

FINAL REPORT

DOWN TO THE WIRE

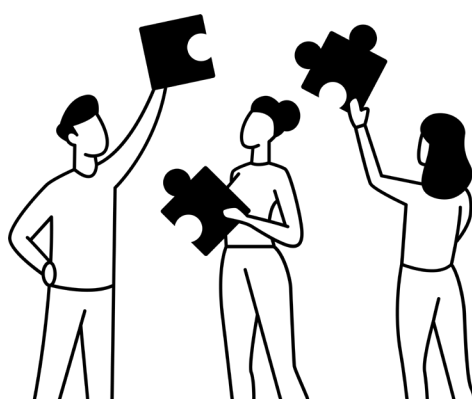
Managing the upcoming infrastructure workforce
crunch in Riverina Murray, New South Wales.

JULY 2022



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About Business NSW

As the state's peak business organisation, Business NSW has more than 40,000 member businesses. We work with businesses spanning all industry sectors including small, medium and large enterprises.

Operating throughout a network in metropolitan and regional NSW, Business NSW represents the needs of business at a local, state and federal level.

About Industry Capability Network

The ICN is a network of experienced industry procurement and supply chain specialists who introduce businesses large and small to projects large and small across Australia and New Zealand.

They are independently funded by members and subscribers, including Australian and New Zealand federal, state and territory governments.

The ICN was created over 35 years ago, to increase economic activity and employment opportunities for local industry.

Foreword

Australia is in the middle of an unprecedented infrastructure boom. There are several reasons behind this – a backlog of projects following persistent underinvestment at the turn of the century; the need to prepare Australia for expected population growth over the coming decades; the need for better transport and freight connectivity; and the need to reorient Australia’s energy system to meet the challenge posed by climate change and to curtail greenhouse gas emissions. Each of those by itself would be a sizeable task. Tackling all at once has led to the point we are at today.

Delivering on these infrastructure promises will be crucial for Australian businesses. Improving the nation’s productivity will demand faster transport links, more reliable digital connectivity, and greener, cheaper energy supplies.

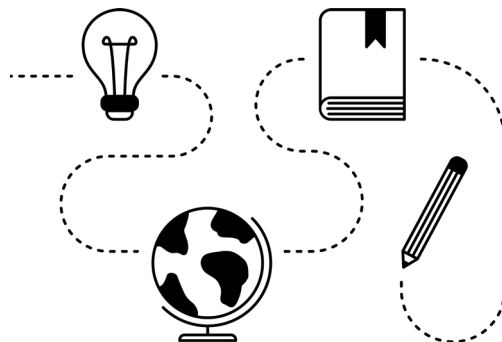
The Riverina Murray region in southern NSW has a bright future but is at a crunch point for the delivery of several megaprojects. The region will be intersected by new electricity transmission lines connecting NSW to neighbouring states to service new sources of supply. Snowy 2.0 is a vast civil engineering work, tunnelling through mountains to create a way to support the transition to a much greater share of renewable power. Inland Rail cuts through the region on its route from Brisbane to Melbourne, creating a new freight artery through the centre of NSW. Dozens of smaller projects are also in play, to upgrade the region’s roads, intermodals, hospitals, defence bases, energy supply and more.

The Riverina Murray region typifies the pressures that are created with major projects in the same place at the same time.

Business NSW has undertaken this project to consider how this significant infrastructure pipeline is going to be delivered and to identify potential constraints around the delivery of this infrastructure investment. To help inform our research, we spoke with major project owners and contractors in the region and gathered their feedback on capacity, skills and phasing of projects. Those businesses all identified the desire to leave a lasting skills legacy in the region.

The challenges created by the infrastructure boom demand a rethink of governments’ approaches to infrastructure planning and coordination. They also demand improvements to the education and training offerings available.

Australia’s infrastructure renaissance promises great things for Australian business, if it can be delivered at reasonable cost and to the desired timetable. But unless we get better at managing and coordinating infrastructure delivery, there is a risk that the promises will not match the reality. We need to address these issues urgently. With work on several projects already underway, we are already down to the wire.



Executive Summary

The infrastructure pipeline in the Riverina Murray region of southern NSW is unprecedented, with more than \$20 billion allocated to projects that are funded or underway, with more planned. Six of these projects (Snowy 2.0, Inland Rail, Project Energy Connect, Snowy 2.0 Connect, VNI West and Hume Link) are estimated to be collectively worth over \$14 billion and are likely to face further cost increases over the coming years as inflationary pressures pile up. ICN estimates these six projects alone will require more than 5000 workers during their construction phases.

Strategic investments made by federal, state and local governments have the potential to deliver significant improvements to businesses' access to transport and reliable energy. They should also drive significant economic value to the region providing job and business opportunities. However, with pressures growing in the infrastructure supply chain and labour market, the ability to deliver all these projects on-time and on-budget is becoming increasingly questionable.

During consultation on this report, we heard from many businesses in the region already struggling to fill vacancies and find suitably qualified workers with many concerned that these shortages will be exacerbated as competition for available skills increases as major infrastructure projects progress. It also became clear that housing was already in short supply, with an ever-increasing premium as workers are sourced from other regions to work on infrastructure projects.

In order to deliver on the infrastructure commitments in the region, we heard about the importance of phasing of projects to ensure delivery on time and to budget.



As a result of our consultation, our primary concern is the lack of coordination between these projects, which if left unmanaged may cause significant challenges for local communities' liveability and infrastructure, result in cost escalation and delays, particularly when considering how an already stretched labour pool will be accessed and may not create the long-term permanent employment opportunities needed to sustain and grow regional communities. The report sets out the importance of better coordination between infrastructure projects devised and delivered by different departments in different tiers of government.

To address these issues, we recommend the creation of a regional Infrastructure Coordinator General, capable of managing the demands from different government departments and non-government infrastructure providers, to avoid overloading the infrastructure pipeline. The role needs to fill gaps in the existing approach which gives Infrastructure NSW a nominal infrastructure coordination role, but omits from its remit Commonwealth projects, projects developed by Government Business Enterprises, and local councils. We also recommend an enhancement of information sharing by major projects about their labour market impacts and better management of the cumulative impacts of multiple concurrent projects.

After consultation with key stakeholders, we are also concerned about potential engagement failures between the education sector (school, VET and university) and industry. We recommend deeper industry involvement in determining educational offerings in the region, the establishment of a university-level civil, mechanical and electrical engineering course in Riverina Murray, and the (re)introduction of other courses critical to supplying the skills required for this significant infrastructure investment. The region is ripe for new models of partnership between industry and education, and the existing nascent strategies in the region could be further developed with support from governments.

Without resolving these issues, not only will it be difficult for those tasked with building the infrastructure projects to deliver them on time and to budget, it will also become increasingly difficult for those businesses already in the region that are seeking to expand, or those businesses just trying to get by in a region suddenly transformed by the arrival of so much construction activity.

The issues facing the Riverina Murray region have much in common with other parts of NSW encountering infrastructure booms. While this report focuses on the experiences of the Riverina Murray region, we believe it will be instructive for other parts of the state.



1. Introduction

Australia is undertaking record-breaking investment in its infrastructure. Infrastructure Partnerships Australia reports \$248 billion has been allocated for general government sector infrastructure funding over the four years to FY2024-25.¹ NSW accounts for \$85.6 billion, having been overtaken for the first time by Victoria (Figure 1).

