Warp Speed

Accelerating renewable energy infrastructure deployment

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CENTRE FOR POLICY DEVELOPMENT

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Executive summary

Australia is in the midst of a major expansion of its energy infrastructure. Beyond addressing the climate crisis, recent geopolitical volatility has highlighted our dependence on other nations, reigniting calls for energy independence and economic resilience. The competitiveness of Australian industry also depends on the energy transition: the government's "Future Made in Australia" agenda will require significant clean energy resources.

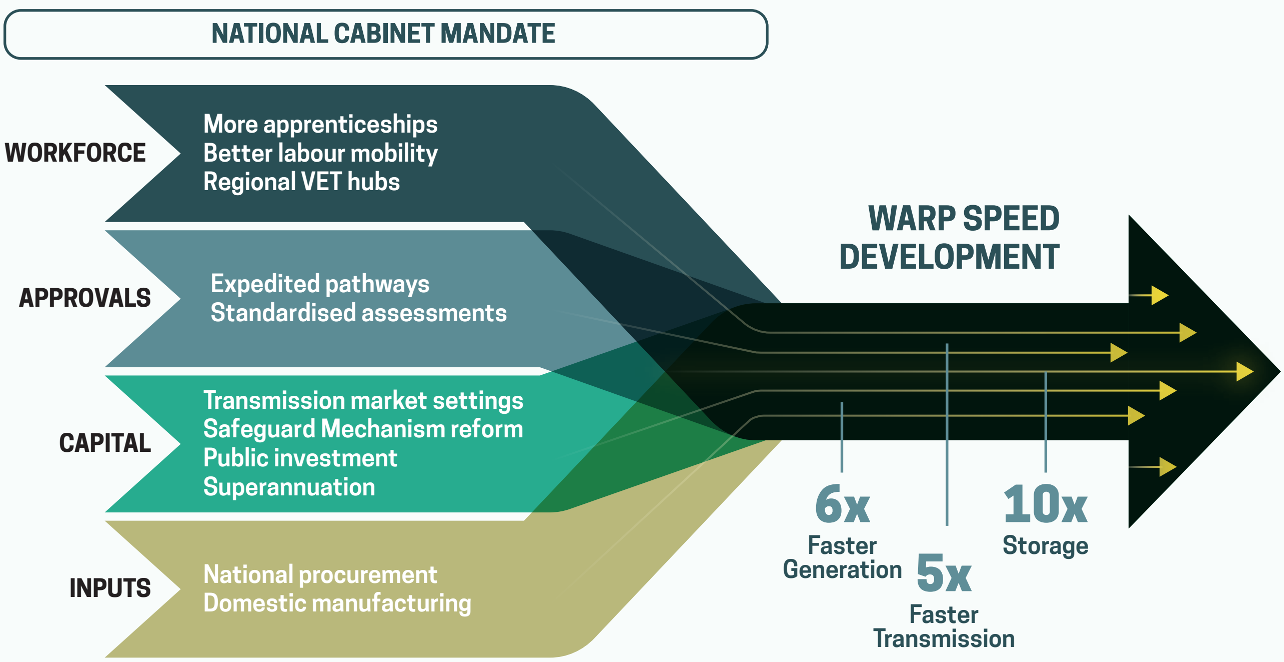
This is bigger than a replacement of old power sources. The Australian Energy Market Operator's (AEMO) central "Step Change" scenario forecasts that electricity demand will more than double over the next 25 years. An export oriented industrial strategy will require 2-5 times more energy beyond this doubling.[1] Achieving this level of infrastructure deployment while also retiring old coal and gas generators will require an economy-wide mobilisation of resources.

While Australia is comparatively further ahead than many countries in decarbonising its energy system, the pace is still too slow. Renewable energy, industry and climate change targets will not be met under current policy settings. To stay on track, over the next few years Australia must facilitate a six-fold increase in the build-out of generation, a five-fold acceleration of transmission, and must build 10 times the entire historical capacity (as at 2024-25) of utility-scale storage.[2] This cannot be achieved with marginal improvements that increase efficiency by 5 or 10%.

Success is only possible with an inflection point in the deployment rate of energy infrastructure: *a warp speed approach to energy infrastructure*.

Significant barriers stand in the way of an infrastructure rollout at the scale and pace required. Complex project planning approvals cause lengthy delays; supply chain constraints and workforce shortages leave developers hamstrung, and policies are holding back clean energy capital from getting out the door.

FIGURE 1 | Four key policy reform areas for "warp speed" renewable infrastructure deployment



We also know that new industries must provide benefits to local communities – the energy transition needs to leave Australian communities stronger rather than weaker. It might theoretically be possible to do things faster by eliminating social protections and regulations, but in reality these exist for a reason. This report sets out a responsible pathway to rapidly accelerate the economy's ability to build energy infrastructure.

Policy reform is essential across four key areas to accelerate renewable infrastructure deployment:

1. **Doubling the energy workforce pipeline** will require expanding the institutional capacity for training and apprenticeships (recommendations 2 to 4); increasing labour mobility across different sectors and Australian jurisdictions (recommendations 5 and 6); and addressing labour shortages in regions through VET hubs and skilled migration (recommendations 7 to 9).
2. **Halving development approval timeframes** will require using expedited approval pathways and providing support for significant projects (recommendations 10 to 12); limiting the time and effort for assessments, requests for information and decision-making (recommendations 13 to 15); and simplifying and standardising data inputs for assessments (recommendations 16 and 17).
3. **Encouraging capital flows** to where it is most needed (recommendations 18 to 20); and using public and patient capital to go to crowd-in private investment (recommendations 21 and 22).
4. **Securing supply of key inputs** will require securing Australia's supply of global components and materials (recommendation 23 and 24).

We know what needs to be done. And industry, finance and workers are all ready and willing to get on with the job. But the scale of this challenge demands an ambitious, coordinated, strategic response. Ultimately, there must be a strong, whole-of-nation imperative to overcome existing barriers and move at a faster pace. **A warp speed approach to energy infrastructure should be set as a national, Cabinet-level priority (recommendation 1).**

By creating the right conditions, and with the right mandate, Australia can deploy mass amounts of new renewable energy, magnitudes faster than what we're on track for now—at warp speed.

Recommendations

		Impact	Effort
	Recommendation 1 National Cabinet and its subcommittees should adopt a "warp speed" policy agenda to rapidly accelerate the build out of grid-scale electricity infrastructure.	HIGH	MID

Doubling the energy workforce pipeline

		Impact	Effort
Expand the institutional capacity for training and apprenticeships	**Recommendation 2** State and territory governments should establish recurring capital grant programs that invest in training infrastructure and equipment. **Recommendation 3** The Commonwealth Government should ensure there are enough placements for apprentices, for instance by imposing quotas for larger businesses to employ first and second-year apprentices and mature-aged apprentices. **Recommendation 4** The Commonwealth Government should expand the Australian Skills Guarantee to cover all major projects in the energy sector receiving public finance, and extend the Guarantee to other occupations in the energy sector beyond construction.	HIGH	LOW
Increase labour mobility across different sectors and Australian jurisdictions	**Recommendation 5** The Commonwealth, through National Cabinet, should harmonise interstate licensing for critical clean-energy occupations including the electrical trades. **Recommendation 6** The Commonwealth Government should boost labour mobility by creating a national digital skills passport, a single mandatory platform for advertising energy jobs and apprenticeships, and scaling the CERT program nationally.	HIGH	MID
Address labour shortages in regions through VET hubs and skilled migration	**Recommendation 7** The Commonwealth and state governments should expand funding for dedicated VET hubs in REZs near major projects, offering pre-apprenticeships, apprenticeships and short courses linked to those projects, with a clear pipeline into local jobs. **Recommendation 8** The Commonwealth Government should cut the financial and administrative cost of visas for energy-relevant "Skills in Demand" roles, ensuring that there are clear pathways for skills recognition. **Recommendation 9** Where migrant workers are used to meet workforce shortages, they should have a clear pathway to permanent residency.	MID	HIGH

Halving development approval timeframes

		Impact	Effort
Use expedited approval pathways and provide support for significant projects	**Recommendation 10** Use existing or new approval pathways that provide accelerated processing for renewable energy projects. **Recommendation 11** Use a legislated authority in the state planning department or a Coordinator General Office with expediting powers to streamline existing approval pathways. **Recommendation 12** Provide integrated case management support early on and throughout for clean energy projects.	HIGH	MID

Limit the time and effort for assessments, requests for information and decision making	**Recommendation 13** Along with statutory time limits for decision making, ministers should provide directives to regulators to encourage faster approvals. **Recommendation 14** Limit the number of requests for information (RFIs) to one per stage. **Recommendation 15** Ensure communities closely or directly impacted by projects have a proportionately greater voice in consultation and objections.	Impact **MID**	Effort **MID**
Simplify and standardise data inputs for assessments	**Recommendation 16** Use clear and efficient ready-made assessment requirements (i.e. that are industry-specific) for projects that have predictable and mitigatable impacts. **Recommendation 17** Identify best practice technical handbooks across Australia that specify knowledge and methodologies to assist proponents in impact assessments, and use them as common standards.	Impact **HIGH**	Effort **LOW**

Encouraging capital flows

Encourage effective capital allocation to energy infrastructure projects	**Recommendation 18** The Commonwealth and NEM jurisdictional governments should establish the proposed ESEM as quickly as possible, and commission an independent review into transmission market operation. **Recommendation 19** Establish policy settings or market interventions to ensure that requirements on heavy energy users to purchase green energy lead to additional investment in renewable generation. **Recommendation 20** The Commonwealth Government should expand the Safeguard Mechanism and ensure it provides sufficient price signals to encourage capital allocation into renewable energy infrastructure.	Impact **MID**	Effort **HIGH**
Direct public and patient capital where it is needed to crowd-in private investment	**Recommendation 21** State government funding initiatives and the Commonwealth's SIVs should be provided with the necessary mandate to invest in higher-risk first-mover 'anchor' generation projects in priority renewable regions. **Recommendation 22** Reform the Your Future, Your Super benchmarks to allow superannuation funds to benchmark against forward looking transition-aligned market indices.	Impact **MID**	Effort **LOW**

Securing supply of key inputs

Secure Australia's supply of global components and materials	**Recommendation 23** The Commonwealth, supported by AEMO, should negotiate a national multi-year, multi-project procurement framework with key suppliers, allowing developers to draw down equipment under national agreements. **Recommendation 24** The Commonwealth should direct the NRF and CEFC to develop a 10-year, ring-fenced program of targeted support - such as concessional finance and other risk-sharing tools - for commercially viable onshore manufacturing of critical grid components.	Impact **LOW**	Effort **LOW**

Australia's current progress towards a low-carbon energy system

The federal government has adopted a 62–70% emissions reduction target by 2035 (from 2005 levels), framed as the most ambitious target Australia can realistically achieve. Hitting this target would mean roughly halving today's emissions and would require significant contributions from every sector of the economy. It also represents a marked acceleration from current progress: as of September 2025, existing policies put Australia on track for only around a 51% reduction by 2035, which is based on a generous assumption that the government succeeds in meeting its 2030 target first (a 43% reduction below 2005 levels – see Figure 2).[3]

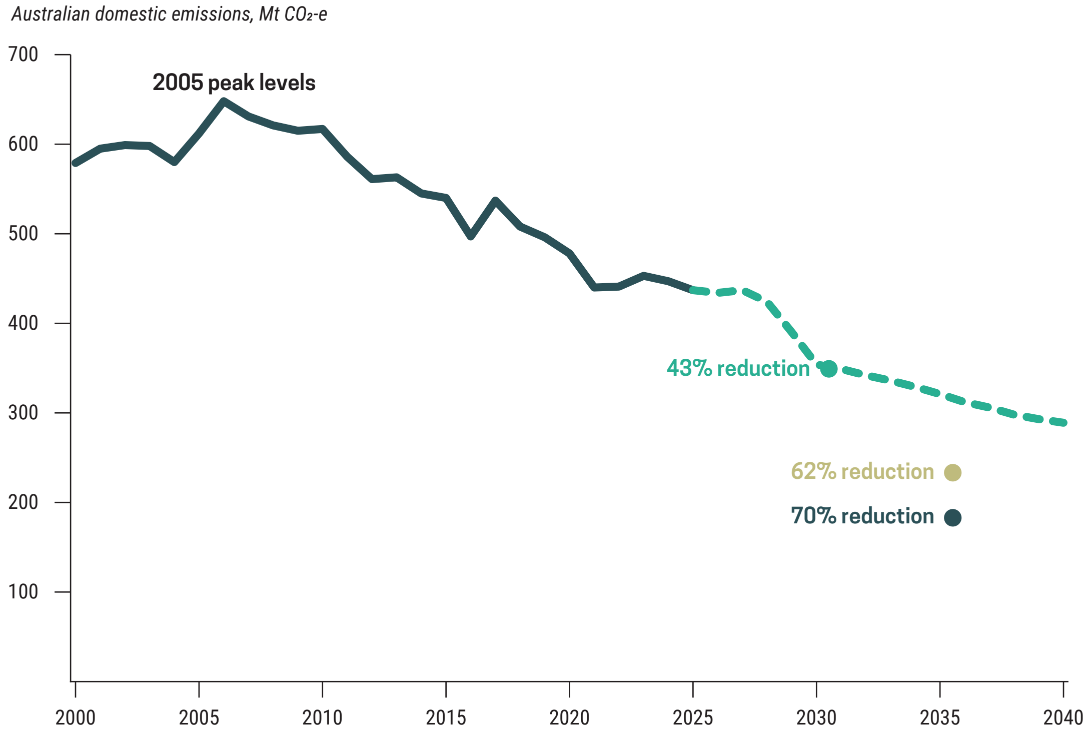
Over the past five years, emissions have fallen by about 8 Mt CO_2-e a year on average. To hit the 2030 target of 43% below 2005 levels, that needs to rise to around 18 Mt a year. To reach the 62-70% target by 2035, the pace has to lift again to roughly 20-25 Mt a year, and stay there for the next decade.

