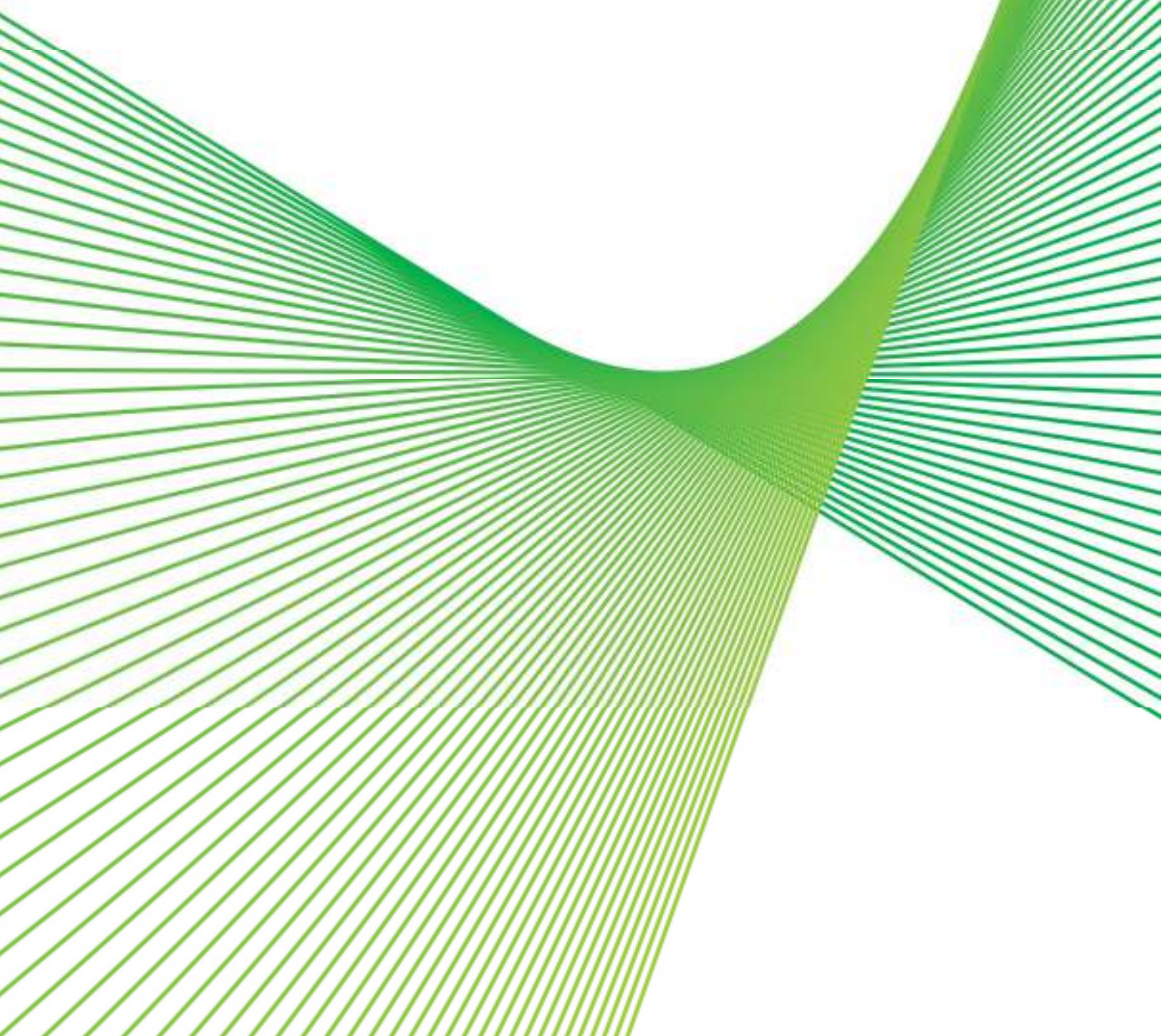


# Summary: Increasing Capacity for Generation in Wagga North Area

RIT-T Project Specification Consultation Report

Region: Southern NSW

Date of issue: 19 December 2024



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## Summary

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We are applying the Regulatory Investment Test for Transmission (RIT-T) to options for improving capacity for renewable generation in the Wagga North area. Publication of this Project Specification Consultation Report (PSCR) represents the first step in the RIT-T process.

The Wagga North area has seen significant growth in renewable generation connections to the transmission network, as part of the wider energy market transition. Currently, approximately 409 MW of renewable generation is already in service in this area. Transgrid is also aware of two additional BESS that are proposed to be developed in the area with a combined capacity of 120 MW.

