

Southern Region Development Outlook

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This chapter focuses on potential investment opportunities on the transmission network across the 10-year outlook period for the Southern Region within Queensland. It includes information on forecast network limitations, potential network investments, non-network opportunities, and other future developments which could shape transmission network requirements.

Key highlights

- The Southern Region includes the Wide Bay, Surat, Bulli, South West, Moreton and Gold Coast Transmission Annual Planning Report (TAPR) zones.
- The Southern Region contains Queensland's largest concentration of electricity demand and is one of the state's most significant generation, firming and storage development regions.
- Two strategic intra-regional transmission corridors are central to the future development of the Southern Region network:
 - The Central Queensland to South Queensland (CQ-SQ) corridor, supporting transfers between Central Queensland, Wide Bay, the Sunshine Coast, South West Queensland and South East Queensland.
 - The South West Queensland to South East Queensland (SWQ-SEQ) corridor, which is expected to play an increasingly important role in transferring energy from generation, firming and storage developments in the Surat Basin, Darling Downs and Southern Downs to major load centres in South East Queensland and the broader National Electricity Market (NEM).
- South East Queensland is expected to remain a key focus area for future transmission investment, with opportunities driven by population growth, large customer connections, urban development, industrial precincts, ageing transmission infrastructure and future reliability of supply requirements.
- South West Queensland continues to attract significant generation and battery energy storage development, potentially creating emerging network limitations or opportunities to deliver net market benefits.
- The Southern Region is experiencing significant interest in large data centre and advanced computing facility connections, which could affect regional power transfers and future network requirements. Powerlink is responding by publishing a technical guide (see Appendix B) to support proponents in planning and integrating these connections.
- The Brisbane Area 275 kilovolt (kV) Reinforcement project associated with augmentation of the network between Blackwall, Karana Downs, Rocklea and South Pine has been identified as an actionable Integrated System Plan (ISP) project in the Australian Energy Market Operator's (AEMO) 2026 ISP.
- Maintaining the reliability and performance of ageing transmission infrastructure remains a key investment theme across the Southern Region, with future opportunities focused on transmission lines, substations, transformers, primary plant, and secondary systems.
- Powerlink will continue to work closely with customers, Energy Queensland, AEMO, Transgrid, industry and government stakeholders to identify efficient network and non-network solutions that maintain reliability, support economic development and deliver value for consumers.

8.1 Regional overview

The Southern Region transmission network comprises an interconnected 330kV, 275kV, 132kV and 110kV network that supplies major population, commercial and industrial load centres, and facilitates bulk power transfers between Central Queensland, South West Queensland, South East Queensland and the broader NEM. The region includes the Wide Bay, Surat, Bulli, South West, Moreton and Gold Coast TAPR zones.

South West Queensland and the Darling Downs continue to attract significant generation and battery energy storage development due to strong renewable resources and access to existing transmission infrastructure. South East Queensland remains Powerlink's largest load centre, with ongoing population growth, urban development, industrial expansion, and potential block load developments expected to influence future transmission requirements.

Two key transmission backbones will play key roles in the future development of the Southern Region.

- The CQ-SQ backbone transmission, enabling bulk power transfers between Central Queensland, Wide Bay, the Sunshine Coast and South East Queensland.
- The SWQ-SEQ backbone transmission, enabling bulk power transfers from the Surat Basin, Darling Downs, Southern Downs and Queensland to New South Wales Interconnector (QNI) areas into South East Queensland.

8.2 Regional investment themes

Four key investment themes are expected to shape transmission network requirements and development within the Southern Region over the 10-year outlook period:

- maintaining reliable supply to South East Queensland
- supporting efficient power transfers across Queensland
- addressing emerging condition and obsolescence risks with ageing network assets
- responding to large-scale data centre and advanced computing facility loads.

Maintaining reliable supply to South East Queensland

Future investment is expected to focus on maintaining the reliability of supply to South East Queensland's major population centres, commercial precincts and industrial loads. This includes addressing asset condition risks, maintaining compliance with reliability requirements and supporting forecast growth in electricity demand across the region.

Supporting efficient power transfers across Queensland

The CQ-SQ and SWQ-SEQ transmission corridors are key components of Queensland's transmission network, supporting bulk power transfers between major generation, storage and load centres. Future investment may be required to maintain or increase transfer capability within these corridors where network assessments identify reliability limitations or market benefits.