Over half of the required emissions cuts can come from quickly shifting to a secure, reliable, renewables-based electricity system. Achieving the rapid deployment of grid-scale renewable energy generation, storage and new transmission will also underpin the success of other major transitions required to hit the 2035 emissions reduction target – especially electrifying and decarbonising transport, industry and buildings, which together can deliver a further 25% of the reductions needed through to 2035.[5, 6]

To gauge the build rate needed to meet Australia's renewable and emissions targets, we can consider the National Electricity Market (NEM), which interconnects the eastern and southern states and supplies around 80% of national electricity consumption.[7] In its Draft 2026 Integrated System Plan (ISP), AEMO sets out an Optimal Development Path (ODP) under the "Step Change" scenario – a least-cost sequence of generation, storage and transmission projects that delivers a reliable NEM while meeting Australia's renewables and emissions targets. Under the Step Change scenario, investment is needed to increase grid-scale variable renewable energy six-fold by 2050, add 6,000 km of new transmission, and more than quadruple dispatchable grid-scale storage through batteries and pumped hydro.[8]

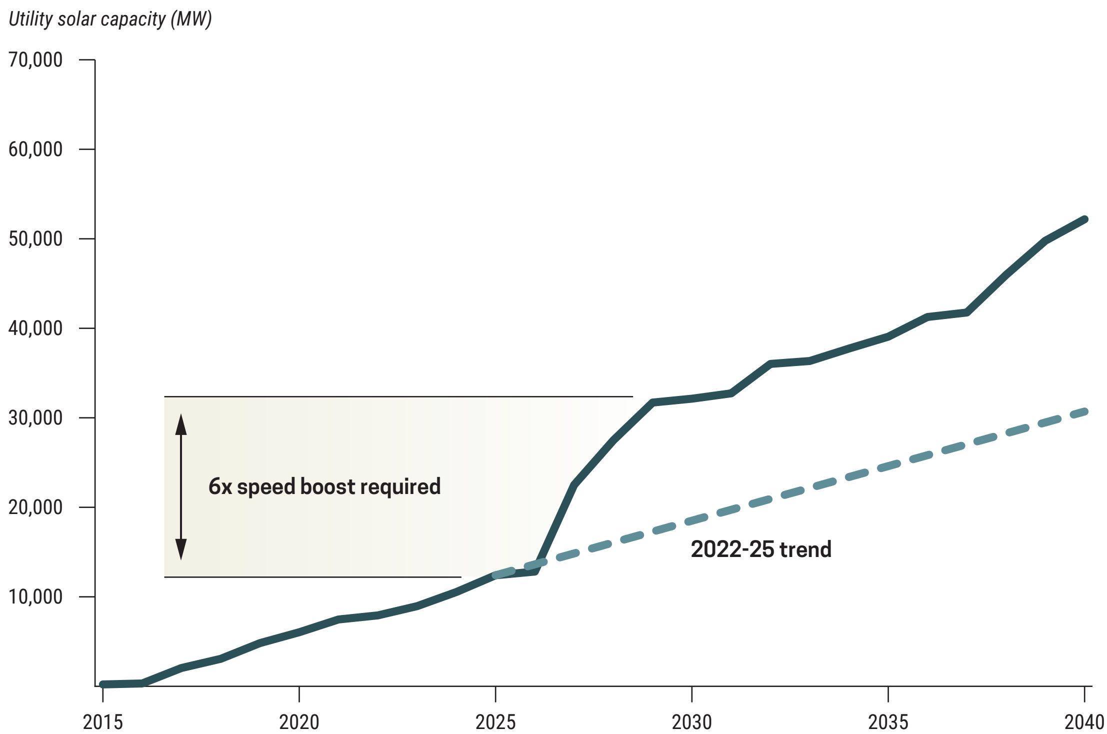
For renewable energy generation, a clear acceleration in deployment must be achieved even to deliver AEMO's central Step Change scenario. Taking solar as an example – under Step Change, the build-out of utility-scale solar must hit a clear inflection point between now and 2030: after a decade of steady growth to today's levels which has added around 1,000MW per year for a decade, the system now needs to add at least as much new capacity again in just three years to stay on track (Figure 3).[9] This requires a 6x acceleration in the speed of deployment.

FIGURE 2 I Projected emissions reductions are not consistent with commitments to keep global warming within 1.5°C



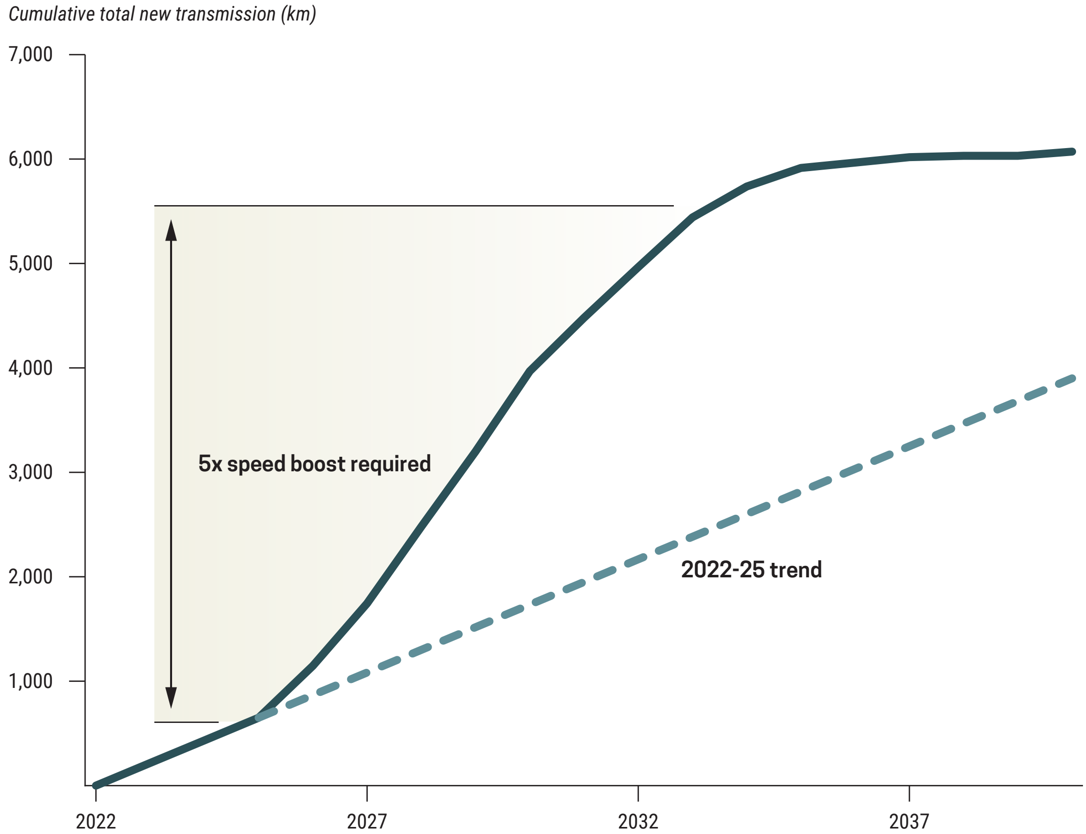
SOURCE: CPD analysis, DCCEEW[4]

FIGURE 3 I The Step Change scenario assumes a six-fold increase in the rate of solar deployment



SOURCE: AEMO (2026) Draft ISP chart data

FIGURE 4 I The Step Change scenario assumes a five-fold increase in the build rate of new transmission



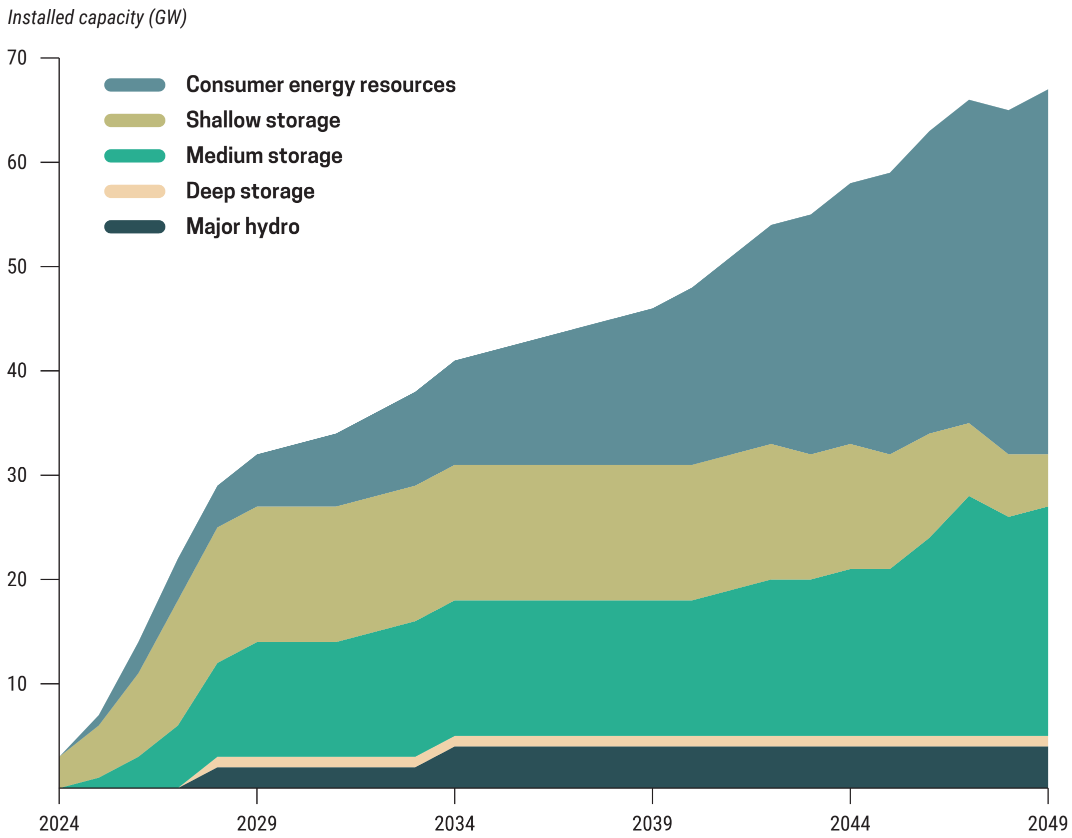
SOURCE: AEMO (2026) Draft ISP chart data

A rapid acceleration is also needed in the build out of transmission. Only around 650 km of new transmission has been completed in the NEM between 2022 and the end of 2025. Under the Step Change scenario in AEMO's Draft 2026 ISP, a further ~3,000 km must be delivered before 2030 (see Figure 4). In other words, transmission deployment must accelerate to become 5x faster compared to a 2020 baseline.

While investment in transmission and generation infrastructure must rise, these are at least relatively mature and established technologies. Grid-scale storage capacity also requires a large amount of assets built quickly over the next few years, but in this case Australia is starting from a small base of existing installed assets. By 2050, approximately 33 GW of utility-scale installed capacity is forecast to be needed (representing around 550 GWh of energy storage). Most of this needs to be deployed in the next four years to achieve 27 GW installed capacity before 2030 (see figure 5).[10] Starting from a base of just 2.8 GW of utility scale storage in 2024-25, the latest AEMO connection dashboards suggest 2.4 GW has been added in the first three quarters of 2025-26, which still lags behind the ~4 GW projected in the Step Change scenario. Deployment of non-utility scale "consumer energy resources" is ahead of projections (9.4 GWh energy storage installed against a projection of 5.9 GWh) thanks largely to government home battery incentives, but there is still a clear imperative to do more. Multiplying the volume of utility scale storage to 10x the 2024 levels will require a significant increase in the speed of deployment.

This is an existential moment in Australia's economic transition. We must collectively achieve a major inflection point in deployment of grid-scale energy infrastructure. Continuing our current approach to building infrastructure is not sufficient, and will inevitably lead to failure. Over the next few years, Australia must accelerate generation build-out by 600% (6x faster), transmission by 500% (5x faster), and we must build 10x the entire historical capacity of utility-scale storage. These are big numbers, and cannot be achieved with marginal improvements that increase efficiency by 5 or 10%. It requires an ambitious approach to fundamentally change the rate at which the economy can physically deploy grid-scale energy infrastructure. **We must shift the economy into warp speed**.

