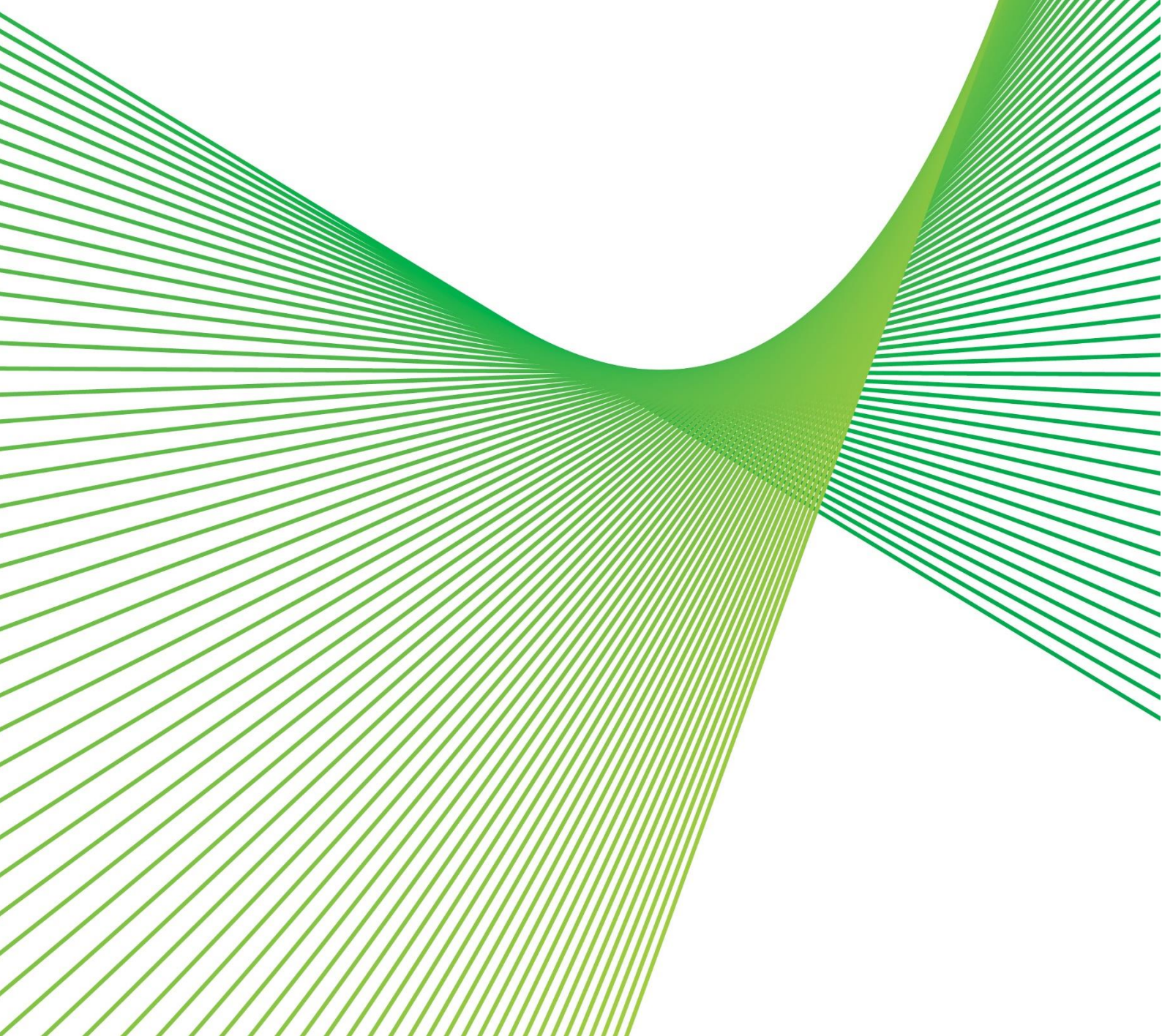


Increasing Capacity for Generation in Wagga North Area

RIT-T Project Specification Consultation Report

Region: Southern NSW

Date of issue: 19 December 2024



Disclaimer

This suite of documents comprises Transgrid's application of the Regulatory Investment Test for Transmission (RIT-T) which has been prepared and made available solely for information purposes. It is made available on the understanding that Transgrid and/or its employees, agents and consultants are not engaged in rendering professional advice. Nothing in these documents is a recommendation in respect of any possible investment.

The information in these documents reflect the forecasts, proposals and opinions adopted by Transgrid at the time of publication, other than where otherwise specifically stated. Those forecasts, proposals and opinions may change at any time without warning. Anyone considering information provided in these documents, at any date, should independently seek the latest forecasts, proposals and opinions.

These documents include information obtained from the Australian Energy Market Operator (AEMO) and other sources. That information has been adopted in good faith without further enquiry or verification. The information in these documents should be read in the context of the Electricity Statement of Opportunities, the Integrated System Plan published by AEMO and other relevant regulatory consultation documents. It does not purport to contain all of the information that AEMO, a prospective investor, Registered Participant or potential participant in the National Electricity Market (NEM), or any other person may require for making decisions. In preparing these documents it is not possible, nor is it intended, for Transgrid to have regard to the investment objectives, financial situation and particular needs of each person or organisation which reads or uses this document. In all cases, anyone proposing to rely on or use the information in this document should:

- Independently verify and check the currency, accuracy, completeness, reliability and suitability of that information
- Independently verify and check the currency, accuracy, completeness, reliability and suitability of reports relied on by Transgrid in preparing these documents
- Obtain independent and specific advice from appropriate experts or other sources.

Accordingly, Transgrid makes no representations or warranty as to the currency, accuracy, reliability, completeness or suitability for particular purposes of the information in this suite of documents.

Persons reading or utilising this suite of RIT-T-related documents acknowledge and accept that Transgrid and/or its employees, agents and consultants have no liability for any direct, indirect, special, incidental or consequential damage (including liability to any person by reason of negligence or negligent misstatement) for any damage resulting from, arising out of or in connection with, reliance upon statements, opinions, information or matter (expressed or implied) arising out of, contained in or derived from, or for any omissions from the information in this document, except insofar as liability under any New South Wales and Commonwealth statute cannot be excluded.

Privacy notice

Transgrid is bound by the *Privacy Act 1988 (Cth)*. In making submissions in response to this consultation process, Transgrid will collect and hold your personal information such as your name, email address, employer and phone number for the purpose of receiving and following up on your submissions.

Under the National Electricity Law, there are circumstances where Transgrid may be compelled to provide information to the Australian Energy Regulator (AER). Transgrid will advise you should this occur.

Transgrid's Privacy Policy sets out the approach to managing your personal information. In particular, it explains how you may seek to access or correct the personal information held about you, how to make a complaint about a breach of our obligations under the Privacy Act, and how Transgrid will deal with complaints. You can access the Privacy Policy here (<https://www.Transgrid.com.au/Pages/Privacy.aspx>).

Executive summary

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.¹ These options are summarised in Table E-1 below.

¹ 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 ² 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.

² 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.³ 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.

³ Transgrid is bound by the Privacy Act 1988 (Cth). In making submissions in response to this consultation process, Transgrid will collect and hold your personal information such as your name, email address, employer and phone number for the purpose of receiving and following up on your submissions. If you do not wish for your submission to be made public, please clearly specify this at the time of lodgement. See Privacy Notice within the Disclaimer for more details.

