

# NEED/OPPORTUNITY STATEMENT (NOS)



Misc DNSP Secondary Systems Works

NOS- 000000001694 revision 1.0

**Ellipse project no(s):** P0010124

**TRIM file:** [TRIM No]

**Project reason:** Other - Customer request

**Project category:** Prescribed - Augmentation

## Approvals

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Reviewed	Ronny Schnapp	Network & Connection Analysis Engineer
Endorsed	Vincent Ong	Network & Connection Analysis Manager
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	Mark Jones	Secondary Systems & Communications Asset Manager
Approved	Nalin Pahalawaththa	Manager / Power System Analysis
Date submitted for approval	8 December 2016	

## Change history

Revision	Date	Amendment
0	27/05/2016	Initial issue
1	8/12/2016	Amended risks to align with NER compliance requirements

## 1. Background

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Minor secondary systems projects (protection, communications and commissioning works) initiated within Distribution Network Service Provider (DNSP) organisations could require reciprocal works at TransGrid sites. For example, transmission line protection and communications works located at a DNSP zone substation could require equivalent protection and communications works at TransGrid's substation (the remote end of the transmission line). Currently, individual work requests are issued by the DNSP's to TransGrid as their projects arise.

## 2. Need/opportunity

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Analysis of minor secondary systems projects investment during the 2014/15 to 2018/19 Regulatory Control Period (from July 2014 to November 2016, approximately 2.5 years) is \$1.2 million.<sup>a</sup> These investments were for remote end works for Ausgrid, Endeavour Energy and Essential Energy. No investment was required for ActewAGL. This expenditure equates to approximately \$0.16 million per year for the three DNSPs. It is anticipated that expenditure will remain constant for the remainder of the current Regulatory Control Period for each DNSP.

Endeavour Energy has advised TransGrid in a letter dated 19 August 2016 that in the 2018/19 to 2022/23 Regulatory Control Period, a number of sites in their network will require minor secondary systems (protection, communications, and commissioning works) investment. The exact locations for these works are not known at this stage, however, individual work requests will be sent to TransGrid, as per current process, as the projects arise. Endeavour Energy has estimated that approximately \$0.1 million per annum will be required by TransGrid to fund these minor works (\$0.5 million over the 2018/19 to 2022/23 period).

It is assumed the estimated expenditure for Ausgrid and Essential Energy will be similar to that of Endeavour Energy. That is for Ausgrid \$0.1 million per annum (\$0.5 million over the 2018/19 to 2022/23 period) and for Essential Energy \$0.1 million per annum (\$0.5 million over the 2018/19 to 2022/23 period).

These types of works are not included in any other proposed 2018/19 to 2022/23 projects.

This estimate (annual expense of \$0.1 million) is comparable to the level of current minor secondary systems project investment (\$0.16 million) within the current Regulatory Control Period for Ausgrid, Endeavour Energy and Essential Energy.

With the relative size of the ActewAGL network, and no historical investments completed, no estimate expenditure has been allocated within this need.

Hence the total estimate expenditure is \$1.5 million over the 2018/19 to 2022/23 period.

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<sup>a</sup> Expense incurred by TransGrid due to these types of projects occurring.

## 2.1 Risks

The primary risk of TransGrid not addressing this need is that it will not comply with the NER Clause 4.6.5(b), which states:

*“If there is an outage of both protection systems on a transmission line and AEMO determines this to be an unacceptable risk to power system security, AEMO must take the transmission element out of service as soon as possible and advise the appropriate Network Service Provider immediately this action is undertaken.” (NER v.85).*

Furthermore, the NER states that “this clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations clause 6(1) and Schedule 1”. According to the National Electricity Law (1996) clause 2AA(1)(c), the penalty to TransGrid would be \$100,000 and up to \$10,000 per day for every day during which the protection systems are non-compliant. Therefore, the risk cost of this option is assessed to be:

### Financial Risk Cost

*Risk cost = civil penalty*

$$= \$100,000 + \$10,000 \text{ (per day)} * 365 \text{ (days per year)} * 5 \text{ (no. of years)}^b$$

$$= \$18.35 \text{ million} / 5 \text{ years}$$

$$= \mathbf{\$3.67 \text{ million per annum}}$$

There are no other risk types applicable to this Need.

The Total Risk cost is \$3.67 million, refer Attachment 1.

## 3. Related needs/opportunities

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Nil

## 4. Recommendation

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It is recommended that an Option Evaluation Report be completed to address the identified need.

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<sup>b</sup> Assuming that the violation persists over the entire 2018/19 to 2022/23 regulatory control period.

## Attachment 1 – Risk Cost Summary

### Current Option Assessment - Risk Summary

Project Name: Secondary Systems works for DNSPs

Option Name: 1694 - Base Case

Option Assessment Name: 1694 - Base Case - Carry out sec sys works - Assessment 1

Rev Reset Period: Next (2018-23)



Major Component	No.	Minor Component	Sel. Hazardous Event	LoC x CoF (\$M)	Failure Mechanism	NoxLoC xCoF (\$M)	PoF (Yr 1)	Total Risk (\$M)	Risk (\$M) (Rel)	Risk (\$M) (Op)	Risk (\$M) (Fin)	Risk (\$M) (Peo)	Risk (\$M) (Env)	Risk (\$M) (Rep)
Protections non compliant	1	Protection	Unplanned Outage - HV (Protections non compliant)	\$3.67	Failure	\$3.67	100.00%	\$3.67			\$3.67			
				\$3.67		\$3.67		\$3.67			\$3.67			

Total VCR Risk:

Total ENS Risk: