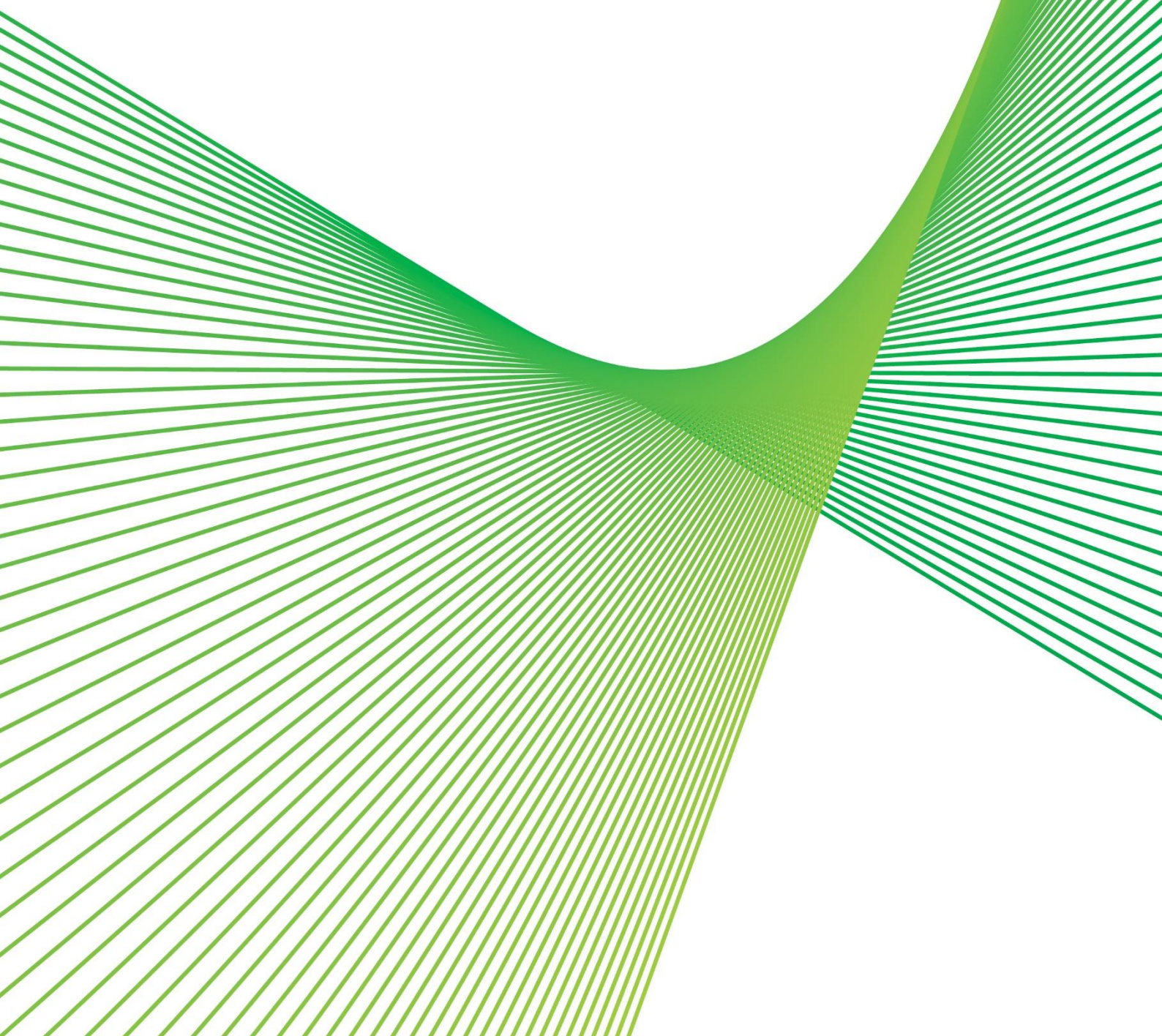


# **Summary: Maintaining safe and reliable operation of Sydney East, Wagga 132 kV, and Dapto substations**

RIT-T Project Assessment Conclusions Report

Date of issue: 22 August 2025



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## Summary

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We are applying the Regulatory Investment Test for Transmission (RIT-T) to options for maintaining the safe and reliable operation of Sydney East, Wagga 132 kV and Dapto substations. Publication of this Project Assessment Conclusions Report (PACR) is the final step in the RIT-T process.