Contents

Disclaimer	1
Privacy notice	1
Executive summary.....	3
Identified need: provide net benefits to the market by improving capacity for renewable generation in the Wagga North area	3
Four credible network options have been identified	3
Non-network options are likely to help address the identified need	4
Wholesale market modelling will be adopted for the PADR analysis	4
Submissions and next steps.....	5
1. Introduction.....	8
1.1 Purpose of this report.....	8
1.2 Submissions and next steps	8
2. The identified need.....	10
2.1 Background to the identified need	10
2.2 Description of the identified need	12
2.3 Assumptions underpinning the identified need.....	13
2.3.1 Renewable generation in the Wagga North area is growing	13
2.3.2 Thermal capacity of Line 9R5 and Line 9R6 is insufficient to meet increasing generation requirements.....	13
2.3.3 Electricity generation and demand in the Wagga Wagga SAP	15
3. Options that meet the identified need.....	17
3.1 Base case.....	17
3.2 Option 1 – Restraining Lines 9R5 and 9R6 with a Mango ACSR/GZ conductor (or equivalent) operating at 85°C.....	19
3.3 Option 2 – Restraining Lines 9R5 and 9R6 with a high-temperature conductor operating at 180°C .	19
3.4 Option 3 – Double circuit transmission line	20
3.5 Option 4 – Single circuit transmission line.....	20
3.6 Options considered but not progressed.....	21
3.7 No material inter-network impact is expected.....	22
3.8 Community engagement	22
4. Technical characteristics for non-network options.....	24
5. Materiality of market benefits.....	25
5.1 Wholesale market modelling will be adopted for the PADR	25

5.2 No other classes of market benefits are material 25

6. Overview of the assessment approach..... 27

6.1 Assessment period and discount rate..... 27

6.2 Approach to estimating option costs..... 27

Appendix A Compliance checklist 30

1. Introduction

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 Wagga North area with a combined capacity of 120MW.

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. The network constraints to manage Lines 9R6 and 9R5 overloading 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 benefits 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. As a result, we have classified this RIT-T as a 'markets benefits' driven RIT-T.

1.1 Purpose of this report

The purpose of this PSCR⁴ is to:

- set out the reasons why we propose that action be taken (the 'identified need')
- present the options that we currently consider address the identified need
- outline the technical characteristics that non-network options would need to provide
- summarise how we intend to assess options for addressing the identified need in the Project Assessment Draft report (PADR)
- allow interested parties to make submissions and provide input to the RIT-T assessment.

1.2 Submissions and next steps

We welcome written submissions on materials contained in this PSCR.

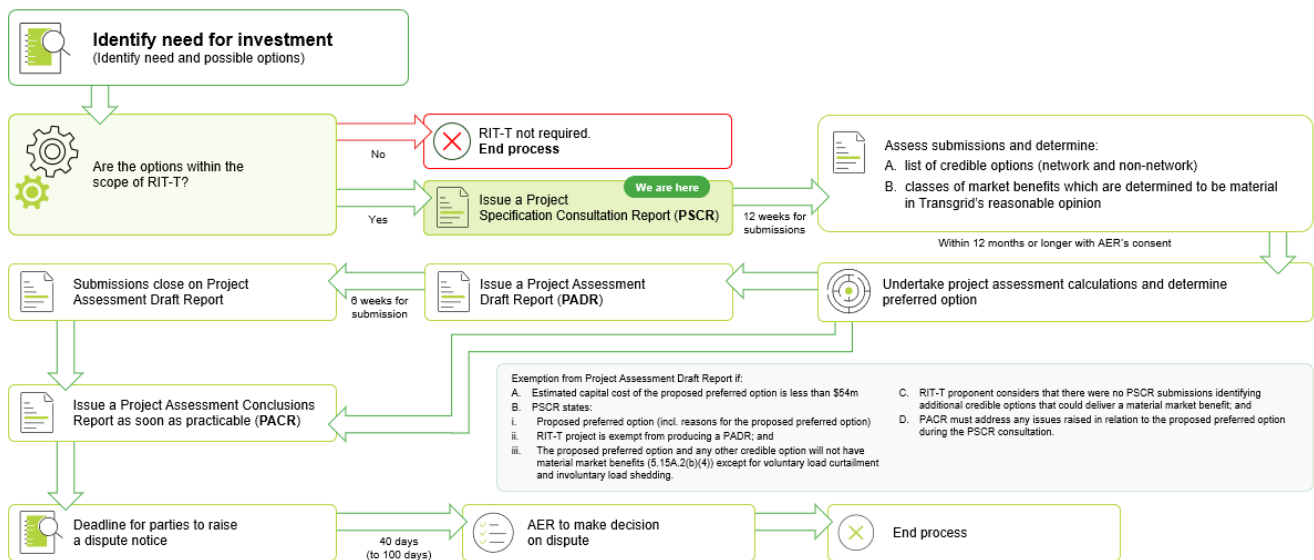
⁴ See Appendix A for the National Electricity Rules requirements.

Submissions are due on 26 March 2025 and should be emailed to our Regulation team via regulatory.consultation@Transgrid.com.au.⁵ 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.

Figure 1-1 This PSCR is the first stage of the RIT-T process



⁵ Transgrid is bound by the Privacy Act 1988 (Cth). In making submissions in response to this consultation process, Transgrid will collect and hold your personal information such as your name, email address, employer and phone number for the purpose of receiving and following up on your submissions. If you do not wish for your submission to be made public, please clearly specify this at the time of lodgement. See Privacy Notice within the Disclaimer for more details.

2. The identified need

This section outlines the identified need for this RIT-T, as well as the assumptions and data underpinning it. It sets out background information related to the transmission network in the Wagga area.

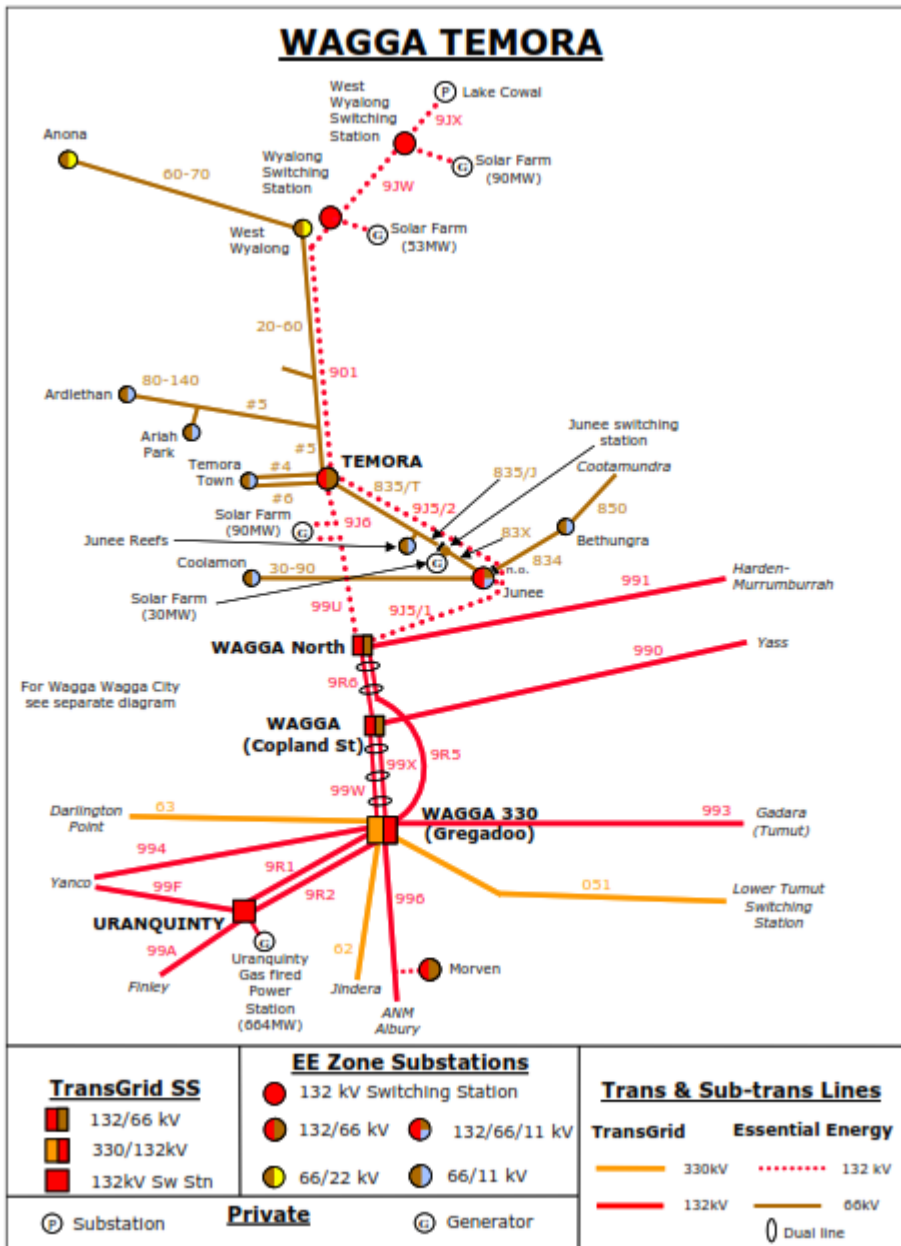
2.1 Background to the identified need

Transgrid's Wagga North 132/66 kV substation is in Southern NSW in an area with significant new investment in renewable generation. Transgrid provides bulk supply from Wagga North substation.

