



Maintaining Reliability of Supply at Townsville South

Summary Project Specification Consultation Report



Summary

The Townsville South Substation is located approximately 11 kilometres south-east of the Townsville central business district and is a major injection point into the Ergon Energy distribution network for southern and eastern Townsville. The substation is also a transfer point for enabling the flow of electricity between Clare to the south and Townsville to the north. The substation was established in 1977, and the age and condition of its primary plant places the network at risk of being unable to meet current and forecast energy needs.

Powerlink is reapplying the Regulatory Investment Test for Transmission to maintain reliability of supply at Townsville South

In 2018/19, Powerlink undertook a Regulatory Investment Test for Transmission (RIT-T) to address the condition risks arising from ageing primary plant at Townsville South Substation. The preferred option in the Project Assessment Conclusions Report (PACR) was staged replacement of selected primary plant using live tank circuit breakers. The PACR indicated completion was planned by December 2022 at an estimated capital cost of \$4.94 million in 2018/19 prices.

Following completion of the RIT-T, constrained availability of field resources, during the COVID-19 pandemic, delayed project delivery. During this time, the condition of the primary plant further deteriorated, resulting in Powerlink implementing a number of Restricted Access Zones (RAZs) to maintain safety at the substation. Powerlink also encountered early failures in equipment at the substation, including particular current transformer and voltage transformer models. Powerlink has mitigated the increased asset risk through operational measures, including additional inspections and maintenance.

The original scope of the project has been expanded, predominantly driven by the need to replace equipment prone to premature failure. Initially, the project scope involved replacing seven circuit breakers with live tank models, while retaining the existing current transformers in those bays. However, it has since been identified that these current transformers are prone to premature failure and now require replacement. As a result, the preferred option has shifted to installing dead tank circuit breakers, which integrate current transformers within the unit. Additionally, the scope has been expanded to include the replacement of further voltage transformers that have also demonstrated premature failure.

Powerlink considers the change in preferred option to be a material change of circumstances under the RIT-T framework set out in the National Electricity Rules (NER) and is reapplying the RIT-T to maintain reliability of supply to Townsville South.

Powerlink intends to adopt the expedited RIT-T process

The estimated capital cost of the most expensive credible option to address primary plant risks at Townsville South Substation exceeds the minimum threshold (currently \$8 million) to apply the RIT-T. As the identified need for the proposed investment is to meet reliability and service standards specified within Powerlink's Transmission Authority, guidelines and standards published by the Australian Energy Market Operator (AEMO), and Powerlink's ongoing compliance with Schedule 5.1 of the NER, it is classified as a reliability corrective action under the NER. The identified need is not discussed in AEMO's most recent [Integrated System Plan](#) (ISP) and is therefore subject to the application and consultation process for RIT-T projects that are not actionable ISP projects. As the identified need is a reliability corrective action, the preferred option may have a net economic cost.

Powerlink intends to adopt the expedited process for non-ISP projects for this RIT-T, as the estimated capital cost of the preferred option is below \$54 million, and is unlikely to result in any material market benefits other than those arising from a reduction in involuntary load shedding. The reduction in involuntary load shedding under the credible network option is included in the cost benefit analysis.

Powerlink has developed a non-credible base case against which to compare credible options

Powerlink has modelled a non-credible option where the asset condition issues are managed via operational maintenance or operational measures only. This would result in an increase in overall risk levels due to continuing deterioration of asset condition and increasing failure rectification timeframes due to obsolescence issues. These increasing risk levels are assigned a monetary value using Powerlink’s Risk Cost framework and added to the ongoing maintenance costs to form the base case.

Powerlink has developed one credible network option to address the identified need

The table below details the credible network option and shows that this option has a positive Net Present Value (NPV) relative to the base case. Further credible options were initially considered in Powerlink’s first RIT-T, however given the difficulties in delivering these other options, only one credible option remains.

Summary of Credible Options

Option	Description	Total Costs (\$m, 2025)	NPV relative to base case (\$m)	Ranking
1	Single stage replacement utilising dead tank circuit breakers by 2027.	20.23	27.28	1

Note: Total costs exclude risk and contingency.

Powerlink welcomes the potential for non-network options to form part or all of the solution

To enhance engagement outcomes, Powerlink proactively applies an engagement strategy to each RIT-T consultation. The scope of engagement activities undertaken is dependent upon various considerations, such as the characteristics and complexity of the identified need and potential credible options outlined in the [RIT-T stakeholder engagement matrix](#).

Powerlink welcomes submissions from proponents who consider they could offer a potential non-network option that is both economically and technically feasible, on an ongoing basis. To mitigate the impact of a single 132 kilovolt feeder outage, a non-network solution would need to provide supply to major customers in the area of up to a peak of 70 megawatts (MW), and up to a peak of 1160 megawatt hours per day on a continuous basis. To maintain supply to major customers in the area and the Ergon Energy distribution network, a non-network solution would need to provide up to a peak of 150MW, and up to a peak of 2,700 megawatt hours per day on a continuous basis.

Lodging a submission with Powerlink

Powerlink seeks written submissions on this Project Specification Consultation Report (PSCR), on or before **Friday, 10 April 2026**, particularly on the credible options presented in this PSCR. Submissions should be addressed to:

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