Substation gantries are essential for the safe and reliable operation of the whole substation. The gantries at the Sydney East, Wagga 132 kV, and Dapto substations display evidence of corrosion, which, if unaddressed, may result in the failure of the steelwork, connection bolts, holding down bolts, or baseplates. The failure of the gantries may in-turn result in a loss of supply to end consumers, injury to staff and damage to other critical substation equipment. These events may also affect more than one system element at the same time, which would require significant time to rectify.

The purpose of this RIT-T is to examine and consult on options to address the corrosion of the existing gantries at the Sydney East, Wagga 132 kV, and Dapto substations and reduce the likelihood of prolonged and involuntary load shedding across NSW.

### **Identified need: maintain safe and reliable operation of the Sydney East, Wagga 132 kV, and Dapto substations**

The identified need for this project is to maintain the safe and reliable operation of the Sydney East, Wagga 132 kV, and Dapto substations and the broader transmission network in NSW by addressing the risk of gantry failure.

Condition assessments performed through our routine maintenance program has shown degradation in the condition of these gantries which will increase their risk of failure. Without intervention, other than ongoing business-as-usual maintenance, the assets are expected to deteriorate further and more rapidly. This will increase the risk of supply interruptions to our customers as well as safety, environmental and financial consequences.

Transgrid considers the proposed investment to be a 'market benefits' driven RIT-T as the proposed investment is for the purpose of maintaining network security at critical transmission substations, which is estimated to deliver significant benefits in terms of avoided involuntary load shedding (ie, compared to if nothing is done and corrosion worsens). The investment will also assist Transgrid to manage and mitigate safety risks that would otherwise arise from a failure in substation gantries<sup>1</sup>.

While the purpose of the proposed investment has similarities to those made under a reliability corrective action identified need (ie, to avoid involuntary load shedding), the scope of the current reliability standards applicable to Transgrid do not extend to multiple failures of transmission network elements that would be expected to result from a failure of substation gantries (e.g., damage to and failure of multiple busbar sections at the same substation). It follows that the proposed investment is driven by a 'market benefits'

### **No submissions received in response to the Project Specification Consultation Report**

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<sup>1</sup>Transgrid manages and mitigates safety risk to ensure they are below risk tolerance levels or 'As Low As Reasonably Practicable' ('ALARP'), in accordance with Transgrid's obligations under the New South Wales *Electricity Supply (Safety and Network Management) Regulation 2014* and Transgrid's Electricity Network

We published a Project Specification Consultation Report (PSCR) on 8 April 2025 and invited written submissions on the material presented within the document. No submissions were received in response to the PSCR.

## No material developments since publication of the PSCR

No additional credible options were identified during the consultation period following publication of the PSCR. In addition, no material changes have occurred since the PSCR that have made an impact on the preferred option.

## Credible options considered

We have considered that there is only one credible option from a technical, commercial, and project delivery perspective. This is summarised in Table E-1.

Table E-Error! No text of specified style in document. Summary of the credible options

Option	Description	Capital costs (\$M, 2024/25)
Option 1	Steelwork replacement	27.93 (± 25%)

The preferred option is Option 1, as it has the highest positive weighted NPV result of the technically and commercially feasible options which have been considered at this stage of the RIT-T process. In consideration of the delivery requirements and the economic benefit NPV analysis for the need, its optimal timing is 2026/27.

It is expected that the replacement works will be undertaken in various phases between January to December in both 2026 and 2031. The total estimated capital cost is \$27.93m (\$2024-25). The breakdown of capital costs for each substation is listed below:

- Sydney East: \$4.78m
- Wagga 132 kV: \$8.04m
- Dapto: \$15.11m

Two other options were considered but not progressed including on/offsite refurbishment and elimination of gantries by alternate methods. The reasons these options were not progressed are outlined in section 3.3 of this PACR.

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

We do not consider that non-network solutions can assist with meeting the identified need for this RIT-T. This is driven by the fundamental role that the identified gantries play in the transmission of electricity at a substation, the enduring need for the Sydney East, Wagga 132 kV, and Dapto substations.