The Wagga North substation is supplied by 132 kV Lines 9R5, 9R6 and 991. These lines are strung with ACSR Panther conductors at a design operating temperature of 85°C. These lines have normal and emergency ratings of 125 MVA and 137 MVA respectively. Lines 9R5 and 9R6 interconnect Wagga North 132/66 kV and Wagga 330/132 kV substations, while Line 991 connects to Yass 330/132 kV substation via Murrumburrah. Lines 9R5 and 9R6 are approximately 12km and 7.8km long, respectively.

A map showing the location of the Wagga North area and Essential Energy's network in the Temora region is set out below in Figure 2-1.

Figure 2-1 Transgrid and Essential Energy network in Wagga/Temora area⁶



⁶ Essential Energy, 2023, Distribution Annual Planning Report Dec 2023,

2.2 Description of the identified need

The thermal constraints imposed due to the rating of the 132 kV Lines 9R5, 9R6 and 991 are constraining the output of renewable generation in the Wagga area. At times of high generation output, thermal overloading of these lines can occur. This has resulted in the Australian Energy Market Operator (AEMO) introducing operational constraints in the NEM Dispatch Engine (NEMDE) to limit power flows to manage the risk of thermal overload. AEMO’s monthly constraint reports⁷ have consistently identified lines in the Wagga North area as a top 10 constraint on the NEM since September 2023.

Table 2-1 below summarises the most recent AEMO monthly constraint reports relevant to Wagga North 9R5, 9R6 and 991 lines. AEMO additionally provides data on the total hours each constraint was binding during previous calendar years. The 9R5 and 9R6 lines were binding for 299.3 hours and 605.3 hours in 2022 and 2023, respectively⁸.

Table 2-1 Summary of AEMO monthly constraint reports

Year	Month	Top 10 position	Constraint Equation ID	#DIs (Hours)	Limit Type
2023	September	10 th	N>NIL_9R6_991	1356 (113.0)	Thermal
2023	October	9 th	N>NIL_9R6_9R5	1156 (96.3)	Thermal
2023	November	7 th	N>NIL_9R6_991	1519 (126.6)	Thermal
2023	December	6 th	N>NIL_9R6_991	1736 (144.7)	Thermal
2024	January	7 th	N>NIL_9R6_991	2084 (173.7)	Thermal
2024	February	7 th	N>NIL_9R6_991	2045 (170.4)	Thermal
2024	March	4 th	N>NIL_9R6_991	1766 (147.2)	Thermal
2024	April	5 th	N>NIL_9R6_9R5	1100 (91.7)	Thermal
		9 th	N>NIL_9R6_991	732 (61.0)	Thermal
2024	May	5 th	N>NIL_9R6_9R5	532 (44.3)	Thermal

The identified need for this RIT-T is to increase consumer and producer surplus in the NEM through relieving network constraints on the supply of renewable generation in the Wagga North area. This will enable a greater amount of renewable generation produced in the Wagga area to be supplied to customers in the NEM.

Within the context of the RIT-T assessment, greater supply of renewable generation is expected to deliver market benefits primarily through:

- lower fuel costs, by enabling lower cost renewable generation to displace higher cost conventional generation elsewhere in the NEM;
- lower capital costs, by reducing (or deferring) the need for new investment in generation plants to meet growing electricity demand in the future; and
- reducing Australia’s greenhouse gas emissions

⁷ AEMO, various dates, *Monthly Constraint Reports*. Accessed from: <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/system-operations/congestion-information-resource/statistical-reporting-streams>

⁸ Where the total hours is equal to the sum of the annual constraint on equation N>NIL_9R5_9R6 and N>NIL_9R6_9R5.

2.3 Assumptions underpinning the identified need

This section sets out the key assumptions underpinning the identified need.

2.3.1 Renewable generation in the Wagga North area is growing

There have been recent developments of renewable generation in the Wagga North area. Currently, Essential Energy and Transgrid have approximately 409 MW of in-service generation connected to north of Wagga North substation. Transgrid is aware of two additional BESS that are proposed to be developed in the area with a combined capacity of 120MW.

Table 2-2 Current and Planned generation in the Wagga North region

Renewable Source	Connection point	Maximum Capacity (MW) ⁹	Status
Wagga North Solar Farm	Wagga North	46	In service
Junee Solar Farm	Junee Switching Station	30	In service
Sebastopol Solar Farm	Sebastopol	90	In service
West Wyalong Solar Farm	West Wyalong Switching Station	90	In service
Wyalong Solar Farm	Wyalong Switching Station	53	In service
Bomen Solar Farm	Bomen	100	In service
Wagga North BESS	Wagga North	105	Proposed
Wagga North Solar Farm BESS	Wagga North	15	Proposed
Total MW		529	
Total MW (in-service)		409	

The total amount of in-service generation has resulted in thermal loading limitations on the 132kV lines connected to the Wagga North substation.

2.3.2 Thermal capacity of Line 9R5 and Line 9R6 is insufficient to meet increasing generation requirements

Our analysis shows that the load requirements on Lines 9R5 and 9R6 would exceed their thermal rating under system normal network conditions if the current in-service renewable generators in the Wagga area are dispatched to their maximum capacities.

The particular lines that become overloaded and the level of overloading depends on factors such as the amount of renewable generation dispatched in the Wagga North area, the amount of generation from Snowy Hydro, interconnector flows between NSW and VIC and the power flow in Line 63 towards Wagga Wagga.

⁹ AEMO, 22 August 2024, *NEM Registration and Exemption List*. Accessed from: https://aemo.com.au/-/media/files/electricity/nem/participant_information/nem-registration-and-exemption-list.xlsx?la=en

