

CHAPTER 9

Committed, current and recently commissioned network developments

9.1 Transmission network

9 Committed, current and recently commissioned network developments

Key highlights

- During 2017/18, 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 arising from assets reaching the end of technical service life.
- A major project for Powerlink has been the works completed at Mudgeeraba Substation to maintain the reliability of supply of Powerlink's transmission network in the Gold Coast zone ensuring a safe, reliable and secure electricity supply for the region into the future.

9.1 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 9.1.

- Table 9.1 lists transmission network developments commissioned since Powerlink's 2017 Transmission Annual Planning Report (TAPR) was published.
- Table 9.2 lists connection works commissioned since Powerlink's 2017 TAPR was published.
- Table 9.3 lists new transmission connection works for supplying loads which are committed and under construction at June 2018. These connection projects resulted from agreement reached with relevant connected customers, generators or Distribution Network Service Providers (DNSPs) as applicable.
- Table 9.4 lists network reinvestments commissioned since Powerlink's 2017 TAPR was published.
- Table 9.5 lists network reinvestments which are committed at June 2018.
- Table 9.6 lists network assets retired since Powerlink's 2017 TAPR was published.

Table 9.1 Commissioned transmission developments since June 2017

Project	Purpose	Zone location	Date commissioned
Moranbah area 132kV capacitor banks	Increase supply capability in the North zone	North	July 2017

Table 9.2 Commissioned connection works since June 2017

Project (I)	Purpose	Zone location	Date commissioned
Clare Solar Farm	New solar farm	Ross	Quarter 1 2018
Sun Metals Solar Farm	New solar farm	Ross	Quarter 1 2018

Note:

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

Table 9.3 Committed and under construction connection works at June 2018

Project (I)	Purpose	Zone location	Proposed commissioning date
Ross River Solar Farm	New solar farm	Ross	Quarter 2 2018
Coopers Gap Wind Farm	New wind farm	Bulli	Quarter 2 2018
Darling Downs Solar Farm	New solar farm	Bulli	Quarter 2 2018 (2)
Mount Emerald Wind Farm	New wind farm	Far North	Quarter 3 2018
Whitsunday Solar Farm	New solar farm	North	Quarter 3 2018 (2)
Hamilton Solar Farm	New solar farm	North	Quarter 3 2018 (2)
Haughton Solar Farm	New solar farm	Ross	Quarter 4 2018
Daydream Solar Farm	New solar farm	North	Quarter 4 2018
Hayman Solar Farm	New solar farm	North	Quarter 4 2018

Note:

- (1) When Powerlink constructs a new line or substation as a non-regulated customer connection (e.g. generator, renewable generator, mine or industrial development), the costs of acquiring easements, constructing and operating the transmission line and/or are paid for by the company making the connection request
- (2) Powerlink's scope of works for this project has been completed. Remaining works associated with generation connection are being coordinated with the customer.

Table 9.4 Commissioned network reinvestments since June 2017

Project	Purpose	Zone location	Date commissioned
Mudgeeraba 275/110kV transformer replacement	Maintain supply reliability in the Gold Coast zone	Gold Coast	May 2017 (1)
Blackwater Substation replacement	Maintain supply reliability in the Central West zone	Central West	September 2017
Garbutt to Alan Sherriff 132kV line replacement	Maintain supply reliability in the Ross zone	Ross	October 2017
Proserpine Substation replacement	Maintain supply reliability in the North zone	North	December 2017
Mudgeeraba 110kV Substation primary plant and secondary systems replacement	Maintain supply reliability in the Gold Coast zone	Gold Coast	February 2018

Note:

- (1) Formal notification of project commissioning was not issued until after the publication of the 2017 TAPR.

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Table 9.5 Committed network reinvestments at June 2018

Project	Purpose	Zone location	Proposed commissioning date
Turkinje secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	December 2018
Garbutt transformers replacement	Maintain supply reliability in the Ross zone	Ross	June 2019
Moranbah 132/66kV transformer replacement	Maintain supply reliability in the North zone	North	July 2018
Nebo 275/132kV transformer replacements	Maintain supply reliability in the North zone (1)	North	November 2018
Mackay Substation replacement	Maintain supply reliability in the North zone	North	May 2019
Line refit works on the 132kV transmission line between Collinsville North and Proserpine substations	Maintain supply reliability to Proserpine	North	June 2019
Line refit works on the 132kV transmission line between Eton tee and Alligator Creek Substation	Maintain supply reliability in the North zone	North	October 2020
Nebo primary plant and secondary systems replacement	Maintain supply reliability in the North zone	North	August 2022
Calvale 275/132kV transformer reinvestment	Maintain supply reliability in the Central West zone (2)	Central West	May 2019
Moura Substation replacement	Maintain supply reliability in the Central West zone	Central West	May 2019 (1)
Stanwell secondary systems replacement	Maintain supply reliability in the Central West zone	Central West	November 2018
Dysart Substation replacement	Maintain supply reliability in the Central West zone	Central West	October 2019
Dysart transformer replacement	Maintain supply reliability in the Central West zone	Central West	October 2019
Calvale and Callide B secondary systems replacement	Maintain supply reliability in the Central West zone (3)	Central West	June 2021
Line refit works on 132kV transmission lines between Calliope River and Boyne Island	Maintain supply reliability in the Central West and Gladstone zones	Gladstone	May 2019
Wurdong secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	September 2019
Line refit works on 275kV transmission line between Woolooga and Palmwoods	Maintain supply reliability in the Wide Bay zone	Wide Bay	December 2019
Gin Gin Substation rebuild	Maintain supply reliability in the Wide Bay zone	Wide Bay	October 2020
Tennyson secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	December 2018
Rocklea secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	November 2019
Ashgrove West Substation replacement	Maintain supply reliability in the Moreton zone	Moreton	October 2020

Table 9.5 Committed network reinvestments at June 2018 (*continued*)

Note:

- (1) Major works completed in October 2017. Minor works scheduling is being coordinated with Ergon Energy (Energex and Ergon Energy are part of the Energy Queensland Group).
- (2) Approved works were rescoped as part of the Callide A/Calvale 132kV transmission reinvestment, previously named Callide A Substation replacement. Refer to Section 5.7.5.
- (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 9.6 Completed asset retirement works since June 2017

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

Note:

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

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Figure 9.1 Existing Powerlink Queensland transmission network June 2017

