WE PLAN AND THEN DON'T BUILD

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nexa ADVISORY

About Nexa Advisory

Nexa is a 'for purpose' advisory firm. Our unwavering focus is accelerating the clean energy transition in a way that provides secure, reliable, and affordable power for consumers of all types.

Nexa Advisory is a team of experienced specialists in the energy market, policy and regulation design, stakeholder engagement, and advocacy. We work with public and private clients including renewable energy developers, investors and climate impact philanthropists to help them get Australia's clean energy transition done.

Nexa Advisory stands at the nexus of the energy sector's complex web of stakeholders. We support and direct their dialogue so as to remove the roadblocks to the transition.

We have a track record in policy creation, advocacy, political risk assessment, and project delivery. We are holistic in our approach and deliver solutions with people in mind, and commercial intent.

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Disclaimer:

Executive Summary

The slow pace of Australia's clean energy transition means that not only will Australia fail to meet its climate targets, but there is a significant threat to power system reliability and security, and increased costs for consumers both large and small.

The factors contributing to the slow transition are many and complex[1]. A key issue is the ongoing delays to delivering new transmission projects, particularly transmission interconnectors, which will connect the renewable generation[2] and storage capacity required to replace ageing coal-fired power stations.

We are not making progress in building transmission. However, there are still significant roadblocks which need to be addressed by governments so that we attract the significant investment needed, and achieve the unprecedented amount of transmission build. These fall under three categories:

- the regulatory environment is not fit for purpose
- there is a lack of national planning and coordination
- further work is needed to build social licence and community acceptance

Nexa Advisory has set out three recommendations below which seek to address these key areas of friction.

1 Nexa Advisory, Removing the Roadblocks to New Transmission to Achieve the Transition, April 2022

2 AEMC, Transmission Planning and Investment Review, 2021

Context

The Australian Energy Market Operator (AEMO) has been planning the power system for many years, publishing its inaugural independent National Transmission Network Development Plan (NTNDP) in 2010[3]. The aim of the annual NTNDP was to ensure that the development of new transmission by the individual regulated Transmission Network Service Providers (TNSPs) was coordinated, so as to ensure that builds were efficient and costs minimised, while maximising reliability and access to the National Electricity Market (NEM).

The 2017 Finkel Review[4] found that a more strategic approach to transmission planning was needed to facilitate the efficient development of transmission and generation, given technical and economic developments across the NEM, recommending an integrated plan be developed by AEMO. In 2018, the biennial Integrated System Plan (ISP) was introduced[5], replacing the annual NTNDP.

The focus of these plans has rightly been on the new transmission lines needed to meet Australia's future energy needs. However, while AEMO develops the whole-of-system plan, it does not compel or control delivery.

At a high-level, the ISP:

- forecasts electricity demand and generation mix based on costs and emissions policies
- outlines the Optimal Development Path (ODP) for transmission projects so as to maximise long-term consumer benefits
- compels the TNSP to commence the Regulatory Investment Test for Transmission (RIT-T) for 'actionable' projects to be delivered as soon as possible

The weaknesses of this planning framework are that it does not:

- directly coordinate new generation and storage connections
- ensure government policy and planning processes adhere to delivery timelines
- ensure that the regulatory processes adhere to delivery timelines
- require the TNSP to make a positive investment decision to progress a new ISP transmission line
- mandate construction or adherence to specified completion dates given in the ISP, despite TNSPs holding exclusive rights to build new transmission lines[6]

3 AEMO, National Transmission Network Development Plan, 2010

4 Dr Alan Finkel, Independent Review into the Future Security of the National Electricity, 2017

5 AEMO, Draft 2024 Integrated System Plan, 2024

6 AEMC, Transmission Planning and Investment – Contestability options paper, 2022

The goal posts keep changing

Nexa Advisory's analysis reveals that numerous critical new transmission projects identified as delivering net benefits to consumers have faced delays, particularly if originally targeting completion in the early to mid-2020s.

Of the key committed and actionable ISP transmission projects identified from 2015-2020, only VNI Minor has been completed, with only Project EnergyConnect and QNI Minor under construction. The remaining major projects have yet to finalise their routes or commence construction, leaving them susceptible to additional delays (see Table 1 below).