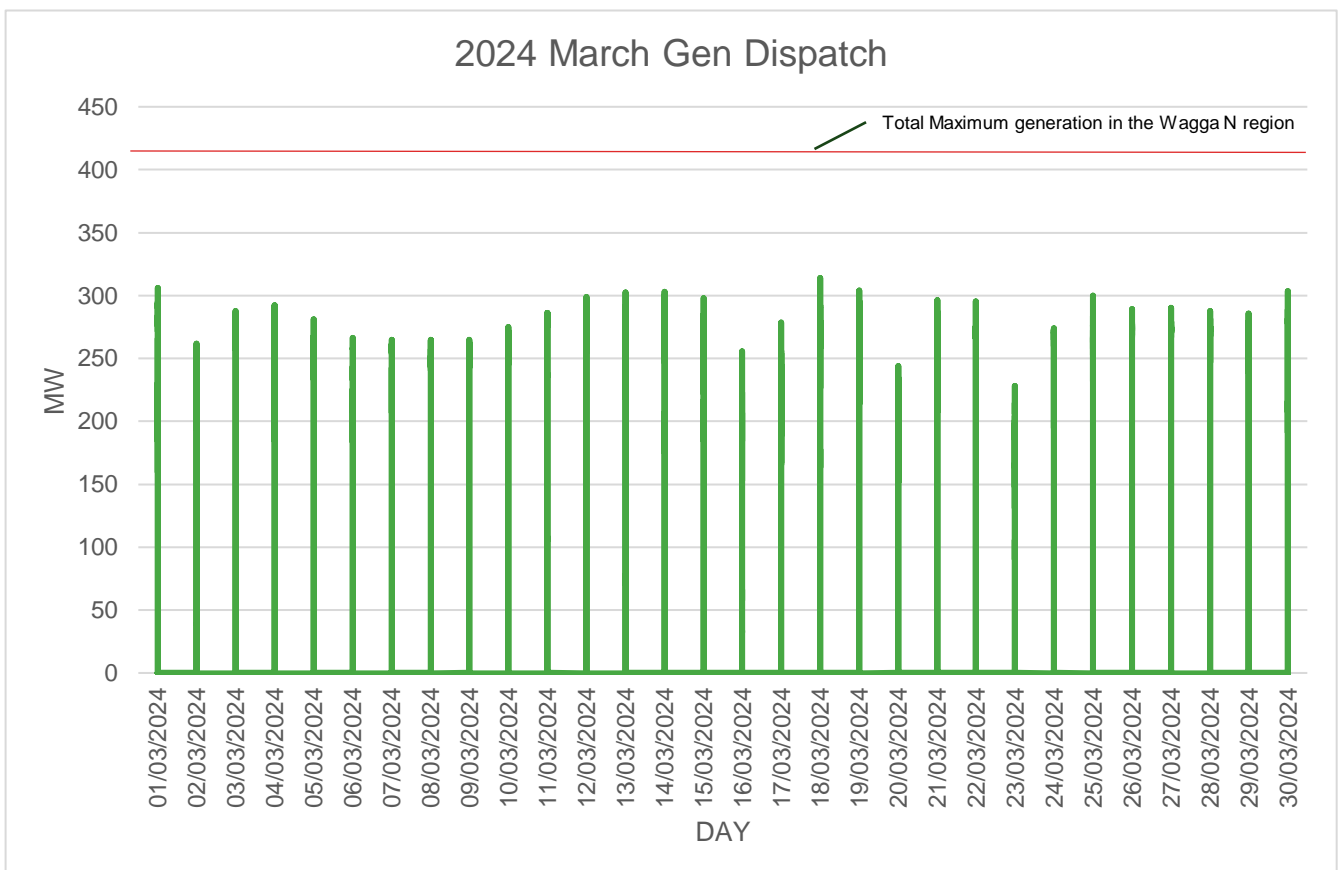
If the network is operated in its present configuration, a significant amount of renewable generation will need to be constrained at times of high output from the solar farms connected to Wagga North and in the Essential Energy network in the Temora region.

We have estimated the total generation required to be constrained to manage the potential thermal overloading of the Lines 9R6 and 9R5. To do this, we have simulated dispatch and price outcomes in the NEM using AEMO’s Integrated System Plan (ISP) model. Our estimate is based on:

- AEMO’s Step Change scenario from the 2024 ISP;
- the projected generation profile of the in-service and committed generators in the Wagga North area;
- demand forecasts for the Wagga North area; and
- the contribution factors of the renewable generators in the Wagga North area based on AEMO’s Step Change central scenario from its 2024 ISP.

Figure 2-2 illustrates the total generation dispatch compared to the total maximum generation (409 MW) in the Wagga North area over a month due to system normal condition.¹⁰

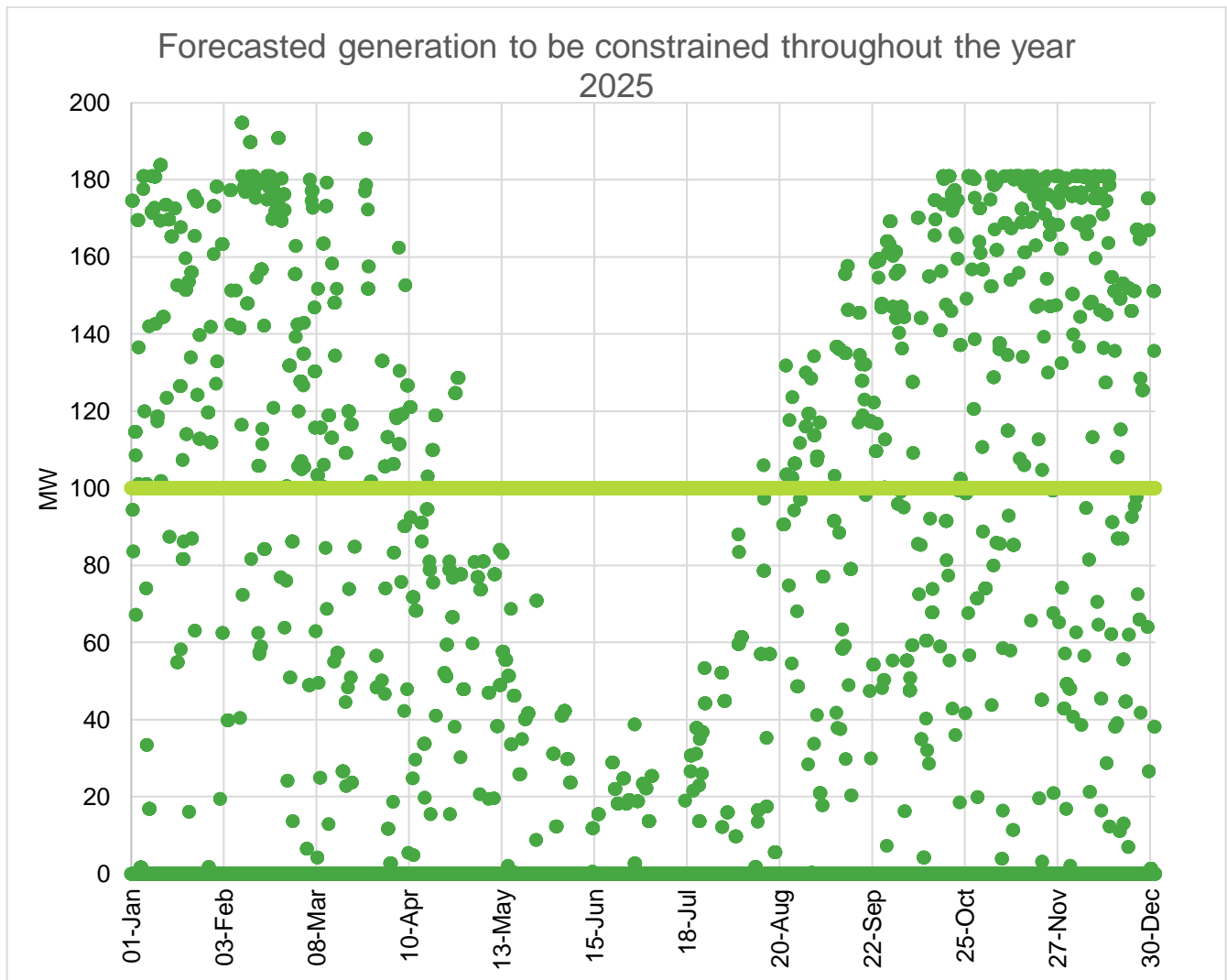
Figure 2-2 Total generation dispatch over a month in the Wagga North region



¹⁰ The amount of constrained energy was estimated based on the projected solar traces and demand forecast data for the Wagga north area in the shoulder period. The projected solar traces of the in-service solar farms have been used to estimate solar traces of the committed generators located in the same geographical area.

Figure 2-3 demonstrates the estimated generation to be constrained throughout a year due to system normal overloading in Line 9R6. The modelling suggests that for approximately 191 days of the year it will be necessary to constrain at least 100 MW of renewable generation to ensure the line 9R6 loading level is maintained below its normal rating. In addition, Figure 2-3 shows that some level of constraint (even as low as a few MW) will be required for most of the year to manage the loading on Line 9R6 under system normal conditions.

