

Deliverability strategy

1.1. Key Points

Victoria's transmission network is the silent enabler of homes, businesses, and industry, serving over seven million customers and forming the backbone of the National Electricity Market (NEM). This Transmission Revenue Reset (TRR) proposal (this proposal) for the forthcoming regulatory control period (the period) outlines \$2.4B capex to renew this ageing transmission backbone, and is a prudent, essential investment to secure the network and enable the state's clean energy future. This renewal will position new renewable infrastructure to operate on a reliable foundation.

AusNet's regulated transmission business has carefully considered our readiness to deliver this program. The deliverability analysis presented in this report is the product of AusNet's deep investigation of deliverability conducted over the last nine months. This analysis has been a systematic and objective exercise drawn on the collective expertise of AusNet, our delivery partners and our Transmission Stakeholder Advisory Panel (TSAP), to quantify and understand the delivery implications of this proposal and any required adjustments based on the findings.

A significant portion of our increased capex is driven by price escalations from increased costs of labour and materials. Since 2021, price escalation above inflation for the transmission sector has been unprecedented and widely reported. The Australian Energy Market Operator's (AEMO) Transmission Cost Database (TCD) is a national benchmark for cost reporting in the sector and reports approximately 60-80% real cost escalation between the 2021 TCD and the 2025 TCD.¹ Price increases do not directly result in deliverability issues, as they increase the capex amount but do not change the underlying volume of work to deliver.

Our delivery performance in the current regulatory control period gives confidence in delivering this proposed capex uplift. We expect to deliver 13% over the Australian Energy Regulator's (AER) regulatory capex allowance across this period. Early period COVID-19 and cost escalation disruptions have eased, and we have undergone a large-scale organisational restructure in July 2024 to reinforce focus on the successful end-to-end delivery of outcomes for the regulated transmission business, including large-scale capital programs. We now expect to deliver a significant uplift in capex across the last two years of this period, enabling us to be in-flight with projects representing 90% of our major station capex by the start of the next period.

Our ability to deliver the proposed TRR capex program must consider the impact of other capital drivers, including customer-initiated work, such as distribution-initiated augmentations or data centre connections, and network augmentation works under VicGrid's inaugural Victorian Transmission Plan (VTP). Together, they represent a significant uplift in delivery. However, AusNet is not the key decision maker for these projects, and their deliverability will be assessed through separate processes. This report assesses the deliverability of TRR capex but does consider if customer-initiated or VTP capex will impact our ability to deliver the TRR.

We have identified four deliverability challenges together with mitigating initiatives that we have already begun actioning: labour availability, procurement of materials, planned outage availability and planning permits and approvals. Our analysis indicates that materials, outages and planning approvals present minor challenges that are mitigated through actions we are taking. These actions include executing targeted supplier strategies to procure long-lead time materials, implementing live line work to mitigate outage constraints and rezoning terminal stations to expedite delivery.

Our labour modelling and analysis indicate that we have sufficient labour available to deliver the TRR on a standalone basis, despite a challenge in accessing skilled electrical roles such as lineworkers, fitters and testers.

However, customer-initiated work and the VTP could result in a substantial additional uplift in delivery outside the scope of the TRR process, which we are acting to resolve. These actions include optimising delivery schedules, building internal capabilities, re-developing our training facility at South Morang for critical roles and enacting a market engagement initiative to establish a commercial agreement that secures the labour required to deliver.

We have made minor adjustments to this proposal to further support deliverability. These adjustments include expenditure deferral for some programs and the use of contingent projects, which removes projects from the proposal and means they only are approved once sufficient deliverability triggers are met.

¹ Based on cumulative result of AEMO's 2023 TCD reporting ~30% real escalation between 2021 and 2023 TCD, and a further 22.5% and 40% real escalation for substation and overline line projects respectively between the 2023 TCD and 2025 TCD.

1.2. Context

AusNet has three drivers of regulated transmission capex

Our ability to deliver the proposed TRR capex program must be assessed alongside other capital drivers, including customer-initiated work, such as DNSP-initiated augmentations or data centre connections, and network augmentation works under VicGrid's inaugural VTP. Table 1 below outlines the three categories of capex, which collectively represent a significant uplift in delivery.

Table 1: Our three drivers of regulated transmission capex

Source	Description	Growth drivers	Value
Transmission Revenue Reset (TRR)	Work to repair or replace the network, as outlined in this proposal	Ageing asset base that needs replacing and rising unit rates. Chapter 4 explores these drivers further.	\$2.1B proposed in RY28-32²
Customer-initiated projects	Transmission network augmentations requested by AEMO, Distribution or non-regulated businesses, that AusNet must deliver	Step change in energy transition and emerging market needs (e.g., Battery Energy Storage Systems and data centres)	To be confirmed In CY25, we expect to deliver ~\$160M of customer-initiated work
Victorian Transmission Plan (VTP)	VicGrid-initiated non-contestable projects to augment the network. A portion of this work will be delivered by AusNet's regulated transmission business.	AEMO will transfer the transmission network planner role to VicGrid in 2025. VicGrid's VTP, released in August, outlines an ambitious 15-year plan to augment the network to achieve net zero targets.	To be confirmed The VTP indicates \$7.9B capex across 15 years.³ A proportion of this will be delivered by our regulated transmission business

This report seeks to assess the deliverability of network capex within the TRR

A comprehensive assessment has been completed to evaluate deliverability challenges for the forthcoming regulatory period (the period) of RY28 to RY32,⁴ and to identify actions to address the challenges so we can successfully deliver all capital expenditure programs.

This report seeks to assess the deliverability of capex within the TRR, and understand if other customer-initiated or VTP capex is likely to impact AusNet's ability to deliver the TRR. This report does not directly assess whether customer-initiated or VTP capex is deliverable within its own right, as this will be dealt with through separate processes.

This report focuses on network capex within the TRR proposal, which includes three capex categories:

- Major stations, which are projects to rebuild terminal stations that perform essential functions like voltage transformation, switching and grid control, worth \$1,162M
- Asset replacement programs, which replace line, tower, station, protection and control systems and communication assets based on need across the entire network, worth \$655M
- Compliance and resilience, which typically replace or upgrade assets to meet safety, security and compliance obligations, worth \$283M

Digital and non-network capex are excluded from this analysis.

² This \$2.1bn figure is less than the full \$2.4B proposed capex, as it excludes digital and other non-network capital expenditure which faces different deliverability considerations to projects or programs.

³ \$7.9B in real 2025 economic terms, as per Victorian Transmission Plan

⁴ RY28 refers to the year beginning 1 April 2027 and ending 31 March 2028, the start of the forthcoming regulatory period.

A significant portion of our increased capex is driven by price escalations

A significant portion of our increased capex is driven by price escalations as a result of increased costs of labour and materials. Since 2021, price escalations above inflation for the transmission sector has been unprecedented and widely reported.

AEMO's Transmission Cost Database (TCD) is a national benchmark for cost reporting in the sector and reports approximately 60-80% real cost escalation between the 2021 TCD and the 2025 TCD.¹ While this increases costs of these programs, these price increases do not directly result in deliverability issues.

Projects worth 90% of major station capex will be in flight when the period begins

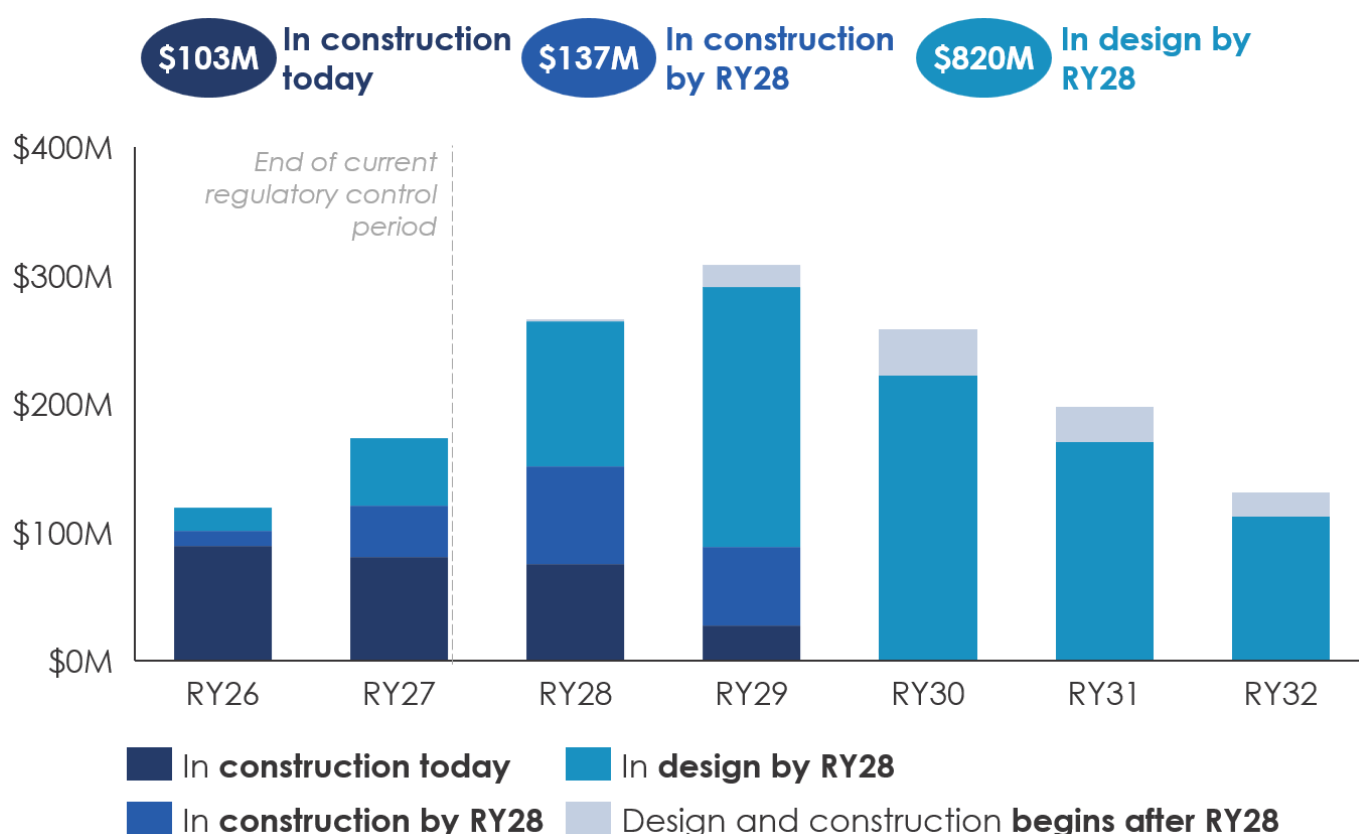
A large proportion of our capex program is to complete major station projects that will already be underway by the start of the forthcoming regulatory period.

More than half of our proposed capex is directed at rebuilding major terminal stations, which are critical nodes in the transmission network that perform essential functions like voltage transformation, switching and grid control. The major stations program includes 11 new projects where, based on asset condition, it is economic to replace groups of assets in the next period. It also includes capex from some committed projects that will be largely completed by the end of the current period, but with some capex that flows into the next period.

The majority of these major station projects will be well progressed by the beginning of the forthcoming period. Projects representing over 90% of capex will be in flight by the start of the period, including: 9% in construction today, a further 12% of capex in construction by the start of the period and a further 71% in design.

