



Chapter 3:

Committed and commissioned network developments

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3 Committed and commissioned network developments

Key highlights

- During 2016/17, Powerlink's efforts have been predominantly directed towards 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 technical or economic life.
- A major project for Powerlink has been the Rockhampton Substation replacement which ensures a safe, reliable and secure electricity supply for the region.

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 projects¹

Table 3.1 lists transmission network developments which are committed at June 2017.

Table 3.2 lists network reinvestments commissioned since Powerlink's 2016 TAPR was published.

Table 3.3 lists network reinvestments which are committed at June 2017.

Table 3.4 lists network assets which are committed for retirement at June 2017.

Table 3.1 Committed transmission developments at June 2017

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

¹ There have been no transmission network developments commissioned since June 2016. Powerlink received and processed numerous connection enquiries since the 2016 TAPR was published, however none proceeded to connection works for commissioning during the 2016/17 financial year.

Table 3.2 Commissioned network reinvestments since June 2016

Project	Purpose	Zone location	Date commissioned
Rockhampton Substation replacement	Maintain supply reliability in the Central West zone	Central West	September 2016
Upper Kedron secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	December 2016
Line refit works on 110kV transmission lines between Runcorn and Algester	Maintain supply reliability in the Moreton zone	Moreton	December 2016
Line refit works on 110kV transmission lines between Belmont and Runcorn	Maintain supply reliability in the Moreton zone	Moreton	December 2016
Blackwall IPASS secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	June 2017

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Table 3.3 Committed network reinvestments at June 2017

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	Summer 2017/18
Garbutt transformers replacement	Maintain supply reliability in the Ross zone	Ross	Winter 2019
Ingham South 132/66kV transformers replacement	Maintain supply reliability in the Ross zone	Ross	Summer 2019/20
Nebo 275/132kV transformer replacements	Maintain supply reliability in the North zone (1)	North	Progressively from summer 2013/14 to summer 2017/18
Proserpine Substation replacement	Maintain supply reliability in the North zone	North	Summer 2017/18
Moranbah 132/66kV transformer replacement	Maintain supply reliability in the North zone	North	Winter 2018
Line refit works on the 132kV transmission line between Collinsville North and Proserpine substations	Maintain supply reliability to Proserpine	North	Summer 2018/19
Mackay Substation replacement	Maintain supply reliability in the North zone	North	Summer 2018/19
Line refit works on the 132kV transmission line between Eton Tee and Alligator Creek Substation	Maintain supply reliability in the North zone	North	Summer 2020/21
Nebo primary plant and secondary systems replacement	Maintain supply reliability in the North zone	North	Summer 2022/23
Calvale 275/132kV transformer reinvestment	Maintain supply reliability in the Central West zone (2)	Central West	Summer 2017/18
Blackwater Substation replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2017/18
Baralaba secondary systems replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2017/18
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
Dysart Substation replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2019/20
Dysart transformer replacement	Maintain supply reliability in the Central West zone	Central West	Summer 2019/20
Calvale and Callide B secondary systems replacement	Maintain supply reliability in the Central West zone (3)	Central West	Winter 2021
Line refit works on 132kV transmission lines between Calliope River and Boyne Island	Maintain supply reliability in the Central West zone	Gladstone	Summer 2017/18

Table 3.3 Committed network reinvestments at June 2017 (*continued*)

Project	Purpose	Zone location	Proposed commissioning date
Wurdong secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	Summer 2018/19
Line refit works on 275kV transmission line between Woolooga and Palmwoods	Maintain supply reliability in the Wide Bay zone	Wide Bay	Winter 2019
Tennyson secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	Summer 2018/19
Rocklea secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	Summer 2018/19
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) Approved works were rescoped as part of the Callide A/Calvale 132kV transmission reinvestment, previously named Callide A Substation replacement. Refer to Section 4.2.4.
- (3) 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.

Table 3.4 Committed asset retirement works at June 2017

Project (1)	Purpose	Zone location	Proposed retirement date
Proserpine to Glenella 132kV transmission line retirement	Removal of assets at the end of technical and economic life in the North zone	North	Winter 2017

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 2017

