Comprehensive audit (not including cost of pilot) approx. \$350,000 Low priority

Specialisation and synergy

AIM	ACTIVITY	Resourcing and priority
Continue to encourage growth of smart specialisation clusters in identified areas of relative advantage	Seek government investment to bring employment land associated with identified clusters to market	LEEP Team High priority
Explore viability of creating an industrial STEM precinct adjacent to Thales	Feasibility study assessing market demand and financing options	Feasibility study approx. \$90,000 High priority
Attract research and innovation	Partner with research institutions to leverage funding opportunities, invite research funding and co-located research talent into Lithgow	LEEP Team
Develop targeted training and reskilling programs focused on advanced manufacturing and renewable energy systems	Liaise with Centennial to ensure mine and power plant workers have priority access and roll out programs well in advance of closures Partner with renewables firms and manufacturers to co-design industry-specific microcredentials and placements	LEEP Team Low priority
Grow the pipeline	Establish and incentivise specialised apprenticeship and traineeship pathways into sectors in focus	Development of incentive packages program approx. \$65,000 Implementation of program approx. \$250,000 annually. Low priority
Grow the health workforce	Links to Training and Education Plan	
Establish a regional health precinct	In train	LEEP Team High priority
Link STEM and health	Establish links between the health precinct and the STEM precinct Create joint programs on biomedical equipment and digital health systems. Establish a 'health tech in the regions' accelerator for startups	Accelerator (if combined with co-working space initiative), approx. \$120,000 for development of program and collateral. Low priority
Link tourism and health	Conduct market research into viability of a 'wellness tourism' cluster, focused on allied health, fitness, rehabilitation, and nature-based wellness retreats	Market study approx. \$130,000 Low priority



PLAN 3:

Long-Term Education and Training Pathways Plan

Plan 3: Long-Term Education and Training Pathways Plan

This plan complements the Regional Workforce Adaptive Capacity Plan and Long-Term Regional Workforce Plan by setting out actions to enhance the provision of education and training pathways, with an emphasis on pre-employment pathways for young people and career transition/workforce entry or return for older workers.

The plan aims to support more accessible and diversified education and training options for Lithgow residents through resourcing and collaboration in Lithgow's relatively small training and labour markets. Key partners are the education and training service providers. But the plan also links to a mechanism featured in other plans to build closer connection between education and training providers and employers – through a Lithgow Workforce Forum. The plan therefore aims to integrate improved availability of education and training options with improved connection with labour market needs – for the benefit of residents, workers and employers.

Better capacity utilisation

Lithgow has underutilised education and training infrastructure, and a history of mismatch in provision of training and employer demand. This is not so much the case for Lithgow's traditional strengths but is a concern for other occupations in demand. Even when new training infrastructure has been brought to Lithgow, there is a history of low levels of utilisation. Part of the capacity utilisation challenge links back to activities in related plans to build aspiration and accessibility to further education and training amongst Lithgow residents and workers. The plan sets out activities to increase student numbers – securing enrolments and completion in existing and emerging fields.

AIM	ACTIVITY	Resourcing and priority
Raise aspirations and accessibility of post school education and training options	Links to AC Plan	
Population growth to enable viable provision of training for a wider range of qualifications	Links to AC Plan	
Less duplication	Convene twice-yearly provider review workshops Undertake comprehensive review of education infrastructure needs and options analysis	LEEP Team Review approx. \$85,000 Medium priority

STEM in Lithgow

Lithgow's trades background is already supporting a small but important group of high skilled STEM workers in manufacturing. This can be leveraged to foster demand for and provision of STEM training pathways. This is a critical ingredient in the concept of a high-tech industry cluster identified in a related plan as successful clusters rely on a steady supply of highly skilled workers.

