

# **Summary: Managing risk on Line 94M (Beryl – Crudine Ridge)**

RIT-T Project Specification Consultation Report

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## Summary

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We are applying the Regulatory Investment Test for Transmission (RIT-T) to options for mitigating safety, environmental (bushfire) and financial (high reactive maintenance) risks caused by the deteriorating condition of certain components of the 132 kV line running between Beryl substation and Crudine Ridge Wind Farm on the NSW network ('Line 94M'). Publication of this Project Specification Consultation Report (PSCR) represents the first step in the RIT-T process.

The purpose of this PSCR is to set out the reasons we propose that action be taken, present the options that address the identified need, outline the technical characteristics of the identified need that a non-network option would be required to deliver, and allow interested parties to make submissions and provide input to the RIT-T assessment.

Line 94M is a 132kV transmission line between Beryl substation and Crudine Ridge Wind Farm. The line is part of the original line built between Mt Piper and Beryl substations in 1976, which was broken up when Crudine Ridge was connected to the grid in 2020. The line has a route length of 70 km strung over 264 structures.

Detailed analysis of asset condition information indicates that the line has several condition issues which require refurbishment to address its health and maintain appropriate risk levels across the network. The most significant element of concern is the condition of the wood pole structures on the line. Line 94M was first placed into service in 1976, and the wood poles are approaching 50 years of age and toward the end of their nominal lives. The defect rate on the line has increased from 2017 onwards, which is in line with the expected condition of the asset based on its original design parameters.

### Identified need: managing risks on Line 94M

If action is not taken, the condition of Line 94M is expected to expose us and our customers to increasing levels of risk going forward, as the likelihood of failure increases. There are safety and bushfire risks under the 'do nothing' base case, as well as higher expected costs associated with reactive maintenance that may be required under emergency conditions ('financial risks'). The proposed investment will enable us to manage safety, environmental, and financial risks on Line 94M.

Options considered under this RIT-T have been assessed relative to a base case. Under the base case, no proactive capital investment is made and the condition of the lines will continue to deteriorate.

We manage and mitigate safety and bushfire risk to ensure they are below risk tolerance levels or 'As Low As Reasonably Practicable' ('ALARP'), in accordance with our obligations under the *New South Wales Electricity Supply (Safety and Network Management) Regulation 2014* and our Electricity Network Safety Management System (ENSMS).<sup>1</sup>

The proposed investment will enable us to continue to manage and operate this part of the network to a safety and risk mitigation level consistent with ALARP. Consequently, it is considered a reliability corrective action under the RIT-T. A reliability corrective action differs from a 'market benefits'-driven RIT-T in that the

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<sup>1</sup> Our ENSMS follows the International Organization for Standardization's ISO31000:2018 Risk Management framework which requires following a hierarchy of hazard mitigation approach.

preferred option is permitted to have negative net economic benefits on account of it being required to meet an externally imposed obligation on the network business.

We note that the risk cost estimating methodology adopted for this RIT-T aligns with that used in our Revised Revenue Proposal for the 2023-28 period. It reflects feedback from the Australian Energy Regulator (AER) on the methodology initially proposed in our original revenue proposal.

## Credible options considered

In this PSCR, we have considered three credible options that would meet the identified need from a technical, commercial, and project delivery perspective.<sup>2</sup> This option is summarised in Table E-1.

Table E-1 Summary of credible options

Option	Description	Capital costs (\$m +/- 25%, Real \$2024-25)
Option 1	Replace the 29 wood pole structures known to be exhibiting deterioration with steel or concrete pole structures including associated insulators and fittings, and remediate identified condition issues for line components that have priority condition issues and/or have reached end of serviceable life.	9.31 (±25%)
Option 2	Rebuild the entire line, replacing wood poles with concrete or steel pole structures including associated insulators and fittings	46.05 (±25%)
Option 3	Rebuild the entire circa 1976 line, replacing wood poles with concrete or steel pole structures including associated insulators and fittings. The existing Panther conductor is to be replaced with Lemon ACSR/GZ	59.44 (+25%)

The preferred option is Option 1, as it has the highest weighted NPV result of the technically and commercially feasible options which have been considered at this stage of the RIT-T.

