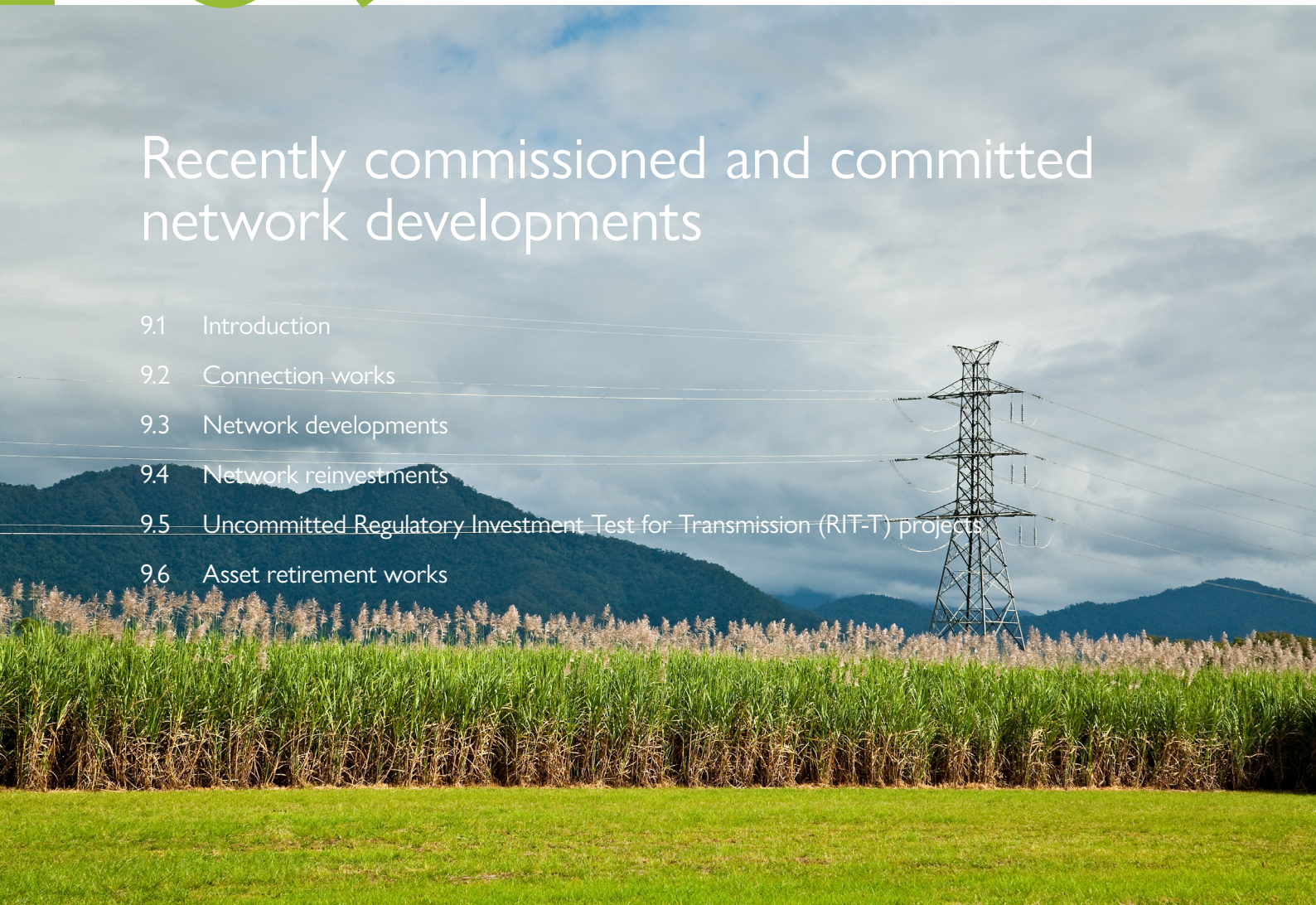


09

Recently commissioned and committed network developments

- 9.1 Introduction
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This chapter provides information on the status of customer connection works and transmission network projects since publication of the 2022 Transmission Annual Planning Report (TAPR). It presents a snapshot of projects that have been commissioned, are committed or awaiting commencement since completion of the Regulatory Investment Test for Transmission (RIT-T) as well as the status of asset retirement works.

Key highlights

- During 2022/23, Powerlink’s delivery efforts have continued to be predominantly directed towards reinvestment in transmission lines and substations across Powerlink’s network.
- Powerlink’s investment program is focussed on reducing the identified risks arising from assets reaching the end of technical service life and maintaining network resilience while continuing to deliver safe, reliable and cost efficient transmission services to our customers.
- Powerlink continues to ensure the safe and reliable supply of electricity to townships, local communities, industry and businesses across Queensland with five reinvestment projects completed since publication of the 2022 TAPR.
- Powerlink continues to support the development of all types of energy projects requiring connection to the transmission network in Queensland, with connection works for 1,575MW of variable renewable energy (VRE) generation developments and a Battery energy storage system (BESS) underway at the time of the 2023 TAPR publication.
- During 2022/23, Powerlink has completed two connection projects which will add 175MW of generation capacity to the grid¹.

