TRANSMISSION DELIVERY CERTAINTY:

THE KEY TO AUSTRALIA'S ENERGY TRANSITION

ALVAREZ & MARSAL

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Australia's National Electricity Market (NEM) stands as one of the most extensive, interconnected network systems in the world. Within this complex network, public and private entities operate symbiotically to generate and deliver electricity across states, powering homes and businesses nationwide. Transmission providers play a critical role within this ecosystem, managing the connections between energy generators and consumers.

As Australia pushes towards meeting its net zero ambitions, Australian transmission companies have a pivotal role in realising these ambitions. Modelling completed by the Australian Energy Market Operator (AEMO), Australia's manager of the NEM, as part of the 2024 Integrated System Plan (ISP) – a plan for investment in the NEM – estimates there is a significant gap in the current and required net-zero generation capacity to keep the lights on in 2050[1]. In addition to the generation and storage capacity, an additional 10,000 kilometres of transmission lines (with an estimated price tag of around $14 billion) and the equivalent of 21 large synchronous condensers are required to expand or upgrade the current network to support Australia's future electricity needs.

[1]Australian Energy Market Operator, '2024 Integrated System Plan', vol. 1, June 2024, pp. 6

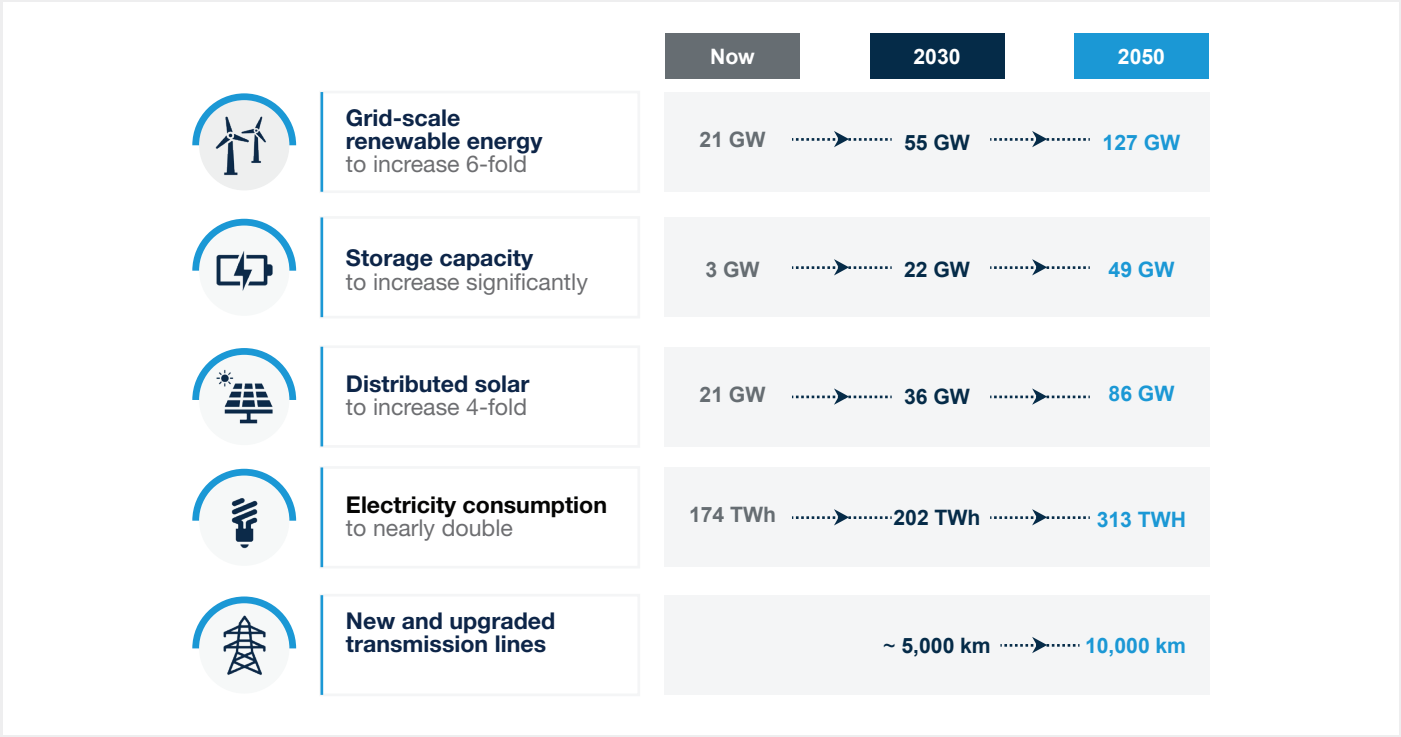


Figure 1.1 AEMO estimates

Source: Australian Energy Market Operator, "key facts and figures (step change scenario)" - 2024-integrated-system-plan-overview.pdf (aemo.com.au)

This is by far no small feat. Australia's transition will require the cooperation and collaboration of a complex network of stakeholders, from private energy generators to communities and the government bodies that oversee the industry. Transmission providers must work closely with each stakeholder group to ensure the needs of each are considered and proactively addressed to ensure momentum as Australia transitions.

Figure 1.2 Energy sector stakeholders

Source: Australian Energy Market Operator, 'Market Bodies' AEMO | Market bodies
Australian Energy Market Operator, 'Electricity market participants' AEMO | Electricity market participants

This article explores the operational levers that transmission providers must employ to deliver transmission investments efficiently and effectively, while meeting the demands of Australia's renewable future.

Value creation levers

In the dynamic landscape of energy transition, transmission providers must harness several critical value levers to achieve delivery excellence, minimise disruption and ensure sustainable growth. These levers collectively enable providers to unlock value, mitigate risks and drive the clean energy agenda forward effectively.

Optimising portfolio management and capital strategy

- Assess project prioritisation framework for investment required to facilitate the clean energy transition.
- Evaluate and balance risk exposure across existing portfolio lines, ensuring major project delivery doesn't impede Business as usual operations.
- Test medium and long-term vision against current portfolio roadmap.

