

Summary: Meeting demand growth in the Western Sydney Aerotropolis 'Priority Growth Area'

RIT-T Project Assessment Conclusions Report

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Summary

This Regulatory Investment Test for Transmission (RIT-T) is a joint planning initiative between Transgrid and Endeavour Energy. It covers options for ensuring reliable supply to the Western Sydney Aerotropolis 'Priority Growth Area' considering demand growth from the development of the Western Sydney International (Nancy Bird Walton) Airport and surrounding metropolitan, commercial and industrial precincts (collectively referred to as the 'Aerotropolis precinct'). Publication of this Project Assessment Conclusions Report (PACR) represents the final step in the RIT-T process, following the Project Specification Consultation Report (PSCR) published on 7 May 2024 and the Project Assessment Draft Report (PADR) published on 4 March 2025.

Transgrid has worked with Endeavour Energy and determined that the expected increase in demand from developments in the Aerotropolis precinct will result in power flows exceeding the capacity of the Macarthur 132 kV transmission Bulk Supply Point (BSP) potentially from 2026/27 under system normal conditions. This may lead to load shedding under both system normal and contingency conditions at the Macarthur 132 kV BSP, after Endeavour Energy completes the first phase of its supply network upgrades in the area.¹

This PACR has been prepared in conjunction with Endeavour Energy (as the relevant distribution network service provider).²

Identified need: relieving network constraints to facilitate the connection of load and provide net market benefits

Together, we have identified the opportunity to improve network supply capacity to the Aerotropolis precinct, which is expected to provide significant net market benefits by eliminating the need for load shedding. This will result in an overall increase in net benefits to participants in the National Electricity Market (NEM) and is considered a 'market benefits' driven RIT-T (i.e., as opposed to a 'reliability corrective action').

No submissions received in response to the PADR and there have been no material developments

We published a PADR on 4 March 2025 and invited written submissions on the material presented within the document. No submissions were received in response to the PADR.

In addition, no additional credible options were identified during the consultation period following publication of the PADR. No other material changes have occurred since the PADR.

On 21 November 2024, the requirements set out in the Australian Energy Regulator's Regulatory Investment Test for Transmission (RIT-T) Application Guidelines were amended. The amended guidelines now expect a RIT-T proponent to explicitly consider community engagement and social licence during the RIT-T process.

¹ Endeavour Energy completed a Regulatory Investment Test for Distribution (RIT-D) in January 2022 to address network limitations caused by increasing demand in the Aerotropolis area. This RIT-D identified the construction of a 26.5km 132kV underground feeder with 275MVA capacity that spans between South Erskine Park zone substation (ZS) to the Bringelly ZS as the preferred option. The project is expected to be in place by 2024/25 and will support the various new distribution substations in the region designed to accommodate the increase in demand.

² Consistent with the joint-planning requirements in the National Electricity Rules.

The amended guidelines mean that Transgrid must consider social licence principles in the identification of credible options. Transgrid considers that through early engagement we can begin to build relationships and trust to gain communities input into the planning of a project during the early design phase as part of the RIT-T. When considering an option, Transgrid will undertake an assessment of community and stakeholder benefits and impacts to determine the appropriate level of stakeholder and community consultation. Any findings and feedback will be used to determine the most likely cost and delivery timeline for the option, and uncover opportunities that can deliver sustainable social legacy outcomes, informed by community engagement.

Transgrid is a strong supporter of involving community in the option design process to better gain community acceptance for the option and reduce the risk of delay to project timelines due to community disagreement. Through earlier engagement we can quantify prudent and efficient social licence initiatives and mitigate impacts on project timing.

The new guideline requirements do not apply to any RIT-T project where a PSCR was published prior to 21 November 2024. Since the PSCR for this RIT-T was published before this date, this RIT-T is not subject to the new requirements. However, this provides an excellent opportunity for Transgrid to engage with communities through other existing approval processes.