AIM	ACTIVITY	Resourcing and priority
Promote current high level STEM careers in Lithgow	Showcase high-tech capability in manufacturing (e.g. Thales), mining and energy	Careers, VET and higher education event for secondary schools approx. cost \$35,000 Medium priority
Grow activities of Adaptive Skills Hub	Provide more hands on and industry-relevant STEM learning experiences	Subject of a NSW Government RECIP Application High priority
Explore viability of creating an industrial STEM precinct adjacent to Thales	Feasibility study assessing market demand and financing options	Feasibility study approx. \$90,000 Medium priority

Lifting completions

Attrition rates for largely online courses are reported as high in Lithgow so it is important to look at ways to enhance the student experience and lift completion rates – especially in services sector qualifications where there is steady demand and recruitment difficulties.

AIM	ACTIVITY	Resourcing and priority
Improve quality through resource sharing	Formalise links with trainers with leading edge facilities	Careers, VET and higher education event for secondary schools approx. cost \$35,000 Medium priority
Improve responsiveness in training offerings	Use Lithgow Workforce Forum to build business cases and lobby for funding for new courses	Subject of a NSW Government RECIP Application High priority
Improve student support (links to AC Plan)	Seek funding to expand student support through study advice, mentors and peer support	Feasibility study approx. \$90,000 Medium priority

Widen education and training offerings in Lithgow

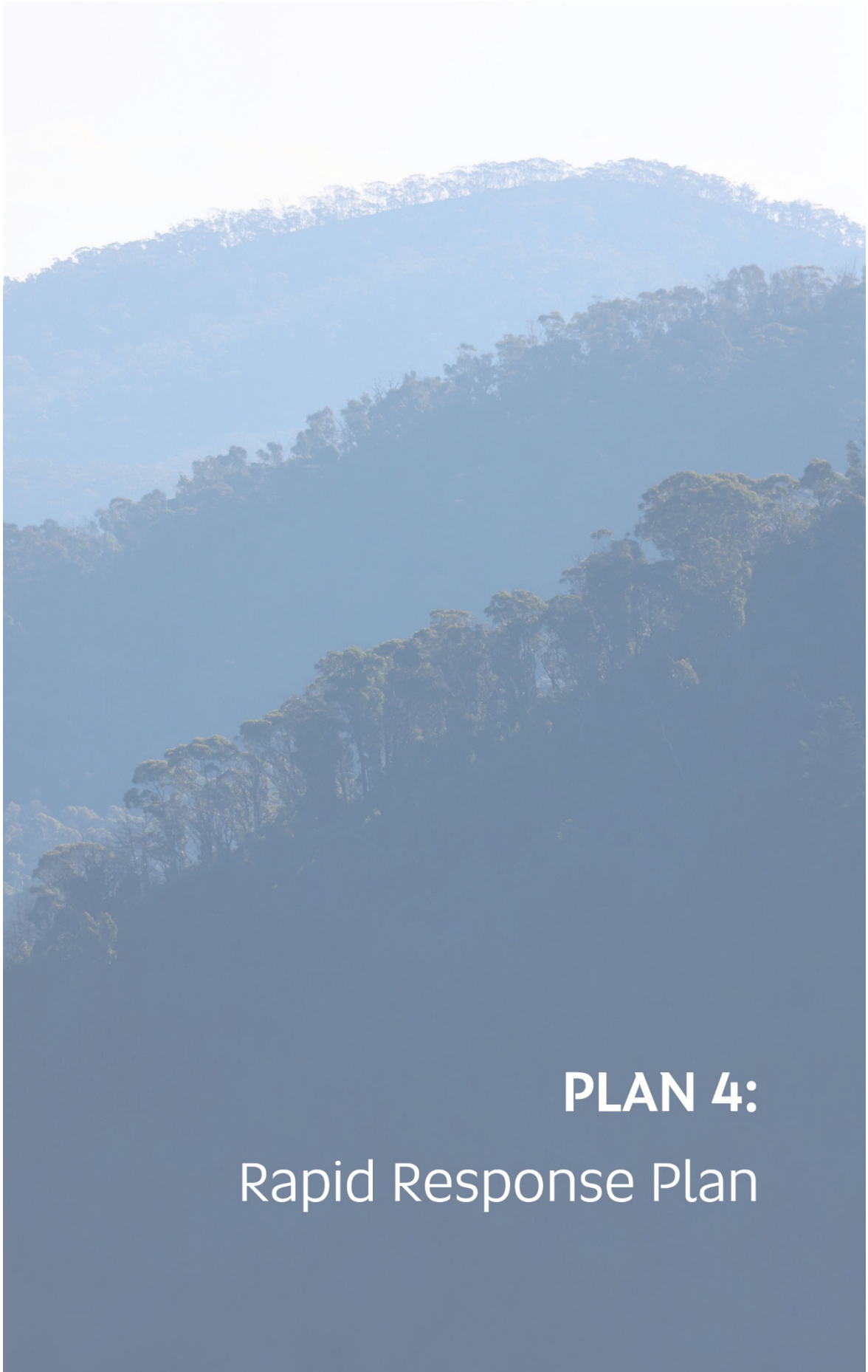
Coexistence of recruitment difficulties and low enrolments points to a mismatch between student expectations, training offerings and employer needs. These actions aim to close these mismatch gaps by ensuring that a wider range of training pathways are available in Lithgow.

