

BOARD PAPER

Title	Ensuring timely support for new transmission
To	API Board & Executives
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EXECUTIVE SUMMARY

Implementing Australian Energy Market Operator's (AEMO's) Integrated System Plan (ISP), which maps out investment requirements for Australia's transition to a net-zero energy system, will require significant transmission investment in new corridors across the National Electricity Market (NEM) the like of which has not been seen for generations. Delays in achieving the range of necessary support and approvals from relevant stakeholders could postpone Australia's net-zero energy target and expose customers to affordability, security and reliability risks.

The major contributing factors relating to the timely approval of transmission projects include:

- Lack of shared goals, benefits and vision - there is a misalignment of well-defined measurable and attainable goals, benefits and vision between all stakeholders.
- Project and process limitations - the current process to gain approvals for transmission projects, specifically the ISP and Regulatory Investment Test for Transmission (RIT-T) processes, are fragmented and inherently slow.
- Workforce knowledge and experience - there has been little investment in new large-scale power system infrastructure which creates a gap in the knowledge and experience to effectively engage relevant stakeholders as required.
- Ineffective stakeholder engagement - linked to the abovementioned point, the lack of skills, knowledge and experience in stakeholder engagement creates a gap in effective engagement of stakeholders, particularly landowners, communities and traditional landowners.

In order to ensure this support is achieved in a timely manner, we make the following recommendations to stakeholders:

Stakeholder	Recommendation
TNSPs	TNSPs to develop and implement a Reconciliation Action Plan (RAP) that engages traditional owners to assist with community engagement throughout the development and construction of the project.
TNSPs and AEMO	Educate existing workforce in community engagement, land use planning and environmental issues that may impact on transmission line route selection
TNSPs	Hire staff with experience in community engagement and development approvals from other sectors with recent large infrastructure experience (e.g. local government)
AEMO	Modify the ISP process to require TNSPs to conduct community engagement around potential transmission routes prior to the selection of actionable projects
Governments	Assist national, state and local communities to develop a shared goal or set of goal(s) for the energy transition
AEMC	Consider whether a rule change to the current cost allocation principles for transmission investments is in the best long-term interests of consumers.

1 INTRODUCTION

1.1 BACKGROUND

It has been more than half a century since Australia last built a large amount of electricity transmission lines, for rural electrification and the development of local industry. Many of the local communities where these transmission lines were built had parents and grandparents who remembered living without electricity and saw first-hand the benefits these transmission lines brought to their own communities and other communities. In addition, these transmission lines were built for a centralised system, with transmission connecting load centres to a few large thermal power stations.

Now, mitigating the impacts of climate change means we need to rewire our electricity system quickly – not to just provide local communities with reliable, secure electricity, but to ensure a safe future for the entire planet. With competing local, national and global objectives, stakeholder support for transmission can no longer be taken for granted as it was half a century ago. The system is also becoming more decentralised, with many smaller renewable sources of generation, meaning transmission lines are required through areas which have never had them before.

1.2 PURPOSE AND SCOPE

Since 2018, Australian Electricity Market Operator (AEMO) has developed a biannual Integrated System Plan (ISP) which provides guidelines for the efficient development of the National Electricity Market (NEM) long term. Implementing AEMO's ISP, including the development of Renewable Energy Zones, will require significant transmission investment in new corridors across the NEM. Delays in achieving the range of necessary support and approvals from relevant stakeholders could postpone Australia's net-zero energy target and expose customers to affordability, security and reliability risks. In the coming years, with the predicted increase in electrification and population growth, as well as the retirement of coal-fired assets, these timely acceptances are becoming critical to the individuals and business who rely on the electricity network.

Stakeholders inclusive of communities, landowners, traditional landowners, environmental organisations, land use planning and heritage approvals bodies, energy regulators and government corporations are the key participants in ensuring transmission investments are available to connect geographically and technologically diverse, low-cost generation.

This document is structured in the following manner:

- 1 A review of the existing processes involved for the development of new transmission infrastructure
- 2 An outline of the major factors that contribute to the delays in stakeholder support and approvals
- 3 Recommendations and actions to improve the process of achieving the necessary support and approvals for new transmission lines

1.3 CURRENT STATE OF PLAY

Currently, requirements for new transmission are identified by AEMO through the ISP. The ISP process was developed as an action to the 2017 Finkel Review into the SA system black event, in response to a need for an integrated planning process for the energy system which did not exist at the time. This process has been developed iteratively with many enhancements implemented as part of the 2022 ISP process which were not present previously, especially with regards to stakeholder engagement. However, the ISP is not a truly integrated planning process for the energy system.