FIGURE 5 I The Step Change scenario assumes a 10-fold increase in storage capacity by 2030 to reach 2050 climate targets



SOURCE:
CPD analysis based on AEMO (2026) Draft 2026 ISP chart data

NOTE:
The "major hydro" category includes the Snowy 2.0 and Borumba pumped hydro projects which we have excluded from our analysis of how much additional storage needs to be built.

A warp speed approach to grid-scale energy infrastructure deployment

There is no magic button to multiply the pace by 10. All sorts of factors contribute to the speed of infrastructure deployment: supply chains, regulatory timelines, the availability of physical inputs, investment horizons, and so on. Even if there was unlimited investment capital, projects must still go through lengthy approvals processes. And even if approval processes were completely re-written from the ground up, there needs to be enough workers to do the work. These sorts of factors create fundamental constraints, and set the speed limit. It is possible to change this speed limit, but it requires ambitious whole-of-system reform.

Ambitious policy reform has achieved this kind of acceleration before, as illustrated by the case study of the US Government's "Operation Warp Speed" development of COVID-19 vaccines, or China's rapid renewable infrastructure deployment (see Box 1). Some aspects of the renewable energy transition are already progressing at a warp speed-like pace. For example, Australian households installed as many home batteries in the final six months of 2025 as they did in the entire preceding five years, amid generous federal government subsidies through the Cheaper Home Batteries Program. Rapid progression in technology readiness also provides significant opportunities to achieve Warp Speed. For example, New South Wales' recent largest ever tender for Long Duration Energy Storage awarded contracts to battery projects offering 8-10 hours of storage – batteries this long in duration would have been considered unviable as recently as a few years ago.

In order to shift Australia's deployment of grid-scale energy infrastructure into warp speed, Australia needs major focussed reform across four domains:

1. Double the energy **workforce pipeline**
2. Halve timelines for **development approvals**
3. **Encourage capital** to flow where it is needed most
4. Secure the **supply of key inputs**

Accelerating the deployment of grid-scale energy infrastructure requires more than just piecemeal reform across four domains, it requires coordinated strategic reform. Many departments and agencies across many governments need to pull in the same direction. As CPD has recommended previously, this sort of major industry development requires a directional approach to governance.[14] In the context of Australia's energy system, this warrants strategic leadership from National Cabinet to set high level objectives and maintain accountability.

Recommendation 1 **National Cabinet and its subcommittees should adopt a "warp speed" policy agenda to rapidly accelerate the build out of grid-scale electricity infrastructure.**

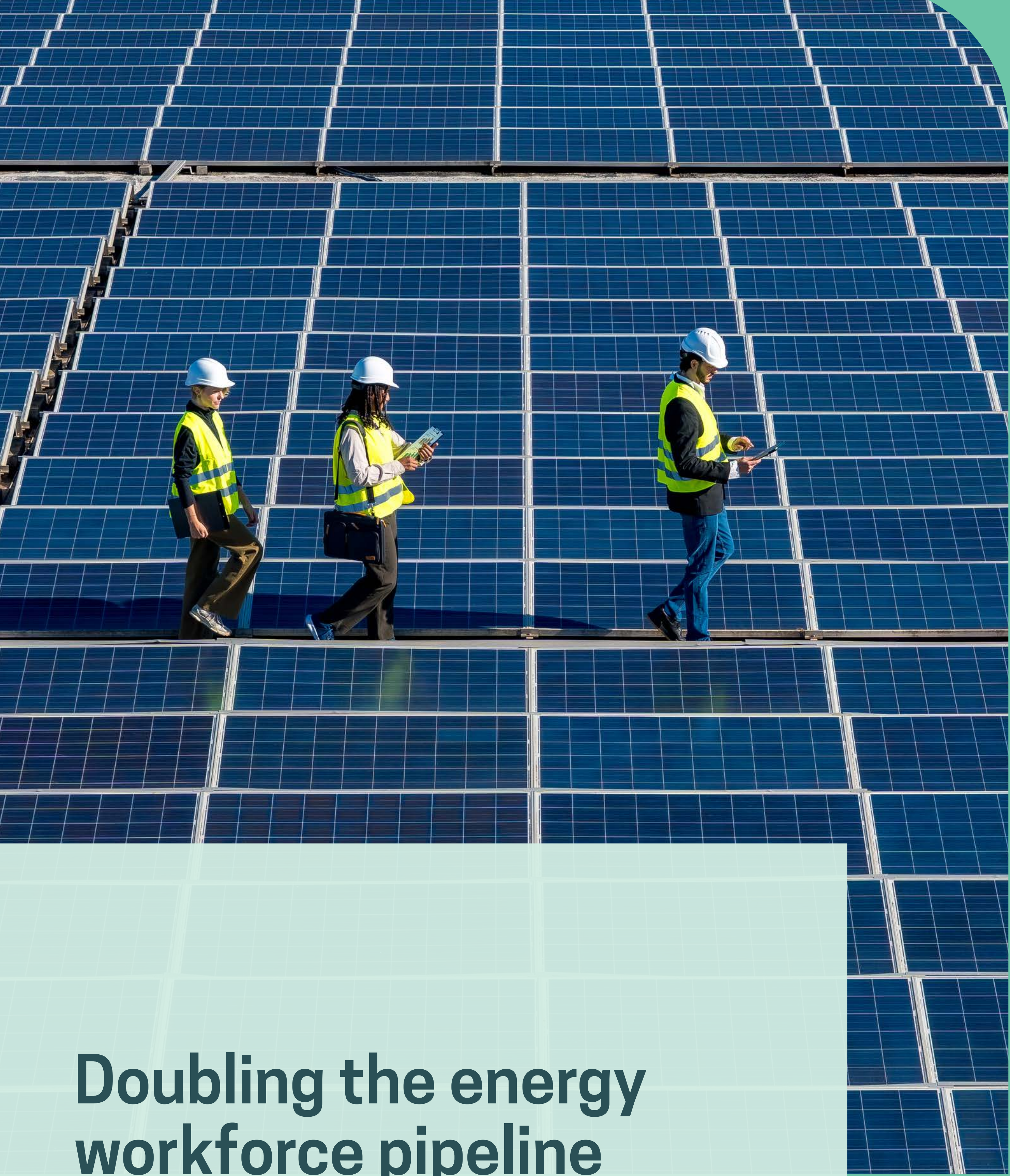
Box 1 | CASE STUDY: US GOVERNMENT "OPERATION WARP SPEED"

Operation Warp Speed was a US government-led program launched in 2020 to accelerate the development of COVID-19 vaccines. It provided large upfront public funding for multiple vaccine candidates, and changed regulatory rules to allow overlapping stages of R&D, clinical trials and manufacturing (rather than doing them sequentially). Regulators (notably the FDA) prioritised reviews of vaccines over other types of medical products, and used Emergency Use Authorisations to allow COVID vaccines to be rapidly deployed to the public while longer-term data needed for full FDA approval was still being collected. Meanwhile, the federal government signed offtake agreements and pre-purchased hundreds of millions of doses.

The result was that several safe and effective vaccines were developed, tested and authorised in under a year – an order of magnitude faster than normal vaccine timelines – allowing mass vaccination to begin from late 2020.

CASE STUDY: CHINESE RENEWABLE DEPLOYMENT

In a different industry and a different country, China has rapidly accelerated renewable deployment in recent years, offering lessons on achieving "warp speed". In the last 12 months alone, China has added 446 GW of new renewable capacity – more than triple the current total capacity of the NEM.[11] Driven by massive public capital investment, ownership of global supply chains (including most of the world's wind turbines, lithium batteries and solar panels), and long-term planning of long-distance transmission linking north-western resource regions with eastern demand centres, China has reached a point where wind and solar now account for 37% of its total power capacity, compared with 25% in 2015.[12,13] Of course there are significant contextual differences between China and Australia, but even this example required a major departure from China's business-as-usual approach to electricity management.



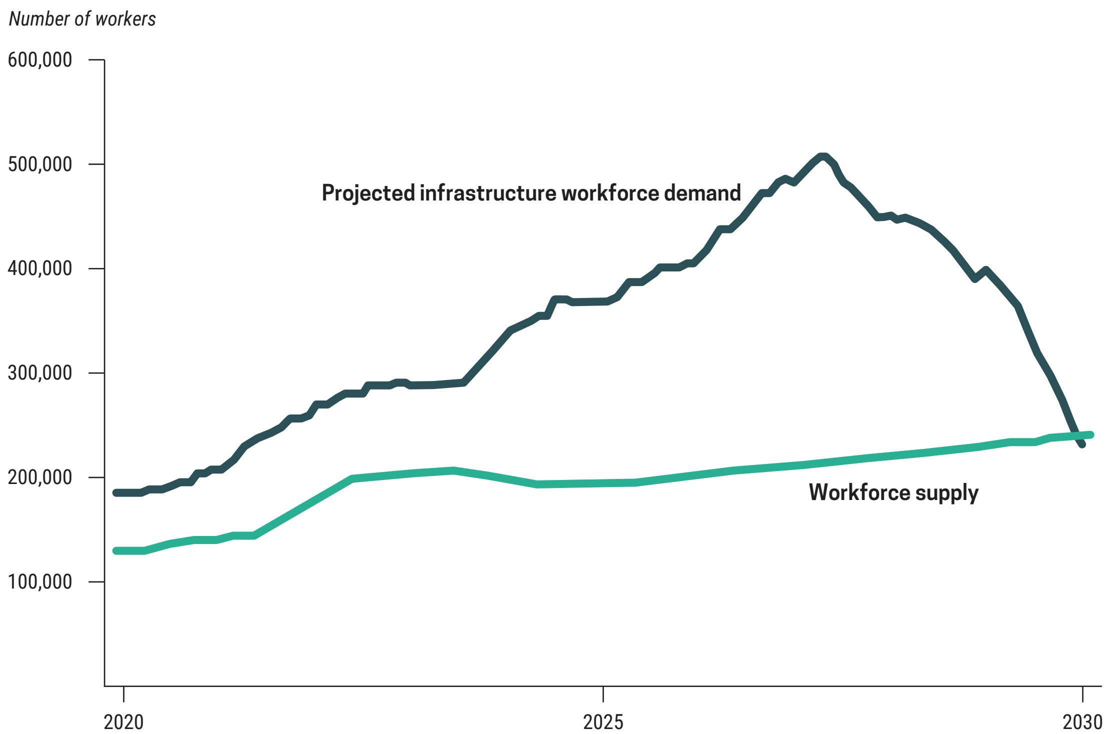
Doubling the energy workforce pipeline

Labour is the most critical delivery risk to Australia's infrastructure plans. Infrastructure workforce shortages could reach 300,000 workers by 2027, with regional areas hardest hit as shortages there rise four-fold, driven by energy projects.[15] In the 2025 Infrastructure Australia Industry Confidence Survey, 63% of respondents saw labour costs and 59% saw labour and skills shortages as a significant or major threat. Shortages are expected to be acute across both white-collar (scientists, engineers, architects) and blue-collar (trades, labourers) roles.

A rapid scale-up of the energy workforce is needed to deliver the Integrated System Plan's (ISP) Step Change scenario. Under the Step Change scenario, electricity-sector employment must roughly double to 66,300 by 2029; under a Green Energy Exports scenario (a level higher than Step Change), almost 63,000 additional electricity workers are required by 2029, rising to about 119,000 by 2050.[16] For context, around 14.6 million people were employed in Australia in December 2025 (up 2.7 million over the decade), and employment grew by 180,800 in the year to December 2025, so even the Green Energy Exports uplift is a small share of overall jobs growth.[17] However, only around 1.5% of workers currently have their main job in 'Electricity, Gas, Water and Waste Services', and projected gaps are concentrated in specific licensed trades, professional roles and regional locations.[18] They cannot be filled simply by directing new entrants into energy; they will require redeployment and retraining of existing workers, plus targeted strategies to attract people into priority roles and regions.

Other sectors have grown quickly before – for example, the aged and disability care workforce almost doubled from 216,900 in 2014 to 429,000 in 2024 – but the clean-energy workforce challenge is at least as complex, possibly more so.[19] Required roles are highly licensed technical trades and professionals, concentrated in regional areas, tied to lumpy project cycles, and in direct competition with mining and other major projects.

FIGURE 6 I Australia's infrastructure workforce is projected to have a shortage of 300,000 workers by 2027



SOURCE: Infrastructure Australia (2025) Market Capacity Report

Construction is expected to dominate energy employment through the 2020s, with most jobs shifting to operations and maintenance from the 2030s.[20] AEMO forecasts broader energy-sector employment peaking at just over 60,000 by 2050, but with sharp swings in demand for particular occupations: for example, demand for electrical engineers is expected to triple by 2029 before dropping below current levels by the late 2030s, while demand for operations managers rises steadily across the period.[21, 22]

Delays in approvals of renewable infrastructure projects – discussed later in this report – are also reported to have a knock-on impact on labour shortages. If approval timeframes are long and the ultimate outcome is uncertain, businesses have no certainty of future profit and therefore cannot justify investing in their workforce.

