



09. Recently commissioned and committed network developments

- 9.1 Introduction
- 9.2 Connection works
- 9.3 Network developments
- 9.4 Network reinvestments
- 9.5 Uncommitted Regulatory Investment Test for Transmission projects
- 9.6 Asset retirement works

This chapter provides information on the status of customer connection works and transmission network projects since publication of the 2023 Transmission Annual Planning Report (TAPR). It presents a snapshot of recently commissioned projects and projects that 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 2023/24, Powerlink's delivery efforts remained predominantly directed towards connecting renewable generators and reinvestment in transmission lines and substations across Powerlink's network.
- Powerlink's regulated investment program focusses 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 11 reinvestment projects completed since publication of the 2023 TAPR.
- Powerlink continues to support the development of all types of energy projects requiring connection to the transmission network in Queensland, with connection works of approximately 820MW of variable renewable energy (VRE) generation developments underway at the time of the 2024 TAPR publication.
- The 2024 TAPR includes the connection of an additional 300MW of generation capacity compared to that reported in the 2023 TAPR.

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 2024.

9.2 Connection works

Table 9.1 lists connection works commissioned since Powerlink's 2023 TAPR was published.

Table 9.1 Commissioned connection works since October 2023

Project (1)	Purpose	Zone	Date commissioned
Clarke Creek Wind Farm	New Wind Farm (2)	Central West	Quarter 3 2023
Chinchilla 200MW/400MWh Battery Energy Storage System (BESS)	New BESS	Bulli	Quarter 2 2023 (3)
MacIntyre Wind Farm	New Wind Farm (4)	Bulli	Quarter 1 2024
Western Downs 200MW/400MWh BESS	New BESS	Bulli	Quarter 2 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 completed the scope of works for this project. Remaining works associated with generation connection are being coordinated with the customer.
- (3) Project Commissioning Notice issued subsequent to 2023 TAPR publication.
- (4) Powerlink has completed the construction of assets in south-west Queensland to enable the connection of the MacIntyre Wind Precinct proposed renewable development and Queensland's second Renewable Energy Zone. Refer to Section 6.6.3 and Powerlink's website.

Table 9.2 lists new transmission connection works for generating systems, which are committed, and under construction at October 2024. These connection projects resulted from agreements reached with relevant connected customers, generators or Distribution Network Service Providers (DNSPs) as applicable.

Table 9.2 Committed and under construction connection works at October 2024

Project (1)	Purpose	Zone	Proposed commissioning date
Kidston Pumped Storage Hydro	New pumped hydro energy storage	Ross	Quarter 1 2025
Broadsound Solar Farm	New Solar Farm	Central West	Quarter 4 2025
Lotus Creek Wind Farm	New Wind Farm	Central West	Quarter 3 2026
Woolooga 200MW/400MWh BESS	New BESS	Wide Bay	Quarter 3 2025
Wambo Wind Farm Stage 1	New Wind Farm	South West	Quarter 4 2024
Ulinda Park 155MW/298MWh BESS	New BESS	South West	Quarter 1 2025
Greenbank 200MW/400MWh BESS	New BESS	Moreton	Quarter 1 2025

Note:

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

9.3 Network developments

Table 9.3 list network developments which have been commissioned since October 2023.

Table 9.3 Commissioned network developments at October 2024

Project	Purpose	Zone	Date commissioned
Broadsound 275kV bus reactor	Maintain voltages in the Central West zone	Central West	June 2024

Table 9.4 list network developments which are committed and under construction at October 2024.

Table 9.4 Committed network developments at October 2024

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	December 2024 (1)
Belmont 275kV bus reactor	Maintain voltages in the Moreton zone	Moreton	December 2024

Note:

- (1) The 3rd circuit was energised in June 2024 and completion of the remaining minor works at Yabulu South substation is expected by December 2024.

9.4 Network reinvestments

Table 9.5 lists network reinvestments commissioned since Powerlink's 2023 TAPR was published.

Table 9.5 Commissioned network reinvestments since October 2023

Project	Purpose	Zone	Date commissioned
Strathmore 275/132kV transformer establishment	Maintain supply reliability in the North zone	North	September 2023 (1)
Strathmore 132kV secondary systems replacement	Maintain supply reliability in the North zone	North	September 2023 (1)
Nebo primary plant and secondary systems replacement	Maintain supply reliability in the North zone (2)	North	June 2024
Lilyvale 132/66kV transformers replacement	Maintain supply reliability in the Central West zone (2)	Central West	June 2023 (1)
Calvale and Callide B secondary systems replacement	Maintain supply reliability in the Central West zone (1)(2)(3)	Central West	September 2023 (1)(3)
Boyne Island secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	September 2023 (1)
Wurdong secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	October 2023 (1)
Line refit works on 275kV transmission line between Woolooga and Palmwoods	Maintain supply reliability in the Wide Bay zone (1)	Wide Bay	September 2023 (1)
Line refit works on the 110kV transmission lines between West Darra and Sumner	Maintain supply reliability in the Moreton zone	Moreton	September 2023 (1)
Line refit works on the 110kV transmission lines between Rocklea and Sumner	Maintain supply reliability in the Moreton zone	Moreton	October 2023 (1)
Abermain 110kV secondary systems replacement	Maintain supply reliability in the Moreton zone (2)	Moreton	November 2023

Notes:

- (1) Project Commissioning Notice issued subsequent to 2023 TAPR publication.
- (2) 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.
- (3) Projects impacted by restrictions related to COVID-19.