Transmission Project	Connecting	First identified	Plan	First delivery date	Latest delivery date#	Difference (delay)	Completed?
QNI Minor	NSW-Qld	2016	NTNDP	2021^	Commissioning - 2024	+3 years	No
VNI Minor	NSW-Vic	2016	NTNDP	2021^	Delivered in 2022	+1 year	Yes
Western Renewable Link	W Vic-Mel	2016	NTNDP	2023*	2027	+4 years	No
VNI-W	Vic-NSW	2015	NTNDP	2024*	2029	+5 years	No
Project EnergyConnect	NSW-SA	2016	NTNDP	2025^	Underway - 2027=	+2 years	No
QNI Medium	NSW-Qld	2018	ISP	2033*	2034	+1 year	No
HumeLink	Snowy 2.0-NSW	2018	ISP	2025*	2026	+1 year	No
Marinus Link	Tas-Vic	2016	NTNDP	2025^	2030	+5 years	No
CWO REZ	NSW REZ	2020	ISP	2025+	2028	+3 years	No
Average delay						+3 years	

^2016 NTNDP, *2018 ISP, +2020 ISP, #2024 Draft ISP, =2024 ESOO Update

Table 1: Key transmission projects in the NTNDP and ISP

The ISP ODP is the combination of new transmission projects and expected delivery dates that maximise net benefits to consumers. Importantly, it is robust across the range of future scenarios modelled in the ISP; if transmission projects are identified as 'actionable', they are required under any future state of the market.

The timetables of these critical transmission projects are not nice to haves. They are needed to connect the renewable generation and storage capacity that will replace the coal-fired power stations when they close, ensuring system reliability.

Our analysis shows that the average delay to transmission projects across the National Energy Market (NEM) is three years. By state, the average delay is four years in Victoria, two years in NSW and Queensland, and one year in South Australia.

However, the latest delivery dates in the Draft 2024 ISP show how timelines continue to slip. In NSW, the anticipated delivery dates for Project EnergyConnect (2027), HumeLink (2026), and the Central West Orana REZ (2028) now fall beyond the closure date of the Eraring coal-fired power station in 2025.

Similarly, in Victoria, the projected completion dates for the Western Renewables Link (WRL, 2027) and VNI-West (2029), which is dependent on the successful delivery of WRL, now extend beyond the closure of the Yallourn coal power station in 2028.

These risks to the system are closely monitored across the NEM through reliability and security forecasts by AEMO[7]. They are giving rise to prolonged operation of ageing, unreliable and carbon-emitting, coal-fired power stations (see Figure 1).

Additionally, while the need for new transmission remains broadly the same as the 2022 ISP, several factors such as increased transmission, generator and storage costs will inflate the eventual cost to consumers. This has resulted in a $10 billion or 37 per cent reduction in net market benefits of the ODP between the 2022 ISP and the Draft 2024 ISP ($27.7bn to $17.45bn[8]).