Lines 9R5, 9R6 and 991 play a central role in transmitting the electricity from these renewable generators via our Wagga North 132/66 kV and Wagga 330/132 kV substations. Our analysis shows that the load requirements on Lines 9R5 and 9R6 exceed their thermal rating under system normal network conditions if the current in-service renewable generators in the Wagga North area are dispatched to their maximum capacities. Lines 9R6 and 9R5 have consistently appeared as top 10 binding constraints in AEMO's monthly constraint reports, with renewable generation being constrained to ensure reliable operation of the lines.

An opportunity has been identified to upgrade the 132 kV Lines 9R6 and 9R5 supplying Wagga North 132/66 kV substation to alleviate potential thermal constraints due to recent renewable generation developments in the Wagga North area. In all credible scenarios there is expected to be significant economic benefit to the National Electricity Market (NEM) to strengthen the transmission network to relieve this constraint and realise net market benefits by avoiding curtailment of low-cost renewable generation in the Wagga North area.

### **Identified need: provide net benefits to the market by improving capacity for renewable generation in the Wagga North area**

The identified need for this RIT-T is to increase overall net market benefits in the NEM through improving capacity and relieving existing constraints on renewable generation in the Wagga North area. This will enable greater output from renewable generation in this region of the NEM.

We have classified this RIT-T as a 'markets benefits' driven RIT-T, delivering market benefits primarily through:

- lower fuel costs, by enabling low-cost renewable generation to displace higher cost conventional generation elsewhere;
- lower capital costs, by reducing (or deferring) the need for new investment in generation plants; and
- reducing Australia's greenhouse gas emissions.

### **Four credible network options have been identified**

We have identified four credible network options that meet the identified need from a technical, commercial, and project delivery perspective.<sup>1</sup> These options are summarised in Table E-1 below.

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<sup>1</sup> As per clause 5.15.2(a) of the NER.

Table E-1 Option summary

Option	Description	Estimated capital cost (\$m 2024/25)	Expected delivery time
Option 1	Restrung Lines 9R5 and 9R6 with a “Mango” ACSR/GZ <sup>2</sup> conductor (or equivalent) operating at 85°C	14.3 (+/- 25%)	2027-28
Option 2	Restrung Lines 9R5 and 9R6 with a high-temperature conductor operating at 180°C	12.5 (+/- 25%)	2027-28
Option 3	Construct a new double circuit 132 kV transmission line from Wagga 330 kV substation to near Wagga North 132/66 kV substation with Line 991 re-routed	49.9 (+/- 25%)	2030-31
Option 4	Construct a new single circuit 132kV transmission line between Wagga North 132/66 kV substation and Wagga 330 kV substation	42.1 (+/- 25%)	2029-30

### Non-network options are likely to help address the identified need

We consider that non-network options may be able to assist with meeting the identified need, either as standalone options or in combination with network options (or components of these options).

At this stage, we consider that possible options include but are not limited to bulk or aggregated energy storage systems, e.g. battery energy storage systems (BESS).

This PSCR includes information on the technical characteristics that non-network options would need to meet to assist with meeting the identified need for this RIT-T, including:

- the magnitude of MW support required;
- the expected cumulative exposure of Line 9R5 and 9R6 to overload per annum (hours)
- the location that the support would need to be provided in; and
- the expected time of the day that the support would be required.

We encourage parties to make written submissions regarding the potential of non-network options to satisfy or contribute to satisfying the identified need.

### Wholesale market modelling will be adopted for the PADR analysis

The options considered are expected to affect dispatch outcomes in the wholesale market, relative to the base case. The additional transmission capacity is expected to provide for more efficient outcomes in the wholesale market, by increasing the output of low-cost renewable generation in the Wagga area and displacing higher cost conventional generation elsewhere.

<sup>2</sup> Aluminium conductor steel-reinforced cable

We consider that market benefits from changes in fuel consumption arising through differences in the size and patterns of generation dispatch have the potential to be material for this RIT-T and will be estimated through wholesale market modelling undertaken as part of the Project Assessment Draft Report (PADR).

## Submissions and next steps

We welcome written submissions on materials contained in this PSCR. Submissions are particularly sought on the credible options presented and from potential proponents of non-network options that could meet the technical requirements set out in this PSCR.

Submissions are due on 26 March 2025 and should be emailed to our Regulation team via [regulatory.consultation@Transgrid.com.au](mailto:regulatory.consultation@Transgrid.com.au).<sup>3</sup> In the subject field, please reference 'Wagga North Capacity Increase PSCR.'

At the conclusion of the consultation process, all submissions received will be published on our website. If you do not wish for your submission to be made public, please clearly specify this at the time of lodgement.

The next formal stage of this RIT-T is the publication of the PADR. The PADR will include the full quantitative analysis of all credible options and is anticipated to be published by mid-2025.

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