Table 9.6 lists network reinvestments which are committed at October 2024.

Table 9.6 Committed network reinvestments at October 2024

Project	Purpose	Zone	Proposed commissioning date
Woree secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	September 2025
Woree SVC secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	March 2025
Chalumbin secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	December 2025
Cairns secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	December 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	January 2026
Innisfail 132kV secondary systems replacement	Maintain supply reliability in the Far North zone	Far North	June 2027
Line refit works on the 132kV transmission line between Townsville South and Clare South substations	Maintain supply reliability in the Ross zone	Ross	December 2024
Garbutt configuration change	Maintain supply reliability in the Ross zone	Ross	January 2025
Ross 275/132kV transformers life extension	Maintain supply reliability in the Ross zone	Ross	January 2025
Townsville South secondary systems replacement Stage 1	Maintain supply reliability in the Ross zone	Ross	February 2026
Townsville South 132kV primary plant replacement	Maintain supply reliability in the Ross zone	Ross	July 2026
Ross 132kV primary plant replacement	Maintain supply reliability in the Ross zone	Ross	September 2025
Ross 275kV primary plant replacement	Maintain supply reliability in the Ross zone	Ross	November 2025
Kemmis secondary systems replacement	Maintain supply reliability in the North zone	North	December 2024
Nebo 132/11kV transformers replacement	Maintain supply reliability in the North zone	North	September 2025
Line refit works on the 132kV transmission line between Eton tee and Alligator Creek substations	Maintain supply reliability in the North zone (1)	North	September 2025
Newlands 132kV primary plant replacement	Maintain supply reliability in the North zone	North	December 2026
Dysart 132/66kV transformers replacement	Maintain supply reliability in the Central West zone (1)	Central West	December 2024
Blackwater 66kV CT and VT replacement	Maintain supply reliability in the Central West zone	Central West	December 2024
Blackwater 132/66kV transformers replacement	Maintain supply reliability in the Central West zone	Central West	December 2024

Table 9.6 Committed network reinvestments at October 2024 (*continued*)

Project	Purpose	Zone	Proposed commissioning date
Lilyvale 275kV and 132kV primary plant replacement	Maintain supply reliability in the Central West zone (2)	Central West	June 2026
Egans Hill secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	March 2025
Gladstone South secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	February 2027
QAL West secondary systems replacement	Maintain supply reliability in the Gladstone zone	Gladstone	February 2027
Redbank Plains 110/11kV transformers and selected primary plant replacement	Maintain supply reliability in the Moreton zone (1)	Moreton	October 2026
Mt England 275kV secondary systems replacement	Maintain supply reliability in the Moreton zone	Moreton	December 2026
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.

9.5 Uncommitted Regulatory Investment Test for Transmission projects

Table 9.7 lists network investments which have undergone the RIT-T and are not fully committed at October 2024.

Table 9.7 Uncommitted network investments at October 2024

Project	Purpose	Zone	Proposed commissioning date
Kemmis 132/66kV transformer replacement	Maintain supply reliability in the North zone (1)	North	November 2026
Tarong 275/66kV transformers and selected primary plant replacement	Maintain supply reliability in the South West zone (1)	South West	July 2025
Tangkam 110kV secondary systems replacement	Maintain supply reliability in the South West zone (1)	South West	September 2026
Chinchilla 132kV primary plant and secondary systems replacement	Maintain supply reliability in the South West zone (1)	South West	June 2027
Sumner 110kV secondary systems replacement	Maintain supply reliability in the Moreton zone (1)	Moreton	October 2025

Notes:

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

9.6 Asset retirement works

Table 9.8 lists asset retirement completed since October 2023.

Table 9.8 Asset retirement works completed at October 2024 (1)

Project	Purpose	Zone	Proposed retirement date
Mudgeeraba 275/110kV Transformer 3 retirement	Removal of asset at the end of technical life	Gold Coast	September 2023 (2)

Notes:

- (1) Operational works, such as asset retirements, do not form part of Powerlink's capital expenditure budget.
- (2) Project completion notification subsequent to 2023 TAPR publication.

Table 9.9 lists asset retirement works at October 2024.

Table 9.9 Asset retirement works at October 2024 (1)

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

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 2024