Accelerating project delivery certainty

- Develop contingency plans to address external factors such as: labour availability, material costs, regulatory landscape, environmental approvals.
- Assess and mitigate internal factors: personnel capability, large-scale delivery experience, consortia collaboration, commercial models.
- Evaluate capability to manage contractors/bids for accelerated timelines.
- Enhanced portfolio and project level governance and controls.

Maintaining social licence

- Build confidence with investors, regulators, governments, energy market stakeholders, consumers, and generators.
- Maintain social licence on projects, balancing cost pressures vs 'doing the right thing'.
- Redefine collaboration models and ways of working across the stakeholder ecosystem.

De-risking the supply chain

- Review the supply chain for resilience. scenario planning, detailed risk mitigation.
- Review strategic supplier relationships/form new alliances to achieve economies of scale and certainty of supply.
- Embed use of technology for sourcing, procurement, and category management.
- Strengthen contract management function with technology, processes, and people.

Corporate functional excellence

- Uplift analytical and operational capabilities including technology tools and headcount.
- Optimise corporate functions to ensure productivity of enabling functions (Finance, IT, HR, Procurement).
- Drive operational and strategic insights from back-office functions.

Figure 1.3 Operational value levers

1 Optimising portfolio management and capital strategy

Transmission companies are poised for disruption as the sector adjusts to meet future energy needs. The traditional portfolio management and capital strategies that worked when the network was powered by predictable thermal generators no longer apply to the variable renewable assets that will power Australia's future. As generators transition to renewable and firming assets, transmission companies must work quickly to connect Australia's windiest and sunniest locations to the network.

An organisation's portfolio management capability enables the ability to navigate the market, ensuring returns for stakeholders and compliance with regulatory requirements. Without effective portfolio management – choosing the right projects to invest in based on long-term fundamentals – companies are unlikely to be able to allocate resources effectively. By optimising their portfolio management capability, organisations can prioritise investments that yield the highest returns, both financial and social, whilst mitigating risks associated with asset performance and reliability. The organisations that can do this effectively will have a competitive advantage in adapting to the evolving energy market and ensuring future projects align with the company's medium- and long-term goals.

Australia's 10,000 kilometres of transmission lines certainly do not come cheaply, and with market conditions pushing cost of capital and materials sky high, transmission providers are under increasing pressure to deliver projects within tight budgets. While public funding is growing in the sector, an effective and modernised capital strategy ensures organisations understand their project pipeline and delivery capability.