Despite its large workforce, NSW faces a concerning shortfall in skills needed to deliver its infrastructure pipeline between 2021-25 according to recent analysis by Infrastructure Australia.²

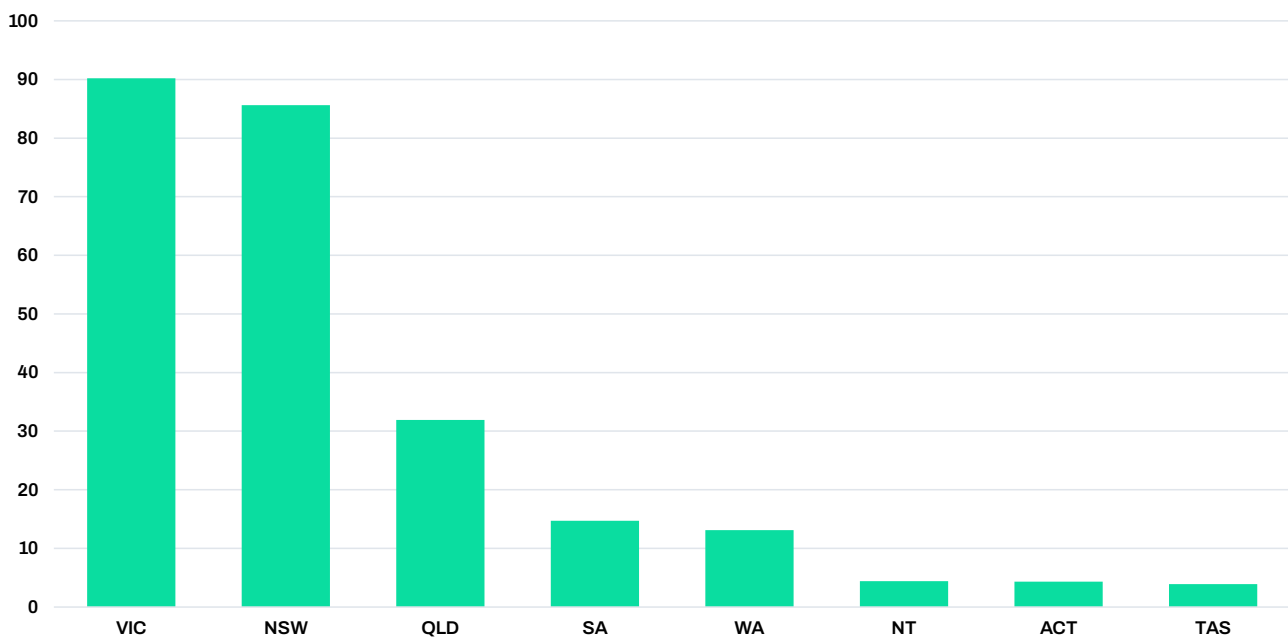


Figure 1: Total infrastructure funding over four years to FY2024-25 (\$billion)³

¹ <https://infrastructure.org.au/budget-monitor-2021-22/>

² <https://infrastructure.org.au/wp-content/uploads/2022/02/Australian-Infrastructure-Budget-Monitor-2021-22.pdf>

³ <https://www.infrastructureaustralia.gov.au/sites/default/files/2021-11/Infrastructure%20Workforce%20and%20Skills%20Supply%20report%20211117.pdf>

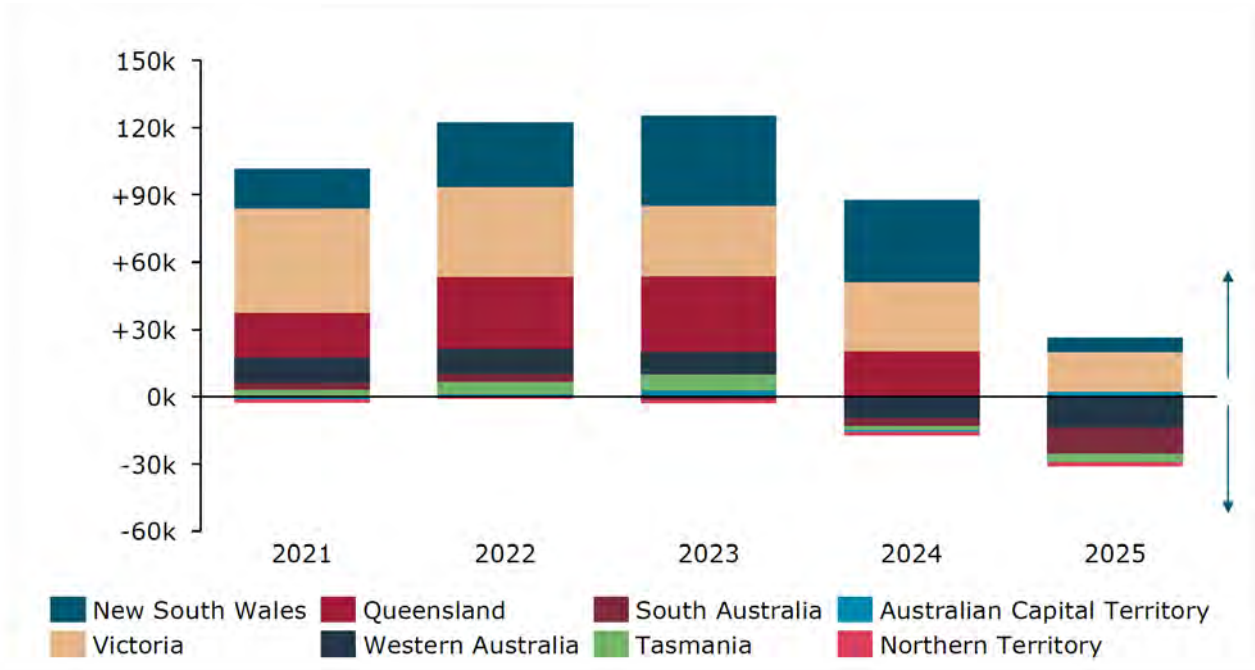


Figure 2: Net required additional public infrastructure workers by jurisdiction, 2021–2025 (000s)⁴

Growth in rail projects alone is ramping up sharply across Australia (Figure 3). Between 2020 and a peak in 2024-5 annual expenditure on rail construction is forecast to double. The same picture can be seen in the electricity sector, where a rapid uptick in transmission and generation projects is taking place as the transition to a renewables-dominated electricity system accelerates.



⁴ <https://www.infrastructureaustralia.gov.au/sites/default/files/2021-11/Infrastructure%20Workforce%20and%20Skills%20Supply%20report%2020211117.pdf> (pg.10)

The Riverina Murray region of southern NSW is a microcosm of this infrastructure boom. It is home to several major electricity projects, including transmission interconnectors between NSW and South Australia, and NSW and Victoria. The Riverina will be the location for one of NSW's Renewable Energy Zones (REZs), entailing more transmission investment, as well as many new renewable energy (solar and wind) projects. The adjacent Snowy Mountains region also plays host to the Snowy 2.0 hydroelectric project, and the transmission link to join it to the grid. Inland Rail will be coming through the region with key intermodals at Wagga Wagga and Albury-Wodonga.

Six infrastructure projects in the region are estimated to be collectively worth over \$14 billion and are likely to face further cost increases over the coming years as inflationary pressures pile up. The six projects are Snowy 2.0, Inland Rail, Project Energy Connect, Snowy 2.0 Connect, VNI West and Hume Link. ICN estimates these five projects alone will require more than 5000 workers during their construction phases.

In addition to these major infrastructure projects, there are a host of smaller projects also in the pipeline. The Newell Highway is slated for a major upgrade. Defence bases in the region are due for a major upgrade program. There is a commitment to improve digital connectivity, through the Gig State program, and economic development through the Special Activation Precinct at Wagga Wagga and Regional Jobs Precinct at Albury. Hospitals in Albury, Wagga Wagga and Griffith are undergoing or due for major capital upgrades.