Addressing emerging condition and obsolescence risks with ageing network assets

A significant proportion of transmission assets within South East Queensland are approaching the end of their technical service life over the 10-year planning horizon. Future investment may be required to address emerging condition, obsolescence and compliance risks to maintain reliability of supply.

Responding to large-scale data centre and advanced computing facility loads

Growing interest in large-scale data centre and computing facility developments represents an emerging investment theme for Southern Queensland. The substantial electricity demand associated with these developments, together with new generation, storage and firming investment, could materially change power transfers within Southern Queensland, between Queensland's regions and across the broader NEM. These changes may influence future transmission network requirements. Powerlink is responding by providing proponents with practical information on site selection, connection pathways, demand flexibility, reliability expectations, and the technical and planning considerations associated with connecting large loads to Queensland's transmission network (refer to Appendix B). Powerlink will also progressively incorporate data centre developments into its demand forecasts as their timing, scale and development maturity become more certain. Through established network planning processes, Powerlink will assess the potential effects of these loads, together with generation and storage investment, on power transfers, network capability, and the need and timing of future network development.

8.3 Central Queensland to South Queensland transmission backbone

The CQ-SQ transmission backbone comprises the 275kV transmission network extending between the Calliope River and South Pine substations. Future investment requirements will be dependent on changes in demand, generation and storage developments, power transfer requirements, and emerging condition and obsolescence risks.

8.3.1 Existing and committed developments

Powerlink has completed the connection of the Woorooga BESS.

Further information on completed and committed developments are provided in Chapter 10.

8.3.2 Emerging and evolving investment drivers

While the CQ-SQ transmission backbone is currently expected to provide sufficient transfer capability to meet forecast electricity demand over the 10-year outlook period, several emerging developments have the potential to influence future transmission and non-network investment requirements.

Emerging asset condition risks and network reliability

Emerging condition and obsolescence risks have been identified across sections of the coastal 275kV transmission backbone, together with associated substations, primary plant and secondary systems. As these assets approach intervention, opportunities may arise to coordinate condition driven reinvestment with future network capability requirements to deliver economic investment outcomes.

Block load developments and population growth

Continued population growth, urban development and potential block load developments within the Wide Bay, Sunshine Coast and Greater Brisbane areas are forecast to increase electricity demand and influence future transmission requirements across the CQ-SQ transmission backbone. The timing and scale of block load developments remain uncertain and will continue to be monitored through Powerlink's annual planning process.

Delivering market benefits through network development

Over the longer-term, changing generation and storage development patterns, load growth and evolving power transfer requirements may increase the need for additional transfer capability across the CQ-SQ transmission backbone. Potential network development options may include progressive rebuild of sections of the coastal 275kV transmission backbone, augmentation of the inland 275kV network, and targeted increases in transmission line thermal capacity.

Much of the coastal transmission backbone comprises single circuit 275kV transmission lines. As these assets approach replacement, opportunities may emerge to coordinate condition driven reinvestment with capability upgrades, including replacement with higher capacity double circuit network configurations where this delivers more economic investment outcomes.

8.3.3 CQ-SQ investment outlook

Figure 8.1 provides a geographic overview of potential investment opportunities across the CQ-SQ transmission corridor.

Table 8.1 summarises these opportunities and their indicative timing, with further detail provided in the sections that follow. The opportunities do not constitute committed projects and their scope, timing and implementation remain subject to further assessment and decision-making processes.

Investment profiles for projects Powerlink anticipates will be required within five years are included in the investment profile tables following Table 8.1. The line refit works on the 275kV transmission line between Woolooga and Teebar Creek substations identified in the 10-year outlook is not profiled as the indicative need falls outside the five-year period.