When considering their capital strategy, organisations should ask themselves:

- What visibility into future investment and planning is required to ensure critical projects are addressed in logical order?
- How can portfolio project planning and project management governance be integrated to enable proactive decision making?
- Are project resources allocated effectively to optimise consumer benefit and return on capital?
- How agile/flexible are we in modifying the portfolio strategy when unforeseen acceleration in project timelines is required?

The answers to these questions may reveal some uncomfortable truths about the current capital allocation framework. A robust capital strategy is especially important to transmission providers as it ensures that the company can adapt to market changes and quickly allocate capital to the areas that need it most.

2 Accelerating project delivery certainty

Australia's energy sector faces a unique set of challenges with end-of-life deadlines for coal-fired thermal stations set (barring government influence), a known gap in the current and required generation capacity and challenging domestic and global macro conditions. As grid operators, transmission providers must manage increased network volatility – with renewable generation less predictable than thermal – whilst balancing development pipelines as new renewable projects become operational.

Transmission providers are likely to face increased pressure as they set out to deliver the necessary network upgrades. Their ability to expertly drive projects forward will be under the vigilant eye of public stakeholders and regulators. As with any large-scale project, there are numerous things that could go wrong. Cost blowouts, delays, angry stakeholders and communities have the potential to erode project value and damage reputations. The proactive identification and control of internal and external influences will be an important level for success.

Internal influences:

Step change in organisation capability to execute at scale - Major clean energy skills shortage has increased the focus on the retention, recruitment and development of key resources to ensure a constant pipeline for talent.

Managing resourcing effectively across the portfolio - The need for enhanced contractor management and productivity management capabilities will be key to maintaining an accelerated pace to delivering critical infrastructure.

New partnerships with no existing relationship - With the advent of Renewable Energy Zones comes a trend in partnerships and consortia forming with little-to-no experience of working together, facing growing pains as teams begin their collaboration journey.

Optimal commercial models for delivery - Establishing appropriate structures such as risk transfer to contractor, fit-for-purpose contract models and updated pricing mechanisms will de-risk financial performance.

External influences:

Labour availability and costs - Labour availability, increasing labour costs, and insufficient delivery experts create a difficult setting for the renewable energy capital pipeline.

Large-scale materials and equipment shortages - International demand for critical materials and equipment like steel, substation equipment, and transmission lines have resulted in price volatility and extended lead times.

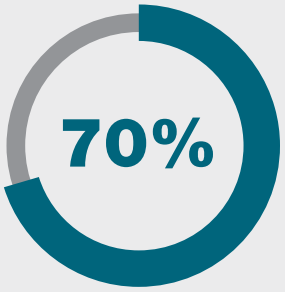
Lack of regulatory clarity - A vast list of regulatory requirements, governing bodies, and everchanging landscape of the energy transition requires constant monitoring for compliance and implications.

Environmental approval processes - Pathways to develop, capture feedback and receive ministerial approval for Environmental Impact Statements have become congested.

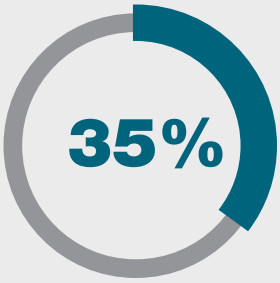
Strengthening project-level governance and controls is crucial for effectively managing project changes. Implementing robust, fit-for-purpose project control frameworks, risk management strategies, and quality assurance processes will pay dividends in the long run. By enhancing these governance and control mechanisms, transmission companies can significantly improve their responsiveness to disruptions, ensuring projects are delivered on time and within budget. This heightened oversight is vital for maintaining stakeholder confidence and consistently delivering projects that meet or exceed expectations.

3 Maintaining social licence

The benefits of Australia's renewable future come with an imposing social cost, often borne by rural communities far away from the energy-hungry city centres; the once pristine landscape marred by the presence of transmission towers, disrupting the natural beauty of the environment and disrupting the life of the communities that have lived in those regions for generations.



Of people felt "renewable energy should not be developed at the expense of local communities[1]".