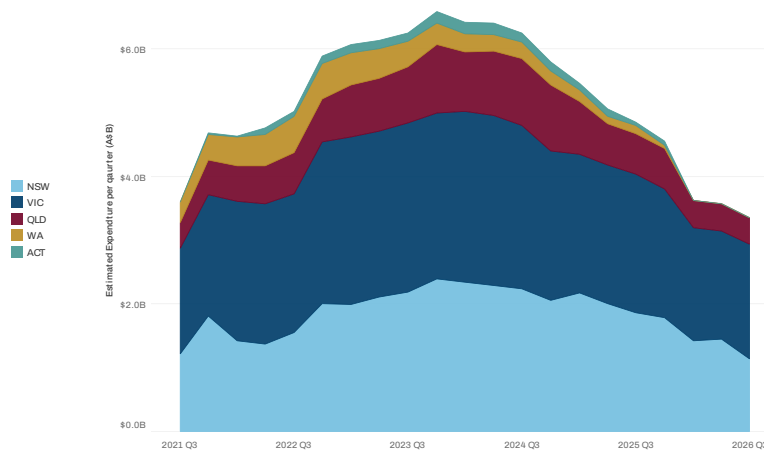


Figure 3: Major rail projects pipeline forecast expenditure over time⁵

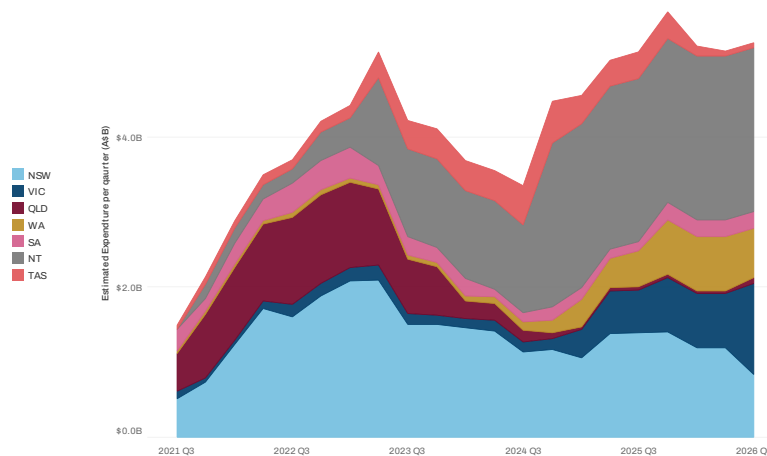
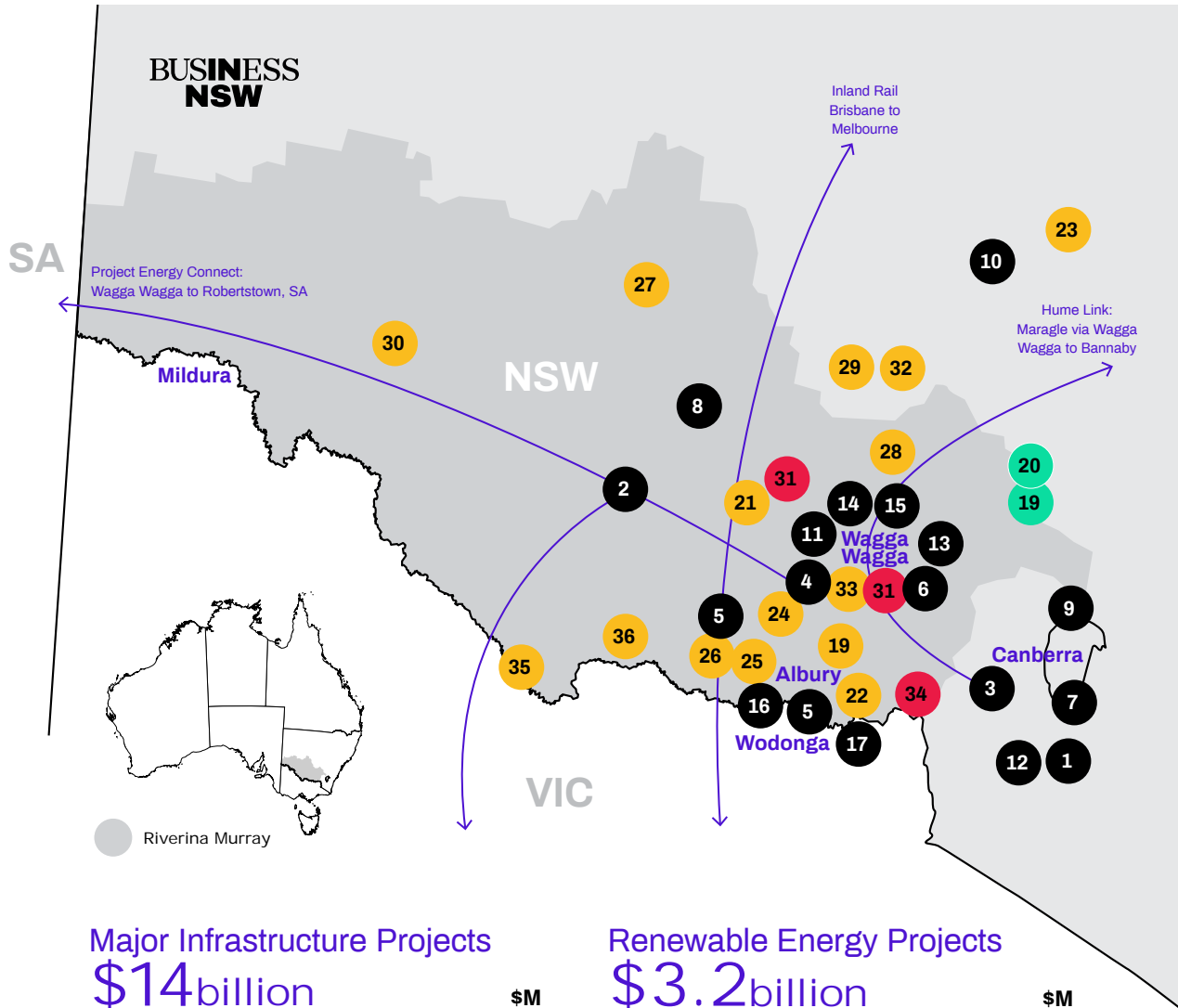


Figure 4: Major energy projects pipeline forecast expenditure over time⁵

⁵ <https://infrastructure.org.au/chart-centre/>



Major Infrastructure Projects \$14billion

		\$M
1	Snowy 2.0	\$5,100
2	VNI West	\$2,500
3	Hume Link	\$2,100
4	Project Energy Connect	\$2,000
5	Inland Rail	\$1,000
6	Defence Estates Upgrade	\$1,000
7	Monaro Highway Upgrade	\$250
8	Griffith Hospital	\$200
9	Barton Highway Upgrade	\$200
10	Newell Highway Upgrade	\$200
11	SAP – Wagga Wagga	\$160
12	Snowy 2.0 Connect	\$120
13	Gig State – Digital Connectivity	\$100
14	RIFL Wagga Wagga	\$55
15	Wagga Wagga Hospital Carpark	\$30
16	Albury Wodonga Hospital Emergency Department Redevelopment	\$30
17	Albury Convention Centre Redevelopment	\$30

Renewable Energy Projects \$3.2billion

		\$M
18	Rye Park Wind Farm	\$700
19	Culcairn Solar Farm	\$400
20	Bango Wind Farm	\$300
21	Avonlie Solar Farm	\$200
22	Glenellen Solar Farm	\$200
23	Currawarra Solar Farm	\$200
24	Walla Walla Solar Farm	\$140
25	Jindera Solar Farm	\$140
26	Sandigo Solar Farm	\$125
27	Hilston Solar Farm	\$120
28	Sebastopol Solar Farm	\$120
29	West Wyalong Solar Farm	\$100
30	Yarrabee Solar Farm	\$100
31	Riverina Battery	\$100
32	Wyalong Solar Farm	\$70
33	Gregadoo Solar Farm	\$61
34	Hume Battery	\$50
35	Moama Solar Farm	\$30
36	Finley Solar Farm	\$12

Major Infrastructure Projects
 Wind Farm
 Solar
 Battery

Map 1: Major infrastructure projects in Southern NSW

All this construction requires skilled people to carry it out. Competition for employees with the required skills in the region is heating up, and with most of the major projects not due to enter the most demanding stage of their development until 2023-24, competition for workers is likely to escalate further as time progresses.

Exacerbating this problem, the COVID-19 crisis has dramatically curtailed the ability of Australian employers to recruit from overseas. Patterns of inter-state and intra-state migration for employment have also shifted through the pandemic. It remains to be seen how the return to recovery and exit from pandemic conditions affects these trends, meaning employers have little certainty about their options to address skills needs in years to come. Changes to close contact 7-day isolation rules have provided some relief for employers but the threat of further waves of COVID-19 remains real.

The region is already experiencing significant skills and labour shortages, with online job advertisements having more than doubled compared to pre-COVID levels. In April 2022 there were more than 2500 vacancies advertised online⁶, at the same time as low unemployment in the region of around three per cent.⁷

In 2020 and 2021 the southern NSW border closure restricted staff availability. Projects were impacted by COVID-19 restrictions when moving staff interstate, the inability to bring in skilled workers from overseas and staffing shortages due to isolation requirements during the Omicron outbreak.

With the significant pipeline of energy, rail, water and defence project activity, current shortages in civil construction and general construction trades, engineers, technicians, metal fabricators and related support industries will be further tested if action is not taken quickly.

This activity takes place against a backdrop of continued growth and modernisation of manufacturing in the region and growth of industries such as food manufacturing, health, recycling and defence which has already seen demand for skilled workers in the region increase significantly. All of this presents an opportunity to redesign courses from vocational education and training (VET) providers and universities to make sure the region develops the skills and talent needed.

Different tiers of government have reacted differently to the growing pressures in the infrastructure supply chain. The NSW Government has acknowledged the challenges facing the delivery of infrastructure projects, and brought forward the State Infrastructure Strategy (produced by Infrastructure NSW) to review timetables and budgets. It has acknowledged the need to delay major new infrastructure projects until there is capacity to fulfil them.⁸ The new Commonwealth Government has yet to make clear its view on the infrastructure commitments it inherited, though it wasted little time in scrapping some of the projects proposed by the previous Government in the run-up to the election.