This level of predicted activity across this period demonstrates our capability to deliver the required uplift in capex throughout the forthcoming period. Figure 1 below outlines the delivery status of major station projects.

Figure 1: Major stations capital expenditure by delivery status (millions, real 2026-27)



Our current period delivery performance gives confidence in the proposed uplift

Our expected capex in the current 2022-27 regulatory period is to be 13% higher or \$132m (real 2026-27) higher than the AER's regulatory allowance.

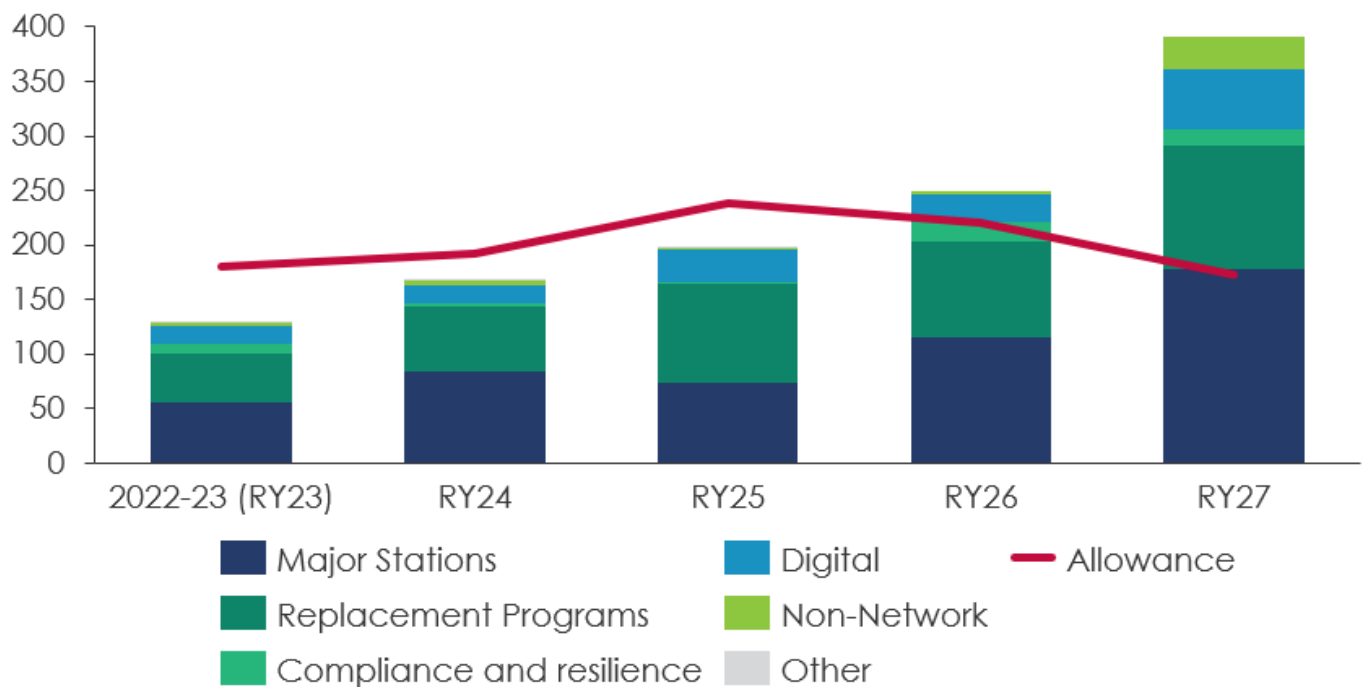
We delivered under the capex allowance in the first three years of the period due to project delivery challenges stemming from COVID-19 restrictions, which delayed the delivery of projects. Delivery was also delayed by cost inflation, which pushed back the economic timing of several major projects and alignment with augmentation projects. Cost inflation also requires re-estimation and changes to business cases, which can further impact delivery.

We expect a large uplift in capex across the last two years of the period. This uplift will be driven by the easing of COVID-19 and cost inflation pressures experienced earlier in the period, and further accelerated by our large-scale organisational restructure delivered in July 2024. This restructure reinforced focus on the end-to-end achievement of outcomes of the regulated transmission business, including the delivery of capital projects, and is discussed further in Section 1.3.

This uplift includes the successful delivery of large-scale works including Thomastown terminal station (transformer and 66kV circuit breaker replacement), Brooklyn terminal station (66kV and 22kV circuit breaker replacement), and East Rowville terminal station (redevelopment - stage 2).

Our recent changes and expected performance within the current regulatory period give confidence in our ability to deliver significant capital programs efficiently and in alignment with economic timing across the next period. Figure 2 below outlines AusNet's expected capex in the current period, which is further explored in Chapter 4.

Figure 2: Expected capex compared with capex allowance in 2023-27 regulatory period (\$m, real 2026-27)

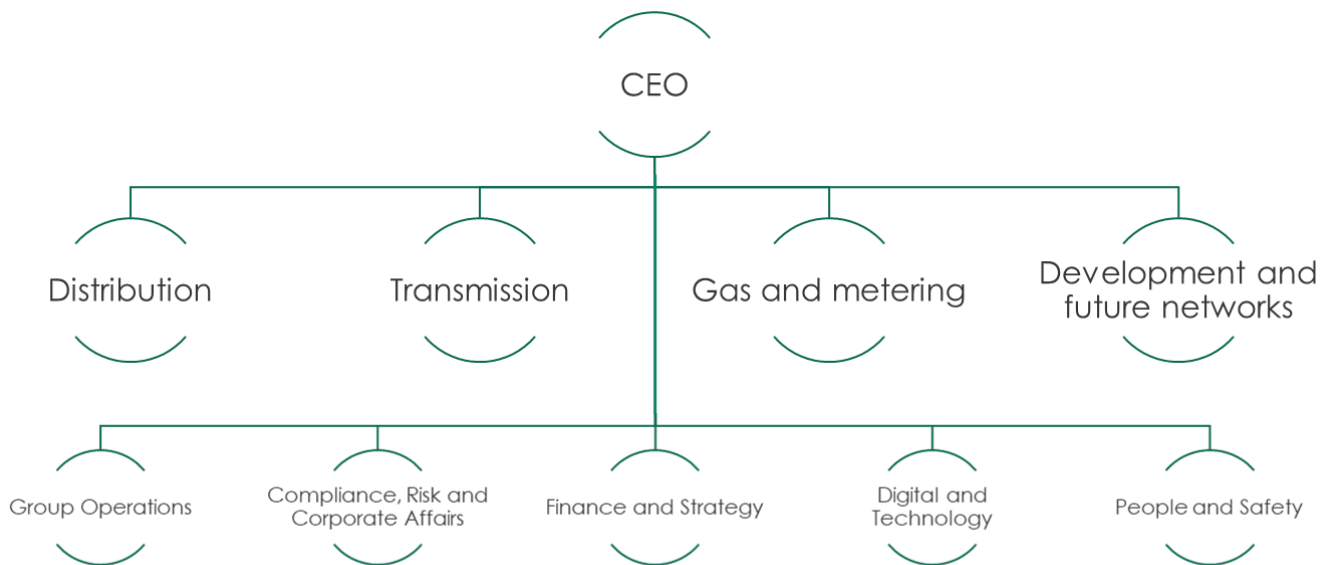


1.3. AusNet's delivery approach

AusNet is structured to enable its network businesses to deliver

In July 2024 AusNet embarked on a major organisational restructure to shift from a functional operating model to an operating model organised around four lines-of-business (regulated distribution, transmission, and gas and metering and a contestable business, focused on transmission), and five support functions which work across all four of the businesses. A high-level view of the organisational structure is shown below in Figure 3.

Figure 3: AusNet Organisational Structure



This structural change was made to reinforce executive level focus on the end-to-end delivery of outcomes of each of AusNet's lines-of-business given the markedly different operating context and strategic priorities on each. This will support the delivery of excellent operational outcomes for each business.

The Transmission business structure contains the following functions, which collectively focus on delivering positive outcomes for customers of the Transmission business:

- **Strategy and Regulation:** Setting the strategy for Transmission, influencing policy and advocacy, overseeing the transmission regulatory regime and delivering the Transmission Revenue Reset
- **Network Management:** Delivering engineering excellence, enabling best practice asset management and network planning, and coordinated field response to maintain a safe and resilient network
- **Network Operations:** Operating AusNet's transmission assets in real time, coordinating safe network access, responding to incidents, and protecting people and sites
- **Development, Customer and Portfolio:** Developing projects and achieving required internal approvals. Manage customer relationships and hold portfolio-wide metrics and controls
- **Delivery:** Delivering projects and programs from design to commissioning and delivering best in class technical services to AusNet and external customers.

Our support functions supplement where organisational-wide governance is required or synergies can be realised. Relevant to deliverability, these include:

- **Workforce planning:** A dedicated workforce planning team within the People and Safety function. This team is identifying and supporting the delivery of a detailed whole of enterprise workforce planning roadmap to help inform resourcing decisions in the medium-term. This will enable better, data driven decisions such as redeploying and retraining workers across businesses to meet their respective demands.
- **Procurement:** A single procurement function, serving the entire organisation, is part of the Group Operations division. This allows procurement expertise and commercial relationships with suppliers to be centralised, enabling bulk purchasing power to be realised and strategic supplier relationships to be formed and leveraged across all of AusNet's businesses.

- **Portfolio management:** a Portfolio Management Office is part of the Group Operations division. This team owns investment governance processes and focuses on strengthening and accelerating processes, supporting system and capability uplift where appropriate.

Our Transmission Delivery function is structured to support successful end-to-end delivery

The Transmission Line of Business' structure is designed to support the delivery of major non-contestable projects on the transmission network – taking projects from development, to design, construction and commissioning, and managing the contracts and financial controls throughout. Project delivery is the particular focus of the Development, Customer and Portfolio and Delivery portfolios within Transmission, including:

- **Development:** a team of project managers, estimators, engineers and technical specialists supporting the development of non-contestable transmission network projects
- **Design Management:** a team of primary, secondary, civil and transmission lines engineers who working closely with Design delivery partners to design all aspects of our major projects, including stations, lines, protection systems, etc.
- **Delivery Construction & Commissioning:** a team of Project Managers, Construction and Commissioning specialists who bring projects to life on the ground, working with our Construction delivery partners and their subcontractors to construct and commission the work
- **Finance, Contracts & Controls:** a team of contract administrators, project controllers, project coordinators and performance and insight analysts. This team executes the contracts for both Design and Construction Delivery Partners, overseeing compliance with governance requirements, providing end-to-end support to the Project Managers. Additionally, the team manages the overall works management, strategically tracking deliverability and fostering strong engagement with delivery partners to align capacity with future requirements.

AusNet's regulated Transmission and Distribution businesses supplement internal delivery capability with external Design and Construction capability. These capabilities are procured through two panels, with similar arrangements:

- The **Construction Delivery Partner (CDP)** panel, with [C-I-C] CDPs with capability to construct transmission assets in Victoria. The construction element of each project is typically tendered to this panel, [C-I-C] . The commercial arrangement of this panel is discussed further in Section 1.4.1.
- The **Design Delivery Partner (DDP)** panel, with [C-I-C] DDPs with capability to design transmission assets in Victoria. The design element of each project is typically tendered to this panel, [C-I-C]

These panels can utilise a range of contractual terms, including [C-I-C]

. On a project-by-project basis, AusNet will choose which Delivery Partner to use under which contractual terms based on supplier capability and capacity, project specific requirements and market conditions.