Of people "supported AEMO's plan to install 10,000 kms of transmission lines. Significant community pushback and strong local protests highlighted the feedback[1]".

1. Guardian Essential Poll - Guardian Essential poll: most voters don't believe Australia will meet Labor's net zero by 2050 target | Essential poll | The Guardian
2. Institute of Public Affairs - Unrealistic Unreliable Unaffordable - IPA - The Voice For Freedom

> "... overhead transmission lines were **vehemently opposed by the local communities,** leading to **delays** and **increased costs.**
>
> If Australia cannot deal with the required build-out of new transmission lines, then achieving the headline renewable targets will be impossible[2]."
>
> **Executive Director Scott Hargreaves, Institute of Public Affairs**

Figure 1.4 Community view on energy infrastructure developments

Transmission providers must navigate this landscape with sensitivity and openness, offering clear communication and seeking input from the outset. This approach not only reduces resistance and conflict but also fosters a sense of ownership among community members. When people feel heard and valued, they are more likely to view the transmission provider as a partner working towards the common good, rather than an external force impeding their lives.

Community engagement is fundamental to building trust and transparency. Just as homeowners take pride in their homes, communities take pride in their local environment. By actively involving community members in planning and decision-making processes, transmission providers can transform their projects from perceived impositions into collaborative efforts aimed at enhancing local infrastructure.

Furthermore, the importance of community engagement extends beyond individual homes to the broader realm of social responsibility. A transmission provider that engages with its communities shows a commitment to collective well-being. Thus, community engagement becomes a strategic investment in social infrastructure, as crucial as the physical infrastructure that transmission providers maintain.

But what does effective community engagement look like?