If major infrastructure projects are unable to meet their skills and labour needs, or face significant wage inflation, budget overruns and delays become more likely. Inflationary pressures continue to rise across the economy, and capital intensive infrastructure works are especially vulnerable to commodity price rises. For businesses in the infrastructure supply chain, this becomes another problem to manage. But for the wider business community in the Riverina Murray, both as taxpayers and potential users of the infrastructure to be built, the prospect of paying more while seeing it completed later will not come as welcome news.

⁶ National Skills Commission. <https://labourmarketinsights.gov.au/media/q1qgkku3/recruitment-trends-and-employers-needs-murray-riverina-june-2022.pdf>

⁷ <https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia-detailed/latest-release>

⁸ <https://www.smh.com.au/national/nsw/premier-flags-timeline-changes-for-transport-education-and-health-projects-20220407-p5abqg.html>; <https://insw.com/expert-advice/state-infrastructure-strategy/>

2. Major Projects in the Riverina Murray

Around \$20 billion worth of infrastructure projects are either approved or under consideration in the region, six of which are estimated to be collectively worth more than \$14 billion in investment (Snowy 2.0, Inland Rail, Energy Connect, Snowy 2.0 Connect, VNI West and Hume Link). These projects alone we estimate to require around 5000 workers during the construction phase.

Project	Type	Current estimated value (relevant region) \$ billions	Estimated Employment (construction phase)
Snowy 2.0 ¹⁰	Electricity generation	5.1	2000
Inland Rail	Rail	1.0	500
Project Energy Connect	Electricity transmission	2.0	700
Hume Link	Electricity transmission	3.3	700
VNI West	Electricity transmission	2.5	700
Snowy 2.0 Connect	Electricity transmission	0.12	300
TOTAL		14.0	4900

Table 1: Major infrastructure projects in Southern NSW / Riverina Murray.⁹

Costs are increasing in many of these projects. For example, Hume Link's total cost was estimated to be about \$1.3 billion in 2020. In 2022, the estimate is now \$3.3 billion.¹¹ The costs presented here are subject to further escalation as the projects progress.

There are several other smaller projects occurring in the region. Significant infrastructure projects across multiple sectors add to workforce pressures in the area.

⁹ Data from Industry Capability Network – ICN NSW

¹⁰ A report in the Australian Financial Review at time of writing gave strong indications the official cost estimate for Snowy 2.0 will be revised upwards before completion. <https://www.afr.com/companies/energy/the-battle-to-build-snowy-2-0-heats-up-20220303-p5a1i2>

¹¹ Australian Energy Market Operator. January 2022. Available at: <https://aemo.com.au/newsroom/news-updates/humelink-meets-optimal-development-path>.

Project	Type	Current estimated value \$ millions
Gig state	Digital connectivity	100
Transport Access Program	Transport	21
Newell Highway Upgrade	Road	200
Special Activation Precinct – Wagga Wagga	Urban development	160
Wagga Wagga Hospital Car Park	Health/transport	30
Griffith Hospital	Health	200
Riverina Intermodal Freight and Logistics Hub (RIFL)	Transport	55
Defence estates upgrade	Defence	1200
Monaro Highway Upgrade*	Road	250
Lake Cowal Underground*	Mine	>130
Cleanteq Sunrise*	Mine	>2300
Wyangala Dam raising*	Water	1500
TOTAL		3292

* These projects are outside the Riverina Murray region but have been assessed by ICN as impacting the Riverina Murray labour market and supply chains. Their value is not included in the total.

Table 3: Additional significant infrastructure projects in Southern NSW/Riverina Murray.¹²

The creation of NSW's South-West Renewable Energy Zone (REZ) will be the springboard for a significant increase in renewable energy developments in the area. Table 2 identifies projects already in development. As contractual arrangements for renewable energy are established under the terms of NSW's Electricity Infrastructure Roadmap, some of these projects may not progress, but more projects are likely to be added. The creation of the REZ is also likely to necessitate further development of electricity transmission infrastructure, though the extent of investment and the timetable has not yet been determined. Depending when that occurs, it could overlap with the other projects listed or may follow on from them.

¹² Data from Industry Capability Network – ICN NSW

¹³ <https://www.energy.nsw.gov.au/renewables/renewable-energy-zones#-southwest-renewable-energy-zone->

¹⁴ <https://www.energy.nsw.gov.au/government-and-regulation/electricity-infrastructure-roadmap>

¹⁵ Estimates from the Australia Institute via Industry Capability Network – ICN NSW (ref. on pg.17)



Project	Value \$ million	Employment (construction phase, estimated)
Wyalong Solar Farm	70	80
West Wyalong Solar Farm	100	90
Avonlie Solar Farm	200	160
Walla Walla Solar Farm	140	120
Culcairn Solar Farm	400	250
Yarrabee Solar Farm	100	90
Gregadoo Solar Farm	61	40
Riverina and Darlington Point Batteries	100	30
Hume Battery	50	20
Finley Solar Farm	12	130
Glenellen Solar Farm	200	150
Jindera Solar Farm	140	12
Moama Solar Farm	30	50
Currawarra Solar Farm	200	150
Hilston Solar Farm	120	90
Sebastopol Solar Farm	120	90
Sandigo Solar Farm	125	100
Rye Park Windfarm	700	300
Bango Wind Farm	300	300
TOTAL	3168	2252

Table 3: Proposed renewable energy projects in Riverina Murray.¹⁵

These projects span across a variety of economic sectors. They have been commissioned at different levels of government, across many government departments, Government Business Enterprises (GBEs) or are the result of private sector investment. However, to be realised they will all draw on the same pool of workers.

While not all will be in construction simultaneously, all will require engineering, construction, project managements and support workforces to be available during the peak years between 2023-2026. Projects are competing for the services of the same group of people, pushing up labour costs across the board. With international immigration still slow to return following the COVID-19 pandemic, and inter-state migration remaining greatly reduced, it remains unclear whether all roles can be filled in the time required to deliver the full pipeline of infrastructure projects in the region on time and on budget.

3. Infrastructure Strategy

The scale of Australia's infrastructure plans is putting significant strain on the construction sector. As the Grattan Institute reported, "even before the pandemic, the [then] Prime Minister, Treasurer, and state infrastructure ministers were worried that there weren't enough workers, materials, and machinery for the massive construction workload".¹⁶ Shortfalls in supply combined with fixed demand lead inexorably to price rises. Delays and cost overruns become increasingly likely, undermining business cases and the realisation of planned benefits.

ELECTRICITY TRANSMISSION

Electricity transmission proposals are required to meet a cost-benefit test – the Regulatory Investment Test for Transmission, or RIT-T, carried out by the Australian Energy Regulator (AER). In Southern NSW, both Project Energy Connect and Hume Link transmission projects have incurred significant cost increases. Project Energy Connect rose from an estimated \$1.5 billion to \$2.3 billion by the time the AER approved it in May 2021. Hume Link has seen estimated costs grow from \$1.3 billion to \$3.3 billion, as environmental remediation requirements in a national park location have become clearer. Unresolved issues related to land access requirements and social license in affected communities remain. Also, these latest cost estimates do not factor in supply chain and labour inflationary pressures that are currently unfolding.

At the time of writing, the Australian Energy Market Commission (AEMC) is consulting on proposal ERC0325 (draft determination is due on 7 July 2022) that would require a project proponent to "reapply the regulatory investment test (RIT) if, following completion of the RIT, the estimated cost of a transmission or distribution project materially increases." While cost-benefit estimation is not an exact science, the vast discrepancies between estimated and realised costs (250% and climbing in the case of HumeLink) suggest that current authorisation processes are no longer adequate. The rule change proposals currently with the AEMC would, if approved, partly address this for electricity transmission infrastructure, but other types of infrastructure are subject to similar patterns without an equivalent path for reappraisal.

Recommendation

1. Establish a more robust method for appraisal of the impacts of changes in costs of major projects when they occur after initial approval has been granted. In the electricity transmission sector, this could be in line with the rule change proposal ERC0325 currently under evaluation by the AEMC.

¹⁶ <https://grattan.edu.au/wp-content/uploads/2020/11/The-Rise-of-Megaprojects-Grattan-Report.pdf>

¹⁷ <https://www.aemc.gov.au/rule-changes/material-change-network-infrastructure-project-costs>

Infrastructure Coordination

Even when projects have clear benefits, they are not net beneficial at any cost. (See also Box 1) Projects which would have been net beneficial (i.e. their expected benefits outweigh their expected costs) if delivered efficiently, or at pre-shortage prices, can change to become net negative if expected costs now exceed expected benefits due to the inflationary impacts of labour and materials shortages. Consumers or taxpayers should not be expected to pay for projects whose benefits no longer outweigh their costs. Efficient delivery is essential, therefore, both to keep projects currently in development 'in the money', and for newly proposed projects to pass their cost-benefit assessment.