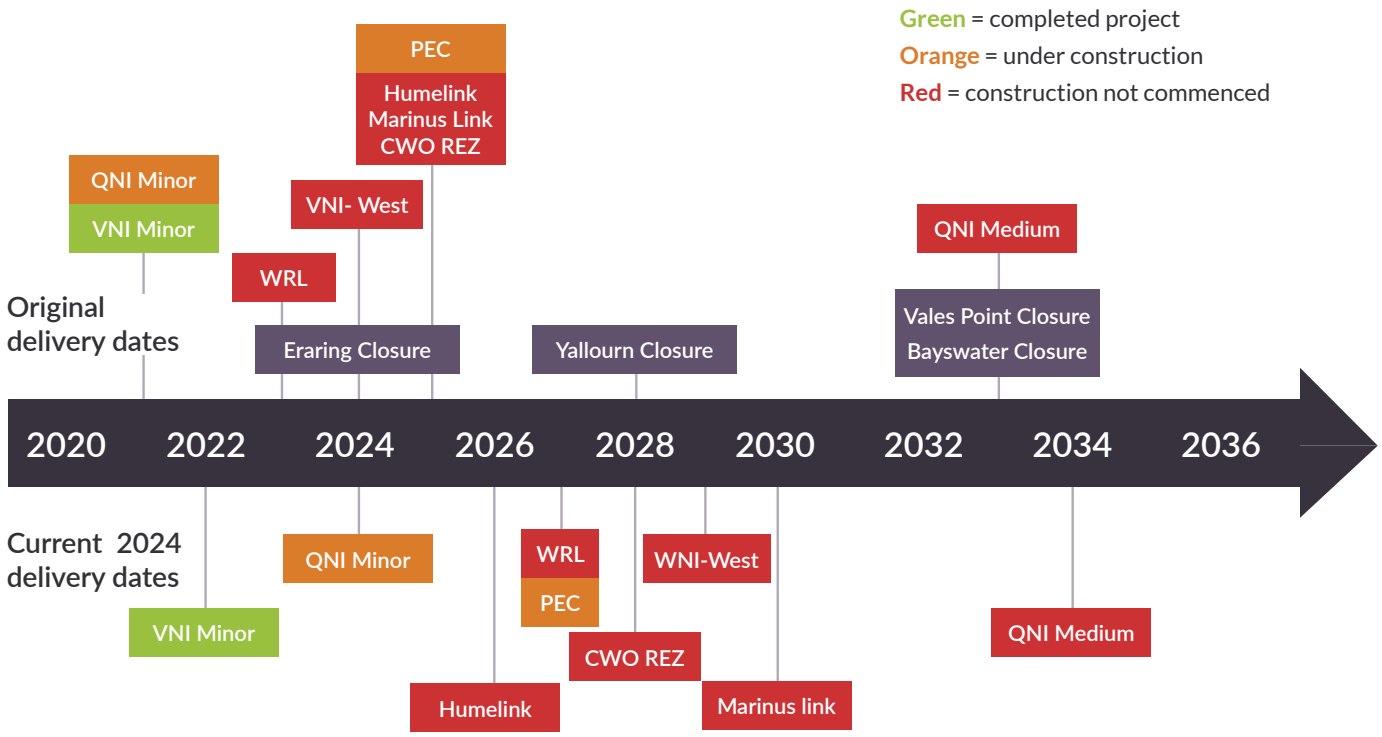

Figure 1: Timeline of coal closures and new transmission planned over the coming decade

7 AEMO, NEM Electricity Statement of Opportunities (ESOO); AEMO, Energy Security Target Monitor Report

8 AEMO - ISP Consumer Panel, ISP Consumer Panel Report, 2024

Key roadblocks continue to hinder transmission buildout

Despite recent attempts by the market bodies to reform the transmission planning and development process, the three key roadblocks which we previously been identified[9] continue to contribute to transmission delays.

The regulated pathway is not fit-for-purpose

All transmission projects identified in the ISP, and built by the regulated monopoly TNSP, must undergo the RIT-T to ensure that the project maximises net benefits to the consumers that fund the new transmission.

The issue is that, while the ISP incorporates a net benefit test for the ODP, ensuring benefits for all NEM customers, the RIT-T evaluates benefits solely for the customers of the investing TNSP(s) for each single transmission line, creating a potential mismatch between regional and market-wide benefits[10].

Introduced in 2010, the RIT-T was deliberately designed to minimise new investment and to limit the growth of the Regulated Asset Base (RAB) from which a regulated TNSP earns a regulated income. This may have been entirely appropriate in a "steady state" power system which needed only incremental upgrades in transmission. However, it is not fit for a power system undergoing transformation requiring significant and rapid network investment.

Following the completion and Australian Energy Regulator (AER) approval of the RIT-T, TNSPs must still undertake early works including securing routes and obtaining planning and environmental approvals before the project can commence, these often hinge on the development of social licence and the support of the community[11].

As such, there are often many years[12] between the AER determining that a transmission project meets the RIT-T requirement to deliver net benefits to consumers and the Contingent Project Application (CPA) that determines the costs the TNSP can levy on consumers. In that time there can be a material increase in costs, eroding the net benefits to consumers of a project[13].

As mentioned earlier, there has been a $10 billion reduction in net benefits in the Draft 2024 ISP compared to 2022.

Overall, the entire process, including tendering and procurement which alone can take up to three years[14], can span over 10 years, delaying the integration of new generation and the transition to clean energy.