AIM	ACTIVITY	Resourcing and priority
Improve course diversity through better links with employers and greater coordination across providers	Pursue a flexible Regional University Study Hub model together with a shared VET space to support diverse tertiary education options	LEEP Team to pursue Commonwealth funding for Regional University Study Hubs High priority
Build on trades strength by identifying other 'hands on' qualifications that will appeal to local young people	Convene 'next generation training' workshop with providers	Approx. \$15,000 Medium priority
Promote local educational pathways	Roll out a 'study local' campaign once course offerings are in place	Development of campaign approx. \$12,000 Implementation of program approx. \$65,000 annually. Low priority

Partnerships outside Lithgow

As a relatively small market it will be important to the long term that Lithgow has a prominent role in channelling students to training providers in neighbouring areas, and develops good partnerships with these providers.

AIM	ACTIVITY	Resourcing and priority
Explore establishment of a university partnership or collaboration to assist Lithgow's economic transition and growth	Provide tailored guidance in Lithgow for students using providers based elsewhere	LEEP Team High priority
Address transport difficulties for young people – especially to Orange and Bathurst	Investigate feasibility of options like a bus, shared use of existing school buses, or digital ride matching	LEEP Team Medium priority



PLAN 4: Rapid Response Plan

Plan 4: Rapid Response Plan

This Rapid Response Plan has been developed so that Lithgow has a ready pathway in the event of the coal mine and coal-fired power plant closures occurring sooner than anticipated. It is designed for **immediate deployment** and is built around four sets of activities:

1. Establish communication, coordination, and community togetherness

A coordinated response from local leaders and service providers is vital. Clear information, a unified narrative, and strong social cohesion will ensure efficient use of resources, easy access to services and reduce anxiety and fragmentation in the community.

2. Secure funding

Immediate and targeted investment is critical to soften the blow of job losses and provide pathways for reemployment and reskilling.

3. Provide services

A centralised and visible support hub should offer both immediate and ongoing assistance for workers, families and businesses across a range of services.

4. Monitor progress

Monitoring will ensure transparency of decisions, allows for course correction and build community trust in the transition process.

The Rapid Response Plan is, above all, an opportunity for Lithgow to drive its own future and ensure it has a significant say in how external resources are marshalled in the event of sudden closures.

