



Powerlink Queensland

Summary of Project Specification Consultation Report

26 September 2018

Addressing the secondary systems condition risks at Abermain Substation

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Summary

Aging and obsolete secondary systems at Abermain Substation require Powerlink to take action

Located in south-east Brisbane, Abermain Substation is a major injection point into the Energex distribution network. Planning studies have confirmed there is an enduring need for the substation to maintain the supply of electricity in the Ipswich, Lockrose, Gatton and south western parts of Brisbane.

Most secondary systems at the Abermain Substation are reaching the end of their technical service life, and are no longer supported by the manufacturer, with few 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.

Powerlink is required to apply the RIT-T to this investment

This investment is driven by an obligation under the Rules, and is classified as a 'reliability corrective action' under the RIT-T.

Two credible options have been identified to address the need

Table 1: Summary of credible options

Option	Description	Indicative capital cost (\$million, 2018/19)	Indicative average annual operating and maintenance costs (\$million, 2018/19)
Base Option: In-situ panel replacement by June 2021	Replacement of all secondary systems using pre-wired panels within an extended existing building by June 2021	6.91	0.04
Option 1: Full replacement in pre-fabricated by June 2021	Replacement of all secondary systems using a modular prefabricated building with new secondary systems installed by June 2021	6.76	0.04

The Base Option reflects a conventional approach to ensuring continued compliance with the secondary systems obligations in the Rules and has been selected to serve as the basis of comparison between options. Due to space limitations in the existing building at Abermain, the Base Option requires an expansion to the building.

This option has then been compared with an option where all of the secondary systems are replaced using a new prefabricated building, which is built off-site and then installed at Abermain in late 2020, with final commissioning in June 2021.

Powerlink has also considered whether non-network options could address the identified need. A non-network option that avoids replacement of secondary systems would need to replicate the support that Abermain Substation provides Powerlink and Energex in meeting their reliability obligations on an enduring basis at a cost that is lower than the network options under consideration.

Powerlink welcomes submissions from potential proponents who consider that they could offer a credible non-network option that is both economically and technically feasible.

Option 1 has been identified as the preferred option

Due to the nature of the investment, none of the options considered, including the preferred option, are expected to give rise to market benefits. The difference between the options relates primarily to differences in capital costs. The net present value (NPV) analysis demonstrates Option 1 provides the lowest cost option. (Refer to Table 2)

Table 2: NPV of credible options (NPV, \$m 2018/19)

Option	Central scenario	Ranking
Base Option	-5.46	2
Option 1	-5.35	1

Powerlink recommends Option 1 based on the following:

- lowest cost in NPV terms
- simplified planning, design and implementation as there is no need to work within the constraints of legacy designs and architecture or to extend the existing building as required under the Base Option; and
- simplified project delivery, by reducing the number of deployments of specialist resources to site, compared to the Base Option.

Under Option 1, work on prefabricating the secondary systems building will commence off site in late 2019, with preparatory construction activities occurring on-site in mid-2020. Installation of the prefabricated secondary systems building on site will take place in late 2020 with full commissioning by June 2021.

The indicative capital cost of this option is \$6.76 million in 2018/19 prices.

Submissions

Powerlink welcomes written submissions on this *Project Specification Consultation Report*. Submissions are particularly sought on the credible options presented.

Submissions are due on or before Monday 24 December 2018.

Please address submissions to:

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