9 Nexa Advisory, Removing the Roadblocks to New Transmission to Achieve the Transition, April 2022

10 Nexa Advisory, Transmission Contestability in Australia, 2023

11 Australian Energy Infrastructure Commissioner, Community Engagement Review Report, 2023

12 AEMC, Transmission Planning and Investment – Stage 3, 2022

13 AEMC, Material change in network infrastructure project costs, 2021

14 Nexa Advisory, Transmission Contestability in Australia, 2023

Lack of national transmission planning and coordination

Given the slowness of the regulated process that underpins the delivering of new transmission, state governments have developed their own planning and delivery frameworks for transmission so that progress can be made under jurisdictional frameworks rather than the national framework, and allowing state governments to accelerate the energy transition and meet their own renewable energy and emissions targets.

This has meant the development of various governance structures across Queensland, New South Wales and Victoria, including creating network planning and delivery roles for government bodies, with adequate separation to avoid potential conflicts of interest.

These frameworks have indeed supported the regional coordination of network planning, state development, planning approvals and project delivery more quickly and cost efficiently than under the national framework[15]. For example, the Waratah Super Battery was a non-network asset delivered as a Priority Transmission Infrastructure Project (PTIP) under the NSW framework. It was announced in 2022 and is expected to be delivered by 2025.

However, while these jurisdictional schemes have made some progress, new transmission lines and ISP-related actionable transmission projects have not progressed. The Central West Orana (CWO) REZ transmission was identified in 2020 (in NSW legislation and the 2020 ISP) with a delivery date of 2025. This has now been pushed back to 2028, suggesting that broader issues, not just the RIT-T, continue to act as a blocker to new transmission.

Further work is needed to build social licence and community acceptance

The energy transition has become one of many economic and social issues within public discourse in Australia. Social licence has become more important than ever in delivering renewable energy generation and transmission projects and has been a focus across the work of market bodies[16] and jurisdictional schemes, particularly in the planning and delivery of Renewable Energy Zones (REZ) in Queensland, New South Wales and Victoria[17].

The state schemes all have strong community engagement elements, reflecting the scale of work needed to build social licence around transmission development, particularly in the regions which will host the clean energy transition. While renewable generation is acceptable, living near transmission lines is much less appealing[18].

Additionally, these communities have overall higher negative sentiment towards the clean energy transition than the broader population. This is because they have perceptions of health and visual amenity impacts, but the benefits are not visible.

There is a clear need for early and targeted 'on-the-ground' engagement throughout transmission planning and construction with impacted communities.

15 For example, the Waratah Super Battery, a non-network asset, was delivered as a Priority Transmission Infrastructure Project (PTIP) under the NSW framework, which progressed from announcement in 2022 and expected to be delivered by 2025 (3 years).

16 AEMC, Enhancing community engagement in transmission building, 2023

17 VicGrid, Offshore Wind Transmission Development and Engagement Roadmap, 2023; NSW EnergyCo, Our commitment to communities, accessed 8 May 2024; Queensland Department of Energy and Climate, Queensland Energy and Jobs Plan, 2022

18 CSIRO, Understanding Australian attitudes toward to renewable energy transition, 2024

Recent developments are a small step in the right direction

The many incremental changes to the RIT-T, including the recent incorporation of emissions reductions[19], have not resulted in a more rapid process to develop transmission.

In the face of this slow progress, the state governments have progressed jurisdictional schemes in NSW, Victoria and Queensland. These schemes, while allowing the states to progress their own energy plans in line with their own jurisdictional targets for renewable generation, storage and emissions reductions, have not yet resulted in new transmission, and have resulted in different models for transmission delivery and cost recovery across the NEM.

The Commonwealth Government's $20bn Rewiring the Nation fund[20], has provided concessional financing to support state governments and TNSPs to progress priority transmission projects. This has included concessional financing for HumeLink[21], Marinus Link[22] and VNI-West[23].

However, even with this support all of these projects continue to face delays because of questions around social licence[24] and who pays[25].

While these measures are a step in the right direction, they do little to address the delays for projects underway suggesting alternative approaches are needed.