Contributing to the pressure is the mix of responsible departments across multiple layers of government, and numerous private sector developers. Each department, and each company, has responsibility for delivering its projects, while having little or no incentive to account for possible impacts on other projects in the region. In the Riverina Murray region Commonwealth departments of defence, energy, infrastructure and transport, NSW departments of energy, transport, regional development, private electricity transmission network operators, private renewable energy developers and others are all project proponents, all with competing priorities, and all competing for the overlapping pools of inputs including skilled workers and materials.

Both the Commonwealth (Infrastructure Australia) and NSW (Infrastructure NSW) have agencies with roles to play in infrastructure coordination. However, in practice there are several constraints which limit their ability to coordinate to the extent needed in Riverina Murray.

In NSW, the title of Infrastructure Coordinator is held as part of the duties of the Infrastructure NSW Chief Executive. However, the remit of the role is limited to oversight of NSW Government funded projects. With infrastructure in Riverina Murray funded by the Commonwealth Government and GBEs as well as NSW Government, the current remit is too limited to address the challenges this has created.

At the national level, Infrastructure Australia also notionally has a coordination function. In practice, its focus has been on project assessment and evaluation (where projects are submitted by their proponents), the identification of the Infrastructure Priority List, and the assembly of the Australian Infrastructure Plan.

Based on the feedback received through the production of this report, we see two critical functions which are not being fully executed. The first is a national role of critical infrastructure prioritisation. With Australia's infrastructure delivery capability reaching capacity, it may be time to move beyond the focus of assessments passing a benefit-cost ratio (BCR) of 1 (i.e. that benefits of a project exceed its costs). This is still a minimum threshold that projects should meet. However, with finite resources and delivery capacity, a $BCR > 1$ alone is insufficient; it is also necessary to know that a project offers a ratio of benefits to costs that exceeds the other projects that are competing for allocations of the limited pool of resources and delivery capacity. In other words, Infrastructure Australia's role would place a greater emphasis on prioritisation, rather than testing whether the $BCR > 1$ test is met. This prioritisation function would also need to understand the relative consequences of projects not being delivered – in other words, which projects impose the greatest costs or risks if they are not built (or at least not built on time). With the incoming government having committed to review Infrastructure Australia, there is an opportunity to build on its project assessment role to also include project delivery, while also holding project proponents to account.

Secondly, we see a role for a regional infrastructure coordination capability with oversight of projects within close geographic proximity. This unit should a) be able to oversee and guide project timing to minimise the risks of adverse interactions between multiple major projects, and importantly b) be able to guide solutions that maximise combined benefits and legacy outcomes from multiple major projects. The Department of Regional NSW is currently carrying out activities in this space and may benefit from being resourced to expand this work.

¹⁸ <https://www.afr.com/companies/infrastructure/infrastructure-australia-stretched-too-far-and-too-thin-20220608-p5as4i>

While both the Commonwealth (Infrastructure Australia) and NSW (Infrastructure NSW) have agencies with roles to play in infrastructure coordination, in practice their contributions are often overridden by Cabinet Departments with higher influence and profile and which commission major infrastructure projects. With no one entity having overall responsibility, and with an ability for government and infrastructure providers to pass cost increases through to taxpayers and billpayers, high quality project assessment can be compromised.

Ultimately though, the success of these functions will depend not on where exactly the Coordinator General role is situated, but whether project owners and decisionmakers (different tiers of government, different government departments, different GBEs and the private sector) are willing to listen to, and where necessary to defer to it. The alternative, as we are seeing in the Riverina Murray, and elsewhere in NSW, is that having multiple major infrastructure projects in the same location exacerbates disbenefits such as strained labour markets, housing shortages and environmental disruption.

Recommendations

2. Infrastructure NSW and Infrastructure Australia should be empowered to reassess business cases for major infrastructure projects when there is a material change in estimated costs, and where there is no other body (such as the AER) with relevant oversight of the project.
3. The ongoing review of Infrastructure Australia should consider empowering IA to advise on the sequencing of infrastructure investments, both to ensure that the highest-value projects are prioritised, and to manage workloads within particular geographic areas or skill types.
4. A Regional Infrastructure Coordinator General for the Riverina Murray region should be appointed with a scope of responsibility including pipeline scheduling, portfolio management, macro resource alignment and reporting to local governments. This service must be able to analyse the cumulative impacts of infrastructure projects whose geography and/or timing overlap.



ROLE OF REGIONAL INFRASTRUCTURE COORDINATOR GENERAL

Responsibilities would include:

- Establishment of a permanent office in the region
- Ability to require project proponents in the Riverina Murray region to provide accurate workforce requirements by trade type updated on a quarterly basis. This would include permanent, FIFO and sub-contract labour expectations
- Ability to commission studies on expected housing, support infrastructure, equipment, transport and other related shortfalls
- Access to proponent sponsor and contractors to understand and promote collaboration of outcomes
- Representation from all levels of Government to a sponsor forum to determine optimised prioritisation of projects and phasing of key activities
- Development/maintenance of a master schedule or projects including key critical paths and dependencies through an active project management office function
- Escalation of unresolved challenges to jurisdictions to ensure timely response
- Oversight of all new contracts above \$10M in the region to ensure new projects can be delivered without further impacting the current project delivery schedule
- Provide capacity and capability gap information to training and skills development organisations to enable timely responses
- Report to the NSW Government to determine any immediate interventions that are needed to deliver on the pipeline
- Authority in-line with Coordinator General office established in Transport for NSW for CBD interaction of projects
- Community and industry liaison responsibilities to ensure community impacts are communicated effectively across the program.

Project evaluations and environmental impact statements (EISs) are required to make basic assessments of labour force requirements. However, the scope of these assessments has not been able to keep up with changing labour force conditions, particularly the impacts of COVID-19. As the majority of impact assessments relating to projects in the Riverina Murray (e.g. Snowy 2.0, Project Energy Connect, the first parts of the EIS process for Inland Rail) were carried out prior to the beginning of the pandemic, they did not consider any difficulty accessing necessary workers or skill types. Nor do any of those evaluations estimate the impact that other projects entering construction at the same time within the same geographic area and labour market will have on the assessing project's ability to recruit staff.

Project evaluations and environmental impact assessments spend little time considering the cumulative impacts on labour markets or supply chains of having multiple major projects within a particular geographic area. The projections made in the various projects' impact assessments cannot be blamed for failing to foresee the pandemic, but they can be blamed for failing to see – and evaluate – how other megaprojects in development in the same locale will affect their own labour market and supply chain impacts.

It has been striking from conversations with multiple project teams how preliminary thinking about recruitment remains, in some cases years after the initial business case or EIS. It is also striking how little public domain data exists about project's workforce expectations and timing. This was especially evident in Infrastructure Australia's 2021 Infrastructure Market Capacity report, in which IA had to rely on modelling and assumptions, rather than actual data, to come up with its figures for skills in need and local demand volumes.¹⁹ There is a worrying degree of complacency that workers will be able to be recruited when needed, despite heightened competition from other projects both within Australia and internationally and the potential to drain local businesses of workers.

A combination of under-developed thinking about how workers will be recruited, and a tendency for each project to keep information in-house, limits every other project's ability to factor in the implications of other works going on around them. ICN has some data on projects across the geographical area but is limited by the level of detail projects have about their own skills needs. The Northern Rivers Reconstruction Corporation has offered some lessons in nurturing sharing of information from private providers, but it remains to be seen whether this model can be replicated outside of an emergency situation. Where projects have not yet determined how many, of which type of worker, over what duration of time, they need for themselves, it cannot be expected that other project teams, nor ICN, will be able to factor that information into their own plans and offerings.

Infrastructure Australia's Infrastructure Market Capacity report is a good starting point for projects either beginning or in the middle of evaluating their skills needs. It indicates clear shortfalls in key areas, with implications for project teams and education providers as to which gaps will need to be addressed through training and education offerings in the immediate future (see Chapter 4). Adding the concept of 'deliverability' to Infrastructure Australia's Major Projects Priority Assessment process is a step in the right direction, reflecting that even desirable projects may not be able to be built with the infrastructure market at full capacity.

Ultimately the task of keeping infrastructure pipeline well-stocked, but not overloaded, falls on state and Commonwealth Treasuries, and the state premiers and the Prime Minister. This task needs to be calibrated, not only to the capacity of the whole country, or of a particular state, but also to specific regions if they are seeing unusually large volumes of infrastructure investment.

