



Powerlink Queensland

Summary of Project Assessment Conclusions Report

14 December 2018

Addressing secondary systems condition risks at Tarong Substation

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Summary

Located approximately 130km north-west of Brisbane, Tarong Substation is a major part of the 275kV transmission backbone connecting generators to the major load centres in the south-east of the State. It also provides the major injection point for local, rural and bulk mining loads in south-west Queensland.

Several 275kV secondary systems at the Tarong Substation are reaching the end of their technical service life and are no longer supported by the manufacturer, with no spares available.

Secondary systems are the control, protection and communications equipment that are necessary to operate the transmission network and prevent damage to primary systems when adverse events occur. Under the National Electricity Rules ('the Rules'), Transmission Network Service Providers (TNSPs) are required to provide sufficient secondary systems, including redundancies, to ensure the transmission system is protected.

This presents Powerlink with operational and compliance issues, requiring resolution. Since consideration for this investment is driven by an obligation in the National Electricity Rules (the Rules), it is a 'reliability corrective action' under the Regulatory Investment Test for Transmission (RIT-T).

This Project Assessment Conclusions Report (PACR) represents the final step of the RIT-T process prescribed under the Rules undertaken by Powerlink to address the condition risks arising from ageing and obsolete secondary systems at Tarong Substation. It contains the results of the planning investigation and cost-benefit analysis of credible options. In accordance with the RIT-T, the credible option that maximises the present value of net economic benefits is recommended for implementation.

Credible options considered

Powerlink identified two credible network options to address the identified need, as presented in Table 1.

Table 1: Summary of credible options

Option	Description	Indicative capital cost (\$million, 2017/18)	Indicative average annual operating and maintenance costs (\$million, 2017/18)
Base Option: Replace selected secondary systems in existing building by late 2022	Single stage replacement of selected secondary systems in free space of existing building	7.8	0.015
Option 1: Replace selected secondary systems using pre-fabricated building by late 2022	Single stage replacement of all obsolete secondary systems and associated panels, using a prefabricated building with new secondary systems equipment and wiring preinstalled. New yard cabling to bay marshalling kiosks	8.7	0.015

Evaluation and conclusion

The RIT-T requires that the proposed preferred option maximises the present value of net economic benefit, or minimises the net cost, to all those who produce, consume and transport electricity in the market.

In accordance with the expedited process for this RIT-T, the Project Specification Consultation Report (PSCR), published in September 2018, made a draft recommendation to implement the Base Option, single stage replacement of selected secondary systems in the free space of the existing building by December 2022.

The estimated capital cost of the proposed preferred option is \$7.8 million in 2017/18 prices. Powerlink is the proponent of the proposed network project.

There were no submissions received in response to the PSCR.

As the outcomes of the economic analysis contained in this PACR remain unchanged from those published in the PSCR, the draft recommendation has been adopted without change as the final recommendation, and will now be implemented.



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