## Non-network options are not expected to be able to assist with 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, as non-network options will not mitigate the safety and environment risk posed as a result of deteriorating wood pole condition.

## The options have been assessed against three reasonable scenarios

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').

<sup>2</sup> As per clause 5.15.2(a) of the NER.

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 credible options have been assessed under three scenarios as part of this PSCR assessment, which differ in terms of the key drivers of the estimated net market benefits (ie, the estimated risk costs avoided).

Given that wholesale market benefits are not relevant for this RIT-T, the three scenarios implicitly assume the most likely scenario from the 2024 ISP (ie, the 'Step Change' scenario). The scenarios differ by the assumed level of risk costs and unserved energy, given that these are key parameters that may affect the ranking of the credible options. Risk cost assumptions do not form part of AEMO's ISP assumptions, and have been based on Transgrid's analysis, as discussed in section 2.

We developed the Central Scenario around a static model of demand scenarios, described further in Section A.3 of our [Network Asset Criticality Framework](#). We consider that this approach is appropriate since it materially reduces the computational effort required, and since differences in demand forecasts will not materially affect the ranking of the credible options.

How the NPV results are affected by changes to other variables (including the discount rate and capital costs) has been investigated in the sensitivity analysis. We consider this is consistent with the latest AER guidance for RIT-Ts of this type (ie, where wholesale market benefits are not expected to be material).<sup>3, 4, 5</sup>

A summary of the key variables in each scenario is provided in the table below.

Table E-2 Summary of scenarios

Variable / Scenario	Central	Low risk cost scenario	High risk cost scenario risk
Scenario weighting	1/3	1/3	1/3
Discount rate	7%	7%	7%
Network capital costs	Base estimate	Base estimate	Base estimate
Operating and maintenance costs	Base estimate	Base estimate	Base estimate
Safety, environmental and financial risk benefit	Base estimate	Base estimate – 25%	Base estimate +25%

<sup>3</sup> AER, *Application Guidelines Regulatory Investment Test for Transmission*, October 2023, pp. 43-44.

<sup>4</sup> We consider the approach to scenarios and sensitivities to be consistent with the AER guidance provided in November 2022 in the context of the disputes of the North West Slopes and Bathurst, Orange and Parkes RIT-Ts. See: AER, *Decision: North West Slopes and Bathurst, Orange and Parkes Determination on dispute - Application of the regulatory investment test for transmission*, November 2022, pp. 18-20 & 31-32, as well as with the AER's RIT-T Guidelines.

<sup>5</sup> AEMO '2023 Inputs, Assumptions and Scenarios Report', July 2023, p 123-124

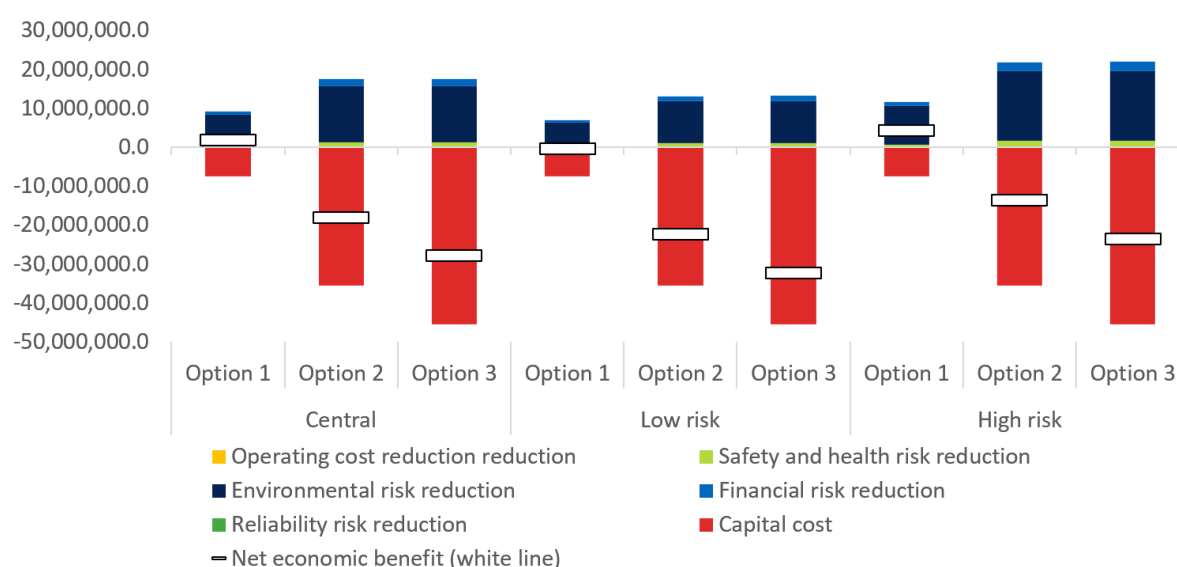
The sensitivity analysis has investigated how the NPV results are affected by changes to other variables, including the discount rate and capital costs.