Figure 2-3: Expected yearly generation to be constrained¹¹



2.3.3 Electricity generation and demand in the Wagga Wagga SAP

The Wagga Wagga Special Activation Precinct (SAP), a joint Government Agency initiative led by the Department of Premier and Cabinet and the Department of Planning and Environment has been announced. As part of Wagga Wagga SAP, potential large scale industrial development is expected in the area supplied by Wagga North substation, which comprises 4,424 hectares of land, located 8 kilometres north of Wagga Wagga, NSW¹². The Precinct is being established as an economic and employment hub to

¹¹ The information on this page was obtained through internal market modelling simulations conducted by Transgrid.

¹² NSW Department of Planning, Industry and Environment, May 2021, *Wagga Wagga Special Aviation Precinct Master Plan*. Accessed from: <https://www.planningportal.nsw.gov.au/WaggaWaggaSAP>

accommodate regionally significant industries and businesses on a large scale and will develop over 40 years.

The consultation process for the development of the SAP Master Plan shortlisted three land-use scenarios, which have associated power generation and load demand forecasts.¹³ The descriptions of each of the three scenarios is as follows:

- **Scenario 4:** a ‘high growth’ scenario featuring a central area for low amenity ‘stack’ industries, close to the Riverina Intermodal Freight and Logistics (RiFL) hub;
- **Scenario 5:** a ‘compact’ scenario focussed on developing land north and south of Marino Drive. A Commercial Gateway precinct is also included along Bomen Road; and
- **Scenario 7:** a ‘high growth’ scenario where development is directed north and north-east. It incorporates industry zoned land north-east of Byrnes Road and also new land along Olympic Highway. Additional rail terminals are included north of RiFL.

The supporting Infrastructure and Services Plan¹⁴ includes generation and load growth estimates for each of the scenarios as summarised below in Table 2-2.

Table 2-2 Estimated power generation and load growth under different scenarios of SAP

Scenario	Power generation (MW)	Average load demand (MW)
Scenario 4	342	241
Scenario 5	187	148
Scenario 7	398	282

The Wagga Wagga SAP project would be expected to reduce the constraints on Lines 9R5 and 9R6. However, the project is still in early stage of the development and the information about the potential renewable generation and load growth is not fully confirmed. As such, we propose to investigate the impact of the Wagga Wagga SAP through sensitivity analysis in the wholesale market modelling undertaken for the PADR.

¹³ NSW Department of Planning, Industry and Environment, July 2020, *Wagga Wagga Special Activation Precinct; A.4.1a Structure Plan*, Accessed from: <https://www.planningportal.nsw.gov.au/WaggaWaggaSAP>

¹⁴ NSW Department of Planning, Industry and Environment, July 2020, *Final Masterplan Report; Infrastructure and Services Plan; Wagga Wagga Special Activation Precinct.*, Accessed from: <https://www.planningportal.nsw.gov.au/WaggaWaggaSAP>

3. Options that meet the identified need

This section describes the option(s) that we have explored to address the identified need, including the scope of each option and the associated costs. We consider that there are four technically and commercially feasible options to address the identified need.¹⁵

Table 3-1 Summary of credible options

Option	Description	Estimated capital cost (\$m 2024/25)	Expected delivery time
Option 1	Restrung Lines 9R5 and 9R6 with a “Mango” ACSR/GZ ¹⁶ 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

In addition, we consider that non-network solutions may be able to form credible options for this RIT-T. Section 4 details the technical characteristics that proponents of non-network solutions need to provide in order to enable their option to be considered in this RIT-T.

This section provides further information on each of the credible options listed above.

3.1 Base case

Consistent with the RIT-T requirements, the assessment undertaken in this PSCR compares the costs and benefits of each credible option to a ‘do nothing’ base case. The base case is the (hypothetical) projected case if no action is taken, i.e.:¹⁷

¹⁵ As per clause 5.15.2(a) of the NER.

¹⁶ Aluminium conductor steel-reinforced cable

¹⁷ AER, *Regulatory Investment Test for Transmission Application Guidelines*, November 2024, p. 21.

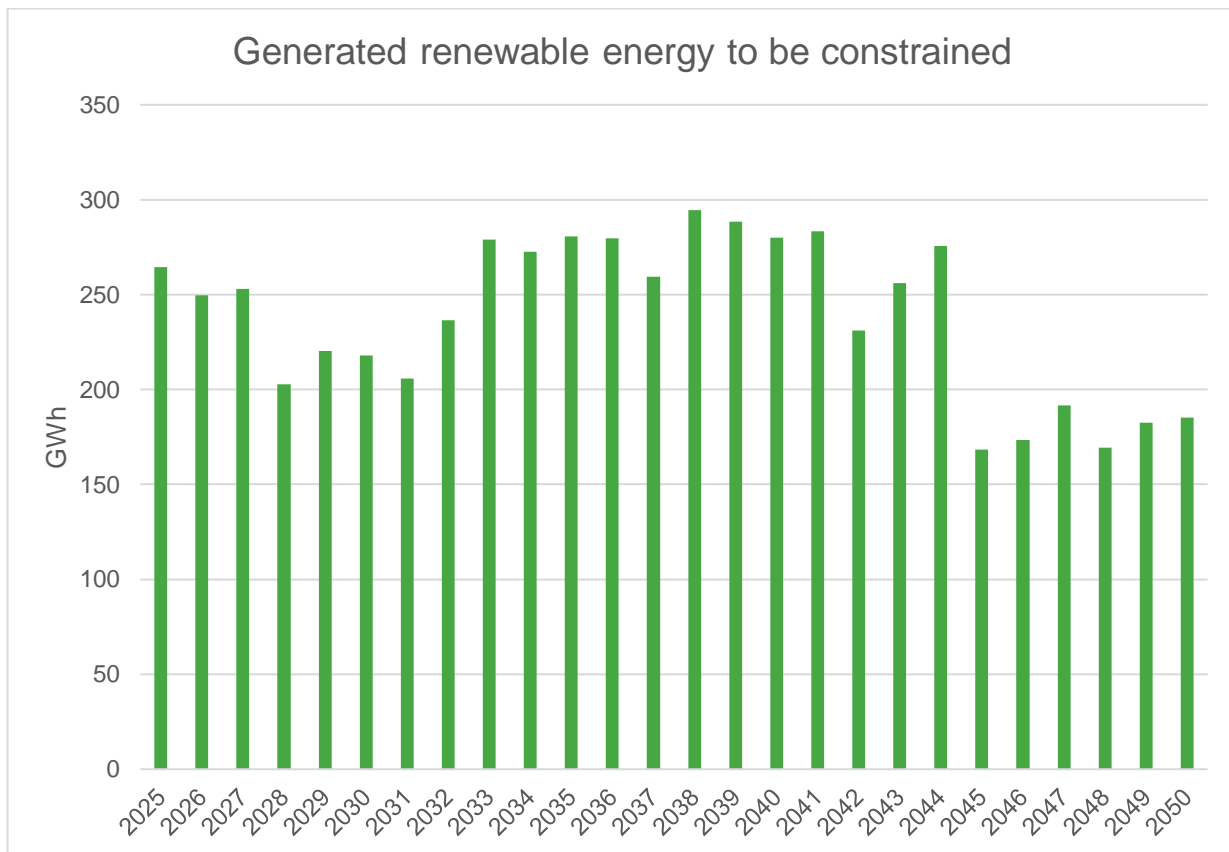
- i. “The base case is where the RIT-T proponent does not implement a credible option to meet the identified need, but rather continues its 'BAU activities'. 'BAU activities' are ongoing, economically prudent activities that occur in absence of a credible option being implemented”

The base case considers a “do nothing” approach, where the existing network infrastructure is maintained, and the network is not augmented to account for increased renewable generation in the Wagga North area.

If the network is operated with the present configuration and as per current operating protocols, a significant amount of renewable energy will need to be constrained at times of high-generation output from the solar farms connected to Wagga North and in Essential Energy’s network in the Temora region.

We have modelled the forecasted renewable curtailment on Lines 9R6 and 9R5, illustrated below in Figure 3-1. Our modelling suggests an average of approximately 240 GWh of renewable energy will be curtailed per annum from 2025 onwards.

