



TransGrid

Summary: Maintaining a reliable Static Var Compensator at Lismore

RIT-T – Project Assessment Conclusions Report

Region: Northern

Date of issue: 17 December 2019

Summary

TransGrid is applying the Regulatory Investment Test for Transmission (RIT-T) to options for maintaining reliability of the Static Var Compensator (SVC) at Lismore. Publication of this Project Assessment Conclusions Report (PACR) represents the final step in the RIT-T process.

TransGrid's analysis indicates that the control system component of the SVC at Lismore has reached a condition that reflects the end of serviceable life. This assessment followed an increase in frequency of failure of the SVC over the last few years.

Between 1 August 2018 and 28 February 2019, the SVC was unavailable for approximately 59% of the time as a result of failures of the control component. TransGrid published a Project Specification Consultation Report (PSCR) in May 2019 which noted the most recent failure of the asset at that time which resulted in the SVC being out of service between November 2018 and January 2019 for a period of 58 days. Since publication of the PSCR, a subsequent failure has occurred resulting in the SVC being out of service between August and November for a period of 27 days.

As the existing control system component is superseded by new technology at the manufacturer level and the existing technology becomes obsolete, spare parts become scarce and it is impossible to operate the SVC to support normal operating transmission system conditions. Ability to support the transmission network is vital for power system security and reliability, therefore the condition issues affecting the Lismore SVC must be addressed.

An out-of-service Lismore SVC will increase the risk of involuntary load shedding in the Lismore area.

TransGrid commenced this RIT-T to identify and consult on options to mitigate and alleviate the deterioration of the Lismore SVC and the risk from technology obsolescence. As investment is intended to maintain a reliable supply to Lismore area and generate positive net economic benefits, TransGrid considers this a 'market benefit'-driven RIT-T.

No submissions received in response to Project Specification Consultation Report

TransGrid published a Project Specification Consultation report (PSCR) on 27 May 2019 and invited written submissions on the material presented within the document. No submissions were received in response to this PSCR.

The PSCR presented a range of credible network options that would meet the identified need from a technical, commercial, and project delivery perspective.¹ The options are summarised in the table below.

All costs presented in this PACR are in 2019/20 dollars.

¹ As per clause 5.15.2(a) of the NER.

Table Error! No text of specified style in document. Summary of the three credible options considered (\$2019/20)

Option	Description	Capital cost (\$m)	Operating costs (\$ per year)	Remarks
Option 1	Refurbish the existing SVC control system	12.1 ± 25% (1.6m in 2019/20 9.9m in 2020/21 0.6m in 2021/22)	~44,000	Most economical and preferred option
Option 2	Complete SVC replacement	> 28	~44,000	Not progressed as uneconomical due to significant cost
Option 3	New transmission line from Dumaresq to Lismore	~ 210	~400,000	Not progressed as uneconomical due to significant cost

As part of this consultation process, TransGrid encouraged interested parties to make submissions regarding non-network options that satisfy, or contribute to satisfying, the identified need. In the PSCR, TransGrid outlined the technical characteristics required for a non-network option to address the expected involuntary load shedding when remediation options either do not proceed or are delayed.

No submissions were received regarding non-network options throughout the consultation period.

Conclusion: refurbishment of the existing SVC control system is optimal

The optimal commercially and technically feasible option presented in the PSCR — Option 1, the refurbishment of the existing SVC control system — remains the preferred option to meet the identified need.

Option 1 involves the refurbishment of the existing SVC control system. The scope of works proposed under Option 1 is outlined in section 3.2 of this PACR.

The implementation of Option 1 will bring significant net economic benefits of approximately \$14.8 million. The new control system, which has expected technical life of 20 years, would fully utilise the expected technical life of the entire SVC.²

Moving forward with this option is the most prudent and economically efficient solution to maintain a reliable SVC at Lismore.

The estimated capital expenditure associated with this option is \$12.1 million ± 25%.

The works will be undertaken between 2019/20 and 2021/22. Planning and procurement (including completion of the RIT-T) will occur between 2019/20 and 2020/21, while the delivery and replacement of the identified assets is planned to occur during 2020/21 and all works will be completed by 2021/22.

Necessary outages of affected asset(s) in service will be planned appropriately in order to complete the works with minimal impact on the network.