Figure 8.1 Future investment opportunities for the CQ-SQ transmission backbone

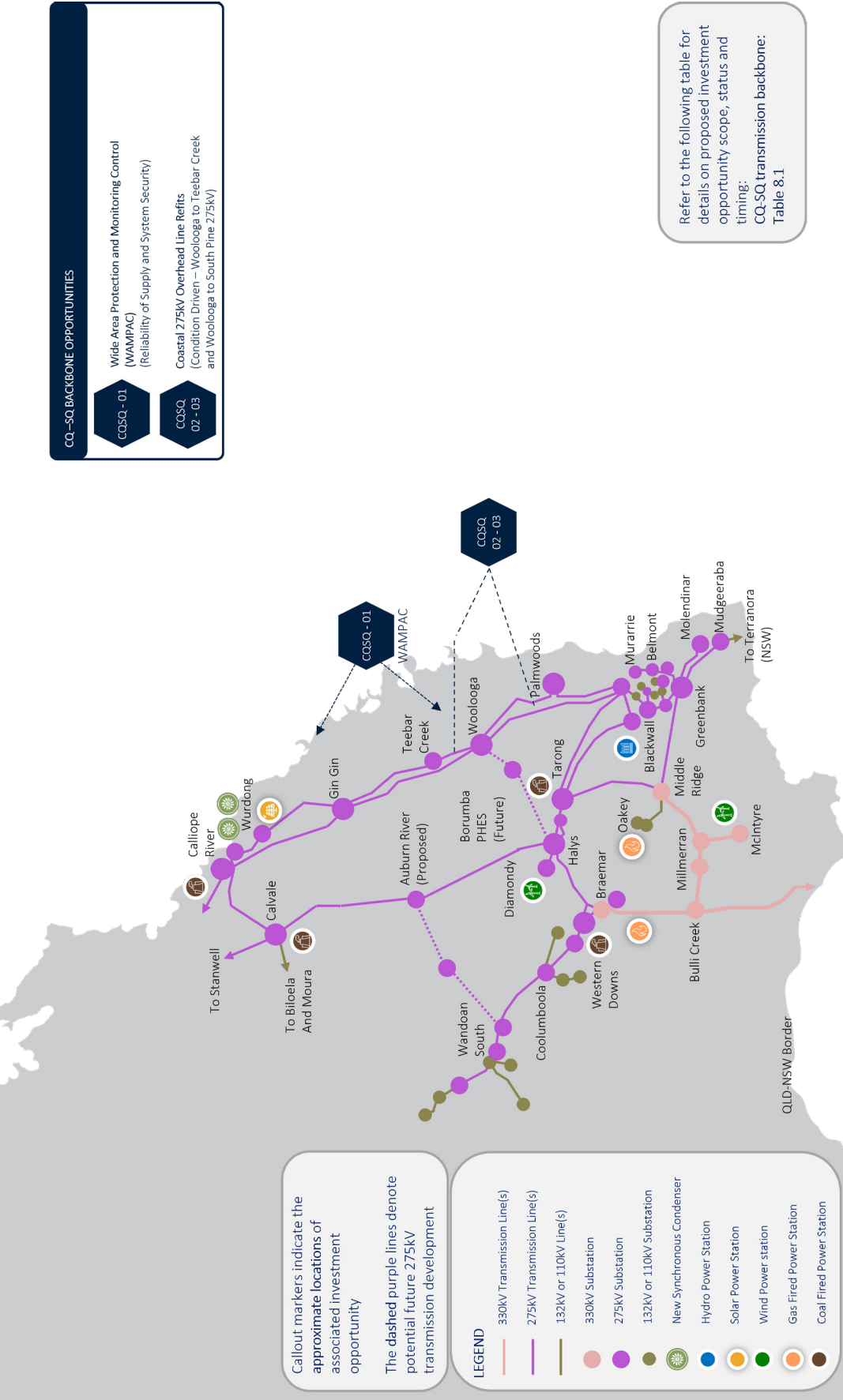


Table 8.1 CQ-SQ transmission backbone future investment opportunities

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
CQSQ-01	Wide Area Monitoring Protection and Control (WAMPAC) Tranche 2	Add functionality to the existing CQ-SQ WAMPAC scheme	Compliance obligations to meet system security	June 2028	No credible options have been identified	\$8 million	Uncommitted
CQSQ-02	Line refit works on the 275kV transmission line between Woolooga and Teebar Creek substations	Target line refit of the existing 275kV line	Maintain supply reliability to the Wide Bay zone	June 2034	Rebuild the 275kV transmission line between Woolooga and Teebar Creek substations	\$14 million	Uncommitted
CQSQ-03	Line refit works on the 275kV transmission line between Woolooga and South Pine substations	Target line refit of the existing 275kV line	Maintain supply reliability to the Moreton zone	June 2032	Rebuild the 275kV transmission line between Woolooga and South Pine substations	\$50 million	Uncommitted

8.3.4 Five-year investment profiles

Powerlink anticipates two potential network investments above the RIT-T cost threshold may be required to address the risks arising from the condition of assets and system security across the CQ-SQ transmission backbone within the next five years.