## Option 1 delivers the greatest net economic benefits

Under all scenarios, the costs of mitigating the risks under Option 1 are found to be significantly outweighed by the expected benefit of avoiding the risks.

The net economic benefits delivered by Option 1 are estimated at \$1.93 million.

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



## Draft conclusion

Option 1 (replacing 29 wood pole structures with steel or concrete poles) is the preferred option to meet the identified need at this stage of the RIT-T. Moving forward with this option is the most prudent and economically efficient solution to manage and mitigate safety and environmental risk to ALARP. Consequently, it will ensure our obligations under the *New South Wales Electricity Supply (Safety and Network Management) Regulation 2014* and our Electricity Network Safety Management System (ENSMS) are met.

The estimated capital expenditure associated with this option is \$9.31 million. Routine operating and maintenance costs relating to planned checks by our field crew are \$97,039 per year. Option 1 is found to have positive net benefits under all scenarios investigated and, on a weighted basis, will deliver \$1.93 million in net economic benefits.

The works would be undertaken from 2023/24 to 2026/27 (including completion of the RIT-T). 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.

## Exemption from preparing a PADR

Subject to the identification of additional credible options during the consultation period, publication of a Project Assessment Draft Report (PADR) is not required for this RIT-T as we consider that the conditions in clause 5.16.4(z1) of the NER exempting RIT-T proponents from providing a PADR have been met.

Specifically, production of a PADR is not required because:

- the estimated capital cost of the preferred option is less than \$54 million;<sup>6</sup>
- we have identified in this PSCR our preferred option and the reasons for that option, and noted that we will be exempt from publishing the PADR for our preferred option; and
- we consider that the preferred option and any other credible options do not have a material market benefit (other than benefits associated with changes in voluntary load curtailment and involuntary load shedding).

If an additional credible option that could deliver a material market benefit is identified during the consultation period, then we will produce a PADR that includes an assessment of the net economic benefit of each additional credible option.

If no additional credible options with material market benefits are identified during the consultation period, then the next step in this RIT-T will be the publication of a Project Assessment Conclusions Report (PACR) that addresses all submissions received, including any issues in relation to the proposed preferred option raised during the consultation period.<sup>7</sup>

## Submissions and next steps

We welcome written submissions on materials contained in this PSCR. Submissions are due on 22 August 2025<sup>8</sup>.

Submissions should be emailed to our Regulation team via [regulatory.consultation@transgrid.com.au](mailto:regulatory.consultation@transgrid.com.au).<sup>9</sup> In the subject field, please reference 'Line 94M 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.

Subject to additional credible options being identified during consultation, we anticipate publication of a PACR by October 2025.

<sup>6</sup> Varied to \$54m based on the [AER Final Determination: Cost threshold review](#), November 2024.

<sup>7</sup> In accordance with NER clause 5.16.4(z2).

<sup>8</sup> Consultation period is for 12 weeks, additional days have been added to cover public holidays.

<sup>9</sup> We are bound by the *Privacy Act 1988 (Cth)*. In making submissions in response to this consultation process, we 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.