9.1 Introduction

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 New South Wales (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.

The status of projects reported in this Chapter is as at 30 September 2023.

9.2 Connection works

Table 9.1 lists connection works commissioned since Powerlink’s 2022 TAPR was published.

Table 9.1 Commissioned connection works since October 2022

Project (1)	Purpose	Zone	Date commissioned
Bouldercombe BESS	New BESS	Gladstone	Quarter 2 2023
Wandoan Solar Farm (2)	New Solar Farm	Surat	Quarter 4 2022

Notes:

- (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 substation 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 9.2 lists new transmission connection works for generating systems which are committed and under construction at October 2023. These connection projects resulted from agreements reached with relevant connected customers, generators or Distribution Network Service Providers (DNSPs) as applicable.

¹ Refer to [Table 9.1](#).

Table 9.2 Committed and under construction connection works at October 2023

Project (1)(2)	Purpose	Zone	Proposed commissioning date
Kidston Pumped Storage Hydro	New pumped hydro energy storage	Ross	Quarter 3 2024
Clarke Creek Wind Farm	New Wind Farm	Central West	Quarter 3 2023
Wambo Wind Farm	New Wind Farm	South West	Quarter 4 2024
Chinchilla Battery energy storage system	New BESS	Bulli	Quarter 1 2024

Notes:

- (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 substation are paid for by the company making the connection request.
- (2) Powerlink has signed an agreement for the construction of assets in south-west Queensland for the connection of the MacIntyre Wind Precinct proposed renewable development. Refer to Section 6.6.3 and Powerlink's [website](#).

9.3 Network developments

There have been no transmission network developments (augmentation works) commissioned since Powerlink's 2022 TAPR was published.

Table 9.3 list network developments which are committed at October 2023.

Table 9.3 Committed network developments at October 2023

Project	Purpose	Zone	Proposed commissioning date
Establishment of a 3rd 275kV connection into Woree	Enable development of the Northern Queensland Renewable Energy Zone and increase supply reliability in the Far North zone	Far North	April 2024 (1)
Broadsound 275kV bus reactor	Maintain voltages in the Central West zone	Central West	October 2024

Note:

- (1) Anticipated date of the completion of works at Tully and Yabulu South substations.

9.4 Network reinvestments

Table 9.4 lists network reinvestments commissioned since Powerlink's 2022 TAPR was published.

Table 9.4 Commissioned network reinvestments since October 2022

Project	Purpose	Zone	Date commissioned
Baralaba secondary systems replacement	Maintain supply reliability in the Central West zone	Central West	November 2022
Bouldercombe primary plant replacement	Maintain supply reliability in the Central West zone	Central West	June 2023
Tarong secondary systems replacement	Maintain supply reliability in the South West zone (1) (2)	South West	December 2022
Palmwoods 275kV secondary systems replacement	Maintain supply reliability in the Moreton zone (2)	Moreton	March 2023
Line refit works on the 110kV transmission lines between South Pine and Upper Kedron	Maintain supply reliability in the Moreton zone	Moreton	July 2023

Notes:

- (1) Major works were completed in October 2017. Minor works were coordinated with Energy Queensland (Energex and Ergon Energy are part of the Energy Queensland Group) and have now been completed.
- (2) Projects impacted by restrictions related to COVID-19.

Table 9.5 lists network reinvestments which are committed at October 2023.

Table 9.5 Committed network reinvestments at October 2023

Project	Purpose	Zone	Proposed commissioning date
Woree secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	October 2024
Woree SVC secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	July 2025
Chalumbin secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	October 2025
Line refit works on the 275kV transmission lines between Chalumbin and Woree substations (section between Davies Creek and Bayview Heights)	Maintain supply reliability to the Far North and Ross zones (1)	Far North	December 2025
Cairns secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	December 2027
Line refit works on the 132kV transmission line between Townsville South and Clare South substations	Maintain supply reliability in the Ross zone	Ross	November 2024
Garbutt configuration change	Maintain supply reliability in the Ross zone	Ross	December 2024
Townsville South 132kV primary plant replacement	Maintain supply reliability in the Ross zone	Ross	October 2025
Townsville South secondary systems replacement Stage 1	Maintain supply reliability in the Ross zone	Ross	October 2025
Ross 275/132kV transformers life extension	Maintain supply reliability in the Ross zone	Ross	October 2025
Ross 275kV primary plant replacement	Maintain supply reliability in the Ross zone	Ross	November 2025
Ross 132kV primary plant replacement	Maintain supply reliability in the Ross zone	Ross	November 2025
Strathmore 132kV secondary systems replacement	Maintain supply reliability in the North zone	North	December 2023
Strathmore 275/132kV transformer establishment	Maintain supply reliability in the North zone	North	December 2023
Nebo primary plant and secondary systems replacement	Maintain supply reliability in the North zone (2)	North	June 2024
Kemmis secondary systems replacement	Maintain supply reliability in the North zone	North	October 2024
Line refit works on the 132kV transmission line between Eton tee and Alligator Creek substations	Maintain supply reliability in the North zone (1)	North	November 2024
Newlands 132kV primary plant replacement	Maintain supply reliability in the North zone	North	March 2026
Dysart 132/66kV transformers replacement	Maintain supply reliability in the Central West zone (1)	Central West	November 2023
Calvale and Callide B secondary systems replacement	Maintain supply reliability in the Central West zone (1)(2)(3)	Central West	December 2023
Blackwater 66kV CT and VT replacement	Maintain supply reliability in the Central West zone	Central West	December 2023