Establish communication, coordination, and community togetherness – actions

Publish, socialise and debate the Rapid Response Plan	• Release the plan online and in print through council channels, local and social media and community organisations • Translate key elements into languages spoken by local CALD populations • Host drop-in sessions and online forums for community feedback and input
Establish mechanisms for collaborative leadership	• Establish a forum for local, state, and federal elected representatives, focused on supporting implementation of the plan and ensuring alignment and rapid decision-making • Establish a forum for community social service providers, focused on developing a joint response strategy, including rapid case management pathways for impacted individuals. This should include welfare organisations, mental health services, housing agencies and care providers • Hold a public sector regional managers' colloquium to develop rapid implementation protocols for key interventions. This should be time-limited. For example, it could take the form of a two-day intensive session for regional managers working in health, employment, education, housing, and transport • Assign a dedicated liaison officer to manage these
Roll out a communications strategy	• Identify priority audiences (e.g., affected workers, vulnerable families, local small businesses) • Use SMS, radio, social media, and community noticeboards to broadcast verified updates and support options • Designate trusted community leaders as spokespersons to reduce misinformation and increase trust • Hold a major community event shortly after the announcement, offering entertainment, wellbeing services, information stalls, and speakers. Ensure representation from unions, local employers, education providers, government departments and support services

Secure funding – actions

Provide governments with investment opportunities	Engage with the Future Jobs and Investment Authority (Central West). Build a business case for state and federal investment in projects like: • Smart specialisation workforce and business development • Tourism development • Housing renewal and social housing builds • Infrastructure upgrades (roads, digital connectivity, public transport) • Renewable energy and green industry pilot programs
Secure expedited employment assistance from state and federal government	• Special eligibility for Centrelink payments • Priority access for local employers to apprenticeship and traineeship subsidies, and other hiring subsidies through Workforce Australia • Funding for Lithgow-based delivery of training through TAFE and RTOs • Grants-based employment region funding through DEWR (Local Recovery Fund and National Priority Fund to be consolidated into single fund from 1 July 2025). Liaise with DEWR Central West Job Coordinator/Local Jobs and Skills Taskforce • Request assessment by the Net Zero Authority for regional and worker transition support eligibility, and establishment of a Regional Workforce Transition Officer for Lithgow

Provide services – actions

Establish a Transition Centre	The Lithgow Transition Centre should be a centrally-located, accessible, one-stop service hub. <u>Job seeking tools and skills:</u> • CV writing • Digital literacy • Job search and job interview skills • Internet and computer access • Small grants for expenses related to work or job seeking, such as transport, clothing, equipment, childcare and relocation <u>Job placement and careers guidance:</u> • Job boards • Jobs brokerage / placement service • Careers counselling • Host ‘jobs fairs’ with nearby regions and employers <u>Training:</u> • Advice on available training pathways and help with applications • Funding for quick training for job readiness (white cards, licenses, etc) • Recognition of Prior Learning • Bookable computers with access to online training resources, e.g. skillfinder.com.au, a marketplace of over 3000 free online courses <u>Other advice and services:</u> • Financial counselling • Legal advice • Information about and referrals to government and social service providers, where appropriate • Access to whatsnext.dewr.gov.au – a government website that helps you decide what to do if you have been retrenched
Implement small business assistance	• Provide business continuity grants and mentoring to affected small businesses • Offer startup support (e.g., business plans, low-interest loans, co-working space) to displaced workers considering self-employment • Offer small business skills workshops • Link businesses to government funding and procurement opportunities • Create a peer support and referral network by connecting small businesses. This can occur through workshop attendance, small networking events and online communities

Monitor progress – actions

Implement a monitoring strategy	• Develop metrics and data-collection strategies • Publish progress reports • Set up a community oversight group, including affected workers and residents, to review and comment on data
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Appendices

Appendix 1: Government-funded supports

An overview of education, training, employment and small business subsidies, incentives, payments and free services currently available in NSW or nationally.