Given the location and scope of the preferred option, the potential impacts to the surrounding community appear to be relatively low. Should the preferred option materialise Transgrid will undertake community and stakeholder engagement to ensure project impacts are minimised.

Transgrid is committed to continuing community engagement post the RIT-T through these alternative approval processes, ensuring that community input remains a vital part of our project planning and execution.

Credible options considered

We consider that there are two feasible options from a technical, commercial, and project delivery perspective that can be implemented in sufficient time to meet the identified need. These are summarised in Table E-1.

Table E-1 Summary of the credible options

Option	Description	Capital cost (\$m)		
		Transgrid	Endeavour Energy	Total
Option 1	New BSP next to the Kemps Creek substation	\$111.7m	\$25.0m	\$136.7m
Option 2	New Airport South BSP supplied from cut-in to Line 39	\$161.0m	\$102.1m	\$263.1m

For both options, all works are estimated to take six years to complete and the new BSP has an expected commissioning date of 2029/30.

Non-network options are not expected to be able to assist with this RIT-T

We do not consider that there will be a non-network solution, or group of solutions, that forms a potential credible option on a standalone basis, or that forms a significant part of a potential credible option for this RIT-T. This is due to the network augmentation being required to facilitate substantial new loads, i.e., the

investment is being built solely for greenfield load developments (and the magnitude of these developments is such that realistic non-network solutions cannot alter the timing or scope of the expected network investment). Additionally, we did not receive any submissions in relation to non-network options in response to the PSCR or PADR.

Three reasonable scenarios have been assessed

The credible options are assessed under three scenarios as part of this PACR assessment. Within this assessment, the only market benefit likely to be material is changes in involuntary load shedding. As a result, the three PACR scenarios differ only through their assumed local demand forecasts, as this is the key parameter influencing the ranking of the credible options.

Given that wholesale market benefits are not relevant for this RIT-T, the three scenarios implicitly assume the expected most likely scenario for the 2024 ISP (i.e., the 'Step Change' scenario).

Option 1 is the preferred option

Option 1 is the preferred option at this final stage because it is the credible option that maximises the net present value of the net economic benefit. Option 1 results in a weighted average NPV of approximately \$600 million, in present value terms, across the scenarios used in this RIT-T.

In addition, unlike Option 2, Option 1 will not add extra loading to the already heavily loaded Line 39, which may lead to network constraints causing a reduction in renewable generation available from the southern Sydney area.

This PACR therefore finds that Option 1 is the preferred option to supply the expected increase in demand from developments in the Greater Western Sydney Aerotropolis 'Priority Growth Area'. Option 1 involves the commissioning of a new BSP next to the existing Kemps Creek substation.

The capital cost of this option is approximately \$136.7 million, which is comprised of \$111.7 million in Transgrid costs and \$25.0 million in Endeavour Energy costs. Routine operating and maintenance costs are estimated at \$904,600/year (approximately 1 per cent of total capital expenditure) for Transgrid and \$100,000/year (approximately 0.4 per cent of total capital expenditure) for Endeavour Energy.

All works are estimated to take six years to complete and the new BSP has an expected commissioning date of 2029/30.

Please note that the costs and scope as detailed in this document for Endeavour Energy are for the initial exiting of capacity from the proposed Bulk Supply Point and do not comprehensively cover the scope of distribution network works required to supply the broader Aerotropolis growth area. Further works to be undertaken by Endeavour Energy will be covered by future RIT-Ds.

Next steps

This PACR represents the final step of the consultation process in relation to the application of the RIT-T process undertaken by Transgrid.

Parties wishing to raise a dispute notice with the AER may do so prior to 3 September 2025 (30 days after publication of this PACR). Any dispute notices raised during this period will be addressed by the AER within

40 to 100 days, after which the formal RIT-T process will conclude. Further details on the RIT-T can be obtained from Transgrid's Regulation team via regulatory.consultation@transgrid.com.au. In the subject field, please reference 'Western Sydney Aerotropolis Priority Growth Area PACR'.