EXPAND THE INSTITUTIONAL CAPACITY FOR TRAINING AND APPRENTICESHIPS

Many new Australian workers will be required to join the energy sector workforce pipeline to accelerate the transition. Rising demand for energy sector training is outpacing the volume of trainers and capacity of existing training infrastructure, leading to overcrowded classes and some prospective apprentices being turned away.[23] Vocational education and training (VET) capacity is already constrained, with potential trainers often able to earn significantly more in the industry.[24] The electrical sector is the single largest barrier and enabler to the energy sector workforce required for a warp speed transition. However, the sector faces circumstances and challenges that have nuances to the broader sector. The sector requires an uplift of approximately 40% in electrical apprenticeships to meet projected demand in a way that upholds critical qualification and safety requirements.[25]

Technical and Further Education (TAFE), independent, private and enterprise Registered Training Organisations (RTOs) are important to deliver energy sector training and expand the system's capacity. Most energy apprenticeships are delivered through TAFE with the remaining delivered by independent providers. Not-for-profit, industry-led RTOs generally achieve significantly higher apprenticeship completion rates than TAFEs but often receive less funding per student, despite having to fund their own capital investment.[26] Their success stems from the involvement of employers and unions, who are incentivised to deliver highly skilled apprentices for industry, and benefit from being coupled with Group Training Organisations (GTOs). GTOs match apprentices with employers, and ensure continuity of employment across project-based roles, while taking on the legal and administrative burden for employers. However this is a model that remains patchy and difficult to expand into new sectors and regions.[27,28] In terms of expanding the market capacity of RTOs, there are barriers to entry such as high upfront capex costs and the high cost of consumables. Therefore, state and territory governments should consider recurring capital grant programs that provide ongoing investment in modern training infrastructure and equipment for the energy sector across all types of training providers, and make it easier for new sector-led RTOs and GTOs to get established. These programs should also align with the federal Clean Energy Capital Investment Fund and address local demand in their respective jurisdictions.[29]

Recommendation 2 State and territory governments should establish recurring capital grant programs that invest in training infrastructure and equipment.

There is persistent unmet demand for energy apprenticeships, with hundreds of applicants often chasing a single position. Smaller firms, which employ around three-quarters of energy trade apprentices, typically lack the capacity to expand intake. Larger businesses delivering major infrastructure projects – who have steadier pipelines of work, stronger cash flow and more supervisory capacity – are better placed to take on a greater share of training, and yet employ a proportionally much smaller share of apprentices.[30]

The Australian Skills Guarantee currently mandates that one in 10 workers on major ($10M+) Commonwealth Government-procured construction and ICT projects be apprentices. The Guarantee does not currently apply to other publicly financed energy infrastructure projects (e.g. those receiving concessional financing from the Clean Energy Finance Corporation), or other non-construction energy occupations.[31] Indeed, beyond direct government procurement, governments support large infrastructure developers in many ways: from providing finance, to regulatory settings that guarantee a profit on investments (e.g. price-setting for transmission providers), through to active market creation, offtake and de-risking (e.g. the proposed Electricity Services Entry Mechanism for the NEM). In return for these forms of support, the government could require that a percentage of all labour hours be undertaken by first or second year apprentices to prevent poaching of late-stage apprentices from small and medium employers.[32] Carefully expanding the Australian Skills Guarantee both in terms of what it requires, and who it applies to, would be one useful tool to ensure large businesses play a bigger role in offering apprenticeships.

Recommendation 3 The Commonwealth Government should ensure there are enough placements for apprentices, for instance by imposing quotas for larger businesses to employ first and second-year apprentices and mature-aged apprentices.

Recommendation 4 The Commonwealth Government should expand the Australian Skills Guarantee to cover all major projects in the energy sector receiving public finance or other forms of public support, and extend the Guarantee to other occupations in the energy sector beyond construction.

INCREASE LABOUR MOBILITY ACROSS DIFFERENT SECTORS AND AUSTRALIAN JURISDICTIONS

There are currently interstate conflicts around trade licensing of some trades that limit workforce mobility for renewable projects, especially as more contractors work FIFO across state borders. Automatic Mutual Recognition (AMR) is intended to let a worker licensed in one jurisdiction be treated as licensed in another without extra applications or fees. But states and territories have exempted a range of occupations on safety grounds – for example AMR does not apply to construction workers in the ACT – so workers in those trades still face fees, paperwork, and other frictions that discourage labour mobility.[33] Despite success in some sectors AMR is not a silver bullet. As long as there is variation in standards between jurisdictions it will be difficult for all stakeholders to commit to the system. Many stakeholders, including unions and electrical peak bodies are sceptical of AMR without nationally consistent standards because they fear it risks a race to the bottom on licensing and safety. There is a solution with broad support: national harmonisation of licensing in key energy-sector occupations (for example engineers), building on the national electrical licensing regime already announced by the Commonwealth.[34,35,36,37]

Recommendation 5 The Commonwealth, through National Cabinet, should harmonise interstate licensing for critical clean-energy occupations including the electrical trades.

Energy sector labour shortages are being worsened by competing demand across other infrastructure sectors (water, commercial construction, transport), so the sector is “fishing from the same pond” for talent just as the Future Made in Australia agenda intensifies competition.[38] Skills are not always easily transferable between sectors and projects, and perceived boom–bust cycles in the energy sector and unclear career paths are deterring new entrants who worry about job security.[39] Some states and peer countries have introduced digital skills passports to improve workforce mobility, giving workers a single repository of qualifications across VET and universities and reducing administrative burdens.[40] The Scottish Government, for example, has created an Energy Skills Passport to help oil and gas workers move into clean energy by showcasing their expertise and verifying their qualifications.[41] Meanwhile, the Clean Energy Council’s Clean Energy Required Training (CERT) pilots in Victoria and Queensland are also seeking to boost mobility by setting consistent, industry-agreed benchmarks for trade qualifications in renewable project construction, commissioning and operations.

Recommendation 6 The Commonwealth Government should boost labour mobility by creating a national digital skills passport, a single mandatory platform for advertising energy jobs and apprenticeships, and scaling the CERT program nationally.

ADDRESS LABOUR SHORTAGES IN REGIONS THROUGH VET HUBS AND SKILLED MIGRATION

Regional areas will be most affected by labour shortages in the energy transition, because they must host most of the new utility-scale generation, storage and transmission.[42] Clean energy workers are needed in remote locations far from existing labour pools, and many regional communities lack local education and training providers offering specialised energy and VET courses.[43, 44, 45] Much of the regional energy workforce is currently flown or driven in from intra-state, inter-state or internationally – even though there is clear potential to grow local employment, especially in ongoing maintenance roles rather than short-term construction jobs.[46] Some states have begun establishing specialist energy training hubs or tailored courses through TAFE and industry RTOs in regions hosting large renewable projects. However, these initiatives are patchy and not systematically aligned with the REZs identified in AEMO's ISP. In many regions, local students still face unclear or fragmented pathways from school into apprenticeships and jobs on nearby renewable and transmission projects.

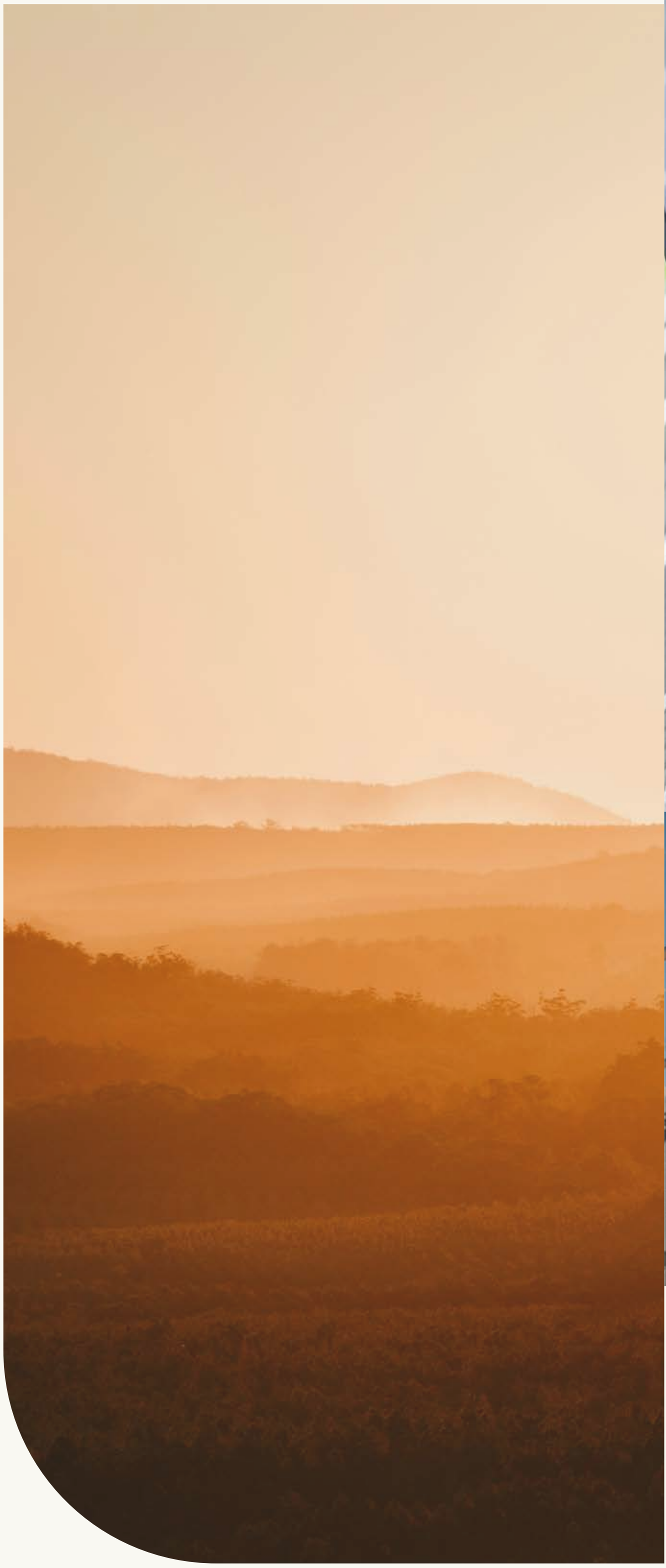
Recommendation 7 The Commonwealth and state governments should expand funding for dedicated VET hubs in REZs near major projects, offering pre-apprenticeships, apprenticeships and short courses linked to those projects, with a clear pipeline into local jobs.

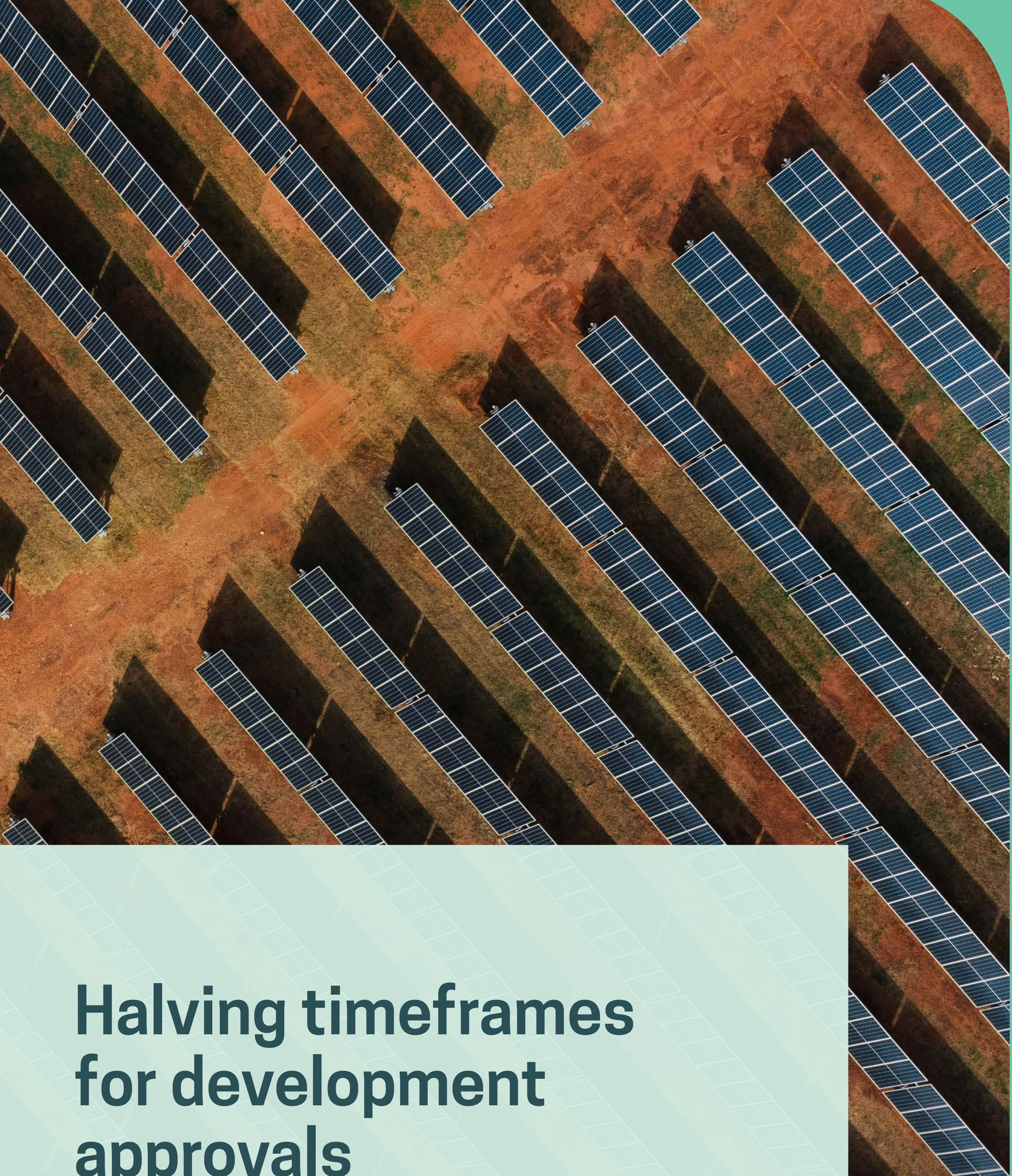
There is also competing demand for energy sector talent internationally – where countries and blocs such as the US, China and the EU have developed incentive programs to accelerate their net zero transitions. Relative to similar industries, energy sector workers who are recent migrants (meaning those who were born outside of Australia, and migrated from 2017-2021) are low at just 2.1% of the energy workforce – meanwhile, Australia's energy workforce may seek opportunities elsewhere in countries and regions offering better remuneration and working conditions.[47] Improving the flow of skilled workers to Australia can help in the short-term. There are significant barriers to attracting the skilled workers Australia needs for the energy transition, including the cost and complexity of visas, and issues with certificate recognition.[48] Workers from occupations on the Core Skills Occupation List can apply for a Skills in Demand Visa. However, there is not currently a clear skills assessment process for each energy sector occupation on that list (including, for example, electrical linesworkers).[49] Resolving these issues can help as a stop-gap while Australia improves its supply of domestic workers, but it is not a substitute for the domestic priorities outlined above.