FREE EDUCATION/TRAINING AND RELATED SERVICES

PROGRAM	RELEVANT DATES	ABOUT	WEB LINKS
NSW Fee-Free and NSW Fee-Free Construction	Check available courses each semester	NSW Fee-Free and NSW Fee-Free Construction offer tuition-free training for those looking to train, retrain or upskill. Students can enrol in one fee-free course per semester. Places are limited and subject to availability. Applicants must be 15 years old or over, no longer at school, living or working in NSW and meet citizenship/visa requirements. People who identify with the following groups are strongly encouraged to apply: • First Nations people • LGBTIQ+ community • Veterans • Job seekers • Unpaid carers • Women interested in non-traditional fields • People living with a disability • People from CALD backgrounds	https://skills.education.nsw.gov.au/nsw-fee-free
Subsidised courses and programs at TAFE NSW	Check available courses each semester	Includes NSW Fee-Free courses delivered by TAFE NSW and additional free courses delivered through other subsidised programs	https://www.tafensw.edu.au/courses/subsidised-courses

Skills for Education and Employment (SEE) Program	Ongoing	Free training to help improve foundational skills: reading, writing, maths and basic computer skills. Available across metropolitan, regional and remote areas of Australia. All Australians aged 15 years and over and have left school and need help with their language, literacy, numeracy and digital (LLND) skills are eligible.	https://www.dewr.gov.au/skills-education-and-employment/resources/see-program-factsheet
SEE First Nations Program		Eligible First Nations people have the option to choose to access free SEE training through both the General SEE delivery and SEE First Nations. SEE First Nations grants fund place-based whole of community projects designed to meet the community's English language, literacy, numeracy and digital literacy training needs. These projects are delivered by organisations who receive a SEE First Nations grant.	https://www.dewr.gov.au/skills-education-and-employment/see-first-nations
Reading Writing Hotline		A free national telephone referral service for adult literacy and numeracy, funded by DEWR. Can often refer callers to classes that are free too.	https://readingwritinghotline.edu.au/
Career Transition Assistance program		Free Australian Government program that helps individuals aged 45 and over build job seeking skills and tools, digital literacy and assess skill transferability.	https://www.workforceaustralia.gov.au/individuals/training/activities/career-transition-assistance

AUSTRALIAN APPRENTICESHIPS INCENTIVE SYSTEM

Priority Hiring Incentive	A payment for employers of Australian Apprentices training towards an occupation and qualification at a Certificate level III or above listed on the Australian Apprenticeships Priority List	https://www.apprenticeships.gov.au/support-and-resources/financial-support-employers
GTO Reimbursement Program	A payment to eligible GTOs who place an Australian Apprentice training towards a qualification and occupation listed on the Australian Apprenticeships Priority List with a Small or Medium Enterprise (SME)	https://www.apprenticeships.gov.au/support-and-resources/financial-support-employers#gto-reimbursement-program-2
Disability Australia Apprentice Wage Support (DAAWS)	A weekly payment to employers who employ apprentices with a disability	https://www.servicesaustralia.gov.au/disability-australian-apprentice-wage-support-daaws
Australian Apprentice Training Support Payment (AATSP)	Incentive to support training for qualifications on the Australian Apprenticeships Priority List	https://www.dewr.gov.au/skills-support-individuals/resources/australian-apprenticeships-incentive-system-guidelines
New Energy Apprentice Support Payment (NEASP)	Incentive to support training in clean energy occupations	https://www.apprenticeshipsupport.com.au/apprentices/getting-started/new-energy-apprenticeships-program
Australian Apprenticeship Support Loans (AASL)	To support Australian Apprentices to meet everyday costs while they undertake their training, eligible apprentices can apply for Australian Apprenticeship Support Loans. These loans provide up to \$25,374 (for 2024-25) in total and are paid monthly in arrears.	https://www.dewr.gov.au/skills-support-individuals/australian-apprenticeship-support-loans
Living Away From Home Allowance (LAFHA)	To support Australian Apprentices who have to move away from home to take up or continue training	https://www.apprenticeships.gov.au/support-and-resources/financial-support-apprentices#living-away-from-home-allowance-3
Apprentice Connect Australia Providers	Connect apprentices and trainees with employers and provide support throughout the apprenticeship.	https://www.workforceaustralia.gov.au/businesses/help/hire/australian-apprenticeship-support-services