One method to address this, as previously recommended by the Grattan Institute, is, that the Federal Government change the Infrastructure Australia Act to require IA to publish a reliability rating of the business cases for all projects valued at \$250 million or more within a month of their tabling.²⁰

Governments can also make use of their roles as the major decisionmakers and purchasers of infrastructure to ensure that the different projects they procure reinforce, rather than compete with, each other. One way the NSW Government has achieved this is through the Infrastructure Skills Legacy Program, allowing skills development gained on one project to expand the pool of skilled workers available to future projects.

The next Chapter will describe the policy initiatives required in local education and training in order to complement changes to strategic infrastructure planning.

Recommendation

5. Projects reliant on public funding (through taxation or through mandatory charges such as energy network costs) should be required to publish information on their expected workforce requirements. Regional NSW may be able to play a constructive role in facilitating critical information sharing across projects in Riverina Murray.
6. Cumulative impacts of labour market impacts should be considered in EIS processes alongside cumulative environmental impacts of multiple projects in a location. Where cumulative impacts are found, project proponents or developers should be encouraged to find solutions collaboratively with the other projects contributing to the impact, such as through combined training offerings or 'pooled' workforce arrangements to facilitate workers moving from one project to another to efficiently deliver multiple projects.

¹⁹ <https://www.infrastructureaustralia.gov.au/publications/2021-infrastructure-market-capacity-report>

²⁰ Grattan Institute. How to get better bang for transport bucks. Available at: <https://grattan.edu.au/wp-content/uploads/2021/07/How-to-get-better-bang-for-transport-bucks-submission.pdf>

4. Skills & Training

CONTEXT

Skills and labour shortages occur where there is insufficient availability of skilled workers to meet the current and emerging needs of industry.

At any stage of the pandemic, access to workforce skills has always been a key concern for many businesses, whether it has been trying to keep workers engaged during the pandemic or trying to find employees as restrictions eased.

Most recently, in the Business NSW 2022 Workforce Skills Survey conducted in June 2022, 93 per cent of businesses reported that they were experiencing workforce shortages.

A skilled workforce will be pivotal in realising Australia's extensive infrastructure plans. The proposed rapid expansion of public infrastructure is testing the limits of existing capacity and capability. Signs of shortages are already prevalent across the workforce with demand expected to reach unprecedented levels, well beyond the sector's ability to service them. Infrastructure Australia's Public Infrastructure Workforce and Skills Supply report projects a shortage of 105,000 roles being unfilled in 2023 with 34 of 50 occupations likely or potentially in shortage.

Given that many countries around the globe are taking similar approaches to COVID recovery, we expect that competition for talent relevant to civil infrastructure will become even more fierce over the next few years.

THE SITUATION IN RIVERINA MURRAY

Across the Riverina Murray, access to workers is already a significant issue, irrespective of industry sector. Online job advertisements in the region have more than doubled compared to pre-pandemic levels, with more than 2,500 jobs advertised online in the region in April 2022. In June 2022, the Business NSW Workforce Skills Survey found that almost every business in the region was already experiencing a workforce shortage.

In addition, in June 2021, the Riverina Regional Development Australia (RDA) conducted a Skills Study which found that 78 per cent of respondents reported difficulty filling vacancies.

²¹ https://www.businessnsw.com/content/dam/nswbc/businessnsw/pdf/bcs_sept_2021.pdf

²² https://www.businessnsw.com/content/dam/nswbc/businessnsw/pdf/Workforce_Skills_Survey_Preliminary_Report.pdf

²³ <https://www.infrastructureaustralia.gov.au/publications/2021-infrastructure-market-capacity-report>. Data for the forecast is drawn from the projects and contracts on the ANZIP website. This data has then been applied to a model which estimates each project's quarterly labour requirement across all relevant occupations using ABS employment data and labour intensity benchmarks based on the project's sector and position in the planning and delivery cycle.

²⁴ <https://labourmarketinsights.gov.au/media/q1qgkku3/recruitment-trends-and-employers-needs-murray-riverina-june-2022.pdf>

²⁵ Regional results not yet published. State-wide results available at: https://www.businessnsw.com/content/dam/nswbc/businessnsw/pdf/Workforce_Skills_Survey_Preliminary_Report.pdf

²⁶ Regional Development Australia. October 2021. Riverina Skills Study. Available from: <https://rdaiverina.org.au/projects-blog/2021/10/12/riverina-skills-study-launch>

The Skills Study found that an average of 48 per cent of all vacancies in the last 12 months were unable to be filled. The reported impact on businesses and organisations included:

- an increase in workload on available staff
- decreased capacity to take on new work
- decreased productivity
- increased stress on owners, managers
- increased stress on available staff.²⁷

In March 2022, Business NSW hosted a Skills Roundtable in Albury, in partnership with Charles Sturt University (CSU) and attended by a number of local businesses, major infrastructure projects, TAFE, Training Services NSW and the NSW Minister for Skills and Tertiary Education. The aim of the Roundtable was to explore the existing skills needs of businesses and identify solutions.

Many businesses at the Roundtable raised concerns that thousands of jobs were currently vacant and that new infrastructure projects in the region would have a significant impact on the pool of available labour resources. Many businesses were concerned that these projects were going to divert labour from local businesses that were already struggling to find qualified people.

It was also clear from discussions that local education offerings available were not meeting the needs of businesses already in the region.

While there are programs attempting to address these shortages, such as the NSW Growing Regions of Welcome (GROW) program of Multicultural NSW, which aims to resettle people from migrant and refugee backgrounds to a number of regional communities, including the Riverina Murray²⁸, it is clear that as further infrastructure enters construction, existing skills shortages will become more severe.

CAREERS AT THE HEART OF NET ZERO AMBITIONS

The Riverina Murray region has long been regarded as a place to work, live and visit. The region exudes liveability, is well connected to major cities and boasts a diversified economy and a highly skilled workforce, not to mention one of the nation's major food bowls. But if you want to be a part of Australia's renewable energy future, a resurgence in advanced manufacturing, the circular economy or nation-building infrastructure projects, then the Riverina Murray has some current and emerging long term career opportunities that will continue well into the 2020s.

The region is on the cusp of a roaring twenties infrastructure boom through unprecedented levels of project activity in rail, renewable energy, water, logistics, advanced manufacturing and defence. During the construction phase of six major projects alone it is estimated that a workforce of over 5,000 workers will be required. For example, Project Energy Connect will create the backbone infrastructure for the future South-West NSW Renewable Energy Zone (REZ) enabling a further 4950 megawatts of generation capacity and creating up to 1,500 new construction jobs in regional NSW.

²⁷ Regional Development Australia. October 2021. Riverina Skills Study. Available from: <https://rdariverina.org.au/projects-blog/2021/10/12/riverina-skills-study-launch>

²⁸ <https://multicultural.nsw.gov.au/nsw-grow/>

²⁹ <https://www.countrychange.com.au/> (ref. on pg.25)

A competition for talent - how to best promote this opportunity?

The RDA Riverina has, in collaboration with LGAs in the Riverina region, developed a strategy entitled 'Country Change'. This strategy markets career opportunities and provides information to those interested or considering moving to the region.²⁹ If the entire region wants to make a compelling case to workers to stay long-term (and in turn leave a legacy) we recommend that key bodies and agencies in the region come together to build on this strategy to deliver unified message and vision regarding the job opportunities of the future for the Riverina Murray.

In addition to relevant local councils, the newly created Department of Enterprise and Investment and the Department of Regional NSW, key asset owners and projects, and Business NSW could all partner on developing this vision.

One campaign message could be that the Riverina Murray region will play a central role in realising Australia and NSW's goal of a net zero economy. A challenge to the audience would be to say that if you want to be a part of the renewable energy economy, come to the Riverina Murray and help build the nation's future.

Recommendation

7. That key bodies, agencies and projects in the region build on the 'Country Change' campaign to market the overall narrative and upcoming opportunities of the Riverina Murray region.



FUTURE OPPORTUNITIES?

What are some of the key regional opportunities on the horizon that should be promoted?

Renewable Energy Projects

The Riverina Murray will be home to the new South-West REZ, with projects coming online throughout the 2020s and beyond. A REZ is a modern-day power station. They combine renewable energy generation such as wind and solar, storage such as batteries, and high-voltage poles and wires to deliver energy. For more information see <https://www.energy.nsw.gov.au/renewables/renewable-energy-zones>.

Electricity Transmission

The region will see significant investment in transmission infrastructure, including Project Energy Connect and Hume Link, to create the backbone of the REZ. This will create careers for planners, construction engineers (including blast, civil, environmental, electrical) and various specialist roles.