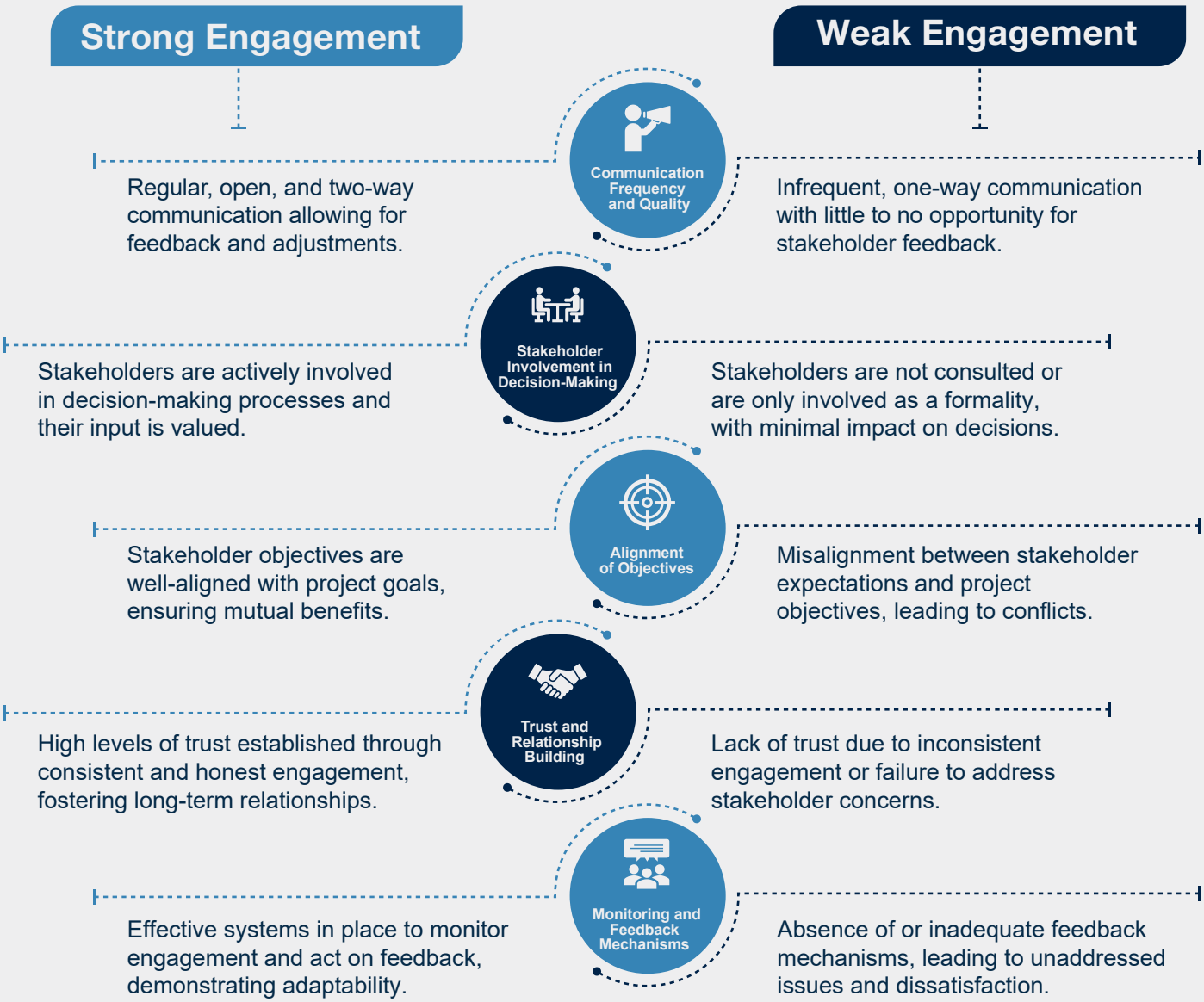


Figure 1.5 Strong vs weak community engagement example

It will take a collective effort from industry and governments to address community concerns and minimise the impact of the additional infrastructure on those who are called to sacrifice for the nation's benefit. While added community consultation may identify additional challenges, businesses can avoid costly legal challenges and provide a stable investment opportunity for investors, one devoid of regulatory or reputational risk.

4 De-risking the supply chain

In a market marked by rapid technological change and volatile demand cycles, accelerating and guaranteeing project delivery is essential. Reviewing the supply chain for resilience is critical as organisations balance cost and delivery timeframes to minimise delays and maximise return on investment. A resilient supply chain is made up of three pillars: people, processes and technology.

