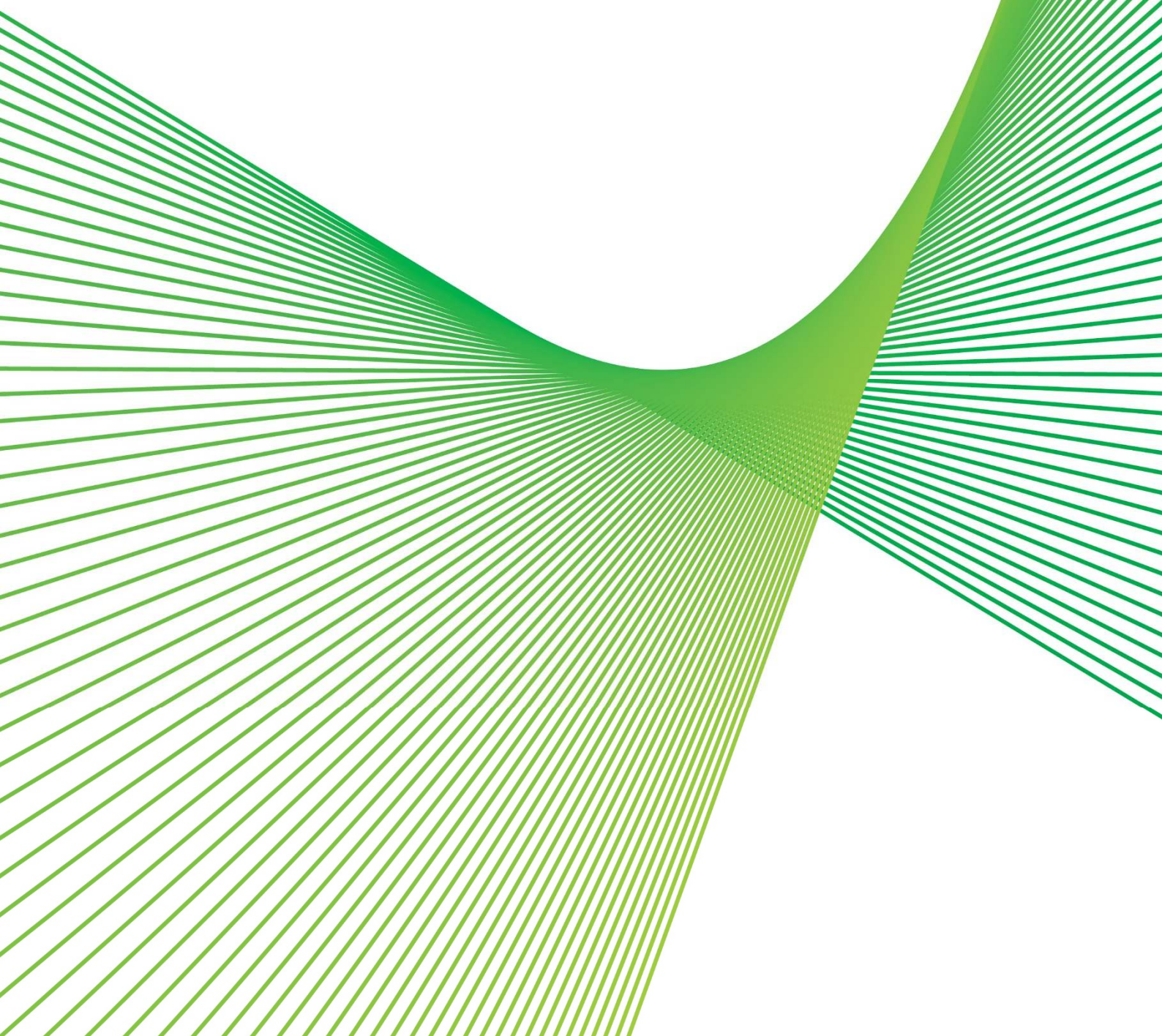


Summary: Managing the risk of disconnecter failure

RIT-T Project Assessment Conclusions Report

Issue date: 6 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:

1. Independently verify and check the currency, accuracy, completeness, reliability and suitability of that information
2. Independently verify and check the currency, accuracy, completeness, reliability and suitability of reports relied on by Transgrid in preparing these documents
3. 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>).

Summary

We are applying the Regulatory Investment Test for Transmission (RIT-T) to options for managing the risk of disconnecter failure on the New South Wales (NSW) transmission network. Publication of this Project Assessment Conclusions Report (PACR) represents the final step in the RIT-T process.