Figure 3-1: Base case renewable generation curtailment¹⁸.



As a result of the curtailment, reliance on existing higher cost generation and investment in new generation in other parts of the NEM will be required to meet expected load forecasts.

The assessment uses this base case as a common point of reference when estimating the net benefits of each credible option.

¹⁸ The information on this graph was obtained through internal market modelling simulations conducted by Transgrid.

3.2 Option 1 – Restrung Lines 9R5 and 9R6 with a Mango ACSR/GZ conductor (or equivalent) operating at 85°C

Option 1 involves re-conductoring of 9R5 and 9R6 lines with a higher thermal capacity conductor such as Mango ACSR/GZ conductor. In comparison to the existing ratings of 125MVA/137MVA, re-stringing the lines should achieve normal rating minimum of 169 MVA.

The total transfer capacity can be increased by at least 95 MW.

This is achieved by:

- Restrung 14.6km of conductors like Mango ACSR/GZ (or equivalent) conductor on Line 9R5 and 10.5km of Mango ACSR/GZ (or equivalent) conductor on Line 9R6 (including insulators and fitting replacements);
- Replacing 27 suspension structures on Line 9R5 and 21 suspension structures on Line 9R6;
- Replacing 5 tension structure on Line 9R5 and 8 tension structures on 9R6; and
- Performing associated structure strengthening on Line 9R5 and Line 9R6.

The estimated capital cost for the option is approximately \$14.3 million (June \$2025) +/- 25 per cent. Table 3-2 shows the expected expenditure profile of this option. This option is expected to take 31 months to complete, with commissioning possible in 2027-28.

Table 3-2: Option 1 expected expenditure

Item	Capital expenditure (\$M, Real \$2024-25)
FY25	0.03
FY26	3.48
FY27	10.77
Total capital cost	14.28 (+/- 25%)

3.3 Option 2 – Restrung Lines 9R5 and 9R6 with a high-temperature conductor operating at 180°C

Option 2 involves increasing Lines 9R5 and 9R6 normal rating to a minimum of 223 MVA by restringing Lines 9R5 and 9R6 with a higher-temperature conductor.

This is achieved by

- Restrung 14.6km of Line 9R5 and 10.5km of Line 9R6 with a higher temperature conductor, including insulators and fitting replacements;
- Replacing 5 suspension structures on Line 9R5 and 7 suspension structures on Line 9R6;
- Replacing 1 tension structure on Line 9R5; and
- Performing associated structure strengthening on Line 9R5 and Line 9R6.

The estimated capital cost for the option is approximately \$12.5 million (June \$2025) +/- 25 per cent. Table 3-3 shows the expected expenditure profile of this option. This option is expected to take 31 months to complete, with commissioning possible in 2027-28.

Table 3-3: Option 2 expected expenditure

Item	Capital expenditure (\$M, Real \$2024-25)
FY25	0.03
FY26	3.43
FY27	9.08
Total capital cost	12.54 (+/- 25%)

3.4 Option 3 – Double circuit transmission line

Option 3 involves building a new double-circuit transmission line between Wagga North and Wagga 330 substation.

This is achieved by:

- constructing approximately 14.6km of new double circuit 132kV transmission line from Wagga 330 substation to existing Line 991 Structure 613;
- diverting Line 991 to Wagga 330 substation on one side of the new double circuit transmission line;
- reusing the existing Line 991 from Structure 613 to Wagga North (WGN) to form the new feeder from Wagga 330 to Wagga North, utilizing the opposite side of the new double-circuit transmission line; and
- installing two new 132kV switch bays at the Wagga 330 substation.

The estimated capital cost for the option is approximately \$49.9 million (June \$2025) +/- 25 per cent. Table 3-4 shows the expected expenditure profile of this option. This option is expected to take 58 months to complete, with commissioning possible in 2030-31.

Table 3-4: Option 3 expected expenditure

Item	Capital expenditure (\$M, Real \$2024-25)
FY25	0.09
FY26	0.50
FY27	2.23
FY28	5.41
FY29	40.89
FY30	0.80
Total capital cost	49.92

3.5 Option 4 – Single circuit transmission line

Option 4 involves building a single circuit transmission line between Wagga North and Wagga 330 substation.

This is achieved by:

- constructing approximately 14.9km of new single-circuit 132kV transmission line from Wagga 330 substation (WG1) to Wagga North substation (WGN), using 1 x Mango ACSR conductors supported by concrete poles;
- constructing one new 132kV switchbay at Wagga 330 substation; and
- constructing one new 132kV switchbay at Wagga North substation.

The estimated capital cost for the option is approximately \$42.1 (June \$2025) +/- 25 per cent. Table 3-5 shows the expected expenditure profile of this option. This option is expected to take 48 months to complete, with commissioning possible in 2029-30.

Table 3-5: Option 4 expected expenditure

Item	Capital expenditure (\$M, Real \$2024-25)
FY25	0.15
FY26	1.12
FY27	4.52
FY28	8.68
FY29	27.66
Total capital cost	42.12

3.6 Options considered but not progressed

We have also considered whether other options could meet the identified need. Reasons these options were not progressed are summarised in Table 3-6.

Table 3-6: Options considered but not progressed

Option	Reason(s) for not progressing
Install a 120MW/600MWh Battery Energy Storage System (BESS) at Wagga North 132 kV Substation	<p>A preliminary assessment of installing a BESS at Wagga North has revealed that a footprint of approximately 110m x 55m would be necessary. This would require the acquisition of additional property almost the size of the existing Wagga North substation.</p> <p>The estimated cost of the 120MW/600MWh BESS is hundreds of millions, excluding the cost of the additional property and associated plant and substation augmentation works.</p> <p>The expected cost estimate is substantially higher than the lowest cost option considered. Therefore, we consider that this option is not commercially feasible.</p>

3.7 No material inter-network impact is expected

We have considered whether the credible options listed above are expected to have material inter-regional impact.¹⁹ A ‘material inter-network impact’ is defined in the NER as:²⁰

“A material impact on another Transmission Network Service Provider’s network, which impact may include (without limitation): (a) the imposition of power transfer constraints within another Transmission Network Service Provider’s network; or (b) an adverse impact on the quality of supply in another Transmission Network Service Provider’s network.”

By reference to AEMO’s screening test for an inter-network impact,²¹ a material inter-regional impact may arise if a credible option:

- is expected to change power transfer capability between transmission networks or in another TNSP’s network by more than the minimum of 3 per cent of the maximum transfer capability and 50 MW
- is expected to result in an increase in fault level by more than 10 MVA at any substation in another TNSP’s network; or
- involves either a series capacitor or modification in the vicinity of an existing series capacitor.

As none of these criteria are satisfied for this RIT-T, we consider that there are no material inter-network impacts associated with any of the credible options considered.

3.8 Community engagement

Social licence may be promoted by early and continued engagement with communities and stakeholders who are reasonably expected to be affected by the project.

Transgrid recognises that some of the options being considered in this RIT-T may impact the surrounding communities. As a consequence, Transgrid intends to engage with stakeholders, including local landowners, local council, local community members, local environmental groups and traditional owners,

¹⁹ As per clause 5.16.4(b)(6)(ii) of the NER.

²⁰ Definition of ‘material inter-network impact,’ in the Glossary to the NER.

²¹ Inter-Regional Planning Committee. “Final Determination: Criteria for Assessing Material Inter-Network Impact of Transmission Augmentations.” Melbourne: Australian Energy Market Operator, 2004. Appendix 2 and 3. Accessed 23 June 2021. https://aemo.com.au/-/media/files/electricity/nem/network_connections/transmission-and-distribution/170-0035-pdf.pdf

ahead of publication of the PADR. This engagement will enable us to understand community concerns and identify whether there are amendments to the options being considered that have the potential to mitigate those concerns.

Transgrid will describe in the PADR how it has assessed the potential impact on communities, and the community engagement approach it has adopted. This may take the format of a community and stakeholders engagement plan. Further details in relation to this community engagement will be provided as part of the PADR.