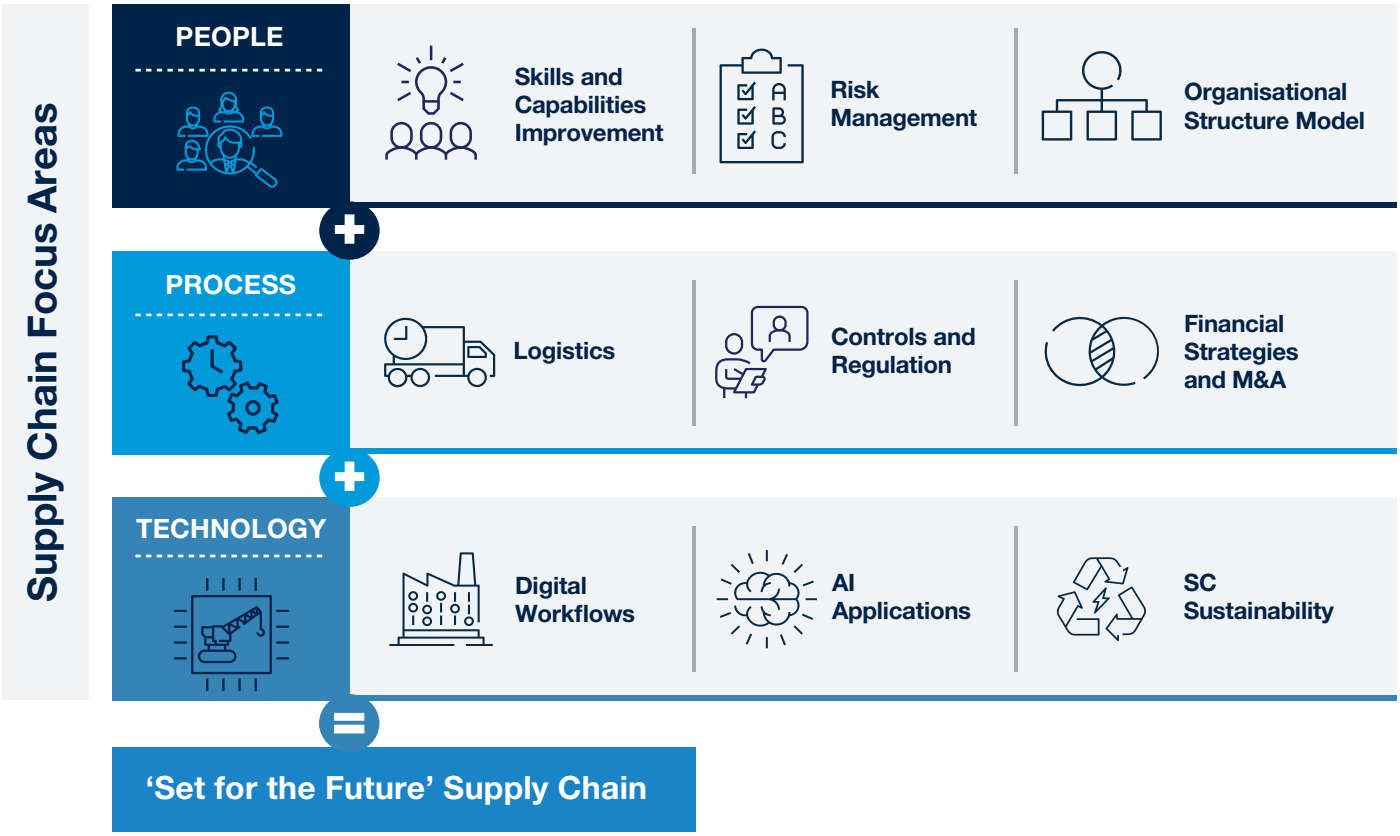


Figure 1.6 Common supply chain stressors

The people pillar is the cornerstone of a supply chain as it encompasses the human capital that drives the entire supply chain process. Employing and upskilling personnel to improve their adaptability is essential to navigating disruptions and maintaining operational continuity. Investing in workforce training and development ensures that employees are equipped with the necessary skills to respond to challenges effectively.

The process pillar includes identifying strategic supplier relationships and alliances such as consortiums, joint ventures or mergers and acquisitions, to secure the materials required to seamlessly deliver on their project pipeline. By strengthening partnerships and exploring new collaborations, transmission companies can secure favourable terms, leverage collective bargaining power, and mitigate supply chain risks. These strategic relationships also serve as a foundation for innovation, offering opportunities to adopt global best practices and swiftly respond to market or regulatory changes.

The technology pillar is indispensable for enhancing sourcing and procurement processes. By integrating advanced technologies such as analytics, artificial intelligence, and machine learning, businesses can significantly boost project effectiveness and efficiency. These technologies streamline operations, enabling more informed decision-making and reducing wasted efforts. Similarly, the incorporation of technology into the supply chain management capability may help improve supplier evaluation and contract management, leading to a more agile and responsive supply chain. This not only lowers input costs but also positions businesses to swiftly adapt to market dynamics, thereby securing a competitive edge.

What can organisations do to de-risk their supply chains?

1. Review the supply chain for resilience, including scenario planning and detailed risk mitigation.
2. Review strategic supplier relationships and form new alliances to achieve economies of scale and certainty of supply.
3. Embed technology in sourcing, procurement, and category management processes.
4. Strengthen the organisation's contract management function with technology, processes, and people.

By strengthening the contract management function with the right mix of technology, processes, and people, organisations can improve their operational effectiveness. A skilled workforce following well-defined processes and supported by innovative technology can help organisations de-risk their supply chain and respond quickly to any changes in the market.

5 Ensuring corporate functional excellence

Transmission companies are slowly recognising the benefits of utilising back-office functions to drive operational and strategic insights. Back-office functions, often seen as cost centres, can in fact be a valuable source to improve decision-making at the highest levels. By leveraging data analytics, transmission companies can gain a deeper understanding of their operations, discovering bottlenecks and identifying opportunities for improvement.

This can lead to more informed strategic planning and a more dynamic response to the market. As the sector undergoes a significant transformation, the ability to extract, and act upon these insights will be a key differentiator for companies.