Recommendation 8 The Commonwealth Government should cut the financial and administrative cost of visas for energy-relevant "Skills in Demand" roles, ensuring that there are clear pathways for skills recognition.

Additionally, over the past decade governments have previously prioritised temporary over permanent migration – the former bringing a whole range of risks for both industry and individual migrant workers.[50] Industry Labour Agreements (ILAs) are negotiated between the Commonwealth and specific industries to relax standard migration settings (e.g. English-language requirements) where there are structural, ongoing labour shortages. Unions argue that such concessions can increase risks of worker exploitation (for example, if weaker English affects safety) and reduce incentives for employers to train local workers, entrenching shortages. While reliance on international workers helped during the mining boom, when there was a surplus of skilled labour overseas, today there is a global shortage of energy-sector workers. Globally, the IEA projects that 3.4 to 4.6 million people will join the energy workforce by 2035 on current policy settings, however they estimate the global energy workforce would need to be 15 million to be consistent with a Paris-aligned energy transition scenario.[51] This means that where Australia's domestic sector does draw in migrant labour, this should be with a clear pathway to permanent residency to ensure that these migration flows contribute a sustained boost to our workforce, and to encourage firms to invest in the long-term success of these workers.

Recommendation 9 Where migrant workers are used to meet workforce shortages, they should have a clear pathway to permanent residency.





Halving timeframes for development approvals

Approval processes at both the state/territory and national level cause significant delays for the roll out of clean energy projects. This comes from inefficiencies in preparing assessments, a lack of clear guidance and integrated case management support. Streamlined and efficient approval processes are important to attracting and securing investment, as development approvals are susceptible to cost blowouts.

Development approvals overall – and environmental approvals specifically – are two of the top challenges experienced by clean energy developers and investors.[52] The average process for development and environmental approvals can take over four years for onshore wind, two years for solar, and a little over two years for batteries.[53] Governments should aim for significant material improvements to these timelines. A modest efficiency, let's say 10% faster approvals, is not enough. A warp speed approach to energy infrastructure will require at least halving these timeframes.

Environmental approvals are the single largest source of delay in this system, but 2025 reforms to the federal Environment Protection and Biodiversity Conservation Act (EPBC Act) should at least partly improve this situation. Separate to the EPBC Act, state-based planning permits and development applications still add significant (and uncertain) lead time to renewable infrastructure projects. Analysis by RenewMap finds that 40% of onshore wind projects in NSW took more than four years to obtain development approval. Relatively simpler solar PV projects are not immune from delays: while a third of solar projects in Victoria and NSW were approved within a relatively prompt six months, another third took more than 12 months.[54] This section unpacks how these top issues can be addressed to speed up the deployment of clean energy projects.

Every jurisdiction has a unique planning approvals process and regulatory system for large scale development, including clean energy projects (see Appendix A for comparison). The role of ministers vary across jurisdictions, and local councils vary in involvement. Notably, South Australia is the first and only in the country to have a specific hydrogen and renewables approval process. Yet, there are common elements across the approvals process which share similar experiences of delay.

FIGURE 7 I Common phases and bottlenecks of the approvals process for large scale development

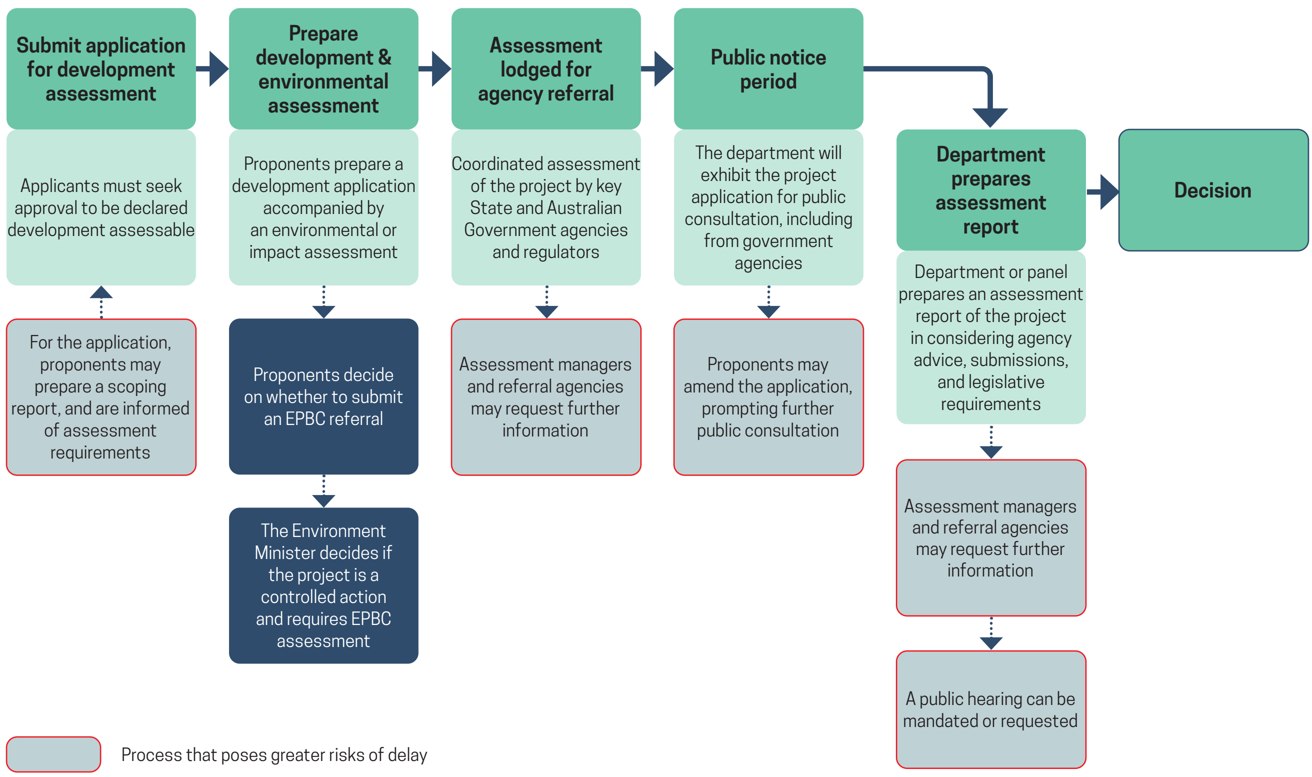


Figure 7 shows the common phases of an approval process for large development projects across Australian states, and the intersection with Commonwealth processes. It depicts a simplified planning pathway that consists of common processes for a development application. When a project is classified as a "controlled action" and deemed a Matter of Environmental Significance, it gets referred for EBPC approval. The boxes with a red outline in figure 7 indicate key phases that often contribute to delays in the approvals process.

Applicants must first **submit an application** to the planning department or minister in the state where the project is located. The application is to determine if the project is "development assessable", and may include determining the requirements for assessment and the appropriate planning pathway. Importantly, this is the point where the clock starts on timelines – when the application is declared to be development assessable – however there is often years worth of pre-scoping and engagement with authorities before this point. When a proponent has been granted to conduct a development assessment, they must complete a **development application accompanied by an environmental assessment**, and both are typically lodged together for assessment. **Agency referral** refers to coordinated assessment of the project by key state and federal government agencies and regulators. Assessment managers and referral agencies may request further information at this stage – this is a process that risks causing delays due to stopping the clock on the application or the number of requests made.

The department will exhibit the development application including environmental assessment statements for public consultation over a **public notice period**, including government agency advice. Proponents will respond with an assessment report. Alternatively, proponents may amend the application which can prompt further public consultation, and therefore extra time spent. Then, the department prepares an **assessment report** of the project in accordance with government legislation and policies. Assessment managers and referral agencies may request further information at this stage, and furthermore, a public hearing can take place – either by mandate or by ministerial request. When it gets to the **decision** stage, an application can be approved, approved with conditions, approved in part, or refused (proponent can appeal). A decision is also subject to EBPC approval if applicable, and also subject to post-approval actions.

Each of these stages plays an important role and cannot simply be eliminated. The approval system is fine-tuned to balance the benefits of development against environmental and social concerns. However there are common areas where the risk of delay is particularly high. Repeated requests for additional information from regulatory authorities, a lack of guardrails around public consultation, and referrals between assessing government agencies all pose systematic risks of delay. Some of these events also "stop the clock" on statutory timeframes, reducing any pressure on the regulatory system to meet its KPIs.

In the section below, we propose a set of policy options that help to minimise delays for clean energy projects. While these recommendations are not jurisdiction-specific – and we hope would have some applicability in most jurisdictions – the best application of these ideas would certainly vary from state to state. Accelerating timeframes for the development pathway involves streamlining duplication and reducing administrative burden. Changes to approvals processes may also require new or reformed legislative rules and ministerial orders in order to be constituted.

USE EXPEDITED APPROVAL PATHWAYS AND PROVIDE SUPPORT FOR SIGNIFICANT PROJECTS

Proponents must navigate complex interactions within the planning system to obtain development approvals, and experience compounding delays across the system. The planning approval processes for most jurisdictions are underpinned by planning and infrastructure acts. This means that clean energy projects go through the same process as other major infrastructure or development projects. To reduce congestion, renewable energy projects should go through an expedited or dedicated approval pathway. New legislation and regulation can be introduced for this, but it should work alongside the existing regulatory systems where possible. Often this does not mean entirely replacing the planning pathway (such as the stylised example in Figure 7) but rather changing the thresholds, triggers or decision points that determine how a proposal is treated.

For example, in NSW there is an opportunity to open up the Critical State Significant Infrastructure (CSSI) pathway to all generation projects, which has demonstrated fast approvals with the Central-West Orana Renewable Energy Zone (REZ). Currently, most of the renewable energy projects go through the state significant development (SSD) pathway which, despite its name, is a significantly slower pathway with frequent bottlenecks and drawn out timeframes.[55]

Jurisdictions can also consider establishing an exclusive and tailored pathway for renewable projects. South Australia has adopted an approach to planning approvals that sets itself apart from other jurisdictions. The state has introduced the Hydrogen and Renewable Energy Act 2023 (HRE Act), a new regulatory framework for planning approvals solely for hydrogen and renewable projects. Having a dedicated Act and approval pathway firstly demonstrates that these types of projects are a non-negotiable priority; it is not a question of "does society want this sort of development?" but rather "society wants hydrogen and renewables, and is this specific proposal a compliant development and can they operate?". Because the Act is specifically designed for clean energy projects, it marks a fundamental shift from a process that typically sits within the planning, development and infrastructure Acts that includes other types of major developments. Beyond just planning approvals, the HRE Act broadly serves as a licensing scheme that uses an effective, efficient and flexible regulatory framework for constructing, operating, maintaining and decommissioning facilities. For crown land, it is used to facilitate competitive tendering for renewable development that virtually guarantees a development will proceed, and for privately held land it allows proponents to negotiate access with landowners and then seek a license from the state.[56]

Recommendation 10 Use existing or new approval pathways that provide accelerated processing for renewable energy projects.