Table 9.5 Committed network reinvestments at October 2023 (continued)

Project	Purpose	Zone	Proposed commissioning date
Blackwater 132/66kV transformers replacement	Maintain supply reliability in the Central West zone	Central West	December 2024
Lilyvale 132/66kV transformers replacement	Maintain supply reliability in the Central West zone (2)	Central West	October 2025
Lilyvale 275kV and 132kV primary plant replacement	Maintain supply reliability in the Central West zone (2)	Central West	November 2026
Wurdong secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	May 2024
Boyne Island secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	June 2024
Egans Hill secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	November 2024
Gladstone South secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	May 2026
QAL West secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	May 2026
Line refit works on 275kV transmission line between Woolooga and Palmwoods	Maintain supply reliability in the Wide Bay zone (1)	Wide Bay	November 2023
Line refit works on the 110kV transmission lines between West Darra and Sumner	Maintain supply reliability in the Moreton zone	Moreton	November 2023
Line refit works on the 110kV transmission lines between Rocklea and Sumner	Maintain supply reliability in the Moreton zone	Moreton	November 2023
Abermain 110kV secondary systems replacement	Maintain supply reliability in the Moreton zone(2)	Moreton	November 2023
Mt England 275kV secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	December 2025
Mudgeeraba 275kV secondary systems replacement	Maintain supply reliability in the Gold Coast zone	Gold Coast	December 2024

Notes:

- (1) Project identified under the RIT-T transitional arrangements in place for committed projects between 18 September 2017 and 30 January 2018.
- (2) Projects impacted by restrictions related to COVID-19. A number of projects have also been deferred 12+ months.
- (3) The majority of Powerlink's staged works are anticipated for completion by summer 2023. Remaining works associated with generation connection will be coordinated with the customer.

9.5 Uncommitted Regulatory Investment Test for Transmission projects

Table 9.6 lists network investments which have undergone the RIT-T and are not fully committed at October 2023.

Table 9.6 Uncommitted network investments at October 2023

Project	Purpose	Zone	Proposed commissioning date
Innisfail 132kV secondary systems replacement	Maintain supply reliability in the Far North zone (1)	Far North	June 2028
Tangkam 110kV secondary systems replacement	Maintain supply reliability in the South West zone (1)	South West	June 2025
Chinchilla 132kV Substation replacement	Maintain supply reliability in the South West zone (1)	South West	December 2025
Tarong 275/66kV transformers and selected primary plant replacement	Maintain supply reliability in the South West zone (1)	South West	June 2027
Belmont 120MVAr bus reactor	Maintain supply reliability in the Moreton zone (2)	Moreton	December 2024
Redbank Plains 110/11kV transformers and selected primary plant replacement	Maintain supply reliability in the Moreton zone (1)	Moreton	October 2025

Notes:

- (1) Capital expenditure in relation to network asset replacement.
- (2) Capital expenditure in relation to network augmentation.

9.6 Asset retirement works

Table 9.7 lists assets which have been retired since Powerlink's 2022 TAPR was published.

Table 9.7 Asset retirement works completed since October 2022

Project	Purpose	Zone	Decommissioning date
Belmont 275/110kV Transformer 2 decommissioning	Removal of asset at the end of technical life in the Moreton zone	Moreton	December 2021 (1)
Belmont 275/110kV Transformer 3 decommissioning	Removal of asset at the end of technical life in the Moreton zone	Moreton	December 2021 (1)

Note:

- (1) Notification of decommissioning received after the publication of the 2022 TAPR.

Table 9.8 lists asset retirement works at October 2023.

Table 9.8 Asset retirement works at October 2023

Project	Purpose	Zone	Proposed retirement date
Cairns 132/22kV Transformer 4 retirement	Removal of asset at the end of technical life in the Far North zone	Far North	December 2027
Tarong 275/132kV transformers retirement	Removal of assets at the end of technical life in the South West zone	South West	June 2025
Mudgeeraba 275/110kV Transformer 3 retirement	Removal of asset at the end of technical life in the Gold Coast zone	Gold Coast	June 2026
132kV transmission line retirement between Townsville South and Clare South substations	Removal of assets at the end of technical life in the Ross zone	Ross	June 2029

Note:

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

Figure 9.1 Existing Powerlink Queensland transmission network October 2023