High voltage disconnectors and associated earth switches (henceforth collectively referred to as disconnectors) earth and provide visible isolation for sections of Transgrid's high voltage network. Disconnectors are required within the network to facilitate maintenance of other high voltage equipment such as circuit breakers and transformers.

We consider it prudent and cost effective to manage this risk of disconnector failure through an asset replacement program during the 2024/25 and 2027/28 regulatory period.

Identified need: ensure the safe and reliable operation of our transmission network by managing the risk of disconnector failure

The identified need for this project is to ensure the safe and reliable operation of our transmission network by addressing the risk of failure of certain disconnectors that are approaching the end of their technical life.

There are 5180 disconnectors installed in Transgrid's network. Of this population, 30% will be over the nominal expected life of 40 years by 2027-28. With such a large ageing population, a strategic approach is required to plan investments over the coming years to manage these assets effectively and efficiently.

The disconnectors considered for replacement under this need are older disconnectors that have already reached their end of life (see Appendix C for further detail). The failure of a disconnector is expected to result in additional equipment outages to isolate the failed disconnector for repair. In case of bus disconnectors this additional outage is significant due to the isolation of all other services from the affective bus bar. The potential outages are expected to disrupt customer and distributor supplies and increase corrective maintenance costs.

Addressing the condition of the identified assets provides the economic benefit of avoided involuntary load shedding to the NEM. We have classified this RIT-T as a 'market benefits' driven RIT-T as the economic assessment is not being progressed specifically to meet a mandated reliability standard but by the net benefits that are expected to be generated for end-customers. This means that options assessed within this RIT-T must provide net economic benefits compared to the base case if they are to be pursued.

No submissions received in response to the Project Specification Consultation Report

We published a Project Specification Consultation Report (PSCR) on 6 August 2024 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. Option 1 remains the preferred option at this stage of the RIT-T process.

Credible options considered

We identified one credible network option that would meet the identified need from a technical, commercial, and project delivery perspective¹. This option is summarised in Table E-1.

Table E-1 Summary of credible options, \$2024/25

Option	Description	Capital costs (\$m, 2024/25)
Option 1	This option fully addresses the identified need by replacing and refurbishing disconnectors.	21.46

Appendix C presents a list of disconnectors identified by this need for replacement and refurbishment under the preferred option, Option 1.

Non-network options are not expected to assist in this RIT-T

We do not consider non-network options to be commercially and technically feasible to assist with meeting the identified need for this RIT-T. Non-network options are not able to mitigate the risks associated with failure of disconnector assets that have reached or are approaching the end of their technical life. We did not receive any submissions from proponents of these solutions in response to the PSCR.

Conclusion: Replacing and refurbishing 136 disconnectors is optimal

This PACR finds that implementation of Option 1 is the preferred option at this final stage of the RIT-T process.

We have assessed that Option 1 is net beneficial under all three reasonable scenarios considered in this PACR. On a weighted basis, where each scenario is weighted equally, Option 1 is expected to deliver net benefits of approximately \$1,397m.

The capital cost of this option is approximately \$21.46 million (in \$2024/25). The works are expected to be completed by 2028. All works will be completed in accordance with the relevant standards and components shall be replaced to have minimal modification to the wider transmission network. Necessary outages of relevant assets in service will be planned appropriately to complete the works with minimal network impact.

Next steps

This PACR represents the final step of the consultation process in relation to the application of the Regulatory Investment Test for Transmission (RIT-T) process undertaken by Transgrid. It follows a PSCR released in August 2024. 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 RIT-T process under NER clause 5.16.4(z1). Production of a PADR is not required due to:

- the estimated capital cost of the preferred option being less than \$54 million;
- the PSCR stating:
 - the proposed preferred option, together with the reasons for the proposed preferred option;
 - the RIT-T is exempt from producing a PADR; and

¹ As per clause 5.15.2(a) of the NER.

- the proposed preferred option and any other credible options will not have a material market benefit for the classes of market benefit specified in clause 5.15A.2(b)(4), with the exception of market benefits arising from changes in voluntary and involuntary load shedding;
- no PSCR submissions identifying additional credible options that could deliver a material market benefit; and
- the PACR addressing any issues raised in relation to the proposed preferred option during the PSCR consultation.

Parties wishing to raise a dispute notice with the AER may do so prior to 17 January 2025² (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 'Disconnecter renewal program PACR'.

² Additional days have been added to cover public holidays