Statutory powers can be granted to an authority to proactively support infrastructure development. Institutionalising this function in an *office*, rather than a *process*, is a key strategy to accelerated approvals timelines. It can play a counterbalance to the institutional role of regulatory assessment agencies whose primary functions, mandates and organisational cultures are oriented towards compliance and enforcement rather than proactive project facilitation.

New South Wales' Housing Delivery Authority was established to offer a clear planning pathway for large residential and mixed-used developments. It helped to speed up assessments by classifying them as a state significant development (SSD) and using a new streamlined SSD pathway in the state planning department, bypassing council approvals.[57] More recently, NSW's Investment Delivery Authority (IDA) was established and modelled after the success of the Housing Delivery Authority. The IDA will also accelerate approvals for eligible domestic and international projects, including renewable energy. The kind of support offered for proponents include:

- the facilitation of early coordination between departments, infrastructure planners and councils;
- early intelligence and engagement with agencies to support issue resolution (i.e. disaster mitigation planning, biodiversity assessment); and
- identification of servicing or construction challenges that may impact development timeframes.[58]

Another example is Western Australia's State Development Act 2025, a legislated project delivery process with a newly established Office of the Coordinator General. The Office acts as a single point of leadership to oversee complex projects, and has the authority to expedite key decisions for strategic projects. This includes an ability to designate priority projects and state development areas. The Act still maintains environmental, social and cultural assessment standards rather than lower regulatory thresholds and protections, however it creates an office with the goal of proactively facilitating complex development.[59]

It is important that the authority is set up to be well-resourced, with sufficient capacity for taking on infrastructure projects each year. For example, many developers in NSW have expressed caution about the IDA's potential for impact, as it is currently limited to 30 projects a year, and the $1 billion threshold for projects is too high.[60] A lower project threshold and sufficient resourcing to reflect relevant development activity would make these institutions more successful.

Recommendation 11 Use a legislated authority in the state planning department or a Coordinator General Office with expediting powers to streamline existing approval pathways.

In systems where proponents still have to go through the standard development application steps summarised in Figure 7, integrated case management or a single point of contact with government can reduce frictions and time-loss as proposals move from one part of the planning system to another. This includes engaging at an earlier point with proponents in the planning stage before going to the regulator.

This was a feature of South Australia's Hydrogen and Renewable Energy Act where proponents now have a "single window to government". The Department for Energy and Mining (DEM) will act as a lead government agency to: assist project proponents to navigate all relevant legislative requirements; coordinate relevant state bodies responsible for assessment and approval under other legislation; and act as industry regulator.[61] Tasmania has recently established a Major Renewable Energy Project case management function in state government along with a cross-agency team for more integration and coordination in the pre-assessment phase. These services are still independent of the regulatory system and do not have any assessment or approval responsibilities. The Tasmanian government is also resourcing regulatory agencies including the Tasmanian Planning Commission, Environment Protection Agency and Aboriginal Heritage Tasmania.[62]

Similarly, Queensland established a State Assessment Referral Agency (SARA) that provides a coordinated, whole-of-government approach to the state's assessment of development applications. When SARA is the referral agency, applications are lodged with SARA. This is the standard pathway for clean energy projects.[63]

Case management reduces the transaction costs of navigating the system, and is a useful complement to structural reforms like the creation of a Coordinator General which fundamentally changes the development approvals system itself.

Recommendation 12 Provide integrated case management support early on and throughout for clean energy projects.

LIMIT THE TIME AND EFFORT FOR ASSESSMENTS, REQUESTS FOR INFORMATION AND DECISION-MAKING

State development approval processes often have multiple points where regulators and assessment authorities can request additional information from proponents (see our stylised process in Figure 7). While it is necessary for assessors to be able to seek additional information, this is a common cause of delays and uncertainty for proponents. For instance, in Queensland's approval framework, there are several points in the process where multiple information requests can be made, and authorities are not limited to the number of sequential requests they can make. Additionally, these requests "stop the clock" on statutory timeframes, reducing pressure on authorities to meet their targets.[64] Queensland is not unique, similar problems have been documented in NSW, and all jurisdictions have some form of this process.[65]

States should consider ways to limit the time and effort required for assessments, however this must be supported by more efficient processes. There are significant reforms occurring in both the Commonwealth (EPBC Act) and states to help shorten approval timeframes.

For example, the EBPC reforms will allow the minister to repeal two of the five assessment options – assessments on referral information documentation and public environmental reports – and be replaced with a new streamlined assessment mechanism for all projects with exceptions. A minister has to make an approval decision within 30 business days.[66]

In Victoria, the government has recently introduced new targets for Environmental Effects Statement (EES) processes to last for no longer than 18 months. To enable the shorter timeframe, this process will use sharper assessment scopes, provide extra support to proponents where they are holding up the process, speed up the public engagement process (using online forums), and use more of the environmental reports which are a quicker alternative to a full EES process.[67] It's not yet clear whether this will be successful, as statutory time limits in other jurisdictions have not been strictly enforced. But importantly this initiative goes beyond simply putting a time limit on a decision-maker, and instead redesigns the process to encourage decision-makers to reach their conclusions more quickly.

Recommendation 13 Along with statutory time limits for decision-making, ministers should provide directives to regulators to encourage faster approvals.

A Request for Information (RFI) is a formal notice from a regulatory agency stating that the application provided does not contain sufficient data. This is a critical step for assessing agencies to make informed decisions, but without careful management it often stalls projects for months or years because the government either asks for data that the developer hasn't collected, or makes multiple sequential RFIs instead, or asks for such time-intensive assessments that the project fundamentals have changed by the time the RFI is resolved. What's more, it is very common for planning frameworks to "stop the clock" once regulators or assessors make an RFI, reducing any pressure on the assessor to balance timeliness considerations when making RFIs. To address this, some states have signalled a non-statutory limit on the number of RFIs to one per stage. Enforceability will be a challenge since it is not a mandated requirement, and regulators are inclined to raise RFIs to mitigate risks. More generally, governments should consider how to balance the competing interests of an informed decision with a timely decision. RFI processes can be amended to reduce their impact on timeframes by either aligning regulator/assessor incentives with more timely processing of RFIs, or by structurally limiting the impact of RFIs (eg. with a limit of one per stage). Either way, it will require the political leadership of ministers and departments to steer this practice, through formal statements of expectations and setting of mandates for the arms-length assessors.

Recommendation 14 Limit the number of requests for information (RFIs) to one per stage.

Community engagement is an important feature of democratic decision-making. From a purely instrumental perspective, it also provides a means of building social license, understanding how communities are impacted by projects, and an opportunity to develop projects in ways that genuinely benefit communities. Communities that have the potential to be directly and closely impacted should have a proportionately greater voice in these consultations. At the same time, these processes should not be endless and uncertain for proponents and stakeholders. In some jurisdictions, projects can face objections raised by individuals anywhere across Australia.

In NSW, decisions can be automatically taken out of the hands of the Department of Planning and referred to the state's Independent Planning Commission if as few as 50 objections are received from within a 100km radius. As a result of duplicative or imprecise scopes like this, consultation processes can be lengthy, expensive and drawn-out. Setting a higher threshold (or requiring a more proximate connection to the project) before applications are escalated can ensure that fewer proponents lose time to necessary and sometimes vexatious objections, and ensure that resources for escalating issues (such as the limited resources of a planning commission) are reserved for legitimately difficult cases that face local objection from within the affected community. Additionally, objections can be limited to the local area by setting a radius, or set percentages according to the geographical category – urban, peri-urban, regional, rural, and remote.[68]

Recommendation 15 Ensure communities closely or directly impacted by projects have a proportionately greater voice in consultation and objections.

Box 2 | FAST AND FAIR – ENSURING COMMUNITIES BENEFIT FROM THE ENERGY TRANSITION

The industrial and economic change required for the net zero transition will be disruptive, especially for communities slated to host new industries and energy infrastructure. The imperatives for ensuring communities can reap meaningful benefits from the transition are closely linked. Hearing and responding to genuine concerns raised by communities will lead to a faster transition, by avoiding the delays that occur alongside backlash. Correspondingly, implementing projects in a timely way with minimal delays provides the certainty and clarity communities deserve, allowing them to plan for changes that will affect them.

This report focuses largely on the need for a fast transition and ways to achieve this. CPD's earlier research has focused on the need for a fair transition. *Making our Way* looked at how government and communities can build locally-led climate transition responses,[69] and *Sharing the Benefits* showed how government can use its public funding lever to drive benefits for affected communities.[70] View these reports for our recommendations on achieving a holistic, inclusive and equitable transition.

SIMPLIFY AND STANDARDISE DATA INPUTS FOR ASSESSMENTS

Another option is to streamline state environmental assessments by using ready-made assessment requirements where possible, for projects that have consistent, predictable and mitigatable impacts. This would be most impactful if it applied to a variety of industries, not just clean energy projects, as it would optimise for the entire pipeline of environmental assessments. For example, NSW has accelerated the project assessment process of state significant developments (SSD applications) with its Rapid Assessment Framework. The approach channels resources to more complex projects that require Secretary's Environmental Assessment Requirements (SEARs), which inform what would go into an environmental assessment. This is achieved by preparing ready-made assessment requirements for projects that 1) are wholly permissible; 2) are not a concept development application, and; 3) are consistent in their land use zoning and have predictable and mitigatable impacts. This allows departments to focus more on project-specific SEARs that likely have greater environmental risks.[71]

Recommendation 16 **Use clear and efficient ready-made assessment requirements (i.e. that are industry-specific) for projects that have predictable and mitigatable impacts.**

A lack of accurate information on perceived and actual impacts reduces regulators' ability to apply appropriate levels of proportional assessment, leading to more RFIs. For instance, requests during the assessment stage are typically focused on visual impacts. There is insufficient guidance provided to proponents on how to structure their submissions, increasing delays as further information is then requested.[72]

The lack of clear, standardised technical handbooks and guides forces proponents into an inefficient cycle of trial and error, creating significant data gaps and systemic project delays. Without a clear starting point for the type of data and methods required, proponents often conduct surveys that are insufficient, and are required to perform further tests. In Tasmania, internal admissions from Environment Protection Tasmania confirmed that the regulatory environment for the development of the St Patricks Plains Windfarm had been a "confusing mix" for developers, particularly regarding technical metrics like noise and specialist survey methodologies.[73] Data gaps can be created if regulators provide insufficient baseline data or don't have a methodology for proponents to use as models. This increases stop-start delays as the proponent baseline methodology is insufficient and they must conduct further research.[74] Victoria's Department of Energy, Environment and Climate Action has produced a Handbook for the Development of Renewable Energy in Victoria that addresses uncertainty for proponents and assessors when it comes to impacts on bird and bat species.[75] This approach should be taken across all relevant impacts where possible.

Recommendation 17 **Identify best practice technical handbooks across Australia that specify knowledge and methodologies to assist proponents in impact assessments, and use them as common standards.**

Encouraging capital to flow where it is needed most

Australia does not have a problem of limited access to capital: there is enough money willing to invest in the renewable sector to meet the pace required for Australia to hit its target of 82% renewables by 2030.[76] The raw availability of capital is not the binding constraint preventing warp speed deployment of renewable infrastructure. Rather we need policy settings to support effective capital allocation and to unlock innovative finance for first-of-a-kind investments.

ENCOURAGE EFFECTIVE CAPITAL ALLOCATION TO ENERGY INFRASTRUCTURE PROJECTS

The markets that govern the energy sector are highly regulated and shaped by government policy. To the extent that capital is not being allocated to the most efficient and effective purposes, this is as much a problem of policy design as it is about fundamental energy economics.