FUTURE OPPORTUNITIES? (CONT.)

Nation Leading Hydro

Snowy 2.0 is the next chapter in the Snowy Hydro Scheme's history. It is the largest committed renewable energy project in Australia and will provide an additional 2,000 megawatts of dispatchable, on-demand generating capacity and approximately 350,000 megawatt hours of large-scale storage to the National Electricity Market. To provide context, this is enough energy storage to power three million homes over the course of a week. Careers range from labourers and trades, plant operators, geologists, construction engineers (blast, civil, environmental, electrical and more) and specialist roles including tunnelling engineers.

Inland Rail and interface opportunities

The Albury to Illabo project will upgrade approximately 185km of the existing freight rail corridor between the Victoria/NSW border and Illabo in regional NSW. Expected to commence construction in 2024, this will form part of the Inland Rail line linking ports at Melbourne and Brisbane with the agricultural heartlands of NSW. Inland Rail promises to be a fast freight backbone that will transform how goods are moved around Australia, generating opportunities for our regions and our economy, now and well into the future.

The Defence supply chain

The Defence bases in the region are located around Wagga Wagga and Albury Wodonga but there is a diverse range of defence industry and supply chain capability across the region including specialist engineering, guided weapons and explosive ordnance, propellant and explosive manufacturing, portable power solutions, armoured vehicle kits, virtual training systems, drone and high-altitude balloon technologies.

Careers include:

- designers
- specialised engineers and electronic engineers
- manufacturing specialists
- metal fabricators
- vehicle maintenance.

The defence industry is a major employer and attractor of skilled workers in the region. The 2022-23 Federal Budget added \$38 billion to boost the workforce by 18,500 personnel nationally.

Advanced manufacturing growth

The Riverina Murray continues to modernise its manufacturing capability and has regional strengths in advanced food manufacturing, metal fabrication, paper and pulp manufacturing, AgTech and is a leading region for new Circular Economy investments including the nation's largest PET (polyethylene terephthalate) recycling plant, capable of processing one billion plastic bottles each year at Nexus Albury. There are more than 900 businesses employing almost 12,000 people in the manufacturing sector and one in four adults have a science, technology, engineering or mathematics (STEM) education.

The sector is supported by the availability of multi-disciplinary research at Charles Sturt University and the Albury Wodonga Regional Deal is currently exploring an Advanced Manufacturing Hub in the region.

URGENT SOLUTIONS TO SKILLS NEEDS

Consultation with major infrastructure projects in Riverina Murray clearly indicated a desire to create a legacy in the region. Projects reported that they urgently needed a varied and broad range of skilled and lower skilled occupations including:

- Tunnelling operators
- Carpenters
- Cleaners
- Chefs
- Plumbers
- Electricians
- Civil and electrical engineers
- Fabricators
- Project managers

During consultation on this report, we found that there was little collaboration or understanding of the skills needs of each competing project (and the needs of existing local businesses). To ensure that these projects meet their budget and schedule requirements, there is an urgent requirement for analysis and timetabling of worker need across projects.

Recommendation

8. The new Infrastructure Coordinator General should conduct an urgent review and timetabling of skills needs across existing and upcoming projects in the region.

Industry Engagement

During consultation on this report, it became clear that industry has little input into what government funded training is delivered in the region, where it is delivered and how. Industry lacks significant opportunities to input into NSW Government funding for vocational education and training, particularly under the Smart and Skilled program. It is only able to review and advise on the NSW Skills List, which identifies the qualifications that are eligible for a government subsidy under Smart and Skilled, but not where or how many of those courses are delivered. This is despite one of the primary purposes of vocational education and training (VET) being to achieve employment outcomes.

It became clear during consultation for this report that the poor engagement between industry and the education sectors has led to relevant and appropriate tertiary courses not being offered within the Riverina Murray region. For example, TAFE NSW does not offer the Certificate IV in Engineering (CNC Programming) locally.

This issue is evident not just with VET but also with university education: neither civil, mechanical nor electrical engineering is offered at either Charles Sturt University (Albury campus) or Latrobe University in Wodonga. Currently people interested in this field must move to another region to study, which comes at a cost and increases the likelihood of them permanently moving away from the region.

Delivering the skills required for major infrastructure projects will require the education sector to be aware of, and offer, relevant skills required locally and will require significant engagement with industry to help drive the awareness and desire to work on these projects. There is indicative evidence to suggest that training people in regional areas will improve retention of staff in those areas.

Whilst the bulk of research is in the health sector, evidence indicates that there are positive correlations between training in a rural and regional area and later working in a rural or regional area.³⁰

Accordingly, there is an immediate need for a co-creation workshop to be held in the region to identify local engineering requirements and design suitable educational offerings to meet those needs, which may include micro-credential or short-course offerings that articulate into other training pathways. Such a workshop would need to be attended by tertiary education providers (CSU and TAFE), local businesses and government stakeholders.

Related to these industry engagement issues, there are specific cross-border VET issues in the Riverina Murray region. Presently a cross-border contract exists for the training of both NSW apprentices and school-based apprentices with six Victorian TAFEs including the Wodonga Institute of TAFE. Under these arrangements training is accessed by the NSW apprentice in Victoria where it is impracticable for the training to be delivered by a Smart and Skilled provider within NSW. It is understood that Training Services NSW funds training for NSW-based apprentices under the agreement.

While it is commendable that most NSW apprentices are able to study close by the region in Victoria rather than travelling further afield, there are other courses that businesses require access to, such as the Certificate IV in Engineering Drafting, which would be delivered as a traineeship, that are not included in the funding agreement despite there being an identified need. It is unclear how these funding arrangements are determined and what flexibility there is to include additional traineeships under the agreement. Industry would be keen to provide input into the arrangements.

Since the start of COVID, TAFE has been forced to move much of its training online and has successfully increased its capacity to deliver via this method. It has also increased its usage of flexible learning centres (particularly Connected Learning Centres (CLCs)).

However, there have also been reports of some courses in the Riverina Murray region moving entirely to online learning in 2022. While there is merit in the online delivery of some courses, many businesses advise that online training – particularly in construction and manufacturing – is of lower quality compared to face-to-face delivery. Further, there are significant equity issues with transitioning to a fully online model: online delivery requires access to IT and adequate telecommunications connectivity, as well as support when the student needs it.

The National Centre for Vocational Education Research (NCVER) has found that online VET courses have higher subject withdrawal rates and lower completion rates than other modes of delivery, particularly face to face learning. A 2019 study found that withdrawal rates were around 10 per cent higher for online subjects and completion rates for courses delivered entirely online around 10 per cent lower. This research also found that, for those students who do complete online qualifications, satisfaction measures are lower for graduates of courses delivered online, although still relatively high. The method of delivery of courses should also be considered in consultation with industry.

Therefore, on an ongoing basis, there needs to be stronger links between education providers, local business and new projects to inform the training that is provided and how it is delivered to ensure that government's investment in training is achieving intended outcomes. There is an opportunity to trial new mechanisms in this region for bringing together key stakeholders.

Further, such engagement must include independent Registered Training Organisations as there will likely be opportunities to address gaps in existing local educational offerings.

³⁰ Increasing Rural Recruitment and Retention through Rural Exposure during Undergraduate Training: An Integrative Review. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7503328/>

³¹ National Centre for Vocational Education Research. Available from: https://www.ncver.edu.au/__data/assets/pdf_file/0040/7682296/Online-delivery-of-VET-qualifications.pdf

³² National Centre for Vocational Education Research. Available from: https://www.ncver.edu.au/__data/assets/pdf_file/0040/7682296/Online-delivery-of-VET-qualifications.pdf

Recommendation

9. The new Regional Infrastructure Coordinator General should, in partnership with the Regional Education Commissioner, urgently review education and training courses available in the region and in Victoria, in consultation with local universities, Registered Training Organisations, major infrastructure projects and local businesses, with a view to ensuring local education and training offerings are available for the community to develop in-demand skills.
10. That a co-creation workshop is held in the region to identify local engineering requirements and design suitable educational offerings to meet those needs, to be attended by tertiary education providers (CSU and TAFE), the Regional Education Commissioner, industry and governments.
11. On an ongoing basis, the NSW Government should pilot new engagement mechanisms between industry and all education sectors within the region and in Victoria (including Victorian and NSW universities, Registered Training Organisations and schools), to ensure that appropriate courses are funded and available in suitable locations.
12. The NSW and Victorian Governments should, in consultation with industry, include additional traineeships in the cross-border VET funding agreement.