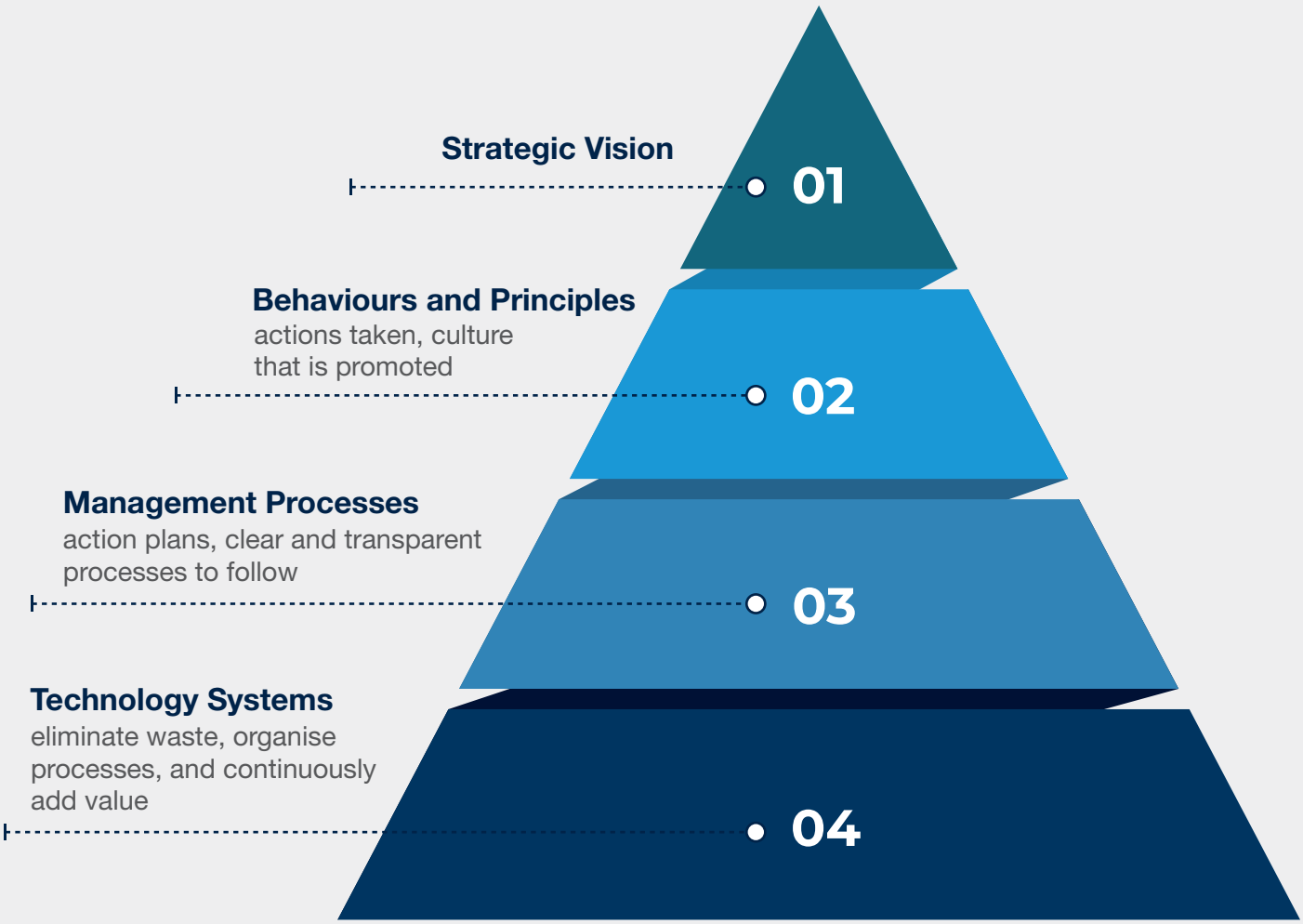


Figure 1.7 Foundational element of corporate and business excellence

Elevating analytical and operational capabilities is a critical first step in an organisation's evolution. This not only includes investing in tools that can streamline processes and enhance decision-making, but also increase or redistribute headcount where necessary. By doing so, organisations can ensure they have the right infrastructure and workforce to manage complex projects efficiently and effectively. This is particularly important as the industry consolidates in Renewable Energy Zones REZs, where the ability to integrate at scale will streamline the connection process.