In the market for electricity generation, investors face uncertain projections of future demand. This prevents the market functioning effectively and is a significant barrier to investment. The Electricity Services Entry Mechanism (ESEM) proposed in the Nelson NEM Review would be a major step in closing the "tenor gap" by using government-backed, tradeable contracts to underwrite the later years (e.g. years 8–20) of clean energy projects, improving bankability where the market will not sign long-term power purchase agreements. The ESEM should build on core elements of schemes like the Capacity Investment Scheme but be enduring (a permanent NEM feature), targeted (focused only on risks the market cannot manage) and market-linked (re-auctioning contracts to keep risk and value in the market and minimise costs to consumers).[77]

The market for transmission services has even bigger problems. Designed in most states as a regulated monopoly, the incentives for transmission operators are often to allocate capital towards whatever will increase their regulated asset base (which determines the level of profit they are able to generate). What's more, the profits accrue almost entirely to transmission operators with little incentive for local landowners and communities to support new developments. This does not always align with the most effective allocation of capital to achieve warp speed deployment of renewable energy infrastructure. Where other sources of capital might be willing to invest in transmission augmentation, the nature of the industry as a physical monopoly makes it difficult for investor-led developments to emerge. Various opportunities exist to improve capital allocation in the transmission sector, from introducing more competition (e.g. through contestable procurement that breaks existing monopolies, or tradable rights) through to removing market dynamics entirely through state-owned infrastructure development. The most expedient next step is for the Commonwealth Government to commission an independent review into transmission markets to propose long-term reform.[78,79]

Recommendation 18 **The Commonwealth and NEM jurisdictional governments should establish the proposed ESEM as quickly as possible, and commission an independent review into transmission market operation.**

One of the problems that the ESEM is designed to address is the mismatch in lead times between energy supply and demand: new load can come online much faster than new generation. This doesn't just create a problem for energy developers and generators, but it can also create a problem for new energy intensive industries. New industries like data centres or green metal processing require significant energy, and the Commonwealth has set clear expectations that these industries contribute to the build-out of new renewable energy infrastructure.[80] The challenge is that industry's overwhelming preference is to do this by entering into power purchase agreements (PPAs) with existing generators – in the short term this simply has the effect of contracting out existing renewable generation, bidding up the price of PPAs, and maintaining overall reliance on the grid's existing supply. The new capital added to the system accrues to existing renewable energy suppliers and does not necessarily finance new development.[81]

Government policy should ensure additionality in industry-financed renewable development: that is, capital from heavy users should generate *additional* supply rather than merely enriching the owners of existing supply. There are several ways to achieve this, each with their own trade-offs. It could be achieved through mechanisms such as a strict additionality requirement (for example: heavy users must directly finance new developments, not just procure energy via PPA), or an over-contracting requirement (for example: a new data centre must fund through a PPA supply to the grid of 125% of its own needs). A further option, taking inspiration from the ESEM, could be for a government backed (or owned) entity to take the role of market maker, buying PPAs from new generators and then selling to new sources of demand. Guaranteeing a base level of demand for new generators, and capturing any surplus from an unexpected influx of new purchases to direct towards additional investment.

Recommendation 19 Establish policy settings or market interventions to ensure that requirements on heavy energy users to purchase green energy lead to additional investment in renewable generation.

The last major factor affecting the allocation of capital is the extent to which marginal incentives encourage investment and deployment of low-carbon energy infrastructure. The federal government's cornerstone policy for setting marginal incentives for decarbonisation – the Safeguard Mechanism – is not particularly effective at sending signals at the level of individual energy generation facilities. At the moment, as long as total emissions for the electricity sector remain below the sector's overall limit, individual facilities do not need to reduce their emissions or purchase offsets. There is no marginal incentive to generate low-carbon electricity. Changing this will drive deeper and faster emissions reductions in the electricity sector and thereby strengthen incentives for investment in renewable over fossil fuel energy generation.[82] It bears repeating that the first-best option for establishing economic incentives is an economy-wide carbon price. But if that remains politically unfeasible, the major review into the Safeguard Mechanism later this year provides an opportunity to improve incentives in the energy sector.

Recommendation 20 The Commonwealth Government should expand the Safeguard Mechanism and ensure it provides sufficient price signals to encourage capital allocation into renewable energy infrastructure.

DIRECT PUBLIC AND PATIENT CAPITAL WHERE IT IS NEEDED TO CROWD-IN PRIVATE INVESTMENT

Beyond improving the allocation of private capital, there is also more that public and patient capital can do to accelerate the energy transition. Public capital investment in renewable infrastructure – including through government specialist investment vehicles (SIVs) like the Clean Energy Finance Corporation – has so far gone to lower-risk, commercially viable projects, reflecting conservative mandates and sometimes crowding out rather than crowding in private finance.[83,84]

At present, private investors are often reluctant to commit to the first large-scale generation project in an emerging renewable region – there is a first-mover disadvantage because transmission timing and connection risk are high and difficult to price.[85] Concessional finance or offtake guarantees from SIVs can shift that risk, allowing one or more first-mover "anchor" generation projects (e.g. the first wind farm in a region) to reach final investment decision.[86] Once those anchor projects are committed, TNSPs have a clearer case to proceed with transmission investment at scale, and subsequent generation projects can then be financed on normal commercial terms.[87]

In February 2026, the Commonwealth agreed that the $5 billion Net Zero Fund (a sub fund of the National Reconstruction Fund) would accept a lower rate of return, allowing it to take more risk than commercial finance to support emissions cuts while crowding in private capital.[88] That is a welcome first step, and that principle should be extended to other SIVs.[89]

Recommendation 21 State government funding initiatives and the Commonwealth's SIVs should be provided with the necessary mandate to invest in higher-risk first-mover "anchor" generation projects in priority renewable regions.

The superannuation industry is one of Australia's greatest financial assets: almost $5 trillion of capital with a mandate to invest for beneficiaries' long-term interest. There is no source of capital that can be more patient and take a long view on the economics of transition. However the current regulatory approach benchmarks super funds to total market indices, and this forces the funds to allocate capital in a way that effectively mirrors the average allocation across the entire market. Alongside the global development in recent years of financial regulations that require climate-related disclosures, the funds management industry has used this influx of new and pertinent data to develop robust strategies (and accompanying indices) to invest in a transition-aligned subset of the total market. Superannuation regulations should be reformed to allow them to fully play a role as Australia's source of patient and strategic capital. This is in the best interests of super fund members as well as the country.[90]

Recommendation 22 Reform the Your Future, Your Super benchmarks to allow superannuation funds to benchmark against forward looking transition-aligned market indices.

Securing supply of key hardware and materials

Australia is heavily reliant on imports for most of the materials and hardware needed to build renewable infrastructure at scale. Many components such as transmission cables are manufactured near large markets in Europe and the US; others (e.g. transmission towers) are imported and then assembled in Australia. More complex hardware (solar panels, utility-scale batteries) is overwhelmingly imported fully assembled.[91] UN Comtrade data shows Australia imported around $320 million of high-voltage power cables in 2024 alone, underlining how structurally dependent the current system already is on offshore manufacturing – and volume demand will only rise as the transmission build-out accelerates (with only 650 km completed in the NEM since 2022, but a further 2,800 km already underway for delivery by 2031).[92, 93] More broadly, Australia imports around 80% of all electrical equipment used in the country.[94]

For now, projects can mostly import what they need (once approvals and finance are in place) without major delays. Where supply-side constraints do exist, they are generally related to access to specialist electrical equipment. For example, transformers had lead-in times averaging 120 weeks in 2024.[95] The question is whether Australia will be able to keep importing everything it needs as global net zero efforts ramp up: global demand for key renewable infrastructure equipment is expected to rise by 45-80% by 2030, and demand in Australia by 70-115% over the same period in the most ambitious scenario mapped under AEMO's ISP.[96]

ADOPT A MULTI-YEAR, MULTI-PROJECT PROCUREMENT FRAMEWORK

Australian Transmission Network Service Providers (TNSPs) and other project proponents also lack buying power on a global scale, making it harder to guarantee ongoing supply.[97] Some have tried bundling procurement across multiple Australian projects to secure scale and earlier deliveries, such as Transgrid's Powering Tomorrow Together program, backed by $385 million in federal underwriting for equipment, materials and skilled labour.[98] While Transgrid is bundling procurement for its own confirmed upcoming projects, in contrast the UK's National Grid uses a multi-year, multi-project framework agreement to lock in manufacturing capacity for future projects across the entire country.[99] A similar model in Australia could both secure access to key imports and provide long-term demand certainty for domestic manufacturers of simpler grid components.

Recommendation 23 The Commonwealth, supported by AEMO, should negotiate a national multi-year, multi-project procurement framework with key suppliers, allowing developers to draw down equipment under national agreements.

DIRECT SPECIALIST INVESTMENT VEHICLES TO TARGET SUPPORT FOR VIABLE ONSHORE MANUFACTURING OF CRITICAL GRID COMPONENTS

Another consideration is whether Australia can access enough raw materials as global renewables build-outs accelerate. Industry consistently cites steel and concrete as major delivery risks for large projects. Australia produces more than 5.6 million tonnes of steel a year, but competing demand from manufacturing and other sectors, plus reliance on imported specialty grades, means the transition will depend on a mix of domestic and imported steel. Infrastructure Australia estimates 36–60 tonnes of steel per kilometre of transmission line, implying up to ~120,000 tonnes just for new lines under AEMO's Optimal Development Path by 2031.[100] Including wind, solar and other assets, around 400,000 tonnes of steel a year is expected to be needed for renewable infrastructure alone – a big shift when almost half (48.7%) of current steel use is in manufacturing, not construction.[101, 102] Concrete supply is likely sufficient at a national level, but concentrated demand in specific REZs and project clusters could still create local bottlenecks.[103]

There are many competing visions for how Australia should revitalise its manufacturing sector. But to support a "warp speed" objective the most obvious priorities are raw materials and simpler hardware where Australia already has capability, where volumes will be large, and where global supply chains are less complex – for example steel, transmission towers and aluminium transmission cables.[104] Industry stakeholders note that a large-scale, state-of-the-art transmission tower fabrication facility can be established within about five years; one exemplar firm decided to invest in Australia in mid-2022 and had opened its Adelaide facility by December 2024.[105] While domestic capacity would not eliminate the need to import towers at peak times, it could significantly reduce Australia's reliance on overseas manufacturing to meet its targets. Risk sharing tools that provide targeted, time-limited support for commercially viable onshore manufacturing can help to hedge future supply-chain risk.

Recommendation 24 **The Commonwealth should direct the National Reconstruction Fund and Clean Energy Finance Corporation to develop a 10-year, ring-fenced program of targeted support – such as concessional finance and other risk-sharing tools – for commercially viable onshore manufacturing of critical grid components.**

Conclusion

While Australia's progress in deploying renewable energy infrastructure is comparable to similar countries, it still lags behind what is needed for a smooth and successful decarbonisation of the energy system. Australia must speed up implementation of renewable energy projects to many times the current rate. Not only is this about making Australia's renewable energy and emissions targets achievable, it is also about safeguarding the country's national and economic security, and responding to increasing demand on electrification.

Some aspects of the renewable energy transition are already progressing at a warp speed-like pace, however greater speed must be unlocked. It means that action must go beyond the current policy settings and economy-wide capacity. This requires nothing less than deep systematic change to accelerate the pace at which the Australian economy can physically plan, build, and commission infrastructure.

Strategic reform is needed across four critical domains. First, we must double the energy workforce pipeline by expanding training infrastructure, improving cross-border labour mobility, and addressing regional labour shortages through VET hubs and skilled migration. Second, we must halve development approval timeframes by utilising expedited pathways, limiting time and effort for assessments, and standardising assessment requirements. Third, we must encourage capital to flow where it is needed most, leveraging public and patient capital to crowd-in private investment for higher-risk, first-mover projects. Finally, we must secure our supply of key inputs through national multi-year procurement frameworks and support for the onshore manufacturing of critical grid components.

This will require a distinct change in prioritisation, and a concerted, whole-of-government effort to provide the strategic leadership and accountability necessary. There is no shortage of metaphors to describe this imperative: a "wartime" mobilisation, or perhaps a "moonshot" mission. We think speed is the best way to understand this challenge; both the need for it and the lack of it. That is why the central recommendation in this report is to develop a National Cabinet agenda for "warp speed" deployment of energy infrastructure. Success is not possible if each minister and agency is pursuing their own version of what good looks like – National Cabinet leaders must work collectively to drive a whole-of-government effort to get Australia to warp speed.