Transgrid plans to develop the PADR with updated information about the environment, planning and social constraints for credible options. This information will contribute, where relevant, to potential refinements to relevant cost factors and time allowances for obtaining planning and environment approval prior to the construction of credible options.

4. Technical characteristics for non-network options

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

At this stage, Transgrid considers that possible options include but are not limited to bulk or aggregated energy storage systems that could charge from the renewable generation that would otherwise be constrained within the identified region, and discharged at other times, e.g. battery energy storage systems, (BESS).

This section describes the technical characteristics that a non-network option would need to address the identified need consistent with the NER. The NER requires a PSCR to include characteristics, such as:²²

- the size of the load reduction or additional supply required;
- the location; and
- the operating profile.

Table 4-1 below outlines the size, location and nature of the non-network option, noting that the identified need relates to constrained generation output in the nominated region.

Table 4-1: Summary of the technical characteristics required for the non-network option

Financial Year	Magnitude of power reduction on 9R5/9R6/911 cut-set (MW)	Expected cumulative exposure to overload per annum (hours)	Location	Time of the day
Initially from 2026 to 2027/28	Up to 120	> 605.3 ²³	Located in connection points supplied by the Wagga North substation	Summer & Spring: 7:00 am to 5:30 pm Winter & Autumn: 8:00 am to 4:30 pm

Transgrid welcomes submissions to this PSCR from potential providers of non-network solutions. Transgrid may use the submissions to conduct wholesale market modelling for the PADR and determine the materiality of market benefits.

²² NER clause 5.16.4(b)(3)

²³ Annual hours taken from AEMO's 2023 annual constraint report

5. Materiality of market benefits

The NER requires that all categories of market benefit identified in relation to the RIT-T are included in the RIT-T assessment, unless the TNSP can demonstrate that a specific category (or categories) is unlikely to be material in relation to the RIT-T assessment for a specific option.²⁴

The PSCR is required to set out the classes of market benefit that the TNSP considers are not likely to be material for a particular RIT-T assessment.²⁵

5.1 Wholesale market modelling will be adopted for the PADR

The options considered in this PSCR are expected to affect dispatch outcomes in the wholesale market, relative to the base case. The additional transmission capacity is expected to provide 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.

Within the context of the RIT-T assessment, greater supply of renewable generation is expected to deliver market benefits primarily through reductions in total dispatch costs from:

- lower fuel costs, by enabling lower cost renewable generation to displace higher cost conventional generation elsewhere in the NEM; and
- lower capital costs, by reducing (or deferring) the need for new investment in generation plants to meet growing electricity demand in the future.

We consider that these market benefits have the potential to be material for this RIT-T and will be estimated in the wholesale market modelling as part of the PADR.

Additionally, increased renewable generation is expected to materially change Australia's direct greenhouse gas emissions associated with NEM generation. As part of the PADR assessment, we propose to estimate the value of avoided emissions under each of the credible options, compared to the base case, as part of the same case study approach. We will adopt the AER's Value of Emissions Reduction (VER) to quantify the value of avoided emissions.

5.2 No other classes of market benefits are material

In addition to the classes of market benefits identified above, the NER also requires us to consider the following classes of market benefits, listed in Table 5-1, arising from each credible option.²⁶ We consider that none of the classes of market benefits listed are material for this RIT-T assessment for the reasons in Table 5-1.

Table 5-1: Reasons non-wholesale electricity market benefits categories are considered not material

Market benefits	Reason
Changes in voluntary load curtailment	The identified need of this RIT-T is to relieve existing renewable generation constraints on Line 9R5 and Line 9R6, increasing the overall net market benefits in the NEM. This is expected to have an immaterial impact on load.

²⁴ NER clause 5.16.1(c)(6).

²⁵ NER clause 5.16.4(b)(6)(iii).

²⁶ NER, clause 5.15A.2(b)(4)-(6).

Changes in involuntary load shedding	
Changes in costs for parties, other than the RIT-T proponent due to differences in timing of new plant, capital costs and operating and maintenance costs	The change in costs for other parties is not expected to be material in this RIT-T assessment.
Changes in network losses	There is not expected to be any material difference in transmission losses between options.
Changes in ancillary services costs	<p>While the cost of Frequency Control Ancillary Services (FCAS) may change, as a result of changed generation dispatch patterns and changed generation development following any increase to transfer capacity, we consider that changes in FCAS costs are not likely to be materially different between options and are not expected to be material in the selection of the preferred option.</p> <p>There is no expected change to the costs of Network Control Ancillary Services (NCAS), or System Restart Ancillary Services (SRAS) as a result of the options being considered. These costs are therefore not considered material to the outcome of the RIT-T assessment.</p>
Competition benefits	<p>Competition benefits under the RIT-T relate to net changes in market benefits, arising from the impact of the credible option on the bidding behaviour of market participants in the wholesale market.</p> <p>While each of the credible options considered are designed to address network constraint, we consider that competition benefits are unlikely to be material and do not intend to estimate them as part of this RIT-T. This is due to all options being expected to have a similar effect on the wholesale market through relieving the existing constraint of Line 9R5, 9R6 and 991 in the Wagga North area.</p> <p>In addition, the calculation of competition benefits requires substantial additional market modelling. We consider that this modelling exercise would be disproportionate to any competition benefits that may be identified for this specific RIT-T assessment, particularly the difference between options in terms of competition benefits</p>
Option value	<p>Option value is likely to arise where there is uncertainty regarding future outcomes, the information that is available is likely to change in the future, and the credible options considered by the TNSP are sufficiently flexible to respond to that change.</p> <p>We note that no credible option identified is sufficiently flexible to respond to change or uncertainty. Additionally, a significant modelling assessment would be required to estimate the option value benefit but it would be disproportionate to potential additional benefits for this RIT-T. Therefore, we have not estimated any additional option value benefit.</p>

6. Overview of the assessment approach

This section outlines the approach that we have applied in assessing the net benefits associated with each of the credible options against the base case.

6.1 Assessment period and discount rate

The RIT-T will consider a 25-year period from 2024/25 to 2049/50. We consider that this takes into account the size, complexity and expected lives of the options and provide a reasonable indication of the costs and benefits over a long period.

Where the capital components of the credible options have asset lives extending beyond the end of the assessment period, the NPV modelling will include a terminal value to capture the remaining asset life. This ensures that the capital cost of long-lived options over the assessment period is appropriately captured, and that all options have their costs and benefits assessed over a consistent period, irrespective of option type, technology or asset life. The terminal values will be calculated as the undepreciated value of capital costs at the end of the analysis period and can be interpreted as a conservative estimate for benefits (net of operating costs) arising after the analysis period.

A real, pre-tax discount rate of 7.00 per cent has been adopted as the central assumption for the NPV analysis, consistent with AEMO's latest Input Assumptions and Scenarios Report (IASR).²⁷ The RIT-T requires that sensitivity testing be conducted on the discount rate and that the regulated weighted average cost of capital (WACC) be used as the lower bound. We have therefore tested the sensitivity of the results to a lower bound discount rate of 3.63 per cent.²⁸ We have also adopted an upper bound discount rate of 10.5 per cent (i.e., the upper bound in the latest IASR).²⁹

6.2 Approach to estimating option costs

The initial cost estimates presented in this PSCR have been at a high level, based on experience from previous projects involving similar options or based on publicly available information.

It is intended that cost estimates will be further refined in the PADR stage, and this process may be informed by stakeholder responses to the PSCR. Our objective is to achieve costs that are estimated to be within +/- 25 per cent of the actual cost as part of 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.

The amended guidelines mean that Transgrid must consider social licence principles in the identification of credible options. This may affect how we determine the most likely cost and delivery timeline for an option.

Transgrid believes building relationships and trust is how we can gain and grow social licence. Through engagement with affected communities, we identify prudent and efficient investment opportunities, and we

²⁷ AEMO, *2023 Inputs, Assumptions and Scenarios Report*, Final report, July 2023, p 123.

