

Network Capability Incentive Parameter Action Plan (2014-2019)

Project Number	34
Project Priority	12
Transmission Circuit / Injection Point	Sheffield-George Town 1 and 2 220 kV transmission circuits
Project	Replace disconnectors, CT and bay conductor at Sheffield Substation on the SH-GT 1 and 2 220 kV transmission circuits to achieve a transfer rating increase and reduce market constraints.
Scope of works	Replace disconnectors K129B and K129C, and bay conductor within K1 Bay at Sheffield Substation on the SH-GT 1 220 kV transmission circuit. Replace current transformer L196, and bay conductor within L1 Bay at Sheffield Substation on the SH-GT 2 220 kV transmission circuit.
Reasons to undertake the project	Increase transmission circuit ratings and reduce market constraints caused by the two transmission circuits. SH-GT 1 and 2 220 kV transmission circuits utilise dynamic ratings. During favourable weather conditions these dynamic ratings are higher than the line terminal equipment ratings. Hence, power flow on these lines are limited due to low ratings of terminal equipment. Historically, this terminal equipment has caused market constraint. Uprating of terminal equipment would result in reduced market constraints.
Current value of the limit	SH-GT 1 220 kV: 1200A terminal rating at Sheffield Substation SH-GT 2 220 kV: 1250A terminal rating at Sheffield Substation
Target limit	SH-GT 1 220 kV: 2000A terminal rating at Sheffield Substation SH-GT 2 220 kV: 2000A terminal rating at Sheffield Substation
Priority project improvement target	Replace present limiting terminal equipment at Sheffield Substation on the SH-GT 1 and 2 220 kV transmission circuits to increase their circuit terminal ratings to 2000A to reduce market constraints.
Completion date	Dec 2015
Capital cost	\$1.12m
Operational cost	Nil
Market benefit	\$493k per annum based on historical market constraints