Industry / school connections

Aspiration has to be built at a young age in the education system and industry needs to be engaging with schools to ensure a pipeline of workers into the future. However, many businesses reported that engagement with schools is problematic. Businesses we consulted in the development of this report informed us of the barriers they have encountered when attempting to partner with local schools, and include:

- finding someone within the school to engage with schools tending to encourage students to attend university when they may be better suited to a trade-based occupation.
- people working within schools not having a clear understanding of occupational requirements in infrastructure projects and local businesses.

Despite these challenges, the NSW Government's Regional Industry Education Partnerships (RIEP – see box below) was specifically designed by the NSW Department of Education and Training to support partnerships between local schools and businesses and to create a range of employer and workplace engagements for students. Businesses are encouraged to reach out to the program to help build further connections.

Further, the STEM Industry School Partnerships (SISP) Program has created the Murrumbidgee Academy of STEM Excellence (MASE), based at Murrumbidgee Regional High School (MRHS). The MASE includes approximately 20 schools in a hub and spoke model with focus areas in Agri-Tech and Advanced Manufacturing.³³

Existing businesses in the region are encouraged to engage further with these programs, and both the RIEP and SISP programs should work closely with the new infrastructure projects as they progress to ensure that local school students are aware of the opportunities on their doorstep. This may require the MASE to expand to include additional focus areas.

³³ <https://sispprogram.schools.nsw.gov.au/stem/stem.html>

THE REGIONAL INDUSTRY EDUCATION PARTNERSHIPS (RIEP) PROGRAM

The NSW Government's Regional Industry Education Partnerships (RIEP) connects local industry and secondary school communities.

- The partnerships provide opportunities for:
- sharing values and expectations for building our future workforce
- helping employers engage with schools
- supporting students to plan their future career pathways
- improving students' career prospects.

The Riverina Murray region has a local RIEP project officer who:

- Works with school staff on initiatives that engage local industries
- Works with local businesses to ease their access to local schools
- Facilitates activities where employers can communicate with, and inspire, students
- Provides industry validated career information to support school staff, including career advisers
- Builds capacity for schools and businesses to partner.

The program officer can be contacted by emailing RIEP@det.nsw.edu.au

Institutes of Applied Technology

TAFE is partnering with the NSW Department of Education and Training to deliver two pilot Institutes of Applied Technology (IATs) – one in Kingswood focused on construction (due to open in early 2023), and one in Meadowbank focused on Information Technology (due to open August 2022). These IATs will forge closer links between TAFE, employers and universities.

The aims of the IATs are to:

- deliver more 'work ready' graduates with the skills that employers need
- make it easier for students to transition between TAFE and university and back again as upskilling / reskilling requirements change, and
- deliver more opportunities for workplace training.

The Riverina Murray region would make an ideal location for a pilot regional IAT, with its new model of integrated theoretical and practical employability skills, and with curriculums designed in collaboration with industry and focused on the region's emerging labour market needs. Of note, CSU has begun developing a similar model independently in collaboration with one of the major infrastructure projects (see box below) and there is an opportunity to leverage this work further into an IAT model bringing together additional projects, local schools and TAFE.

Recommendation

13. The NSW Government should establish an Institute of Applied Technology focused on infrastructure-oriented education in the Riverina Murray region.

CSU AND TRANSGRID – THE BEGINNINGS OF THE EDUCATION / INDUSTRY MODEL OF THE FUTURE

A Memorandum of Understanding (MoU) has been signed by Charles Sturt University (CSU) and Transgrid with the aim of bringing opportunities for students and research as well as helping to create jobs and a substantial economic boost for the Riverina by growing Wagga Wagga into “the hub of the energy transformation in NSW”.

CSU and Transgrid will seek to develop opportunities for research and infrastructure, while training, education and employment pipelines for CSU students will be developed. The partnership will see the two organisations aid in co-creation of educational programs, including in engineering, virtual reality and drone training, and explore research projects around the coexistence of electricity infrastructure and agriculture. It will also see regional students benefit from scholarships, cadetships, training and graduate employment opportunities in the Murray and Riverina region.

As more major infrastructure projects coming to the region, it is important to have bold thinking and a collaborative approach to navigate challenges including labour and skills shortages. This partnership highlights the advantages of industry and universities working together for sustainable outcomes and supporting regional prosperity and growth.



5. Housing Constraints

Housing is a key constraint across the Riverina Murray region. Vacancy rates across the region have been very tight for at least the last year. The vacancy rate in the private rental market, according to data from the Real Estate Institute of New South Wales (REINSW), in Albury is 1.1 per cent, in Murrumbidgee is 0.3 per cent and Riverina is 0.6 per cent.³⁴ A vacancy rate of 3% is regarded as representing a balance between supply and demand.

Projects are putting further pressure on limited housing stock

More workers drawn in to work on the region's infrastructure projects, earning at or above the median salary for the region, are likely to put further pressure on the housing market.

Solutions may include the approach that is being taken by the Future Generation Joint Venture for the Snowy Hydro and Snowy 2.0 projects. Construction is already underway for a \$19 million, 126-bed accommodation development to house Cooma-based workers for the Snowy 2.0 pumped-hydro renewable energy project. This housing would then enter the open market or be made available for operational workers at Snowy 2.0 once construction is completed. Other major projects in the region may need to consider whether they are able to develop housing during construction (which can then be sold following construction phases, limiting financial impacts to project developers).

To complement the development of permanent housing, temporary worker camps will be needed by several projects. Where multiple projects have overlapping geography (such as where Project Energy Connect intersects the Inland Rail line) there may be opportunities for shared work camps utilised by multiple projects. Making temporary worker camp accommodation more durable and higher-quality may mean it is able to contribute to addressing long-term housing needs.

The statistics above, combined with the inevitable influx of workers to the region as infrastructure projects go into construction, show that considerable new housebuilding is needed in the region. Addressing housing shortages across the region will help the delivery of major infrastructure projects. This entails government funding of social and affordable housing, as well as addressing barriers to private sector housing development such as the completion of master planning and the timely completion of underlying infrastructure such as sewers and roads.

This unfortunately contributes to a vicious cycle: added housing infrastructure will require tradespeople with the same skills as those wanted by the infrastructure projects, and they in turn require housing, creating a vicious cycle of housing shortages and house price inflation. Only by getting ahead of the cycle of demand can housing pressures be reduced.

³⁴ REINSW, Vacancy Rate Survey, available at https://www.reinsw.com.au/Web/Members/Property_data/Vacancy_Rates_Survey.aspx

Recommendation

14. Infrastructure projects which are developing housing to meet their worker needs should consider how that housing can be made available as part of an enduring increase in housing supply in the region.
15. The Taskforce should study the impacts of the Northern Rivers Reconstruction Corporation in speeding up the installation of additional temporary housing, which may be applicable to meeting demand in Riverina Murray.

Regional Housing Taskforce

In July 2021, the NSW Government established the Regional Housing Taskforce in response to increasing pressures on the supply and affordability of housing in many regions of NSW. The Regional Housing Taskforce delivered a Recommendations Report which the NSW Government is expected to formally respond to in mid-2022.

As a first step, a \$30m NSW Regional Housing Fund (RHF) was created in February 2022 to incentivise and support regional councils in accelerating housing projects and related critical enabling infrastructure. What was clear from our consultation with developers and councils in the Riverina Murray is that more needs to be done to support and fund initiatives, including support for smaller LGAs that have not been eligible for the RHF.

In response, the 2022 NSW Budget provided further resources for regional housing including a \$120 million Accelerated Infrastructure Fund to co-fund critical enabling infrastructure across regional NSW councils, \$33.8 million to address housing supply plans in regional areas through the creation of a 10-year regional housing supply pipeline and funding for key worker housing across the state. The NSW Government has also created the role of Executive Director for Housing and Infrastructure, responsible for the interactions between infrastructure development and housing growth.

The NSW Government should consider as an immediate priority targeted measures in (and surrounding) regional growth centres that will accelerate housing supply including:

- acceleration of grants to regional councils for enabling infrastructure works for new residential subdivisions;
- assistance to complete detailed master planning of new regional housing developments in priority regional areas to improve the lengthy time taken to bring to market new land subdivisions;
- initiatives to rezone crown land to be zoned for housing;
- consideration of changes to Regional CBD planning controls and zoning to allow for greater densification and infill development in regional growth centres.

Recommendation

16. The NSW Government should monitor and expand, if necessary, measures introduced in the 2022 NSW Budget to prioritise housing enabling infrastructure.
17. The Regional Housing Taskforce should prioritise efforts to facilitate greater infill development and densification of regional growth centres.



Anthony McFarlane
Regional Manager, Riverina Murray
anthony.mcfarlane@businessnsw.com

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