Our capital projects are governed across the project lifecycle

Our regulated transmission capital projects are required to adhere to the Stage Gate Governance Process, a four-phase, six-stage governance process that oversees the delivery of capital projects across the project lifecycle. Figure 4 below outlines these phases.

This framework is designed to guide each project from concept to completion, maintain alignment with our strategic goals and ensuring control and visibility of cost, schedule and quality. The specific requirements to pass each gate depends on project size, especially for business case approval. Table 2 below outlines AusNet's Delegation of Authority (DoA), which allocates the decision maker for the business case of capital projects.

The scale of the projects and programs within this proposal will typically require EGM, CEO or Board approval, which includes a business case. This level of approvals creates appropriate scrutiny for each project before it proceeds, including the consideration of whether the project is deliverable.

As a part of this Deliverability assessment further improvements to this methodology have been identified and are currently in flight.

Figure 4: AusNet's stage gate approach for major capital projects

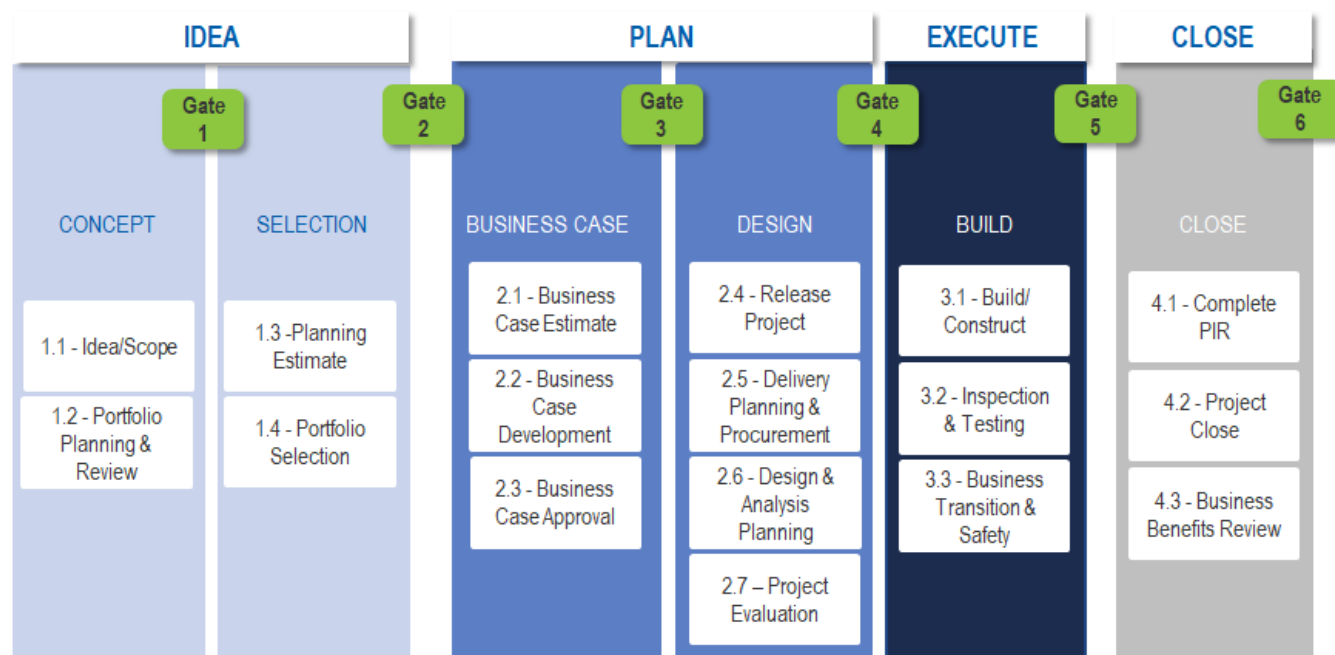


Table 2: AusNet's Delegation of Authority guidelines

Project size	Approver	Key document(s)
<\$1M	Manager	Business case "lite"
\$1M-\$5M	General Manager	Business case "lite"
\$5M-\$50M	Executive General Manager	Business case
\$50M-\$75M	Chief Executive Officer	Business case
>\$75M	Board	Business case and Board paper

We consider deliverability challenges across the project life cycle

During the Business Case stage, AusNet will explore potential options for the project. For each option, AusNet will develop a cost and pricing schedule that is then verified by benchmarking against comparable or recently completed projects to develop high-level understanding of project timelines, including the impact of:

- **Internal Labour Capacity** within AusNet delivery teams,
- **Delivery Partner Capacity**, which is discussed regularly during governance meetings
- **Required materials** and associated lead times
- **Availability of outages** required to complete construction activities
- **Required planning approvals** (e.g. Cultural Heritage Management Plan).

For the preferred option, AusNet develops a business case seeking approval in line with the DoA. A typical business case will include (non-exhaustive):

- **Level 3 schedule:** a high-level overview of activities to obtain approval, and undertake design and construction activities.
- **Detailed cost forecast:** annual forecasts for each cost category aligned to the activity schedule, tested with Delivery experts.
- **Key material list:** outlines key materials required and enable the beginning of procurement activities with suppliers

- **Outage plan:** identifies key outages required to deliver the project, and informs AusNet's long-term outage planning process in collaboration with AEMO
- **Environmental checklist:** identifies potential environmental factors including land overlays, noise, air and land pollution, and associated controls
- **Risk allowances:** AusNet applies a risk-based approach toward estimating through the implementation of a Qualitative and Quantitative risk assessment framework.

Collectively, these plans prepare AusNet to navigate deliverability challenges and support the successful delivery of each capital project before it proceeds.

1.4. Deliverability assessment

AusNet has considered four potential challenges to deliverability

This section seeks to understand the likely effects of four potential deliverability challenges on AusNet's proposed capex profile. Table 3 below introduces these challenges.

Table 3: Four challenges considered in deliverability assessment

Challenge	Description
 1. Internal and partner labour availability	Eight critical labour roles have been identified, challenged by an existing market shortage, lengthy qualification periods and rigorous Australian-based qualifications requirements
 2. Procurement of long-lead materials	Transformers and Reactors have been identified as long-lead time materials and are required for many projects, further challenged by high global supply-chain pressure and demand
 3. Planned outage availability	Outages on lines and stations will be required. There is already an outage shortage, increasing outages will be challenged by conservative AEMO network models with decisions by AEMO, beyond direct AusNet control
 4. Planning approvals and permit	Planning approval ranging from Environmental Effects Studies, Planning Scheme Amendments, Planning Permits (and associated supporting studies) that are required to complete construction activities

The deliverability analysis presented in this report is the product of AusNet's deep investigation of deliverability conducted over the last nine months. This analysis has been a systematic and objective exercise drawn on the collective expertise of AusNet, our delivery partners and our TSAP, to quantify and understand the delivery implications of this proposal and any required adjustments based on the findings. At the core of this analysis is AusNet's deliverability model, which considers how the four challenges impact the capex outlined within this proposal. Figure 5 provides an overview of the model approach and outputs.

Figure 5: Overview of our deliverability model

	Demand model	Supply model
Model components	Projects with scope, capex, timeline, labour, material, outage & planning approvals required	Resources available incl. labour, material, outages & planning approvals
Key outputs	For all projects : - Monthly 6-year FTE forecasts for 8 key roles - Expected key materials, outages and planning approvals required	- Monthly 6-year AusNet labour supply forecasts for 8 key roles - Adjusted timeline and capex forecasts based on delays from challenges
SME input	Working team of ~15 SMEs, across AusNet's regulated transmission business and ~10 SMEs from support functions	- Working team of ~20 AusNet SMEs - Input from 8 Construction and Design Delivery Partners

PowerBI
visualisations of
data based on
modelling



AusNet can deliver the TRR, but additional work creates uncertainty for labour availability

The deliverability assessment indicates that AusNet can deliver the TRR. Procurement of materials, planned outage availability and planning approvals present minor challenges that are mitigated through actions we are taking.

We have sufficient labour available to deliver the TRR on a standalone basis, despite a challenge in accessing skilled electrical roles such as lineworkers, fitters and testers. However, customer-initiated work and the VTP could result in a substantial additional uplift in delivery outside the scope of the TRR process, which we are acting to resolve. These actions include optimising delivery schedules, building internal capabilities, providing training for critical roles and enacting a market engagement initiative to establish a commercial agreement that secures the labour required to deliver. We have also made minor adjustments to the TRR proposal to further support deliverability.

Table 4 summarises the findings of each assessment, which are explored further in the section below.

Table 4: Summary of deliverability assessment findings

Challenge	Assessment approach	Findings	Implications for this proposal
1. Internal and partner labour availability	Supply and demand forecasting for eight internal and delivery partner roles critical to delivery, considering each TRR project and program, and likely customer-initiated and VTP work	Sufficient supply to deliver TRR. Uncertain demand driven by VTP and customer-initiated projects may impact availability for key roles, which AusNet is taking action to address	Minor adjustments made to TRR to further support deliverability , outlined in Section 1.5
2. Procurement of long-lead materials	Market intelligence assessment of long-lead time materials required for TRR projects and programs, challenged by high global supply-chain pressure and demand	Minor challenges , mitigated through actions AusNet is taking. VTP and customer projects do not impact this finding	No adjustment
3. Outage availability	Transmission Operations Control team assessment of outages required to complete TRR, against availability and likely location and timing of VTP outages	Minor challenges , mitigated through actions AusNet is taking. VTP may present a challenge for one TRR project	No adjustment
4. Planning approvals	Planning & Property team assessment of time required to acquire planning approvals for TRR projects and programs such as Environmental Effects Studies, Planning Scheme Amendments, Planning Permits	Minor challenges , mitigated through actions AusNet is taking. VTP and customer projects do not impact this finding	No adjustment

1.4.1. Availability of labour capability assessment

Delivering the TRR will draw on capability across AusNet and our delivery partners

Workforce availability is critical to the successful delivery of transmission infrastructure, particularly in specialised roles essential to transmission infrastructure.

AusNet uses a range of capabilities across the development, design and construction of transmission infrastructure projects. We have identified and assessed the availability of eight roles critical to delivery:

- **Lineworkers**, who install, maintain, and repair high-voltage transmission lines
- **Fitters**, who assemble, install, and maintain electrical equipment, typically in terminal stations
- **Testers**, who perform diagnostics, testing, and commissioning of transmission assets, typically in terminal stations
- **Civil worker**, who construct required groundwork at terminal stations and underneath towers
- **Design engineers**, who develop the design of the assets
- **Project Development**, who develop early-stage scope and cost for projects
- **Internal Delivery**, who manage internal and delivery partners resources to cost and schedule targets
- **Planning consultants**, who oversee applications to receive planning permits and approvals

These roles are not exhaustive of the capability of AusNet and our delivery partners but are explored due to their high criticality to project delivery.

Skilled electrical roles present the greatest labour challenge, but AusNet's supply enables the TRR to be delivered

AusNet's Workforce team, in collaboration with SMEs from Transmission Delivery and our DDP and CDPs, built a comprehensive workforce estimation model to assess the availability of these eight roles to AusNet. The model draws on a wide collection of data to understand demand and supply for each role across the period, and is outlined further in the Appendix.