Appendix A

Common phases of the state approvals process for large scale development (jurisdiction comparison at the point of research)

REFERENCES	**[1]** State significant projects - p. 19-23	**[1]** Licensing and approvals	**[1], [2]** - Approvals framework	**[1]** - Major Project Assessment Process, **[2]** Renewable Energy Approval Pathway (REAP) via the Major Project Assessment Process
Stage (synthesis)	**NSW (verbatim)**	**SA (verbatim)**	**QLD (verbatim)**	**TAS (verbatim)**
Submit an application to be development assessable Applicants must seek approval to be declared development assessable. *For the application, proponents may prepare a scoping report, and are informed of assessment requirements.*	**Stage: Project is being scoped** "Scoping" "Application for SEARs"	**Stage: Licence application** "Minister reviews application" **Stage: Access agreements** "Optional scoping report to inform assessment of activities regulated under the EPBC Act"	**Stage: Development assessment** "Applicants must seek approval to conduct assessable development under the Planning Act 2016 (QLD)"	"Minister receives proposal" "Minister may request proposal to be amended prior to its declaration" "Minister declares major project and notifies" "Commission notifies relevant regulators and owners, councils etc. and establishes Development Assessment Panel" "Relevant regulators notify of assessment requirements, and panel 1) drafts 2) exhibits and 3) determines assessment criteria"
Prepare Development and Environmental Assessment Proponents prepare a development application accompanied by an environmental or impact assessment.	**Stage: SEARs are issued and EIS is being prepared** "SEARs are issued" "Preparing the EIS"	**Stage: Access agreements** "If Statement of Environmental Objectives or Environmental Impact Report exist, prepare the SEO/EIR"	**Stage: Development assessment** "Assessable development is either code or impact assessable. The relevant assessment manager will assess application against prescribed planning benchmarks" "DA including prescribed Environmental Relevant Activity taken to be an application for Environmental Authority"	"Proponent prepares Major Project Impact Statement"
Assessment lodged for agency referral Coordinated assessment of the project by key State and Australian Government agencies and regulators. *Assessment managers and referral agencies may request further information.*	**Stage: EIS is lodged** "The department will: advise if additional information is required in the EIS, prior to exhibition"	"Licensee engages stakeholders and government agencies on proposed EIR/SEO under approved consultation plan" **Stage: EIR & SEO lodgement**	**Stage: Referral to referral agencies** "Projects above the thresholds must be referred to the State Assessment and Referral Agency (SARA)" Multiple RFIs take place at this stage to inform the assessment manager and referral agencies in their assessment.	"Panel provides to participating regulators" "Panel RFIs, or regulator requests amendments to statement" "Participating regulators provide preliminary advice" "Panel prepares initial assessment report"

Public notice period The department will exhibit the project application for public consultation, including from government agencies. Proponents will respond with an assessment report. *Proponents may amend the application, prompting further public consultation.*	**Stage: EIS is exhibited** "The department will publish the EIS and supporting documentation on the major projects website." "The community is able to make a submission…" **Stage: Proponent responds to submissions.** "The proponent is expected to consider and respond to the issues raised in a submissions report." **Optional stage: proponents amends project application**	**Stage: EIR & SEO lodgement** "Mandatory 30-day public consultation on EIR and SEO"	**Stage: Public notice period** "Projects that are impact assessable will be required to undergo a public notice period"	"Panel exhibits proposal and initial assessment report"
Department prepares assessment report Department or panel prepares an assessment report of the project in considering agency advice, submissions, and legislative requirements. *Assessment managers and referral agencies may request further information.* *A public hearing can be mandated or requested.*	**Stage: EIS is assessed** "The Department will: Prepare an assessment report which includes consideration of agency advice, submissions received, the proponent's response to submissions and legislative requirements" "Request additional information from the proponent, seek further advice from agencies or seek advice from independent experts (if required)" **Optional stage: Proponents amends project application** **Optional stage: Public hearing is held by the Independent Planning Commission (if requested by the Minister)**	**Stage: Revised EIR and SEO lodged** **Stage: Minister assessment, approval and gazattal of SEO** "Joint ministerial decision"	**Stage: Public notice period** "The assessment manager will consider submissions when deciding the application"	"Panel holds a hearing" OR "Panel forwards representations to participating regulators, and they provide final advice to panel" "Panel determines the permit"
Decision Can be approved, approved with conditions, approved in part, refused (proponent can appeal). Subject to post-approval actions before work can commence.	**Stage: Project is determined** "The decision-maker will: ▪ prepare conditions of consent which may include requirements for further community engagement during post approval ▪ outline the reasons for the decision, including how community feedback was considered in reaching the decision." "Post-approval phase" **Optional stage: proponents seeks to modify a project approval**	**Stage: license decision** "If granted" "Operational management plan (OMP) prepared" **Stage: Minister assessment and approval of OMP**	**Stage: Decision** "The assessment manager can: approve, approve with conditions, approve in part, refuse the proposed project. The proponent has 20 business days to appeal the decision, submitters can appeal decision" **Stage: post approval requirements** "Approvals conditions may require further action or assessment before work can commence."	"Panel notifies decision and a final assessment report"

Endnotes

1 'Green gold: A strategy to kickstart Australia's renewable industry future', Centre for Policy Development, 2023.

2 '2026 Integrated System Plan (ISP)', AEMO, 2025.

3 'Australia's Net Zero Transformation: Treasury Modelling and Analysis', Treasury, 2025.

4 'Australia's emissions projections 2025', DCCEEW, 2025.

5 '2035 Targets Advice', Climate Change Authority, 2025.

6 '2025 Annual Progress Report', Climate Change Authority, 2025.

7 'National Electricity Market', DCCEEW, 2024.

8 '2026 Integrated System Plan (ISP)', AEMO, 2025.

9 '2026 Integrated System Plan (ISP)', AEMO, 2025.

10 '2026 Integrated System Plan (ISP)', AEMO, 2025.

11 'China Monthly Energy Update January 2026', Climate Energy Finance, 2026.

12 'China Clean Energy Exceeds 20% of Power Generation in 2015', Bloomberg, 2016.

13 'China continues to lead the world in wind and solar', Global Energy Monitor, 2024.

14 'Setting direction: A purposeful approach to modern industry policy', Centre for Policy Development, 2024.

15 'Infrastructure Market Capacity - 2025 Report', Infrastructure Australia, 2025.

16 'The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050', AEMO, 2025

17 'Labour Force, Australia, December 2025 results from monthly Labour Force Survey', Australian Bureau of Statistics (ABS), 2025.

18 'Electricity, Gas, Water and Waste Services - Occupation and Industry Profile', Jobs and Skills Australia, 2025.

19 'The fastest growing jobs and the ones going extinct', KPMG, 2025.

20 'The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050', AEMO, 2025

21 '2024 Integrated System Plan for the National Electricity Market', AEMO, 2024.

22 'The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050', AEMO, 2025

23 'Electrifying the Future; Policy Recommendations to Grow Australia's Skilled Energy Workforce', Powering Skills Organisation, 2025.

24 'Summary of responses to National Energy Workforce Strategy consultation', DCCEEW, 2025.

25 'Electrifying the Future: Policy recommendations to grow Australia's skilled energy workforce', Powering Skills Organisation, 2025.

26 'ETU response to National Energy Workforce Strategy consultation', ETU, 2024.

27 'Charged Up: Strategies for Addressing the Skill Shortage in Electrical Trades for the Clean Energy Transition', Per Capita, 2024.

28 'Employment, Skills and Supply Chains: Renewable Energy in NSW', UTS, 2022.

29 'Electrifying the Future; Policy Recommendations to Grow Australia's Skilled Energy Workforce', Powering Skills Organisation, 2025.

30 'Electrifying the Future; Policy Recommendations to Grow Australia's Skilled Energy Workforce', Powering Skills Organisation, 2025.

31 'The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050', UTS and AEMO, 2024.

32 This proposal goes further than the current Australian Skills Guarantee, but it would go some way to resolve systematic issues with the apprenticeship system. It is also discussed in:'Strategic Review of the Australian Apprenticeship Incentive System – Final Report', DEWR, 2025.

33 'Which licences are accepted in which state and by what method', Master Electricians Australia, 2025.

34 'Summary of responses to National Energy Workforce Strategy consultation', DCCEEW, 2025.

35 'National licensing regime for electrical trades', Treasury, 2025.

36 'Response to the Productivity Commission interim report on National Competition Analysis 2025', Engineers Australia, 2025.

37 'National Competition Policy Analysis 2025, National Licensing', ETU, 2025.

38 'Infrastructure Market Capacity - 2025 Report', Infrastructure Australia, 2025.

39 'Clean Energy Council response to National Energy Workforce Strategy consultation', Clean Energy Council, 2024.

40 'National Skills Passport - ACTU submission', ACTU, 2024.

41 'Energy Skills Passport', Scottish Government, 2025.

42 'Clean Energy Council response to National Energy Workforce Strategy consultation', Clean Energy Council, 2024.

43 'Australian Energy Council response to National Energy Workforce Strategy consultation', AEC, 2024.

44 'Summary of responses to National Energy Workforce Strategy consultation', DCCEEW, 2025.

45 'The Clean Energy Generation', Jobs and Skills Australia, 2023.

46 'Employment, Skills and Supply Chains: Renewable Energy in NSW', UTS, 2022.

47 'Australian Council of Trade Unions response to the National Energy Workforce Strategy Consultation', ACTU, 2024

48 'Australian Energy Council response to National Energy Workforce Strategy consultation', AEC, 2024.

49 'ETU response to National Energy Workforce Strategy consultation', ETU, 2024.

50 'ETU - Tomorrow's Trades to Power Australia's Future', ETU and CEC, 2022.

51 'World Energy Employment Report 2025', IEA, 2025.

52 'Investing in cheaper, cleaner energy and the net zero transformation', The Productivity Commission, 2025.

53 'Not all renewable projects are created equal: Why approval times vary dramatically across Australia', Renew Map, 2025.

54 'Not all renewable projects are created equal: Why approval times vary dramatically across Australia', Renew Map, 2025.

55 'NSW Planning Approvals for Clean Energy Projects', Herbert Smith Freehills Kramer, 2025.

56 'Hydrogen and Renewable Energy Act', Government of South Australia, 2026.

57 'Housing Delivery Authority', NSW Government, 2025.

58 'Investment Delivery Authority Renewable Energy Case Study', NSW Government, nd.

59 'Access resources and additional information', Government of Western Australia, 2026.

60 'NSW Planning Approvals for Clean Energy Projects', Herbert Smith Freehills Kramer, 2025.

61 'Hydrogen and Renewable Energy Act 2023', Government of South Australia, 2024.

62 'Renewable Energy Coordination Framework', Renewables, Climate and Future Industries Tasmania, 2022.; 'Renewable energy approvals pathway', Renewables, Climate and Future Industries Tasmania, nd.

63 'State Assessment and Referral Agency', Queensland Government, 2025.

64 'Renewable Energy Project Pathways Queensland Approvals Process', Queensland Renewable Energy Council, 2024.

65 'Delivering Major Clean Energy Projects in NSW Review of NSW Statutory Planning Approvals Processes', Herbert Smith Freehills & Clean Energy Investor Group, 2023.

66 'Australian Parliament passes key reforms to Australia's national environmental laws', White & Case, 2025.

67 'Action two: Cut red tape', State Government of Victoria, 2024.

68 'NSW Planning Approvals for Clean Energy Projects', Herbert Smith Freehills Kramer, 2025.

69 'Making Our Way: Adaptive capacity in Australia's at-risk fossil-fuel-exposed regions', Centre for Policy Development, 2023.

70 'Sharing the Benefits: Ensuring new industries strengthen communities', Centre for Policy Development, 2025.

71 'Streamlining major project assessment', NSW Government, nd.

72 'Improving renewable energy planning and permitting policy', Climateworks Centre, 2025.

73 'Briefing Paper', Board of Environment Protection Authority', 2025.

74 'Improving renewable energy planning and permitting policy', Climateworks Centre, 2025.

75 'Handbook for the development of renewable energy in Victoria', The State of Victoria Department of Energy Environment and Climate Action, 2025.

76 'Back on track - Aussie clean energy investment reaches new highs in 2024, Clean Energy Council, 2025.

77 'National Electricity Market wholesale market settings review', DCCEEW, 2025.

78 'Transmission Contestability in Australia', Nexa Advisory, 2023.

79 'Transmission Bottleneck Analysis', Clean Energy Investor Group, 2025.

80 For instance, see the Commonwealth's March 2026 'Expectations of data centres and AI infrastructure developers', or the 'Public Interest Principles for Data Centres' (2026) published by an alliance of unions, environment, community and renewable energy industry organisations.

81 'Data centres, clean energy and net zero ambitions', Watt Clarity, 2025.

82 'Productivity with Purpose', Centre for Policy Development, 2025.

83 'Ideas to Industries', Centre for Policy Development, 2024.

84 'Australia's $60bn Public Capital System and the Climate Investment Opportunity', Investor Group on Climate Change, 2025.

85 'Renewable Energy Zones', Transpower, 2022.

86 'On Static vs Dynamic Line Ratings in Renewable Energy Zones', Griffith University Business School, 2023.

87 'Renewable Hydrogen and Energy Investment Opportunity', Regional Development Victoria, 2024.

88 'Net zero fund's $5 billion of world-leading decarbonisation finance', DCCEEW, 2026.

89 'Labour to let $15b National Reconstruction Fund make riskier plays', AFR, 2025.

90 'Your Future, Your Super Performance test can be future-proofed with climate benchmarking', Climateworks Centre, 2025.

91 'What Australia needs to build the power grid of the future', UTS, 2024.

92 'Trade Data, Australian Imports of Insulated Electric Conductors; for a voltage exceeding 1000 volts', UN Comtrade, 2024.

93 'Draft 2026 ISP', AEMO, 2025.

94 'Australian National Accounts: Input-Output Tables, 2023-24 financial year', ABS, 2026.

95 'Supply shortages and an inflexible market give rise to high power transformer lead times', Wood Mackenzie, 2024.

96 'Powering Progress: How Australia can fast-track energy transmission projects for a renewable future', EY, 2024.

97 'Powering Progress: How Australia can fast-track energy transmission projects for a renewable future', EY, 2024.

98 'Transgrid - Powering Tomorrow Together', Transgrid, 2023.

99 'National Grid supply chain framework contracts', UK National Grid, 2025.

100 'Infrastructure Market Capacity - Supporting Appendices', Infrastructure Australia, 2021.

101 'Steel and the renewable energy transition', Steel Australia, 2025.

102 'Overview of the steel industry in Australia', Parliament of Australia, 2017.

103 'Infrastructure Market Capacity - 2025 Report', Infrastructure Australia, 2025.

104 'Weld Australia demands answers: will the Australian Government manufacture wind and transmission towers locally or outsource to China?', Comment from CEO Weld Australia, Manufacturers Monthly, 2024.

105 'Canadian power-grid technology aids clean energy rollout', Austrade, 2025.

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