² SVC primary components typically have a technical life expectancy of 40 to 50 years

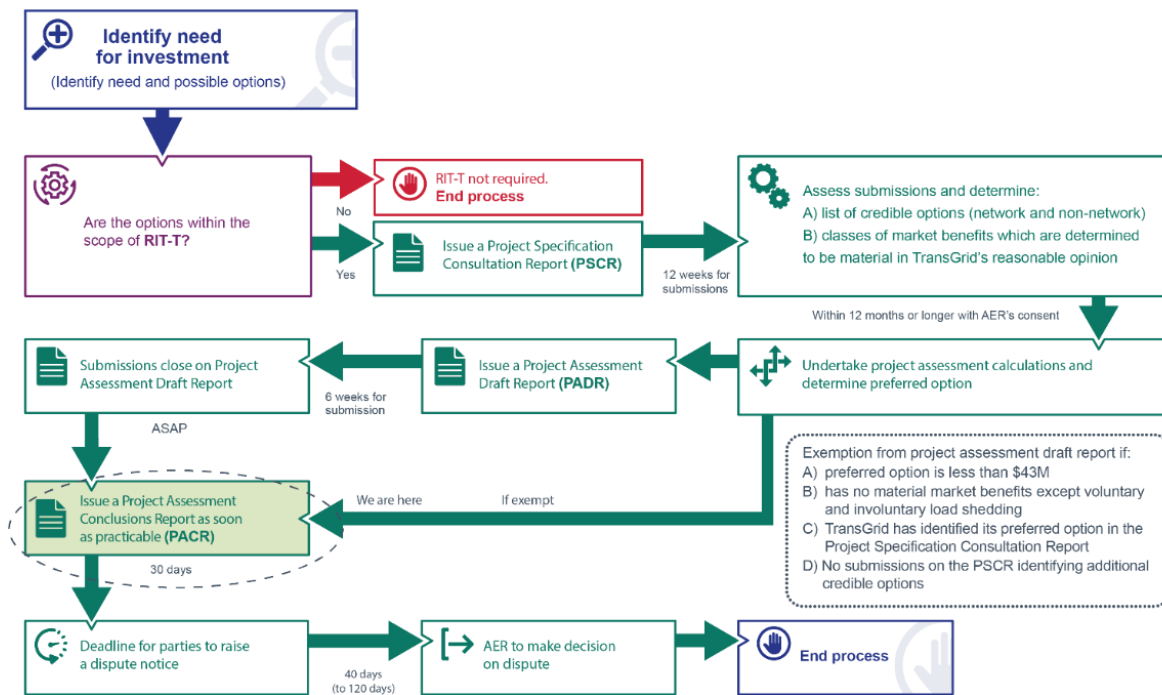
Next steps

This PACR represents the third step in a formal Regulatory Investment Test for Transmission (RIT-T) process undertaken by TransGrid. It follows a Project Specification Consultation Report (PSCR) released in May 2019. The second step, production of a Project Assessment Draft Report (PADR), was not required as TransGrid considered its investment in relation to the preferred option to be exempt from this part of the RIT-T process under NER clause 5.16.4(z1). Production of a PADR was not required due to:

- > preferred option being less than \$43 million
- > no material market benefits except voluntary load curtailment and involuntary load shedding
- > preferred option has been identified in the PSCR
- > no submissions on the PSCR identifying additional credible options.

This project was exempt from producing a PADR as involuntary load shedding is the only class of benefit material to this RIT-T. This PACR represents the third stage of the consultation process for this RIT-T.

Figure 1 This PACR is the third stage of the RIT-T process³



Parties wishing to raise a dispute notice with the AER may do so prior to 20 January 2020 (30 days after publication of this PACR⁴). Any dispute notices raised during this period will be addressed by the AER within 40 to 120 days, after which the formal RIT-T process will conclude.

Further details on the project can be obtained from TransGrid's Regulation team via RIT-TConsultations@transgrid.com.au. In the subject field, please reference 'PACR Lismore SVC project'.

To read the full Project Assessment Conclusions Report visit the [Regulatory Investments Test page](#) on TransGrid's website.

³ Australian Energy Market Commission. "Replacement expenditure planning arrangements, Rule determination". Sydney: AEMC, 18 July 2017.65. Accessed 19 November 2019. <https://www.aemc.gov.au/sites/default/files/content/89fbf559-2275-4672-b6ef-c2574eb7ce05/Final-rule-determination.pdf>

⁴ Additional days have been included to cover public holidays.