Availability is based on AusNet's ability to meet demand to deliver the TRR program, potential additional demand from VTP and customer-initiated projects and the ability of AusNet to access additional supply, based on training requirements and current market depth. Figure 6 below outlines the findings from this assessment, which are further explored below and in the Appendix.

Figure 6: Findings from labour availability assessment⁵

[C-I-C]

⁵ AusNet modelling of demand and supply for key roles, outlined in Appendix.

This analysis indicates that AusNet will have sufficient supply of these eight roles to deliver the TRR. Different roles will peak at different times within the regulatory period; for instance, early-stage work for major projects will create relatively higher demand for Design and Project Development roles earlier in the period, and a high level of construction activity for major stations will create peak demand for fitters and testers mid-period.

The supply analysis indicates that three roles, lineworkers, fitters and testers, will be relatively harder to access additional supply. These roles are all skilled electrical workers employed by AusNet's CDPs. Challenges in scaling supply stem from a combination of factors, including:

- Long training and qualification periods, typically four years for new workers or two years to convert from a similar profession
- Stringent Australian and Victorian-specific licensing and accreditation requirements
- Competition for talent from interstate and international infrastructure sectors which increases difficulty and costs associated with sourcing skilled workers.

The combination of high demand and potential supply limitations of Lineworkers, Fitters and Testers specifically, means that we are focused on the availability of these three roles. Figure 7 below provides further insight into the demand for these roles arising from the TRR relative to AusNet's available supply.

This analysis indicates that AusNet has sufficient labour availability to deliver the TRR under current resourcing arrangements. Lineworkers, predominantly used for projects working on lines assets, will be well utilised early in the period, with the HYTS-APD tower replacement program occurring, before relatively flat utilisation on asset replacement programs (e.g., the insulator replacement program). Fitters and testers, predominantly used for projects working on stations assets, will be well utilised later in the period as most major stations projects are under construction.

Figure 7: Labour availability for lineworkers, fitters and testers to deliver the TRR⁵

[C-I-C]

Labour availability for skilled electrical workers faces uncertainty, which AusNet is taking action to address

However, AusNet's regulated transmission business is expecting to have three sources of capex projects, outlined in Table 1. These projects will arise through a different regulatory framework to the TRR process, so are not the focus of this assessment. However, the projects will typically utilise similar capabilities within AusNet and our delivery partners to deliver.

However, AusNet is not the key decision maker for customer-initiated and VTP projects, hence how these projects will impact labour demand across the period is uncertain. Uncertainties include:

- **Contestability**, which impacts which projects will be delivered by AusNet's regulated transmission business
- **Scope**, which impacts how much labour is needed for each project
- **Timing**, which impact when labour will be needed.

To further understand the implications of these uncertainties, we have developed two potential scenarios for how the VTP and customer-initiated projects could impact labour demand across the forthcoming regulatory control period. Both scenarios include the same set of customer-initiated and VTP projects, based on an interpretation of public and confidential information, with different timing assumptions.

Scenario 1 uses an optimistic delivery schedule for these projects, whereas Scenario 2 outlines a delayed delivery schedule, informed by the potential impact of deliverability challenges (e.g., a delay in securing planning approvals) on each project.

These delays impact when projects enter construction, and hence when construction resources such as lineworkers, fitters and testers are required, Figure 8 below outlines demand for lineworkers and fitters across these two scenarios. The profile for testers mirrors the profile for fitters, as they are both engaged on similar projects. The labour demand from these projects changes materially between the two scenarios, illustrating the uncertainty within non-TRR drivers of labour demand.

Figure 8: Potential lineworker and fitter demand across two scenarios⁵

[C-I-C]

AusNet is taking proactive actions to maintain sufficient labour availability amongst this uncertainty

AusNet is taking actions to secure the required labour availability to deliver, including:

- **Optimising delivery schedules** to maximise labour efficiency within and across projects
- **Investing in and building internal capabilities** through targeted recruitment, training and upskilling
- **Providing training for critical external roles**, including through the development of our South Morang Training School (see case study in Appendix)
- **Improving labour productivity** via innovative work methods, in collaboration with our delivery partners.

These initiatives will be delivered alongside efforts to enact a market engagement initiative to establish a commercial arrangement that secures the labour we require to deliver. This analysis indicates that skilled electrical roles (i.e., lineworkers, fitters and testers) will be the greatest labour availability challenge. While AusNet has sufficient resourcing available to deliver the TRR, uncertainty arises from customer-initiated and VTP work. Despite this uncertainty, we are seeking to uplift labour availability in preparation for this demand to materialise. The market engagement initiative is designed to uplift labour availability for these critical roles through two ways:

- (1) **Expanding capacity:** AusNet uses CDPs to access lineworkers, fitters and testers capability. CDPs need commitment to increase resourcing (e.g., training apprentices and bringing interstate resources) to give AusNet access to more workers. AusNet is exploring new engagement models with our delivery partners to improve their ability to service our pipeline requirements and manage risk. This includes investigating alternative commercial models instead of traditional project-by-project sourcing frameworks.
- (2) **Improving efficiency:** Increasing efficiency gives higher output per worker that AusNet has access to. AusNet is exploring new commercial approaches that increase efficiency, by enabling CDPs to maximise utilisation e.g., cross-project resource sharing, improved scheduling and new work methods.

[C-I-C]

Figure 9: Potential demand and supply for lineworkers and fitters across period⁵

[C-I-C]

Minor adjustments have been made to the TRR based on the uncertainty regarding labour availability

AusNet has sufficient labour capability to deliver the TRR. However, AusNet faces uncertainty on labour availability for skilled electrical workers due to additional VTP and customer-initiated work, where AusNet's has limited control and visibility. There is also uncertainty in the supply of these skilled resources, as AusNet is undergoing effort to implement a new commercial model to increase enable delivery partners to 'resource up'. Section 1.5 outlines these adjustments.

1.4.2. Procurement of materials assessment

Key materials for transmission projects are procured from global supply chains

Transmission construction projects utilise a range of specialised materials. Due to limited domestic manufacturing capabilities, AusNet has become dependent on sourcing some of these materials from international suppliers, where we must compete with other transmission networks.

Suppliers are experiencing high international demand for these materials, with many countries undertaking an energy transformation and seeking to access similar materials, equipment and capabilities.⁶ Limited supply elasticity amongst the global supply chain has the potential to create long lead times, which could impact AusNet's ability to deliver capital projects. Geographic concentration of our equipment supplier base also amplifies AusNet's exposure to trade disruptions, sovereign risk and regulatory changes.

⁶ AEMO, 2024 Integrated System Plan

A market assessment indicates likely lead times for key materials required for the TRR

AusNet's Procurement and Supply Chain Management team within Group Operations are responsible for procuring the materials used in transmission construction projects. This team frequently undertakes market engagement to understand supply market dynamics and typical lead times associated with key materials.

Table 5 below outlines the findings of this market intelligence. Chapter 4 includes a more detailed description of each material.

Table 5: Market dynamics for the procurement of key materials⁷

Materials	Market Balance ⁸	Lead time	Price Trend	Supply locations
Power Transformers	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Instrument Transformers	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Shunt Reactors	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Control Rooms	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Circuit Breakers	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Surge Arrestors	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Disconnectors / Earth Switches	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Transmission/Steel Towers/Pylons	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Air or Gas Insulated Switchgear (AIS / GIS)	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Station / Post Insulators / Bushings	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
HV / EHV Cables	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
Relays	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]

This analysis indicates that three large materials required for TRR projects may have [C-I-C] lead times. These materials are:

- Power Transformers, which are installed at most terminal stations to change voltage on the network
- Shunt Reactors, which are installed at some terminal stations to stabilise the network in response to power surges
- Air or Gas Insulated Switchgear, which control, protect, and isolate power within a terminal station.

AusNet is taking action to mitigate these challenges at a project and enterprise level

AusNet is taking a strategic approach to address these challenges at the project level and at the enterprise level. For each project in the TRR, AusNet has:

- Identified required long lead time materials
- Engaged with potential suppliers to understand market dynamics and likely lead times

⁷ AusNet's Procurement and Supply Chain Management team

⁸ D = Demand, S = Supply

- Aligned schedule and cost forecasts with expected lead times

AusNet is also taking enterprise-level actions to mitigate the potential deliverability impact of these challenges, including:

[C-I-C]

No adjustment to the TRR is required due to the findings of this material procurement assessment

No adjustment to the TRR is required. While the availability of key materials presents challenges, AusNet has taken sufficient actions to mitigate these potential impacts and validate that the forecasts within the TRR to account for any potential impacts. Any customer-initiated or VTP projects that require similar materials are not expected to impact the TRR projects or programs.

1.4.3. Planned outage availability assessment

Planned outages are required to deliver transmission projects

Planned outages involve de-energising sections of electrical infrastructure and are required to undertake most construction activities on transmission assets. During a planned outage, AEMO may constrain generation and network flows to maintain power system security for the next credible contingency. Unlike outages on distribution assets, planned transmission outages typically do not impact power supply to households due to redundancy of supply in the transmission network.

Outages are becoming increasingly difficult to secure, due to the reduction of system strength sources within Victoria as aging coal thermal units are shutdown. Outages that affect interregional flows, such as with New South Wales, Tasmania and South Australia will have greater uncertainty, due to the Victorian network's requirements to secure these neighbouring regions.

Obtaining outages is a limiting factor when planning project timelines, and unexpected cancellations of outages, can push back project delivery timelines, which results in disruptions to the workforce and materials required for delivery.

The ability to take a particular outage is impacted by:

- The network load demand
- Impact on system security (e.g., is there adequate redundancy on the network given other events such as system strength and weather)
- Network constraints on customer plant (e.g., is the network committed to generation etc.)
- Network conditions (e.g., other planned or unplanned outages or inclement weather)
- Planned outage recall time (how long it takes to restore plant under outage to service if needed).

Some parts of the network are more constrained than others. For example, the corridor between Moorabool and South Australia, is a key route for power to flow between Victoria, South Australia and the large customer load at Portland. When there is an outage of one of the two lines, AEMO is required to prepare a contingency plan for the electrical separation of Victoria and South Australia, and the restoration of the large customer load for an unplanned loss of the parallel line.

As the network evolves with decentralised generation and energy storage, network outages are becoming more challenging to obtain as an increasing number of potential outage locations constrain generation.

A planned outage assessment indicates no likely challenges, but that coordination is needed

AusNet's Transmission Operations & Control (TOC) team, in conjunction with AEMO National Electricity Market (NEM) Real Time Operations, manages the power system security risks. For upcoming project work, TOC's systems and expertise provide guidance of outage availability for each network asset.