CQSQ-01 Wide Area Monitoring Protection and Control Tranche 2

Item	Description
Location	The inland component of the CQ-SQ transmission backbone
Asset details	The 275kV transmission network between Calvale and Halys substations
Investment context	AEMO's General Power System Risk Review (GPSRR) identified a gap between the capability of the existing CQ-SQ WAMPAC scheme and the current CQ-SQ transfer capability. While the existing scheme provides transient stability support following the non-credible loss of both Halys-Calvale 275kV circuits for transfer levels of approximately 1,700MW to 1,900MW, CQ-SQ transfers can reach approximately 2,100MW. CQ-SQ WAMPAC Tranche 2 extends the capability of the existing scheme to support higher transfer levels and reduce residual system security risks associated with high CQ-SQ power transfers
Investment driver	Addressing system security risks identified within AEMO's GPSRR
Indicative timing	June 2028
Status	Uncommitted
Proposed network solution	Expand the functionality of the existing CQ-SQ WAMPAC scheme through the implementation of additional generation, battery and load tripping capabilities to maintain transient stability following the non-credible loss of both Halys-Calvale 275kV circuits for CQ-SQ transfers of up to approximately 2,100MW at a cost of around \$8 million
Other potential network solutions	Construction of third 275kV overhead transmission line between Central and Southern Queensland
Potential non-network solutions	Potential non-network solutions would need to provide equivalent system security services to address non-credible contingency events identified by AEMO within the GPSRR
Inter-network impact	No material inter-network impact identified

CQSQ-03 Maintain reliability of supply at Woolooga and South Pine

Item	Description
Location	The 275kV transmission line extends approximately 160km from the northern outskirts of Brisbane to north of Gympie
Asset details	Commissioned in 1972
Investment context	The Woolooga to South Pine 275kV transmission line was constructed as part of the Gladstone Power Station development connecting Central and Southern Queensland in the 1970s. The transmission line comprises a single circuit overhead 275kV transmission line comprising of 358 steel lattice structures. The transmission line operates mostly in relatively benign corrosion environments though some sections experience higher corrosion due to exposure to salt laden winds at elevation
Investment driver	Condition driven replacement to address emerging condition risks associated with 275kV transmission line
Indicative timing	June 2032
Status	Uncommitted
Proposed network solution	Line refit works on the 275kV transmission line between Woolooga and South Pine substations by 2032 at an estimated cost of \$50 million
Other potential network solutions	Rebuild the 275kV transmission line between Woolooga and South Pine substations
Potential non-network solutions	There are material impacts on the transfer capability across the CQ-SQ grid section with unavailability of the existing South Pine to Woolooga 275kV line. Potential non-network solutions would need to provide equivalent capability to support efficient and economic market outcomes in place of the existing 275kV circuit. These market outcomes are associated with both dispatch cost difference and differential market expansion costs
Inter-network impact	No material inter-network impact identified

8.3.5 Other potential developments

Powerlink will continue to assess opportunities to establish an additional transmission pathway between South West Queensland and the inland CQ-SQ transmission backbone. This may include development of new transmission infrastructure between South West Queensland and the proposed Auburn River Substation (refer to Section 8.4.5). Over the longer-term, further reinforcement may include new transmission infrastructure between the Auburn River, Calvale and Halys substations along the inland CQ-SQ transmission backbone, dependent on load and generation developments in Central Queensland, South East Queensland and across the broader Queensland transmission network.

The increasing deployment of BESS and generation developments connected to the CQ-SQ transmission backbone may also create opportunities to increase transfer capability through operational and non-network solutions. Additional opportunities may include implementation of real-time ratings, and targeted increases in transmission line thermal ratings through ground clearance works and conductor re-tensioning across limiting line sections.

The viability and scale of these opportunities will be dependent on further technical analysis, economic assessments, and engagement with relevant proponents and stakeholders.

8.3.6 Possible asset retirements

Powerlink has not identified any potential asset retirements within the CQ-SQ transmission backbone within the 10-year outlook period.