## No submissions received in relation to non-network options

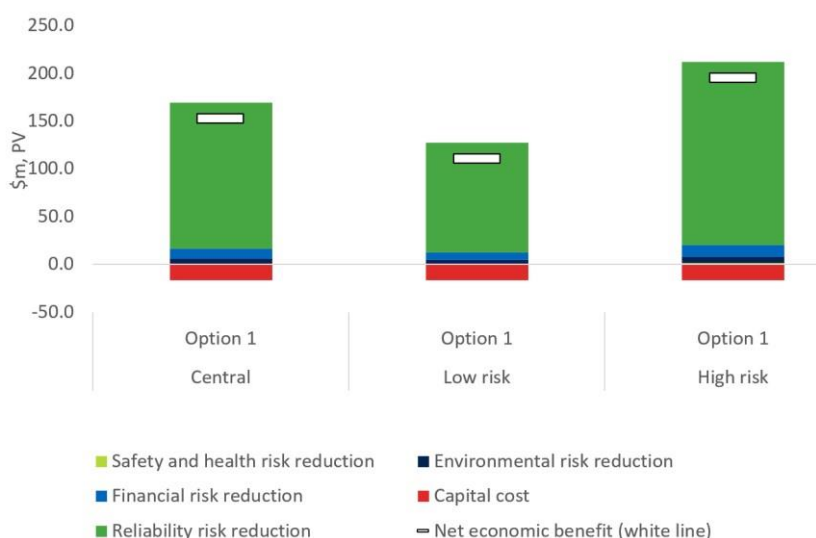
In the PSCR, we noted that we do not consider non-network options to be commercially and technically feasible to assist with meeting the identified need for this RIT-T. This is because any non-network solution for this need is expected to only add to the costs of this option without providing any net benefits. We

invited parties to make written submissions regarding the potential of non-network options to satisfy, or contribute to satisfying, the identified need for this RIT-T. No submissions were received in response to the PSCR in relation to non-network options.

### The replacements are found to deliver strong positive net benefits

The figure below provides a breakdown of estimated benefits, showing almost all of the benefits are derived from avoided involuntary load shedding, while other avoided costs contribute relatively small amounts to overall gross benefits.

Figure E-1 Net economic benefits (\$m, PV)



The table below summaries the net market benefit in NPV terms across the three scenarios, as well as on a weighted basis. The table shows that replacement of the assets is found to have positive net market benefits for all scenarios investigated. On a weighted basis, this investment is expected to deliver approximately \$152.82 million in net market benefits.

### Conclusion

This PACR finds that replacement works on the identified assets is the preferred option. In particular, this involves the replacement of substation gantries at Transgrid’s Sydney East, Wagga 132 kV, and Dapto substations, including the replacement of insulators and conductor fittings. By undertaking the replacement works, the life of the affected substation gantries at the Sydney East, Wagga 132 kV, and Dapto substations are expected to be extended by approximately 45 years.

Option 1 is found to have positive net benefits under all scenarios investigated and, on a weighted basis, will deliver \$152.82 million in net economic benefits over the assessment period.

The estimated capital expenditure associated with this option is \$27.93 million. The work is being executed in two stages:

- **Stage One:** Planning, design, development and procurement (including completion of the RIT-T) will occur between 2023/24 and 2025/26, while project delivery and construction will occur in 2025/26 and 2026/27. All works are expected to be completed by 2026/27.
- **Stage Two:** Planning, design, development and procurement will occur between 2028/29 and 2030/31, while project delivery and construction will occur in 2030/31 and 2031/32. All works are expected to be completed by 2031/32.

Routine operating and maintenance costs across both stages are estimated at approximately \$91,298 per annum (in \$2024/25).

All works would be completed in accordance with the relevant standards with minimal modification to the wider transmission assets. Necessary outages of affected line(s) in service would be planned appropriately in order to complete the works with minimal impact on the network.

## 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. It follows a PSCR released on 8 April 2025. No submissions were received in response to the PSCR.

The second step of the RIT-T process, production of a Project Assessment Draft Report (PADR), was not required as Transgrid considers its investment in relation to the preferred option to be exempt from that part of the process under NER clause 5.16.4(z1). Production of a PADR is not required due to:

- the estimated capital cost of the proposed preferred option being less than \$54 million;
- we have identified in PSCR of our preferred option and the reasons for that option, and noted that we will be exempt from publishing PADR for our preferred option; and
- we consider that the preferred option does not have a material market benefit (other than benefits associated with changes in voluntary load curtailment and involuntary load shedding).

Parties wishing to raise a dispute notice with the AER may do so prior to 20 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](mailto:regulatory.consultation@transgrid.com.au). In the subject field, please reference 'Steelworks Remediation Program PACR'.