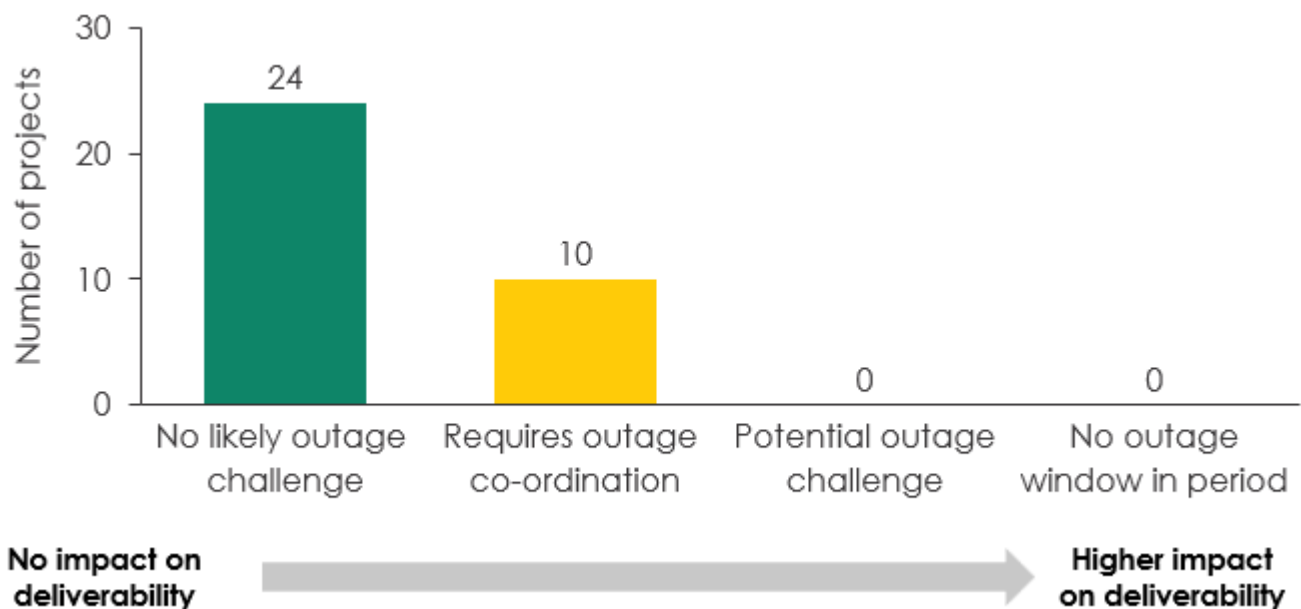
TOC uses the following 5-step process to plan outages:

- **Outage Period:** Plan outages during the optimal time of the year which considers maximum and minimum network demands
- **Network Clashes:** Check that there are no additional outages that directly conflict with the planned outage
- **Network Coordination:** Confirm outages are aligned to minimise network outages
- **Network Security:** Check the outage does not cause any power system security risks
- **Notify Customers:** Provide up to 13 months notification to affected transmission connected generation and load customers

There were no major challenges for the proposed TRR projects, noting that each project will still need to work through adequate outage planning sessions as per the process outlined above.

TOC have conducted an assessment of the availability of required outages for TRR projects, based on the outage requirements of each project, likely outages for VTP and customer-initiated projects with known scope and timing, and outage constraints on the network. Figure 10 summarises the results of this analysis, which are discussed further below.

Figure 10: Planned outage assessment, based on impact on deliverability, # of projects⁹



The analysis indicates that:

- 24 projects will have no likely outage challenges. These projects either require no outages or will require outages that are less restrictive, assuming they are taken at appropriate times of the year
- 10 projects require outage coordination, to manage the cumulative impact of outages on the network. Further coordination will be needed with other projects, such as customer-initiated and VTP projects
- No projects face a potential outage challenge, or have no outage window, at this stage.

The analysis also indicated that VTP projects may face outage availability challenges, especially for major line rebuilds in North-West Victoria. However, the initial assessment of the VTP projects indicates no 'red flag' that impacts on deliverability of TRR projects.

AusNet are taking actions to address the planned outage availability challenge

AusNet are taking actions to manage the impact of outages on deliverability, including:

- Improving Digital Tools that enable network access and management (e.g. TASM)
- Regular outage planning with AEMO, incl. 13-month forward plan for all outages with market impact

⁹ Assessment from Transmission Operations & Control team based on cumulative assessment of demand and supply of outages. Assessment is based on current understanding of network conditions and likely changes, which may face unexpected changes during the period. Note: some programs (e.g. insulator replacements) could not be assessed due to insufficient timing and location information. Typically, asset replacement programs face lesser outage issues

- Collaborative outage planning between Delivery, TOC and CDPs on 2–3-month horizons
- Preparing for VicGrid transition through engagement with SMEs
- Live line work considered if outage issues arise

The appendix includes a case study on AusNet's recent live line work, which can be used to overcome outage challenges.

No adjustment to the TRR is required due to the findings of this outage assessment

No adjustment to the TRR is required. While the availability of planned outages presents challenges, AusNet has taken sufficient actions to mitigate these risks and will use the existing process to manage any additional challenges that arise.

This assessment is based on AusNet's current understanding of the current demand for outage on the transmission network across the TRR, customer-initiated and VTP projects. This availability may change, as project scope and the network evolves. AusNet will continue to monitor this situation through its usual outage planning process with AEMO, and adjust timing as required.

1.4.4. Planning permits and approvals assessment

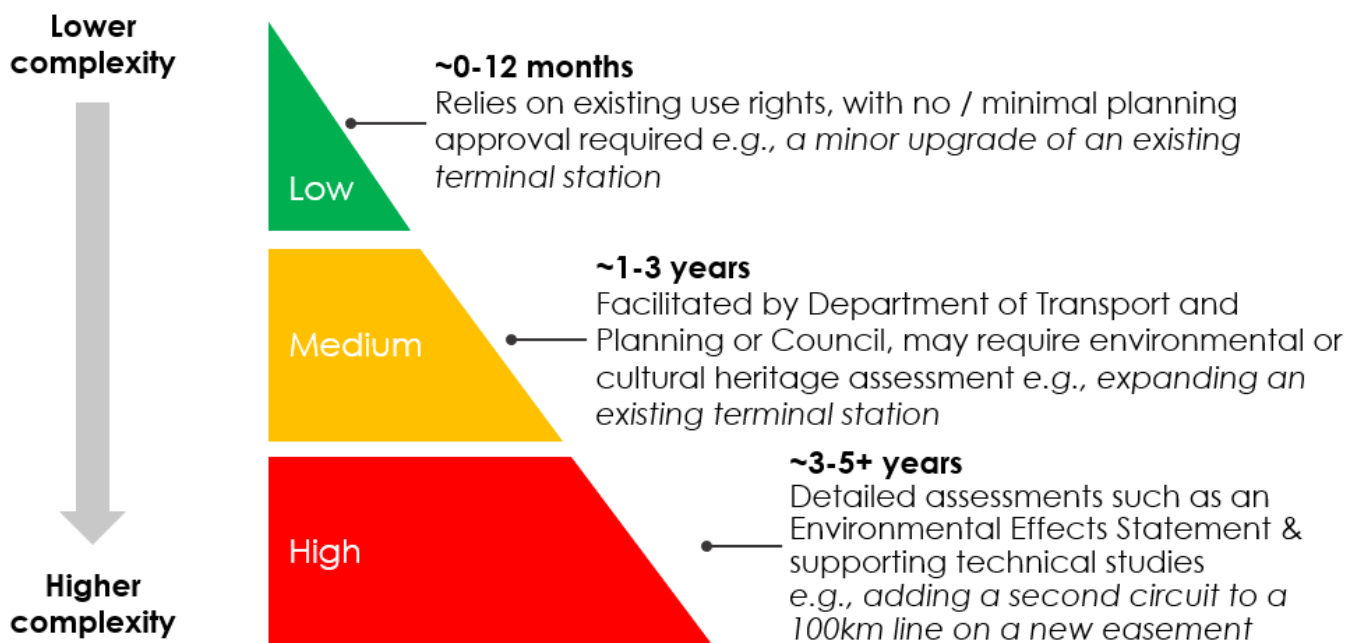
Planning permits and approvals are required for most transmission projects

AusNet's construction activities to repair or replace transmission network assets typically require permits and approvals to be granted from non-AusNet bodies, such as local councils and the Department of Transport and Planning (DTP). These approvals must be granted before construction activities can begin and are typically completed concurrently to development and design activities.

These approvals cover a range of potential impacts of the construction and operation of the transmission assets, including impacts on environmental, cultural heritage, social, biodiversity, visual amenity, noise and vibration and air quality factors.

The specific approvals required by a particular project can vary based on project scope, location, land use and community acceptance. Variability of these factors means that the timeline to acquire the required approvals will vary between projects. Figure 11 below outlines an indicative range of complexity and timing for planning approvals.

Figure 11: Potential timelines required for planning approvals

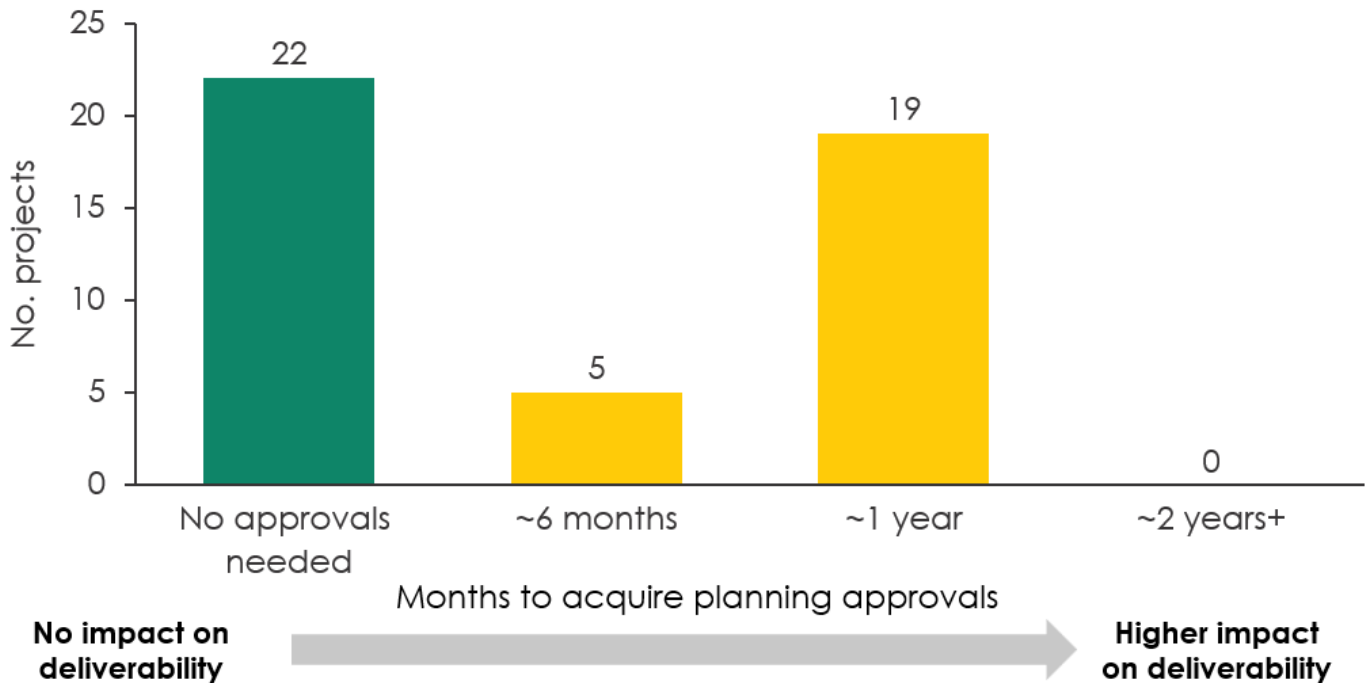


Planning approvals are unlikely to impact deliverability for the TRR, which typically addresses existing assets

AusNet's Network Planning and Property teams are responsible for supporting transmission projects to acquire the required planning approvals to complete construction activities, in collaboration with the Project Manager and other

parties involved in project delivery. This team utilised their previous project expertise and benchmarking to similar projects to assess the likely time required for TRR projects. An important consideration in this assessment was the effect that poor community acceptance can have on a project's deliverability, even once all formal project approvals have been achieved. Figure 12 below outlines the findings of this assessment.

