



Chapter 3: Committed and commissioned network developments

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Key highlights

- During 2015/16, the majority of Powerlink's committed projects provided for reinvestment in transmission lines and substations across Powerlink's network.
- Powerlink's reinvestment program is focused on reducing the identified risks associated with assets reaching the end of life.
- Connection works in the Surat and Bowen Basin have been completed.
- Major substation reinvestments at Collinsville North and Blackstone have been completed.

3.1 Transmission network

Powerlink Queensland's network traverses 1,700km from north of Cairns to the New South Wales (NSW) border. The Queensland transmission network comprises transmission lines constructed and operated at 330kV, 275kV, 132kV and 110kV. The 275kV transmission network connects Cairns in the north to Mudgeeraba in the south, with 110kV and 132kV systems providing transmission in local zones and providing support to the 275kV network. A 330kV network connects the NSW transmission network to Powerlink's 275kV network at Braemar and Middle Ridge substations.

A geographic representation of Powerlink's transmission network is shown in Figure 3.1. Single line diagrams showing network topology and connections may be made available upon request.

3.2 Committed and commissioned transmission projects

Table 3.1 lists transmission network developments commissioned since Powerlink's 2015 Transmission Annual Planning Report (TAPR) was published.

Table 3.2 lists transmission network developments which are committed and under construction at June 2016.

Table 3.3 lists transmission connection works that have been commissioned since Powerlink's 2015 TAPR was published. There are no new connection works committed or under construction at June 2016.

Table 3.4 lists network reinvestments commissioned since Powerlink's 2015 TAPR was published.

Table 3.5 lists network reinvestments which are committed and under construction at June 2016.

Table 3.6 lists network assets which are committed for retirement at June 2016.

Table 3.1 Commissioned transmission developments since June 2015

Project	Purpose	Zone location	Date commissioned
Pioneer Valley feeder bays	Increase voltage stability in Mackay	North	November 2015

Table 3.2 Committed and under construction transmission developments at June 2016

Project	Purpose	Zone location	Proposed commissioning date
Moranbah area 132kV capacitor banks (1)	Increase supply capability in the North zone	North	Progressively from winter 2013 to summer 2017/18

Note:

(1) Refer to section 4.2.3

Table 3.3 Commissioned connection works since June 2015

Project	Purpose	Zone location	Date commissioned
Aurizon 132kV rail connection (Wotonga)	New connection to supply rail load in the Bowen Basin area (I)	North	July 2015
APLNG/GLNG Wandoan South connections	New connection for CSM/LNG compression (I)	Surat	December 2015

Note:

- (I) When Powerlink constructs a new line or substation as a non-regulated customer connection (e.g. generator, mine or CSM/LNG development), the costs of acquiring easements, constructing and operating the transmission line and/or substation are paid for by the customer making the connection request.

Table 3.4 Commissioned network reinvestments since June 2015

Project	Purpose	Zone location	Date commissioned
Line refit works on 132kV transmission line between Woree and Kamerunga substations	Maintain supply reliability in the Far North zone	Far North	July 2015
Ross 300kV 100MVAR bus reactor	Maintain supply reliability in the Ross zone	Ross	August 2015
Collinsville Substation replacement (located at Collinsville North)	Maintain supply reliability in the North zone	North	October 2015
Swanbank B Substation replacement (located at Blackstone)	Maintain supply reliability in the Moreton zone	Moreton	November 2015
Line refit works on 110kV transmission line between Sumner Tee and Richlands substations	Maintain supply reliability in the Moreton zone	Moreton	October 2015

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Table 3.5 Committed and under construction network reinvestments at June 2016¹

Project	Purpose	Zone location	Proposed commissioning date
Turkinje secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	Summer 2018/19
Garbutt to Alan Sherriff 132kV line replacement	Maintain supply reliability in the Ross zone	Ross	June 2018
Nebo 275/132kV transformer replacements	Maintain supply reliability in the North zone (1)	North	Progressively from summer 2013/14 to summer 2017/18
Line refit works on the 132kV transmission line between Collinsville North and Proserpine substations	Maintain supply reliability to Proserpine	North	Summer 2018/19
Proserpine Substation replacement	Maintain supply reliability in the North zone	North	Winter 2016
Moranbah 132/66kV transformer replacement	Maintain supply reliability in the North zone	North	Summer 2016/17
Mackay Substation replacement	Maintain supply reliability in the North zone	North	Summer 2017/18
Nebo primary plant and secondary systems replacement	Maintain supply reliability in the North zone	North	Summer 2019/20
Rockhampton Substation replacement	Maintain supply reliability in the Central West zone	Central West	Winter 2016
Blackwater Substation replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2016/17
Baralaba secondary systems replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2016/17
Moura Substation replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2017/18
Stanwell secondary systems replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2018/19
Calvale and Callide B secondary systems replacement	Maintain supply reliability in the Central West zone (2)	Central West	Winter 2021
Callide A Substation replacement	Maintain supply reliability in the Central West zone (3)	Central West	Summer 2017/18
Line refit works on 132kV transmission lines between Calliope River to Boyne Island	Maintain supply reliability in the Central West zone	Central West	Summer 2017/18
Tennyson secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	Summer 2017
Upper Kedron secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	Summer 2016
Rocklea secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	Summer 2017
Blackwall IPASS secondary systems Replacement	Maintain supply reliability in the Moreton zone	Moreton	Winter 2017

¹ In the interests of transparency secondary systems projects have been included.

Table 3.5 Committed and under construction network reinvestments at June 2016 (continued)

Project	Purpose	Zone location	Proposed commissioning date
Line refit works on 110kV transmission lines between Runcorn to Algester	Maintain supply reliability in the Moreton zone	Moreton	Summer 2016/17
Line refit works on 110kV transmission lines between Belmont to Runcorn	Maintain supply reliability in the Moreton zone	Moreton	Winter 2017
Mudgeeraba 110kV Substation primary plant and secondary systems replacement	Maintain supply reliability in the Gold Coast zone	Gold Coast	Summer 2017/18
Mudgeeraba 275/110kV transformer replacement	Maintain supply reliability in the Gold Coast zone	Gold Coast	Summer 2017/18

Note:

- (1) The first transformer was commissioned in August 2013.
- (2) The majority of Powerlink's staged works are anticipated for completion by summer 2018/19. Remaining works associated with generation connection will be coordinated with the customer.
- (3) Refer to Section 4.2.4.

Table 3.6 Committed asset retirement works at June 2016

Project (1)	Purpose	Zone location	Proposed retirement date
Proserpine to Glenella 132kV transmission line retirement	Removal of assets at the end of technical life in the North zone	North	Summer 2016/17

Note:

- (1) Operational works, such as asset retirements, do not form part of Powerlink's capital expenditure budget.

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Figure 3.1 Existing Powerlink Queensland transmission network June 2016