Instead, the ISP seeks to solve for an economically optimal set of transmission paths given a set of generation and load scenarios developed in consultation with industry. The value of decarbonisation is not explicitly valued but is implicitly included through the selection and weighting of scenarios with various decarbonisation objectives. Social license and local economic impacts are not currently able to be valued as part of the ISP process in accordance with the NEO, which considers electricity system impacts only. In addition, local community engagement is typically not conducted as part of ISP development.

Once a project is identified in the ISP, it then needs to pass a Regulatory Investment Test for Transmission (RIT-T). The RIT-T aims to achieve three objectives:

1. Ensure the electricity system benefits of the proposed transmission investment exceeds its costs;
2. Ensure the proposed transmission investment provides the highest net electricity system benefits of all option(s) able to meet the identified need (path, topology, construction etc), and;
3. Ensure third parties are able to submit non-network solutions to the identified need and have these be compared fairly against the proposed transmission investment.

Local community engagement is typically not conducted until the RIT-T is approved as funding for the project is not allocated by the regulator until this time. In order to expedite transmission lines and de-risk the RIT-T, some State Governments have underwritten early local community engagement while the RIT-T is incomplete.

Environmental approvals are conducted prior to constructing new transmission lines at a State level and can also be at a Federal Government level if the project has potential to have an impact on matters of national environmental significance. There is currently a lack of uniform standards, guidelines and approaches to environment impact assessment across the states.

2 CONTRIBUTING FACTORS

2.1 LACK OF SHARED GOALS AND VISION

Timely and effective approval of large-scale transmission investments requires the alignment of well-defined measurable and attainable goals and vision between stakeholders.

Not all communities are actively supportive of transmission infrastructure developments. Advocates of a highly decentralised energy system may have an alternative vision on reaching a net-zero system and have limited additional transmission needs. Some stakeholders may desire a different pace of emissions reduction, preferring a trade-off between the use of new transmission and existing infrastructure. Furthermore, there are instances where the development of transmission infrastructure places a greater burden on landowners, communities and the environment reducing the likelihood of having shared goals with developers.

The shared goals of multi-state transmission projects (i.e., Marinus Link and Project EnergyConnect) add another level of complexity to the timely support and approvals. Differing views of the energy transition can have a considerable impact to acceptance. Regions of Australia with large amount of renewable energy inputs are perceived to support new REZ transmission infrastructure more readily than regions that have not previously hosted large-scale renewables or have a significant drive for immediate installation. However, the perception and acceptance of renewable energy technologies in local communities and those of landowners from these states will still need to be assessed individually.

Financial investments of multi-state transmission project can also be challenging. New transmission infrastructure will provide benefits to both states, and in some cases the entire NEM. Federal and private investment can be acquired however, recent proposed transmission developments have been funded predominately by the State governments. Therefore, the consumers of the states initiating the project or have the greater obvious benefit will endure most, if not all the cost.

National objective, governance and leadership support for timely transmission investment is currently lacking. Government bodies facilitating the development of shared goals may be advantageous due to:

- Accountability to both the local community and to energy consumers in general who will benefit from the transmission line;
- Ability to consider the energy transition goals of a region in a holistic manner rather than being restricted by electricity system roles and responsibilities, and;
- Clear and well-understood role.

Furthermore, benefit sharing could be used to incentivise reaching shared goals. Benefit sharing is a means of imparting the rewards of the development with all parties. It aims on enhancing the socio-economic outcomes of a community pre and post infrastructure development. Proposed benefits are tailored to the region of interest and consider the local context, cultural background and community needs to limit the level of impact and disturbances experienced over the life of the asset. Possible benefit sharing strategies includes formation of local jobs and procurement, sponsorships, grant and legacy initiatives, neighbourhood benefit programs, employee volunteerism, innovated products and beyond compliance level activities (better communication towers, planting extra vegetation screening etc.).

2.2 PROJECT AND PROCESS LIMITATIONS

The current process to gain approvals for transmission projects, specifically the ISP and RIT-T processes, are fragmented and inherently slow due to the number of sequential steps taken by different organisations (including AEMO, TNSPs, AER, government approval bodies).