Figure 12: Planning approval assessment, based on impact on deliverability, # of projects¹⁰



The assessment found that 22 TRR projects require no approvals or will need minimal time to acquire. For instance, the Morwell Terminal Station Circuit Breaker replacement project operates within existing usage rights.

24 TRR projects will need 6 to 12 months to acquire planning approvals. TRR projects are typically conducted within an existing station e.g. South Morang Gas Insulated Switchgear replacement project, in line with AusNet's powers to replace or repair existing assets. While planning approvals are required for these projects due to their voltage, community and stakeholder impact is typically small relative to greenfield projects. Planning approvals are conducted in sequence with other activities incl. detailed design. This means the critical path for the project is typically not impacted.

Major transmission projects not within this proposal (e.g. line rebuilds as part of the VTP) are likely to require additional planning approvals. However, VTP planning approvals do not impact delivery of TRR projects.

AusNet are taking actions to address the planning permits and approvals challenge

AusNet is taking actions to manage the impact of planning approvals on deliverability, including:

- Pre-planning likely approvals required for upcoming projects, as part of our usual delivery processes
- Considering planning controls (e.g., zoning, overlays, schedules) of terminal stations to avoid unnecessary approval effort. See Case Study 1 in the Appendix for more information.
- Conducting timely well informed and resourced engagement with impacted communities and stakeholders to understand and reflect environmental conditions and locally expressed concerns, resulting in more holistic socially and environmentally informed project proposals
- Engaging with DTP, councils, Traditional Owners and other approval groups to facilitate timely approvals
- Building on our existing landholder engagement capability.

¹⁰ Assessment from Transmission Planning & Property teams considering project scope, community acceptance risk, location and benchmarking to similar projects. Outputs validated by Transmission Delivery and planning Subject Matter Expert (SME). Planning approvals is an umbrella term for approvals required, including planning permits, Cultural Heritage Management Plans, and other local or state government approvals

No adjustment to the TRR is required due to the findings of this planning approvals assessment

No adjustment to the TRR is required. While AusNet will need to undertake significant additional work to acquire adequate planning approvals for all projects, AusNet has taken sufficient actions to mitigate these potential impacts.

This assessment is based on AusNet's current understanding of planning approvals required and time to acquire these. AusNet will continue to monitor this understanding through its usual project delivery planning processes, and adjust actions and timing as required.

1.5. Implications for this proposal

The TRR is deliverable on a standalone basis

This deliverability analysis indicates that the procurement of long lead time materials, outage availability and planning approvals require no adjustments to the TRR. These challenges are considered in the development of the projects and programs that underpin this proposal. Additionally, AusNet is taking a broad range of actions to mitigate these challenges. Labour availability analysis indicates that AusNet has access to sufficient capability to deliver the TRR on a standalone basis.

The VTP and customer-initiated work create uncertainty for labour availability

AusNet's regulated transmission business is expecting to have three sources of capex projects: the TRR, customer-initiated projects and the VTP. Customer-initiated and VTP projects will draw on similar labour capabilities as the TRR. However, AusNet is not the key decision maker for these projects and hence faces uncertainty on which projects will need to be completed, how much labour will be needed and when that labour is needed. Hence, there is uncertainty in labour demand for skilled electrical roles (i.e. lineworkers, fitters and testers).

AusNet is taking action to uplift labour availability, and has made minor adjustments to the TRR to further support deliverability

AusNet is taking actions to uplift labour availability for these critical roles, including exploring a new commercial model to that will incentivise CDPs to expand capacity and increase efficiency of these key roles. [C-I-C]

To ensure the deliverability of this proposal, we have made adjustments to the network capex outlined in this proposal. These adjustments have incorporated the detailed feedback provided by our TSAP at the 1 September and 18 September meetings on the use of contingent projects to manage deliverability risks (and design of triggers), as well as the prioritisation process for projects to be made contingent or deferred. In addition, AusNet undertook engagement on ways to address deliverability challenges in the draft proposal published July. See section 4.4 of the proposal for details in relation to this process. Details in relation to adjustments on the basis of deliverability are provided below including:

Contingent project classification, which designated projects to be approved by the AER only once sufficient deliverability triggers are met. This mechanism has been designed in consultation with our TSAP to consider deliverability, prudence, efficiency and consideration of need. Section 4.10 explores contingent projects further.

Deferral beyond RY32, to mitigate deliverability challenges within the period for projects with relatively low risk from deferring. Deferrals have been reflected in relation to the following projects/programs:

- **Fall arrest systems (FAS):** This project was originally proposed to be \$21.3 million (real 2026-27, escalated including overheads), reflecting a scope of works that is economic to undertake in the upcoming regulatory period. It was decided that 70% of the FAS proposed would be deferred beyond upcoming regulatory period. The remaining 30% of FAS proposed reflects a risk-based approach, prioritising replacement of FAS expected to require climbing activity in the upcoming regulatory period. No changes were made to the program of FAS racks due to deliverability consideration. The resulting FAS program proposed in the 2028-32 period is \$7.6 million.
- **TGTS B2 transformer replacement:** This project proposed to replace the B2 transformer at the Terang Terminal Station (TGTS), and was identified to be economic to undertake in the upcoming regulatory period. The expenditure under this project in the upcoming regulatory period was proposed to be \$3.8 million (real 2026-27, escalated including overheads). The outcome of our engagement was for this project to be deferred beyond the 2028-32 regulatory period on the basis of addressing deliverability.

Removing overlap from the VTP: Our assessments indicate that the overlap between the VTP and AusNet's TRR program is relatively minor, with a potential reduction in capital expenditure of approximately \$19.3 million. These impacts are primarily associated with programs within AusNet's Line fleet, including tower strengthening, low span

rectification, ground wire replacements, and insulator replacements, particularly where VTP projects propose upgrades to the same assets. Primary asset projects are also included in identified overlaps. For details of the overlaps considered and addressed in the capital expenditure program, please see the Technical Document on VTP interactions.

Table 6 below provides a list of the treatment of each project, which are explored further in Chapter 4.

Table 6: Deliverability adjustments to this proposal

Project / program	Categorisation	RATIONALE
Fall arrest structures	Partially (70%) deferred	Changed due to deliverability assessment: These projects can be deferred or made contingent to address deliverability concerns, without introducing excess risk
TGTS B2 Transformer Replacement	Deferred	
DDTS H3 330/220kV Transformer & Circuit Breaker Replacement	Moved into contingent projects	
Various asset replacement programs that overlap with VTP projects (including tower strengthening, low span rectification, ground wire replacements, and insulator replacements)	Removed	Changed due to interaction with planned augmentation expenditure

1.6. Supporting documents

The following documents are relevant to this report:

- ANT - TRR 2027-32 - Appendix 4H Deliverability Model - 29 Oct 2025 – CONFIDENTIAL, which provides the underlying data for analysis within this report.

This model is summarised in a Dashboard, which provides data visualisations for key analysis that underpins this report. The report contains three sheets:

1. Location, which visualises upcoming projects against the existing Victorian transmission network
2. External labour, which visualises labour supply and demand for key external roles; Civil Labourers, Fitters, Lineworkers and Testers
3. Internal labour, which visualises labour supply and demand for key internal roles; Project Development, Design, Planning Approvals and Internal Delivery.

These sheets enable the user to filter by different criteria, including Location, Asset Type and Project Status. Screenshots of each sheet are included in Section A.1.1 below.

[C-I-C]

A.1. Appendices

A.1.1. Deliverability dashboard sheets

Location sheet

[C-I-C]

External labour sheet

[C-I-C]

Internal labour sheet

[C-I-C]

A.1.2. Labour model overview

Findings from the labour availability assessment are summarised in Figure 13 below.

Figure 13: Summary of findings from labour availability assessment

[C-I-C]

A.1.3. Labour demand estimation approach

The labour demand analysis presented in this report is the product of AusNet's deep investigation of deliverability conducted over the last nine months. This analysis has been a systematic and objective exercise drawn on the collective expertise of AusNet, our delivery partners and our TSAP. This section provides an overview of the labour demand estimation approach used to inform this report. Specific calculations and inputs are captured in the supporting model.

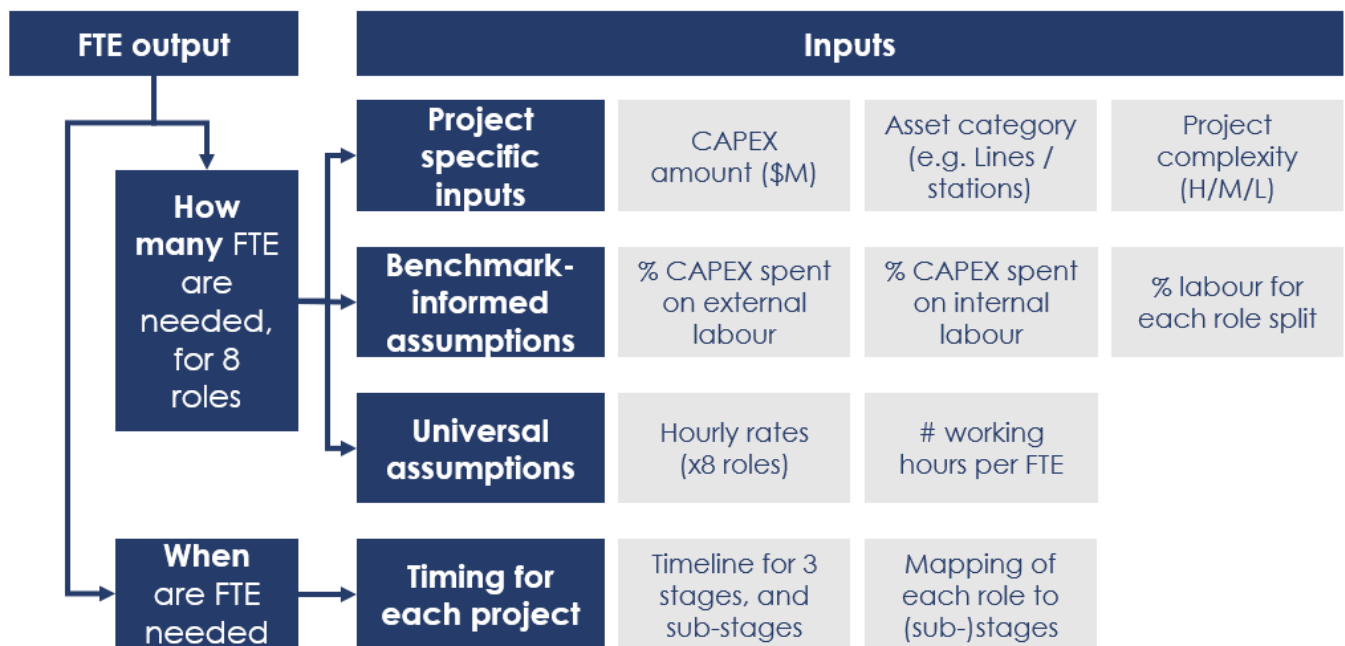
AusNet's Project Development team are a team of estimators, engineers and technical specialists that support the development of non-contestable transmission network projects. This team is responsible for developing the scope and cost of projects. This team developed a labour demand estimation approach for the projects within this TRR proposal, which was extrapolated to consider potential customer-initiated and VTP projects.