8.4 South West to South East Queensland transmission backbone

The SWQ-SEQ transmission backbone supports power transfers between South West Queensland, the QNI and major load centres within South East Queensland. The backbone comprises the 330kV and 275kV transmission network connecting the Tarong, Halys, Braemar, Western Downs, Bulli Creek, Millmerran, Tummaville, Middle Ridge and Greenbank substations.

Future investment requirements will be dependent on changes in demand, generation and storage developments, emerging large-scale load developments, power transfer requirements, and emerging condition and obsolescence risks across the transmission network.

8.4.1 Existing and committed developments

Powerlink has completed the connection of Wambo Wind Farm Stage 2 in South West Queensland and is progressing network asset replacement works to maintain reliability of supply.

Powerlink is also implementing the WAMPAC scheme for the 275kV network supplying the Surat Basin and finalising inter-regional testing of the QNI upgrade.

Further information on these developments is provided in chapters 9 and 10.

8.4.2 Emerging and evolving investment drivers

Based on current demand forecasts, the existing transmission network is forecast to remain capable of supplying customer requirements over the 10-year outlook period.

Future investment drivers are expected to be primarily associated with asset condition and obsolescence risks across the existing 330kV, 275kV and 110kV network. Emerging condition risks have been identified on sections of the transmission network, together with associated primary plant, transformers and secondary systems.

Powerlink will continue to monitor these developments through our annual planning process and ongoing joint planning activities with Ergon Energy.

8.4.3 SWQ-SEQ investment outlook

Figure 8.2 provides a geographic overview of potential investment opportunities across the SWQ-SEQ transmission backbone.

Table 8.2 summarises these opportunities and their indicative timing with further detail provided in the sections that follow. The opportunities do not constitute committed projects, and their scope, timing and implementation remain subject to further assessment and decision-making processes.