For transmission companies, these enabling functions must operate at peak productivity to support the core business activities. Streamlining these functions can lead to significant cost savings and improved operational efficiency. For instance, automating routine tasks in finance and procurement may free up resources for strategic activities that directly contribute to project acceleration. Similarly, information technology can play a pivotal role by providing the digital infrastructure necessary for project management and data analysis, while the human resources team ensures that the right talent is in place to drive these initiatives forward.

Transmission companies have a significant role to play in delivering Australia's energy transition ambitions and create massive, unprecedented value for the Australian economy. However, this opportunity is not without its challenges. We believe maintaining a razor-sharp focus on the five levers will create value for companies and help deliver certainty of transmission.

How A&M Can Help

A&M provides a suite of service offerings for clients delivering large-scale energy projects. We have experience in tailoring solutions to clients' unique profiles and have multiple functional offerings aligned to Australia's Energy Transition.

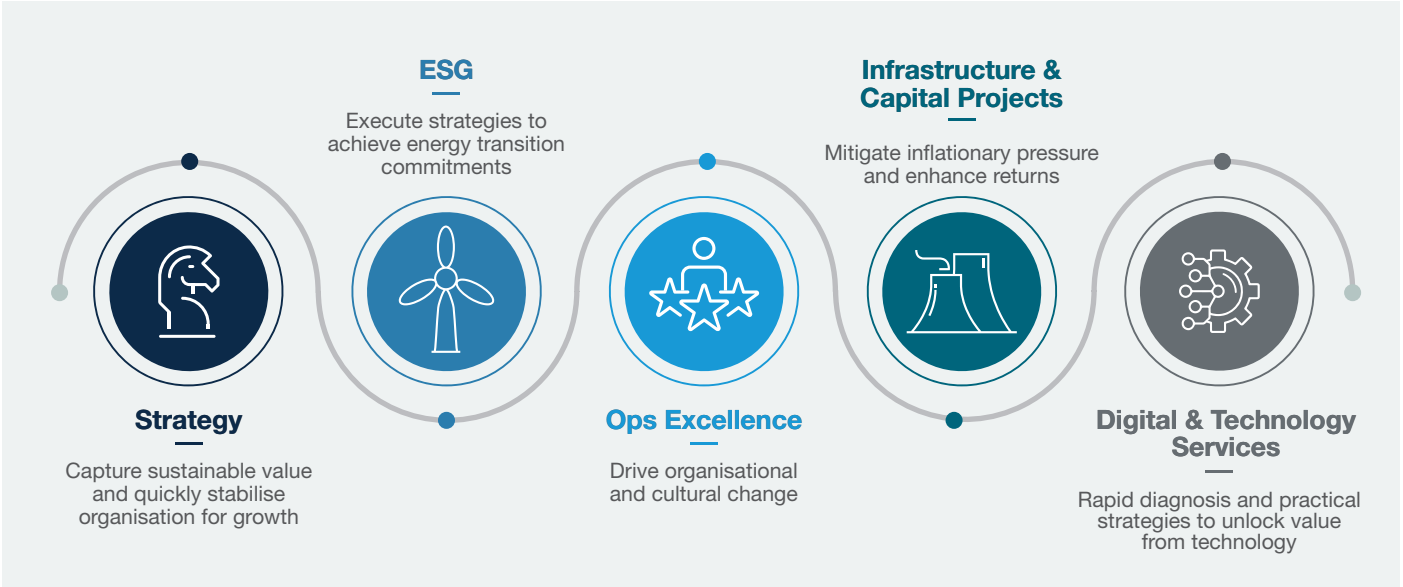


Figure 1.8 A&M service offering

Leverage our extensive expertise in the energy sector and our integrated team of highly skilled professionals specialising in energy, utilities, and renewables to achieve successful transformation outcomes.

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With over 10,000 people providing services across six continents, we deliver tangible results for corporates, boards, private equity firms, law firms and government agencies facing complex challenges. Our senior leaders, and their teams, leverage A&M's restructuring heritage to help companies act decisively, catapult growth and accelerate results. We are experienced operators, world-class consultants, former regulators and industry authorities with a shared commitment to telling clients what's really needed for turning change into a strategic business asset, managing risk and unlocking value at every stage of growth.

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