At present, the relevant TNSP does not assess the transmission project under the RIT-T process until the ISP considers the project “actionable”. Local community engagement and environmental/heritage assessments are typically not conducted until the RIT-T is approved as funding for the project is not allocated by the regulator until this time. The late engagement of the local community can cause delays as can be seen in the Western Victorian Transmission Network project, where there is negative community sentiment and the community is unwilling to grant the social licence to proceed with this project. Early community engagement and TNSP involvement in the ISP process to assess the viability of this transmission line project route could have revealed this risk much earlier.

To address the issues above, TNSPs could provide a greater role in contributing to the ISP inputs by doing what are currently post-RIT-T activities during the ISP stage in a coordinated approach with AEMO, state and local governments and approval bodies. These activities could include detailed transmission line route selection and cost, early community engagement, environmental/heritage assessment.

2.3 WORKFORCE KNOWLEDGE AND EXPERIENCE

Given the lack of recent large-scale transmission projects in Australia, the energy sector workforce has not required the experience and capability needed to deliver large-scale infrastructure generally.

However, as a need for large-scale transmission investment across the NEM has been identified as part of the energy transition, a workforce with new skills, knowledge and experience is necessary to ensure this infrastructure is delivered in a timely and practical manner with support from affected stakeholders.

Projects which have already been identified as part of the ISP or prior to it, and have gone through or are currently going through delivery have already presented key challenges as a result of not having all the needed knowledge and experience present in the workforce involved. And many of these challenges have resulted in issues related to timely and practical execution of these projects, as well as stakeholder acceptance of them. These challenges include but are not limited to:

- Engaging with landowners affected by delivery of infrastructure and local communities, and obtaining understanding of community sentiment
- Sufficiently planning for land accessibility, heritage-listed site, and environmental constraints
- Acquiring relevant land planning and environmental approvals

As the energy transition continues, and the need for more transmission projects grows, a workforce able to address these challenges is imperative.

To acquire this workforce, it is important to look to the experience, knowledge and capability present in other sectors which are more mature in the space of delivering large-scale infrastructure, such as the transport, building, and town planning sectors. By doing so, and by cross-collaborating with these sectors to build up the knowledge and capability of the energy sector's own workforce, as well as acquiring specialist experience from these other industries, the energy sector would be better equipped to address the challenges mentioned earlier. And the planning for and identification of transmission project options could be better informed with community engagement occurring more actively and earlier in the process – which would serve to deliver these projects in more practical, timely and socio-economically acceptable way.

2.4 INEFFECTIVE STAKEHOLDER ENGAGEMENT

Both the Energy Charter and the Clean Energy Council have published guidelines on improved practice for stakeholder engagement on transmission projects which include:

- Community engagement will occur as early as appropriate and reasonably practical
- Shared objectives will be identified that achieve both network objectives as well as objectives that benefit the community
- Traditional owners of the land and indigenous communities will be engaged and consulted
- Local communities will be supported through the provision of local employment and procurement where possible

Effective stakeholder engagement requires thorough knowledge of the stakeholder being engaged, inclusive of the cultural and political environments in which they operate, their specific concerns and the opportunities available to them that they will find benefit in. This is a highly skilled process which TNSPs have minimal existing experience in (see Section 2.3 Workforce Skills and Knowledge). In addition, the current ISP process does not provide for early community engagement (see Section 2.2 Project and Process Limitations) or the development of shared objectives (see Section 2.1 Lack of Shared Benefits).

At a high level, the three key stakeholder segments requiring specific consideration throughout the project lifecycle are:

- Directly impacted landowners on whose property the transmission corridor has been proposed and who will therefore have transmission infrastructure situated within their land

- The wider communities impacted by the construction of the ISP who will likely form a collective voice and play a key role in the issuing of the social licence for the project to proceed
- Traditional owners of the land and Aboriginal Land Councils who are identified as key stakeholders in both the Energy Charter and Clean Energy Council's Community Engagement Guidelines for Powerlines

For individual landowners, the key concern is typically compensation received for the loss of accessible land as a result of the new transmission infrastructure. Whilst there is no consistent compensation model across the wider transmission industry, TNSPs have their own methodologies to compensate impacted landowners based on various state-based legislative acts. Whilst not conducive to the granting of a true social licence, there also remains the option of compulsory acquisition of land, whereby the land can be acquired without the consent of the landowner. The focus on compensation only does not align with the commitments of achieving shared objectives and supporting local communities. An example of this could be the investment in innovative agriculture practices which may help landowners to more effectively utilise the land that they own which provides longer-term benefits further than a one-off payment.