The approach considers the project-specific characteristics, benchmarks of similar projects completed by AusNet and project management timelines to devise labour estimates for most of the 8 key roles explored in this analysis.

Data samples were taken from several typical station and line projects that AusNet has delivered or plans to deliver during the upcoming TRR period. An analysis was done on total expenditure across various cost disciplines that included Ausnet spend (internal labour) and external delivery partners (DDP and CDP). A total of 18 projects were assessed to inform our analysis of labour demand.

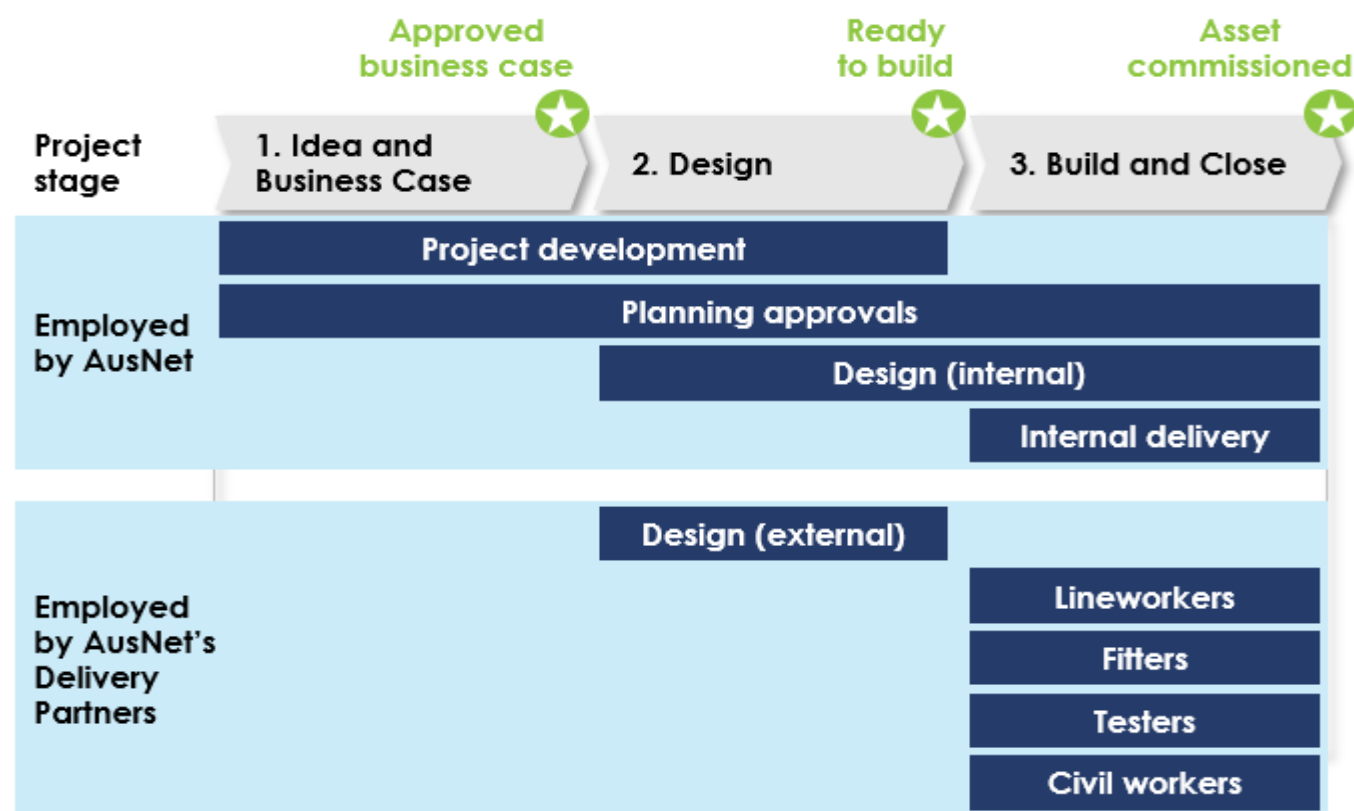
Figure 14 below outlines the approach to calculate labour demand estimates. This approach below was used for fitter, testers, line workers, civil workers, design engineers and planning approvals. Project development and internal delivery staff were assessed using an effort-based approach as the scoping and timing for these functions are generally more well defined.

Figure 14: Labour demand estimation approach



The eight key roles explored in this analysis support different stages of the project lifecycle. For instance, a single project will need to be scoped and estimated by Project Development, then designed by internal and external Design resources, then constructed by Civil Workers, Fitters, Testers and Lineworkers. Figure 15 below outlines which roles are active across each stage of a project.

Figure 15: Mapping of each role to stages of project delivery



Additional granularity is added to forecasts for external workers within the Build stage for more complex station and lines projects, noting that effort is typically not constant across the Build Stage. This reflects the reality of construction activities, where civil effort is typically front-ended, and fitter and tester effort is typically back ended. Table 7 below outlines the effort across three sub-stages of a high complexity station (e.g. the SMTS Transformer Replacement) project.

Table 7: Effort profile across build stage for a 30-month build stage high complexity stations project

Sub-stage	1. Civil and prep	2. Main works	3. Commission and finish
Timing for 18-month build	9 months (30%)	17 months (55%)	5 months (15%)
Lineworker	[C-I-C]	[C-I-C]	[C-I-C]
Fitter	[C-I-C]	[C-I-C]	[C-I-C]
Tester	[C-I-C]	[C-I-C]	[C-I-C]
Civil	[C-I-C]	[C-I-C]	[C-I-C]

Figures are rounded for simplicity, and may not add to 100%

Smaller Projects (e.g., asset management programs, low complexity lines and low complexity stations projects) have relatively flatline effort across the Build stage.

Example project: SMTS Gas Insulated Switchgear Replacement project

This project will replace the 500kV GIS, F2 transformer and associated equipment at South Morang Terminal Station. AusNet has conducted extensive exploration of the project to identify the preferred option and associated budget. The demand uses inputs develop through this process to create an estimate of FTE required for key roles. Key inputs for this project are:

- **Capex:** \$271M total capex, with \$243M within this regulatory period
- **Asset type and complexity:** High complexity stations assets with a high proportion of spend on materials due to the high cost of a GIS
- **Benchmark informed assumptions:** Similar projects spend [C-I-C] of budget on external contracts (i.e. delivery partner resources) and [C-I-C] on internal labour (i.e. AusNet employees). The remaining spend goes to materials (i.e. a transformer), design studies and overheads. Within external contracts the various roles were further reviewed and allocations made based on the anticipated work and time based on the different roles
- **Timing:** The project will be in Build Stage from Oct-2027 to Dec-2032, which extends beyond the end of the next regulatory control period. Within the Build stage, civil effort will be front-ended, and fitter and tester effort will be back-ended.

The model processes these inputs alongside benchmarks from similar high complexity station projects, to estimate the required effort of each role and when they are required. Figure 16 below outlines the resource demand profile for the build stage for this project. Sub-stage 1 (Civil and prep) is heavily Civil focused, with some effort from Fitter and Testers. Sub-stage 2 (Main works) has lower Civil effort, with more focus on Fitters and Testers, and some Lineworker effort. Sub-stage 3 (Commission and finish) shows the ramp down of effort as the project approaches completion. This project will continue beyond the end of the next regulatory control period.

Figure 16: South Morang Terminal Station GIS replacement Full-Time Equivalent (FTE) effort estimation, Build Stage
[C-I-C]

A.1.4. Labour demand perspectives

AusNet's regulated transmission business faces uncertainty in labour demand across this period, as the business will need to deliver capex outside of the TRR process. This includes:

- (1) **Customer-initiated** projects (e.g., augmentations requested by DNSPs or data centre connections)
- (2) **VicGrid's VTP**, which outlines \$7.9B of network expenditure over the next 15 years.

While AusNet is aware that these two drivers will create labour demand, however, this assessment focuses on labour related to the TRR only. Part of the reason for this focus is the relative uncertainty of the VTP scope and customer-initiated projects. Key variables challenging visibility to VTP and customer-initiated work include:

- **Scope uncertainty:** Which projects will actually eventuate, and how much labour will be needed to complete these projects?
- **Contestability uncertainty:** Which projects will be allocated to AusNet's regulated transmission business within the VTP?
- **Timing uncertainty:** When will labour be needed, including the impact of delays from the procurement of materials, outages and planning approvals?

- **Forward visibility uncertainty:** By nature, AusNet will have limited future visibility of customer-initiated projects with AusNet typically only engaged once an application agreement has been lodged with AEMO. This presents significant uncertainty and challenges for developing customer-initiated project labour forecasts

Noting these uncertainties, AusNet has developed three perspectives to understand likely labour demand across the period. Table 8 below outlines these perspectives on how labour demand could eventuate across the period.

Table 8: Labour demand perspectives

Perspective	Scope	Rationale for inclusion
Perspective 1 (TRR only)	TRR only, as outlined in this proposal	To illustrate the labour demand arising from this proposal. This report does not directly assess whether customer-initiated or VTP projects are deliverable within its own right, as this will be dealt with through separate regulatory processes
Perspective 2 (full view)	TRR, customer-initiated and VTP projects, based on publicly available information and internal estimates, with optimistic timelines	
Perspective 3 (full view with delays)	TRR, customer-initiated and VTP projects, based on publicly available information and internal estimates, considers potential deliverability delays to these projects from the procurement of materials, outages and planning approvals	To illustrate different potential perspective of total labour demand for the regulated transmission business, and highlight the uncertainty from customer-initiated and VTP projects

A.1.5. Labour supply estimation approach

The labour supply analysis presented in this report is the product of AusNet's deep investigation of deliverability conducted over the last nine months. This analysis has been a systematic and objective exercise drawn on the collective expertise of AusNet, our delivery partners and our TSAP. This section provides an overview of the labour supply estimation approach used to inform this report. Specific calculations and inputs are captured in the supporting model. Three key approaches were taken to estimate labour supply:

- (1) **Where AusNet employs capability directly** (i.e. Project Development, Planning Approvals and Internal Delivery roles), supply is calculated through current headcount data allocated to each role, with additional reasonable growth informed by previously experienced growth, market conditions, transferability of workers to these roles from other companies and sectors and expected plans to scale these capabilities to support uplifted delivery.
- (2) For the Design role, which **AusNet employs through a combination of internal capability and Design Delivery Partners (DDPs)**, supply is calculated through a combination of internal headcount data and reporting from our DDPs.
- (3) Where **AusNet accesses construction capability through Construction Delivery Partners (CDPs)** (i.e. Lineworker, Fitter, Tester and Civil roles), supply is estimated based on reporting from our delivery partners and Victorian licensing data.