19 AEMC, Harmonising the national energy rules with the updated national energy objectives (electricity), 2024

20 CEFC, Rewiring the Nation Fund, accessed 8 May 2024

21 Office of the Prime Minister, Landmark Rewiring The Nation deal to fast-track Clean Energy jobs and security In NSW, accessed 8 May 2024

22 DCCEEW, Connecting Tasmania: Marinus Link, accessed 8 May 2024

23 Office of the Prime Minister, Rewiring The Nation To Supercharge Victorian Renewables, accessed 8 May 2024

24 Australian Energy Infrastructure Commissioner, Community Engagement Review Report, 2023

25 ABC, Marinus Link project cost blowout means the Tasmanian premier needs to walk a tightrope with independents, voters, accessed 8 May 2024

Recommendations

It is clear that incremental reforms to the RIT-T and jurisdictional schemes have done little to alleviate transmission project delays, particularly for the key projects identified in the ISP ODP.

This lack of progress in building new transmission lines creates uncertainty, delaying investment in renewable generation and threatening power system reliability and security.

Action is needed now to remove the persistent roadblocks causing transmission delays.

Recommendation 1: Identifying and funding the gap

To further build transparency and confidence in delivery, AEMO, in coordination with federal and state governments, should clearly identify the market benefit/cost specifically driven by delays to the completion of actionable projects. The costs identified would provide the basis for additional Federal Government support, through Rewiring the Nation, to fund the increasing "gap" between diminishing benefits and increasing costs to consumers.

This would ensure that the ODP is progressed rapidly, maximising net benefits and protecting consumers from the associated cost of delays, and that state and national targets can be achieved.

Since delays in building transmission has a material impact on the costs that consumers will fund, federal and state energy minister should direct AEMO to deliver a detailed risk analysis on the delays in completing the ISP ODP. This should include:

- wholesale electricity costs
- achievement of the reliability standards (identifying regions at particular risk)
- delays to emissions reductions
- delays to the connection of firmed renewable generation

Recommendation 2: National coordination with state schemes and targets

The federal and state governments, under the National Energy Transformation Partnership, have established new Renewable Energy Transformation Agreements (RETAs) to ensure delivery of renewable projects to maintain agreed reliability standards and support an orderly transition.

- We are calling on the federal and state governments to expand these or other agreements such as the Capacity Investment Scheme to include timely delivery of actionable transmission projects that underpin the success of the transition. This should include:
- Creating incentives to ensure major transmission infrastructure is delivered on time and on budget, under all investment and planning frameworks. This is critical to facilitating confidence in both state policies and AEMO's system planning.
- Where projects are progressing through a jurisdictional scheme, state bodies with planning responsibility must be incentivised to work collaboratively with network companies to deliver projects on time and on budget.
- Clear incentive structures would provide confidence to the market (renewable generation and storage investors) and reduce the risk of state targets being missed.
- Incentivise and coordinate the construction of private (unsolicited) projects identified by investors, renewable developers and/or traditional and non-traditional TNSPs.

While the ISP ODP is focused on the delivery of major interconnectors and state REZs, there is a need for the states to collaborate with industry and incorporate the practical expertise on broader transmission and renewable energy projects that bring forward the governments' ability to deliver on targets for connected renewable generation. This would mitigate the risks arising from the non-delivery of major transmission interconnectors.

As an example, VNI West and WRL in Victoria are facing major delays and there are opportunities to progress private transmission projects that would allow new renewable generation and storage to connect, alleviating the risks imposed by these ongoing delays in delivering interconnectors.

Additionally, state governments and their departments and/or institutions must ensure planning and environmental approvals for transmission are streamlined and accelerated.

Recommendation 3: improve sentiment towards transmission to build social licence

Further work is needed outside of the regulatory process by federal and state governments to improve sentiment about transmission infrastructure, particularly in host communities. This should include:

- Broad awareness and engagement campaigns, developed collaboratively by government and industry, are needed to highlight the role of transmission in the transition. This should focus on the issues that matter to regional communities and the benefits that transmission and renewable developments should deliver to them, such as housing, economic development, jobs, energy poverty and electricity affordability.
- While the AEMC's recent rule change to support community engagement clarifies the role of TNSPs through to the completion of the RIT-T, there is an opportunity for government to support this work outside of regulatory processes. This could see ongoing, genuine, proactive and long-term engagement with local councils, communities, local environmental groups and Traditional Owners, modelled on initiatives such as the First Nations Clean Energy Strategy.
- State government community benefit schemes must be targeted at legacy benefit projects that support regional community needs. This must be in collaboration with border industry including developers, transmission and electricity distribution companies to work closely with local councils, community leaders to deliver bespoke legacy projects in the areas where infrastructure is being built.

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