²⁸ This is equal to WACC (pre-tax, real) in the latest final decision for a transmission business in the NEM (TasNetworks) as of the date of this analysis, see: <https://www.aer.gov.au/industry/registers/determinations/tasnetworks-determination-2024-29/final-decision>.

²⁹ AEMO, *2023 Inputs, Assumptions and Scenarios Report*, Final report, July 2023, p 123.

build and gain community acceptance for our options. Costs associated with social licence include those associated with engagements, community benefits, minor route adjustments and legislated additional landholder payments, as applicable.

We acknowledge this important change to the RIT-T guidelines and will take into account social licence considerations (including those identified through community engagement, as outlined in section ‘Community engagement’) in updating the cost and timing of the credible options in the PADR.

The RIT-T is focused on identifying the top-ranked credible option in terms of expected net benefits. However, uncertainty exists in terms of estimating future inputs and variables (termed future ‘states of the world’).

To deal with this uncertainty, the NER requires that costs and market benefits for each credible option are estimated under reasonable scenarios and then weighted based on the likelihood of each scenario to determine a weighted (‘expected’) net benefit. It is this ‘expected’ net benefit that is used to rank credible options and identify the preferred option.

The RIT-T must include any of the ISP scenarios from the most recent IASR that are relevant unless:

- the RIT-T proponent demonstrates why it is necessary to vary, omit or add a reasonable scenario to what was in the most recent IASR, and
- the new or varied reasonable scenarios are consistent with the requirements for reasonable scenarios set out in the RIT-T instrument.

The credible options will be assessed under three scenarios in the PADR assessment, which reflect the scenarios from AEMO’s 2024 ISP. AEMO defines these scenarios as³⁰:

- **“Green Energy Exports** features a very rapid decarbonisation rate to support Australia’s contribution to limit global temperature rise to 1.5°C, including strong electrification and a strong green energy export economy.
- **Step Change** features an energy transition pace to support Australia’s contribution to limit global temperature rise to less than 2°C, and compatible with 1.5°C outcomes depending on the actions taken across other sectors. Consumer energy resources provide a strong contribution to the transition.
- **Progressive Change** features more challenging conditions resulting in the transition speed focusing on Australia’s current policies and global commitments to decarbonisation.”

Table 6-1 summarises the specific key variables that influence the net benefits of the options under each of the scenarios considered.

Table 6-1: Summary of scenarios

Variable	Green Energy Exports	Step Change	Progressive Change
Capital costs	Base estimate	Base estimate	Base estimate
Demand	POE10 ³¹	POE10 ³²	POE10 ³³

³⁰ AEMO, 2024. 2024 Integrated System Plan (ISP). Accessed online: <https://aemo.com.au/-/media/files/major-publications/isp/2024/2024-integrated-system-plan-isp.pdf?la=en>

³¹ 2024 ISP Green Energy Export Demand Traces

³² 2024 ISP Step Change Demand Traces

³³ 2024 ISP Progressive Change Demand Traces

Renewable generation in the area	In-service and committed and anticipated generators (as outlined in section 2.2)	In-service and committed and anticipated generators (as outlined in section 2.2)	In-service and committed and anticipated generators (as outlined in section 2.2)
Wholesale market benefits estimated	Transgrid estimate based on the 'green energy exports' 2024 ISP scenario	Transgrid estimate based on the 'step change' 2024 ISP scenario	Transgrid estimate based on the 'progressive change' 2024 ISP scenario
Discount rate	7.0%	7.0%	7.0%
Scenario weighting ³⁴	15.0%	43.0%	42.0%

The scenarios may also vary by local spot load forecast, which may not be parameters included in the ISP, if they can be expected to have a material impact on the options considered in this RIT-T.

³⁴ Consistent with the scenario likelihoods outlined in AEMO's 2024 ISP.

Appendix A Compliance checklist

This appendix sets out a checklist which demonstrates the compliance of this PSCR with the requirements of the National Electricity Rules version 222.

Rules clause	Summary of requirements	Relevant section
5.16.4 (b)	A RIT-T proponent must prepare a report (the project specification consultation report), which must include:	–
	(1) a description of the identified need;	2
	(2) the assumptions used in identifying the identified need (including, in the case of proposed reliability corrective action, why the RIT-T proponent considers reliability corrective action is necessary);	2
	(3) the technical characteristics of the identified need that a non-network option would be required to deliver, such as: <ul style="list-style-type: none"> (i) the size of load reduction of additional supply; (ii) location; and (iii) operating profile; 	4
	(4) if applicable, reference to any discussion on the description of the identified need or the credible options in respect of that identified need in the most recent Integrated System Plan;	NA
	(5) a description of all credible options of which the RIT-T proponent is aware that address the identified need, which may include, without limitation, alternative transmission options, interconnectors, generation, system strength services, demand side management, market network services or other network options;	3
	(6) for each credible option identified in accordance with subparagraph (5), information about: <ul style="list-style-type: none"> (i) the technical characteristics of the credible option; (ii) whether the credible option is reasonably likely to have a material inter-network impact; (iii) the classes of market benefits that the RIT-T proponent considers are likely not to be material in accordance with clause 5.15A.2(b)(6), together with reasons of why the RIT-T proponent considers that these classes of market benefits are not likely to be material; (iv) the estimated construction timetable and commissioning date; and (v) to the extent practicable, the total indicative capital and operating and maintenance costs. 	3 & 5

In addition, the table below outlines a separate compliance checklist demonstrating compliance with the binding guidance in the latest AER RIT-T guidelines.

Guidelines section	Summary of the requirements	Section in the PSCR
3.5A.1	<p>Where the estimated capital costs of the preferred option exceeds \$103 million (as varied in accordance with a cost threshold determination), a RIT-T proponent must, in a RIT-T application:</p> <ul style="list-style-type: none"> ii. outline the process it has applied, or intends to apply, to ensure that the estimated costs are accurate to the extent practicable having regard to the purpose of that stage of the RIT-T iii. for all credible options (including the preferred option), either <ul style="list-style-type: none"> • apply the cost estimate classification system published by the AACE, or • if it does not apply the AACE cost estimate classification system, identify the alternative cost estimation system or cost estimation arrangements it intends to apply, and provide reasons to explain why applying that alternative system or arrangements is more appropriate or suitable than applying the AACE cost estimate classification system in producing an accurate cost estimate 	NA
3.5A.2	<p>For each credible option, a RIT-T proponent must specify, to the extent practicable and in a manner which is fit for purpose for that stage of the RIT-T:</p> <ul style="list-style-type: none"> i. all key inputs and assumptions adopted in deriving the cost estimate ii. a breakdown of the main components of the cost estimate iii. the methodologies and processes applied in deriving the cost estimate (e.g. market testing, unit costs from recent projects, and engineering-based cost estimates) iv. the reasons in support of the key inputs and assumptions adopted and methodologies and processes applied v. the level of any contingency allowance that have been included in the cost estimate, and the reasons for that level of contingency allowance 	6.2
3.5.3	<p>The RIT-T proponent is required to provide the basis for any social licence costs in their RIT-T reports, and may choose to refer to best practice from a reputable, independent and verifiable source.</p>	6.2
3.8.2	<p>Where the estimated capital cost of the preferred option exceeds \$103 million (as varied in accordance with an applicable cost threshold determination), a RIT-T proponent must undertake sensitivity analysis on all credible options, by varying one or more inputs and/or assumptions.</p>	NA
3.9.4	<p>If a contingency allowance is included in a cost estimate for a credible option, the RIT-T proponent must explain:</p> <ul style="list-style-type: none"> • the reasons and basis for the contingency allowance, including the particular costs that the contingency allowance may relate to, and • how the level or quantum of the contingency allowance was determined. 	NA

4.1	<p>RIT-T proponents are required to describe in each RIT-T report</p> <ul style="list-style-type: none"> • how they have engaged with local landowners, local council, local community members, local environmental groups or traditional owners and sought to address any relevant concerns identified through this engagement • how they plan to engage with these stakeholder groups, or • why this project does not require community engagement 	3.8
-----	---	-----