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Summary: Managing risk on Line 963

RIT-T Project Assessment Conclusions Report

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Summary

We are applying the Regulatory Investment Test for Transmission (RIT-T) to options for mitigating environmental, safety and financial (reactive maintenance) risks caused by the widespread condition issues on various line components of the 132 kV transmission line running between Tomago and Taree ('Line 963'). Publication of this Project Assessment Conclusions Report (PACR) represents the final step in the RIT-T process and follows the Project Specification Consultation Report (PSCR) published in February 2024.

Line 963 is a 132 kV transmission line between Tomago and Taree that was commissioned in 1992. Transgrid owns the line north of the Karuah River (Structure 185 onwards) to Taree, while Ausgrid owns the line to the south (including the river crossing) to Tomago.

The Transgrid section of the line has a route length of approximately 109 km and consists of 334 structures; 288 of those structures each contain multiple wood poles. This RIT-T will address condition issues affecting the structures, including non-pole related issues such as insulators, fittings and signage.

Line 963 was impacted by the Hillville Fire in November 2019. The fire impacted a total of 42 Transgrid structures between Structures 435 and 475 (35 of them wood pole structures) over a route length of 13.7 km. The line was restored to a serviceable condition following the fires to meet network needs in the mid-north coast of NSW.

Subsequent inspections of the sections impacted by the fire have identified eight structures as burnt and charred (Structures 445, 446, 449, 451, 452, 457, 460, 462). In addition, the conductor (particularly in the vicinity of Structure 446) has also had significant heat stress during the bushfire event, which can cause aluminium to anneal and lose mechanical strength. Further, the heat caused the conductor to lose some of its grease, which is expected to result in subsequent corrosion issues if not addressed.

In addition to the wood poles that are burnt and charred, detailed analysis of asset condition information has identified that various other non-bushfire-related condition issues impact 102 of the 334 structures across multiple line components, including earthwire.

Identified need: managing risks on Line 963

If action is not taken, the condition of Line 963 will expose us and our customers to increasing levels of risk going forward, as deterioration increases the likelihood of failure.

Specifically, under the 'do nothing' base case, incidents such as conductor drop and tower collapse could occur. Such incidents could have considerable environmental risks through potential bushfires and could have considerable safety consequences for nearby residents and members of the public, as well as our field crew who may be working on or near the assets. These incidents also have financial risks associated with reactive maintenance that may be required under emergency conditions.

The proposed investment will enable us to manage environmental, safety and financial risks on Line 963.

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 environmental and safety 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).[1]

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

Two credible options have been considered

We consider that there are two feasible options from a technical, commercial, and project delivery perspective that can be implemented in sufficient time to meet the identified need. Specifically:

- Option 1 involves replacement of all wood pole structures that have identified deterioration with steel or concrete poles, including the bushfire impacted wood poles. Option 1 would address all the identified condition issues on the line with the exception of the bushfire impacted conductor and earthwire.
- Option 2 is the same as Option 1, except that it also replaces the bushfire impacted conductor and 28 km of earthwire.

The capital expenditure (capex) of these options is summarised in Table E-1 below. The cost of both options has increased since the PSCR (by $1.7 million and $3.2 million, respectively) on account of the scope of the structural works expected to be required increasing based on further analysis.

Table E-1 Summary of the capex for the credible options

Option	Description of works	Capital expenditure
Option 1	Replace 24 wood pole structures, plus additional defects on the line	$9.5 million
Option 2	Replace 24 wood pole structures, the conductor between Structure 442 to 463 and 28km of earthwire plus additional defects on the line	$12.2 million

Neither option will affect annual routine operating costs since they do not affect the frequency of inspections.

No submissions were received in response to the PSCR and there have been no material developments

We published a PSCR on 14 February 2024 and invited written submissions on the material presented within the document. No submissions were received in response to the PSCR.

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

[1] Our ENSMS follows the International Organization for Standardization's ISO31000 risk management framework which requires following a hierarchy of hazard mitigation approach.