OTHER FUNDED SUPPORT

Tertiary Access Payment		A means-tested payment to help school leavers relocate for tertiary study from regional or remote areas	https://www.education.gov.au/tertiary-access-payment
Commonwealth Prac Payment - VET	From 1 July 2025	Help for students to manage costs associated with undertaking a mandatory placement (also known as a practicum) as part of a Diploma of Nursing course. Eligible students access a payment (benchmarked to the single Austudy rate) while they undertake a placement. Higher education students undertaking a mandatory placement in nursing, midwifery, teaching or social work through an eligible higher education provider may also be eligible for the CPP.	https://www.dewr.gov.au/skills-and-training/help-cost-training/commonwealth-prac-payment-vocational-education-and-training
VET Student Loans (VSL) Program		VET Student Loans are available for approved courses at the diploma, advanced diploma, graduate certificate and graduate diploma level. Information on 2025 approved courses and loan caps is available here	https://www.dewr.gov.au/vet-student-loans/vet-information-students/information-vet-student-loans-students
FEE-HELP		A loan from the Australian Government to pay all or part of fees when for a higher education course at an approved higher education provider.	https://www.studyassist.gov.au/financial-and-study-support/fee-help
Austudy		Financial help for students or apprentices aged 25 or older	https://www.servicesaustralia.gov.au/austudy
ABstudy		Financial help for Australian Aboriginal or Torres Strait Islander students or apprentices. Depending on a student's circumstances, ABSTUDY can help with: • school fees • boarding fees • living costs • travel costs • buying school materials.	https://www.servicesaustralia.gov.au/abstudy

Women in STEM Cadetship and Advanced Apprenticeships		Supports employed women to study STEM part time. Up to \$5,000 per employee, per year, to a maximum of \$10,000 for a Diploma and \$20,000 for an Associate Degree is available for eligible employers to support employees' participation in the program. These funds can be used to provide flexible work arrangements or to cover costs associated with study, tuition fees or other study-related expenses.	https://www.education.gov.au/women-stem-cadetships-and-advanced-apprenticeships
Employee Assistance Fund		Provides reimbursements to an Applicant for workplace modifications, equipment and services necessary for a person with disability to perform their employment duties. The EAF can help people whether they are working, about to start work, or self-employed.	https://www.jobaccess.gov.au/i-am-a-person-with-disability/looking-applying-job/government-services-help-you/funding-workplace-changes/what-eaf

SKILLS SERVICES

Automatic Mutual Recognition (AMR)	Under AMR, there is no need to obtain a local licence in a second Australian state or territory or pay any licensing fees, as long as there is a home state licence in force. License holders can check if their occupation is included in the AMR scheme, and if necessary, how to meet notification requirements.	https://www.nsw.gov.au/business-and-economy/licences-and-credentials/automatic-mutual-recognition
Trades Recognition Australia	A skills assessment service for people with trade skills gained overseas or in Australia that require a skills assessment for the purpose of migration.	https://www.dewr.gov.au/skills-support-individuals/skills-and-licence-recognition/trades-recognition-australia
Your Career	Free online resources from the National Careers Institute to help find training and plan, manage and change careers	https://www.yourcareer.gov.au/