The labour analysis indicates that the greatest potential challenge exists for key electrical roles (i.e. Lineworkers, Fitters and Testers). Hence, a more detailed supply estimation approach was taken for these roles, noting that CDPs utilise resource sharing across different customers and do not have always have directly allocated resources to AusNet. This approach creates a reasonable estimation of the supply available to AusNet's regulated transmission business based on two key sources:

- (1) **CDP monthly resource reporting:** CDPs provide monthly resource updates to AusNet through governance meetings, which report the number of lineworkers, fitters and testers available for AusNet's CDP panel
- (2) **Victorian Electricity Supply Industry (VESI) database:** The database registers each individual who holds an electrical licence to work on Victorian transmission and distribution assets, their employer and relevant certifications.

As the TNSP responsible for 99% of AusNet's transmission infrastructure, AusNet has access to all transmission lineworkers in Victoria. For fitters and testers, these sources are supported by assumptions that isolate the supply available to AusNet's regulated transmission business:



Figure 17 below outlines the supply available to AusNet for the three electrical roles and Figure 18 outlines the methodology to estimate these figures.

Workforce supply for these roles is expected to grow across the period, based on new entries to the market (apprentices, interstate and international transfers) and CDPs allocating a greater proportion of their total capability to AusNet's regulated transmission business. Key drivers of change in supply are:

- [C-I-C]
15
- [C-I-C]
14
- [C-I-C]

11 [C-I-C]
12 [C-I-C]
13 [C-I-C]
14 [C-I-C]

• [C-I-C]

Figure 17: AusNet’s regulated transmission business’ worker supply for key electrical roles (FTE)¹⁵

Company	Lineworker	Fitter	Tester	Company status	Data source
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	CDP panel	CDP resource reports and supporting assumptions
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	Subcontract to CDPs	VESI database and supporting assumptions
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		
Total	[C-I-C]	[C-I-C]	[C-I-C]		

Figure 18: AusNet regulated transmission business’ expected growth in supply for key electrical roles (FTE)

[C-I-C]

¹⁵ CDP and VESI data current as of July 2025

A.1.6. Labour supply potential uplift

The baseline supply estimates within this report are based on the current commercial model approach that AusNet's regulated transmission business utilises to access construction capability (i.e. lineworkers, fitters, testers and civil workers).

Section 1.4.1 outlines AusNet's efforts to implement a new commercial approach to engage this capability in a way that expands capacity and improves efficiency. Figure 19 below outlines three models that AusNet is currently exploring through a market engagement process, and Case Study 1 below outlines a recent example of this that AusNet utilised for a customer-initiated project.

Figure 19: Commercial models that enable an uplift in labour availability

[C-I-C]

Case study 1: [C-I-C]

[C-I-C]

[C-I-C]

Table 9: [C-I-C]

[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]
[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]		[C-I-C]
[C-I-C]	[C-I-C]		[C-I-C]		[C-I-C]
[C-I-C]	[C-I-C]		[C-I-C]		[C-I-C]

A.1.7. Outage and planning approval assessment summary

Table 10 below represents the findings from the deliverability assessment for planned outage availability and planning approvals, as outlined in Section 1.4.

AusNet's Transmission Operations & Control (TOC) team, in conjunction with AEMO NEM Real Time Operations, manages the power system security risks. For upcoming project work, TOC's systems and expertise provide guidance of outage availability for each network asset. TOC have conducted an assessment of the availability of required outages for TRR projects, based on the outage requirements of each project, likely outages for VTP and customer-initiated projects with known scope and timing, and outage constraints on the network.

AusNet's Network Planning and Property teams are responsible for supporting transmission projects to acquire the required planning approvals to complete construction activities, in collaboration with the Project Manager and other parties involved in project delivery. This team utilised their previous project expertise and benchmarking to similar projects to assess the likely time required for TRR projects.

The below table should be read with the following caveats:

- Each project or program will go through a detailed planning process as it approaches delivery. The below findings are a summary of the likely impact of these challenges at this point in time, which may change as each project approaches delivery
- Some projects were not included in the outage assessment due to insufficient information on their location. For instance, the insulator replacement program will occur in various locations across the network, but the exact timelines for the replacement of each specific insulator will be based on the availability of outages and planning approvals.
- Planning approval complexity does not always directly correlate with timeline to gain approvals, as some projects required a more complex set of approvals, but can be attained quickly.
- Planning approvals are undertaken concurrently to other activities, such as detailed design and procurement of materials. This concurrence means that a non-zero time for planning approvals does not always impact the critical path of project delivery.
- Similar to outages, some asset replacement programs require different planning approvals at different locations within the network. Typically, these programs will proceed in locations where approvals have been achieved while approvals are being sought for other areas.

Table 10: Project and program level findings from planned outage availability and planning approval analysis

Project / program	Asset type	Location	Voltage level	Outage complexity	Outage availability assessment	Planning approvals complexity	Planning approvals time (months, approx.)
SMTS 500kV GIS and F2 Transformer Replacement	Station	SMTS	500kV	High	Coordinated	Med	12
KTS 500/220kV Transformer Replacement	Station	KTS	220kV	High	Coordinated	Med	12
NPSD 220kV GIS	Station	NPSD	220kV	High	Delivered	Med	12
SMTS 330/220kV Transformer Replacement	Station	SMTS	220kV	Medium	Delivered	Med	12
SOCI security	Station	Various	n/a	n/a	Delivered	Low	0
LYPS and HWTS 500kV Circuit Breaker Replacement Stage 2	Station	LYPS	500kV	High	Coordinated	Med	12
ROTS 500 kV GIL Replacement	Station	ROTS	500kV	Medium	Coordinated	Med	12
BATS B2 Transformer Replacement	Station	BATS	220kV	Medium	Delivered	Med	12

RCTS Transformer & Switchgear Replacement	Station	RCTS	220kV	High	Prioritised	Low	12
SYTS 500kV GIS Replacement	Station	SYTS	500kV	Low	Coordinated	Med	12
TTS Circuit Breaker Replacement	Station	TTS	220kV	High	Delivered	Med	12
TTS B4 transformer replacement	Station	TTS	n/a	Medium	Delivered	Med	12
Power Transformers and Oil Filled Reactors (02)	Station	Various	n/a	n/a	Delivered	Low	0
MWTS 66kV Circuit Breaker Replacement	Station	MWTS	66kV	Medium	Delivered	Low	0
Circuit Breakers	Station	Various	n/a	n/a	Delivered	Low	6
SHTS Transformer and CB Replacement	Station	SHTS	220kV	High	Delivered	Med	12
MLTS Reactor Replacement	Station	MLTS	500kV	Medium	Coordinated	Med	12
MLTS CB Replacement	Station	MLTS	220kV	High	Coordinated	Low	0
WOTS Spare 330/66/22kV Transformer Procurement	Station	WOTS	n/a	n/a	Delivered	Low	0
Rework	Station	Various	n/a	n/a	Delivered	Low	0
Civil Infrastructure	Station	KTS	n/a	n/a	Delivered	Med	0
Disconnectors and Earth Switches	Station	Various	n/a	n/a	Delivered	Low	0
Non-SOCI security	Station	Various	n/a	n/a	Delivered	Low	0
Consultant	Station	Various	n/a	n/a	Delivered	Low	0
Environmental	Station	Various	n/a	n/a	Not assessed	Low	0
Fire Detection and Suppression	Station	Various	n/a	n/a	Not assessed	Low	6
Instrument Transformers	Station	Various	n/a	n/a	Not assessed	Low	0
Surge Diverters	Station	Various	n/a	n/a	Not assessed	Low	0
DDTS H3 330/220kV Transformer and Circuit Breaker Replacement	Station	DDTS	220kV	Medium	Not assessed	Med	12
Secondary Systems	Secondary	Various	n/a	n/a	Delivered	Low	0
Auxiliary Power Supplies	Secondary	Various	n/a	n/a	Delivered	Low	0
Metering	Secondary	Various	n/a	n/a	Delivered	Low	0
HYTS-APD tower replacement project, Stage 2	Lines	APD, HYTS	500kV	High	Delivered	High	12

Transmission Line Insulators	Lines	Various	n/a	High	Not Assessed	Low	0
Management of Transmission Line Ground Clearances	Lines	Various	n/a	Medium	Not Assessed	Low	6
Transmission Tower Resilience Program	Lines	Various	n/a	Medium	Not Assessed	Low	6
Transmission Line Structures (01)	Lines	HYTS, APD	n/a	Minimal	Not Assessed	Low	0
Tranche1 Rectification Low Spans, TL	Lines	Various	220kV	High	Coordinated	High	12
Transmission Lines Conductors (GW & Ph Cond)	Lines	Various	n/a	n/a	Delivered	Low	6
Transmission Line Fall Arrest Towers	Lines	Various	n/a	n/a	Not assessed	Low	0
Transmission Lines Fall Arrest System (FAS) Racks	Lines	Various	n/a	n/a	Not assessed	Low	0
T624 to T628B HYTS-APD tower replacement	Lines	HYTS, APD	500kV	Minimal	Not Assessed	High	12
Communication Systems	Comms	Various	n/a	n/a	Delivered	Low	0
South West Network Comms Replacement	Comms	Various	n/a	n/a	Delivered	High	12
VNSC & Comms Sites Battery Replacement	Comms	VNSC	220kV	High	Coordinated	Low	0
North East Network Comms Replacement	Comms	Various	n/a	n/a	Delivered	High	12

A.1.8. Case studies of AusNet's actions to uplift deliverability

We are taking action to address deliverability challenges. The below outlines three case studies of these actions.

Case study 2: Using live line work to avoid outage constraints

Context: Upgrading Victoria's transmission network requires taking outages on high-voltage assets, which are often limited by the need to maintain network security and stability. As discussed in Section 1.4.3, these outages present significant challenges, can delay project construction.

What we're doing: We have implemented Live Line Work, which employs specialised equipment and expertly trained crews to work on energised assets. This year, we proudly completed Australia's first live 500kV line diversion into a terminal station, deploying a crew of 30 with specialised resources and four highly skilled live line workers from the US.¹⁶ (See image on right of live line work in action ►).

Why this matters: Live line work avoids the need for outages to complete construction activities, enabling faster project delivery even in situations where securing outages is difficult.



Case study 3: Rezoning terminal stations to expedite delivery

Context: AusNet owns 59 terminal stations, most of which require planning permits due to fragmented zoning. This causes delays and cost escalations.

What we're doing: We're initiating a bulk rezoning across priority sites, working with state and local authorities to develop a new Special Use Zone tailored to transmission infrastructure. This includes program level approvals for cultural heritage and environmental approvals, streamlining delivery across the portfolio.

Why this matters: This approach eliminates redundant permit triggers, significantly reduces planning risks and creates a clear, reliable baseline to inform estimation. This approach accelerates our ability to deliver TRR, VTP and customer-initiated projects.

Case study 4: Developing a lineworker training centre at South Morang

Context: Victoria's major line projects require skilled lineworkers at an unprecedented scale. Less than 25% of Victoria's lineworkers were trained locally, and the state lacks a fit-for-purpose facility to build lineworker capability at scale.

What we're doing: We are re-investing in the South Morang Training Centre to uplift an outdated asset into a training hub capable of authorising interstate and international transfer to work on Victorian assets and fostering the growth of a local pipeline of apprentices. Works planning is now underway to upgrade the site (see image on right of the South Morang site ►).

Why this matters: This initiative will help ensure adequate labour availability in the short term and create a sustainable talent pipeline for AusNet's future.



¹⁶ <https://www.ausnetservices.com.au/news/ausnet-completes-australian-first-live-powerline-transfer>