No submissions were received in relation to non-network options

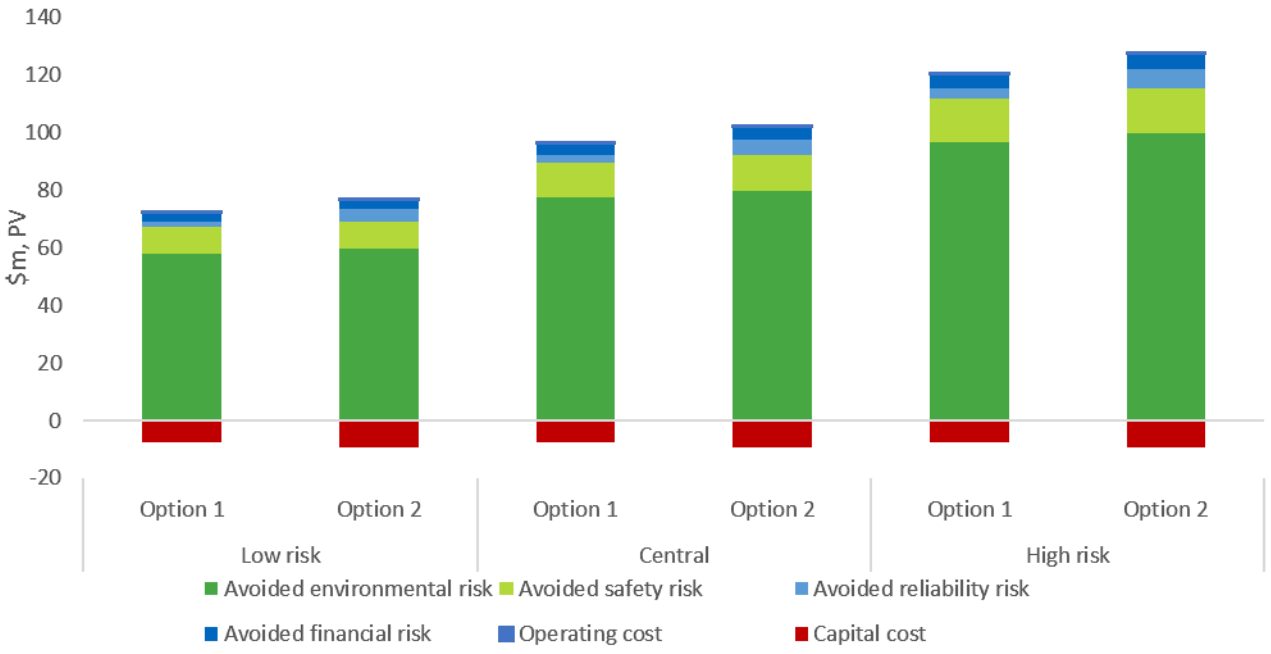
In the PSCR we noted that we do not consider non-network options to be commercially or technically feasible to assist with meeting the identified need for this RIT-T, as non-network options will not mitigate the environmental, safety and financial risks posed as a result of asset deterioration.

No submissions were received in response to the PSCR in relation to non-network options.

Option 2 is the preferred option for this RIT-T

Option 2 is found to have the greatest net economic benefits of the two options assessed, in each scenario as well as on a weighted basis. On a weighted basis, Option 2 is found to deliver approximately $92.4 million in net benefits.

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



The finding that Option 2 is the top-ranked option is also found to be robust to a range of sensitivty and boundary tests.

This PACR therefore finds that Option 2 is the preferred option at this final stage of the RIT-T. Option 2 was also found to be the preferred option in the PSCR.

Option 2 involves the remediation of all identified condition issues on the line, including the replacement of the conductor between Structure 442 to 463 with an equivalent conductor (and replacement of all conductor components and hardware). The scope of work includes the replacement of 24 wood poles, 6 km of conductor and 28 km of earthwire.

The works are estimated to take place between 2024/25 and 2025/26.

Next steps

This PACR represents the final step of the consultation process in relation to the application of the RIT-T process undertaken by Transgrid.

Parties wishing to raise a dispute notice with the AER may do so prior to 17 January 2025 (30 days after publication of this PACR). Any dispute notices raised during this period will be addressed by the AER within 40 to 100 days, after which the formal RIT-T process will conclude.

Further details on the RIT-T can be obtained from Transgrid's Regulation team via regulatory.consultation@transgrid.com.au.. In the subject field, please reference 'Line 963 PACR'.