SMALL BUSINESS SUPPORT

Self-Employment Assistance	Help with a business idea or existing business. Services include: • Exploring self-employment workshops • Small business training • Business plan development • Business mentoring and coaching • Business health checks. May also include help with start-up costs, allowances and rent as part of Small Business Coaching.	https://www.workforceaustralia.gov.au/businesses/help/small-businesses/self-employment-assistance
Grants and programs finder (Federal)	Free guided search to help businesses find grants, funding and support programs from across government.	https://business.gov.au/grants-and-programs?resultsNum=10
Grants and funding (NSW)	Find a government initiative, grant or funding program to help support a business, project or community	https://www.nsw.gov.au/grants-and-funding?audience=Business%2CNot-for-profit&page=0
Business Loan Package	Loans available to assist Aboriginal and Torres Strait owned businesses to help them plan their business future, from \$10,000 to \$5m.	https://business.gov.au/grants-and-programs/business-loan-package
Apprentices and Trainees Payroll Tax Rebate NSW	Provides employers with a payroll tax rebate on wages paid to apprentices and new entrant trainees.	https://business.gov.au/grants-and-programs/apprentices-and-trainees-payroll-tax-rebate-nsw
National Energy Bill Relief	Electricity bill relief payment for small businesses	https://www.energy.nsw.gov.au/households/rebates-grants-and-schemes/national-energy-bill-relief
Australian Small Business and Family Enterprise Ombudsman	Assists and advocates for small businesses and family enterprises, including providing free resources.	https://www.asbfeo.gov.au/
Small Business Showcase	Resources from the Fair Work Ombudsman about running a small business	https://smallbusiness.fairwork.gov.au/
Employer Advisory Service	Gives small business employers free tailored written advice about pay and conditions	https://smallbusiness.fairwork.gov.au/employer-advisory-service
Small Business Peak	Provides free access to information about workplace legislation changes. Funded by DEWR, delivered by Council of Small Business Organisations Australia	https://smallbusinesspeak.org.au/
NewAccess for Small Business Owners	Beyond Blue's NewAccess for Small Business Owners is a free and confidential mental health coaching program	https://business.gov.au/grants-and-programs/newaccess-for-small-business-owners

	designed to support small business owners and sole traders	
Ahead for Business	Helps small business owners take action on their mental health and wellbeing through personalised resources and tools tailored to their specific needs.	https://aheadforbusiness.org.au/
Small Business Debt Helpline	Free, independent and confidential advice for financially struggling small businesses, including referrals to a range of free business supports.	https://sbdh.org.au/

Appendix 2: Policy context

This report and its recommendations respond to a broader strategic policy context set the Australian and New South Wales Governments and the Lithgow City Council. For more information, see the following documents and plans:

Federal Government

Future Made in Australia	2024	Dept of the Treasury
2024–25 Work Plan	2024	Jobs and Skills Australia
National Skills Agreement	2024	Federal, State and Territory Governments
National Skills Plan: Building a skilled Australia through Vocational Education and Training	2024	Skills and Workforce Ministerial Council
VET Workforce Blueprint	2024	Skills and Workforce Ministerial Council
2024–2025 Budget	2024	Dept of the Treasury
Net Zero Plan		Dept of Climate Change, Energy, the Environment and Water
Powering Australia		Dept of Climate Change, Energy, the Environment and Water

New South Wales Government

Central West and Orana Regional Plan 2041	2022	Dept of Planning and Environment
A 20–Year Economic Vision for Regional NSW	2021	Dept of Regional NSW
NSW Network Infrastructure Strategy: A 20–year strategy to transform the NSW electricity network	2023	Energy Corporation of NSW
NSW Skills Plan 2024–2028: Building skills and shaping success	2024	Dept of Education
Future Jobs and Investment Authorities. Issues Paper	2024	Dept of Regional NSW
Net Zero Plan Stage 1: 2020–2030	2020	Dept of Energy and Environment

Local Government

Lithgow Emerging Economy: Transition Plan	2023	Lithgow City Council and Dept of Regional NSW
Lithgow 2040 Local Strategic Planning (LSP) Statement	2020	Lithgow City Council
Our Place Our Future: Community Strategic Plan 2030	2017	Lithgow City Council
Lithgow Land Use Strategy 2010–2030	2010	Lithgow City Council