

# Network capability parameter action plan

Appendix 21



Tasmanian Networks Pty Ltd



Transend Networks Pty Ltd



## Appendix 1

### Network capability incentive parameter action plan

Table A1.1 Network capability incentive parameter action plan (\$'000 2013–14)

Project priority	Project description	Project circuit /Injection point	Annualised market benefit (\$'000)	Expenditure					Total (\$'000)	Expenditure type	AEMO endorsement	Comments
				2014–15	2015–16	2016–17	2017–18	2018–19				
1	Continued operation & maintenance of existing transmission line dynamic rating systems	Whole network	15,200	160	160	160	160	160	800	Opex	No	Increased power transfer capability
2	Maintenance of prescribed special protection schemes	Various circuits and connection sites across the network		30	30	30	30	30	150	Opex	No	Refer to note 1 for additional comments
3	Fifteen minute transient ratings for transmission lines	All transmission lines that are currently controlled through AEMO's generation dispatch	6 - 84 per line	40	-	-	-	-	40	Capex	Yes	Increased power transfer capability
4	Dynamic rating of Knights Road supply transformers	Knights Road Substation	456	150	-	-	-	-	150	Capex	Yes	Increased power transfer capability
					4	4	4	4	16	Opex	Yes	
5	Dynamic rating of Boyer Substation supply transformers	Boyer Substation	507	180	-	-	-	-	180	Capex	Yes	Increased power transfer capability
					-	5	5	5	5	20	Opex	
6	Installation of new line fault indicators	Farrell-Que-Savage River-Hampshire, Farrell-Rosebery-Queenstown, Norwood-Scottsdale-Derby and Lindsfarne-Sorell-Triabunna 110 kV transmission circuits	588	30	100	100	-	-	230	Capex	Yes	Reduced unplanned outage duration
					-	1	4	7	7	19	Opex	
7	Review and optimisation of Operational Margins for Transend limit equations	All transmission circuits whose flow is controlled by AEMO constraint equations	79 - 396	35	-	-	-	-	35	Opex	Yes	Increased power transfer capability

## Transitional Revenue Proposal for the period 1 July 2014 to 30 June 2015

Project priority	Project description	Project circuit /Injection point	Annualised market benefit (\$'000)	Expenditure					Total (\$'000)	Expenditure type	AEMO endorsement	Comments
				2014-15	2015-16	2016-17	2017-18	2018-19				
8	Line fault indicator (LFI) remote communications	Palmerston-Avoca and Knights Road-Huon River-Kermandie 110kV transmission circuits	88	60	-	-	-	-	60	Capex	Yes	Reduced unplanned outage duration
9	George Town automatic voltage control scheme (GTAVCS) 2.0	Basslink Tasmania-Victoria interconnector	424	480	-	-	-	-	480	Capex	Yes	Improved power quality and efficiency gains
10	Dynamic rating of all 220/110 kV network transformers	All 220/110kV network transformers	750	-	350	350	200	-	900	Capex	Yes	Increased power transfer capability
				-	-	10	21	27	58	Opex	Yes	
11	Restring P1 bay conductor at Palmerston Substation	Waddamana-Palmerston No 2 110kV transmission circuit	25	50	-	-	-	-	50	Capex	Yes	Increased power transfer capability
12	Replace disconnectors, CT and bay conductor to achieve line rating increase and reduce market constraints	Sheffield-George Town 220 kV transmission line	493	350	770	-	-	-	1,120	Capex	Yes	Increased power transfer capability
13	Weather station telemetry renewal	Weather stations at Creek Road, Chapel Street, Devonport, Trevallyn, Hadspen, Sheffield, and Farrell substations	223	150	300	150	150	300	1,050	Capex	Yes	Increased power transfer capability
14	Upgrade of dead end fittings on selected transmission lines.	Liapootah-Waddamana-Palmerston No 1, Liapootah-Cluny-Repulse-Chapel Street No 1, Liapootah-Chapel Street No 2 and George Town-Comalco No 4 & 5 220 kV transmission circuits. Hadspen-Norwood No 1 & 2 110 kV transmission circuits.	175	200	340	300	-	-	840	Capex	Yes	Increased power transfer capability
15	Installation of second 220 kV bus coupler circuit breaker at Farrell Substation	Farrell Substation	94	665	-	-	-	-	665	Capex	Yes	Reduced customer impact in the event of a circuit breaker failure
				-	30	30	30	30	120	Opex	Yes	

Project priority	Project description	Project circuit /Injection point	Annualised market benefit (\$'000)	Expenditure					Total (\$'000)	Expenditure type	AEMO endorsement	Comments
				2014-15	2015-16	2016-17	2017-18	2018-19				
16	Castle Forbes Bay Tee Switching Station disconnector upgrade	Castle Forbes Bay Tee Switching Station	31	-	-	250	-	-	250	Capex	Yes	Reduced planned and unplanned outage duration
17	Transmission line surge diverter installation and tower footing earthing improvements	Sheffield-Farrell 1 & 2, Farrell-Reece 1 & 2, Farrell-John Butters 220kV and Farrell-Rosebery-Queenstown 110 kV transmission circuits	68	150	350	50	-	-	550	Capex	Yes	Reduced unplanned outage frequency and market constraints in the event of lightning storms.
18	Substandard spans verification and rectification	Multiple	287	824	724	724	724	724	3,720	Capex	Yes	Maintain compliance and increase line ratings.
19	Installation of modern fault location functionality for more accurate fault location on the identified circuits	Palmerston-Hadspen No 1 & 2, Palmerston-Sheffield and Sheffield-Burnie No 1 220 kV transmission circuits	9	60	60	-	-	-	120	Capex	Yes	Reduced unplanned outage duration
				-	2	4	4	4	14	Opex	Yes	
20	Install a second 110 kV bus coupler dead tank circuit breaker in series with the existing bus coupler circuit breaker	Chapel Street Substation	25	-	-	-	-	450	450	Capex	Yes	Reduced customer impact in the event of a circuit breaker failure.
21	George Town Substation replacement of 220 kV disconnectors with remotely operable disconnectors	George Town Substation	80	-	-	1,100	2,200	-	3,300	Capex	Yes	Reduced planned and unplanned outage durations.

Note 1: AEMO has recommended that these activities should be included within Transend's operational expenditure submission within the transitional Revenue Proposal. Transend has communicated to AEMO that the STPIS explanatory statement specifically states that TNSPs should be rewarded for historical investment in dynamic ratings or other systems that release significant additional market capability. Transend proposes retaining this project in the NCIPAP to be submitted to the AER (as allowed by the STPIS guideline), for the AER to make a decision.

**Table A1.2 Total Network Capability Incentive Parameter Action Plan expenditure  
(\$'000 2013–14)**

	Expenditure					Total (\$'000)
	2014–15	2015–16	2016–17	2017–18	2018–19	
<b>Total Expenditure</b>	<b>3,614</b>	<b>3,226</b>	<b>3,271</b>	<b>3,535</b>	<b>1,741</b>	<b>15,387</b>
Capex	3,389	2,994	3,024	3,274	1,474	14,155
Opex	225	232	247	261	267	1,232

The above total expenditure equates to approximately 1.7 per cent of Transend's proposed revenue.