The wider communities in which the individual landowners live are also key stakeholders as they are impacted by the development of the transmission infrastructure. Consideration should also be given to the cultural and political landscapes in which these communities operate, inclusive of community sentiment towards renewable energy and a green future to mitigate the risks of climate change. This sentiment can be significantly shaped by weather events that have impacted the community such as drought, flood or fire. It is imperative that company representatives engaging with local communities maintain an awareness of these environmental issues to most effectively engage and communicate.

From a traditional landowners and indigenous community stakeholder perspective, there is a lack of maturity of engagement from TNSPs leading to the long-term rights and interests of Aboriginal and Torres Strait Islander people not being adequately considered as per The Native Title Act (1993). Many TNSPs have committed to actively contributing to reconciliation through the development of a Reconciliation Action Plan (RAP) in alignment with Reconciliation Australia's RAP Framework. A RAP is an effective mechanism in which traditional landowners and indigenous representative bodies can be engaged and entered into partnership with to ensure company practices and decisions are made in alignment with best practice and considerate of indigenous communities. However, it is noted that not all TNSPs across the NEM currently have a RAP and many are at the "Reflect" stage of the RAP framework, which indicates the RAP has only been recently developed and still in the early stages of engagement with traditional landowners. The lack of maturity of the TNSP RAPs is a contributing factor in building strong partnerships with traditional landholders.

3 RECOMMENDATIONS

1. TNSPs to develop and implement a Reconciliation Action Plan (RAP) that engages traditional owners and indigenous communities to assist with community engagement throughout the development and construction of the project.
2. TNSPs and AEMO to educate existing workforce in community engagement, land use planning and environmental issues that may impact on transmission line route selection.
3. TNSPs to hire staff with experience in community engagement and development approvals from other sectors with recent large infrastructure experience (e.g. local government).
4. AEMO to modify the ISP process to require TNSPs to conduct community engagement around potential transmission routes prior to the selection of actionable projects.

5. Governments to assist national, state and local communities to develop shared goal(s) for the energy transition.
6. AEMC to consider whether a rule change to the current cost allocation principles for transmission investments is in the best long-term interests of consumers.

4 AUTHOR BIOGRAPHIES

Samantha Kerr is a passionate engineer with a diverse career in many sectors who enjoys finding solutions that improve society. Samantha has 19 years of experience as an electrical engineer in various industries from communication, rail, energy and infrastructure. Samantha's experience to date has given her great depth and understanding of successfully implementing projects and managing stakeholder relationships across multiple divisions including planning, design, construction, operation and maintenance.

Kirk Martel is a Transmission Planning Engineer at Australian Energy Market Operator, working in the Victorian Planning space as part of AEMO's role as TNSP for Victoria. He started his career at AEMO as a Graduate Engineer, and has worked in areas such as real-time operational support – which involved the monitoring of system health and assessment of power system incidents, testing of IT systems to support the market and operational services for the NEM, and assessment of transmission projects to support the shift toward a renewable energy future in Victoria.

Cathryn McDonald is the Network Optimisation Manager at SA Power Networks, working on the implementation of approaches and systems for managing high levels of rooftop solar PV and distributed energy storage. This includes the implementation of the SA Government's Smarter Homes remote disconnect/reconnect requirements, SA Power Networks' minimum demand response, and trials and development of a Flexible Exports service to provide dynamic operating envelopes to Distributed Energy Resources (DER).

Samuel Pickering is Manager of Execution for Transgrid, leading the field-based teams in the execution of maintenance and construction work across Transgrid's programs of work. Samuel began his career at Transgrid as an apprentice transmission lineworker in 2006 and has held a number of planning, management and leadership positions throughout his career development. Samuel is currently completing his Master of Business Administration (MBA) majoring in Human Resource Management at the University of Newcastle.

Mahali Heffner holds a Bachelor of Engineering (Mechanical) from Queensland University of Technology. She has experience in the thermal and hydro power generation industry working in maintenance, reliability and project engineering. Key strengths include machinery breakdown fault diagnoses, reliability risk identification and management and maintenance strategy optimisation.

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