Figure 8.2 Future investment opportunities for the SWQ-SEQ transmission backbone

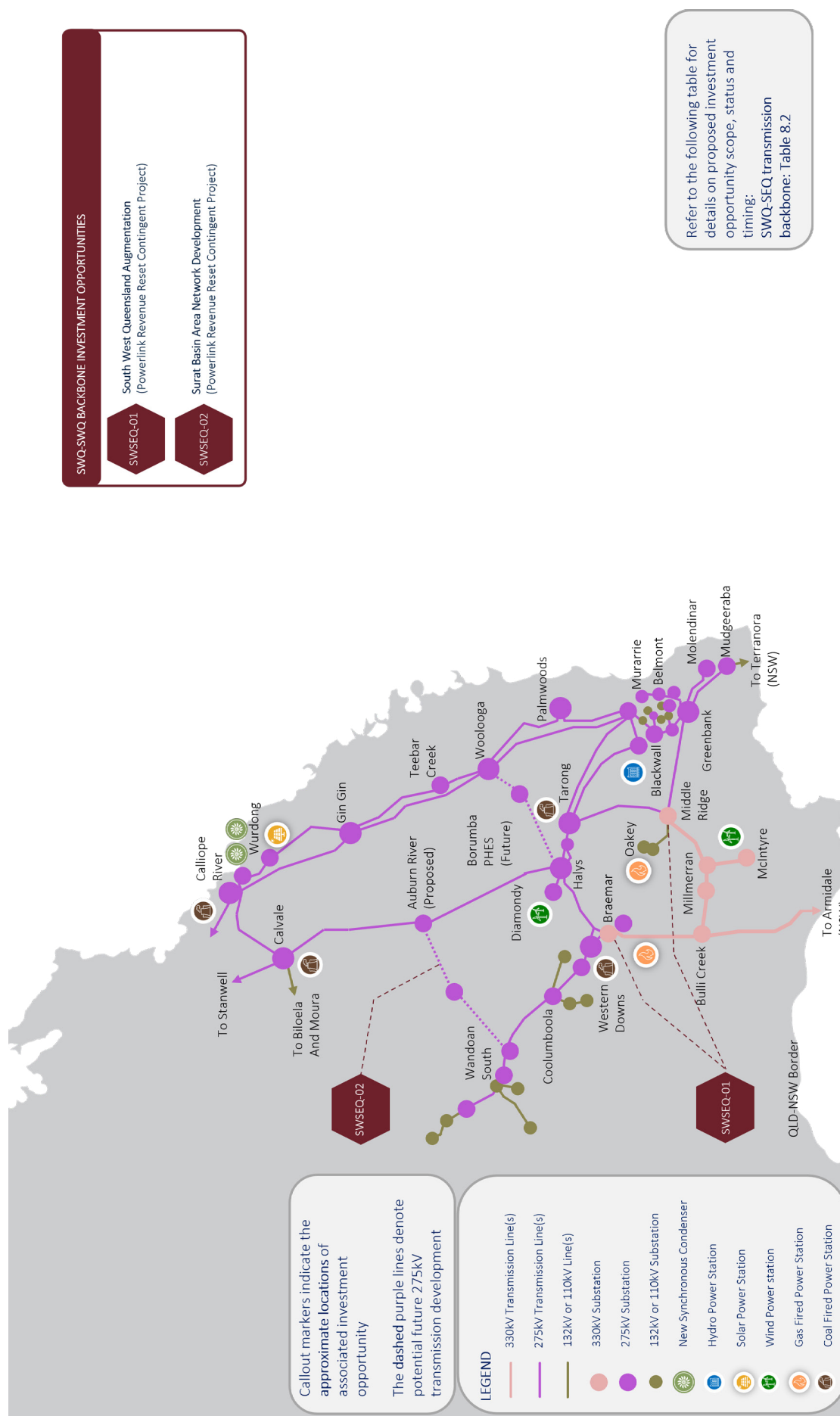


Table 8.2 SWQ-SEQ transmission backbone future investment opportunities

ID	Potential project	High-level scope	Purpose	Indicative timing	Alternatives	Status	Indicative cost
SWSEQ-01	South West Queensland Augmentation (1)	Replace an existing 330/275kV transformer at Middle Ridge with a higher-rated unit and install additional 330/275kV transformer capacity at Braemar	Increase transfer capability between SWQ and SEQ, and deliver net economic benefits by reducing generation expansion and whole of system costs	Subject to RIT-T outcomes and contingent project trigger events	Construction of new transmission network between SWQ and SEQ	Proposed contingent project in Powerlink's 2027–32 Revenue Proposal	\$90 million
SWSEQ-02	Surat Basin Area Network Development (1)	Establish new 275kV substations in the Surat Basin and near Auburn River, connected by a new high-capacity double circuit 275kV transmission line	Increase generation hosting and export capability from the Surat Basin network and deliver net economic benefits by reducing generation expansion and whole of system costs	Subject to RIT-T outcomes and contingent project trigger events	Construction of new transmission network between the Surat Basin and SEQ	Proposed contingent project in Powerlink's 2027–32 Revenue Proposal	\$732 million

Note:

(1) The final status of this project will be determined as part of the AER's Final Determination on Powerlink's 2027–32 Revenue Proposal to be published in April 2027.

8.4.4 Five-year investment profile

Powerlink does not currently anticipate any network investments above the RIT-T cost threshold being required to address asset condition risks across the SWQ-SEQ transmission backbone within the next five years.

8.4.5 Other potential developments

Powerlink is working with a number of proponents seeking to connect into the Wandoan South Substation. The Bungaban Wind Farm Connection Project continues to progress as part of the ongoing project development and investment process. Technical, commercial, land, approvals, delivery, and stakeholder engagement work remains ongoing, and Powerlink continues to work with proponents and various stakeholders to support future investment decisions and the ongoing development of the projects.

Future transmission requirements across the 275kV transmission backbone will be dependent on changes in generation, storage and load developments within South West Queensland and resulting transfer requirements across the broader Queensland power system. Potential future developments may include augmentations between Auburn River and Halys, or Auburn River and Calvale, to increase transfer capability between South West Queensland, Central Queensland and South East Queensland.

Emerging large-scale load developments, including large-scale data centres and advanced computing facilities within South West Queensland also have the potential to change future network requirements and power transfer flows across the transmission backbone.

The Borumba Pumped Hydro Energy Storage (PHES) Project continues to be progressed by the Queensland Government and Queensland Hydro, with planning, assessment and approvals activities continuing. The project is also subject to ongoing review by the Queensland Investment Corporation. The development of new 275kV transmission infrastructure will be required for the connection of this facility.

Powerlink will continue to monitor developments through our annual planning process to identify investment opportunities that address emerging network limitations and deliver net market benefits for consumers.

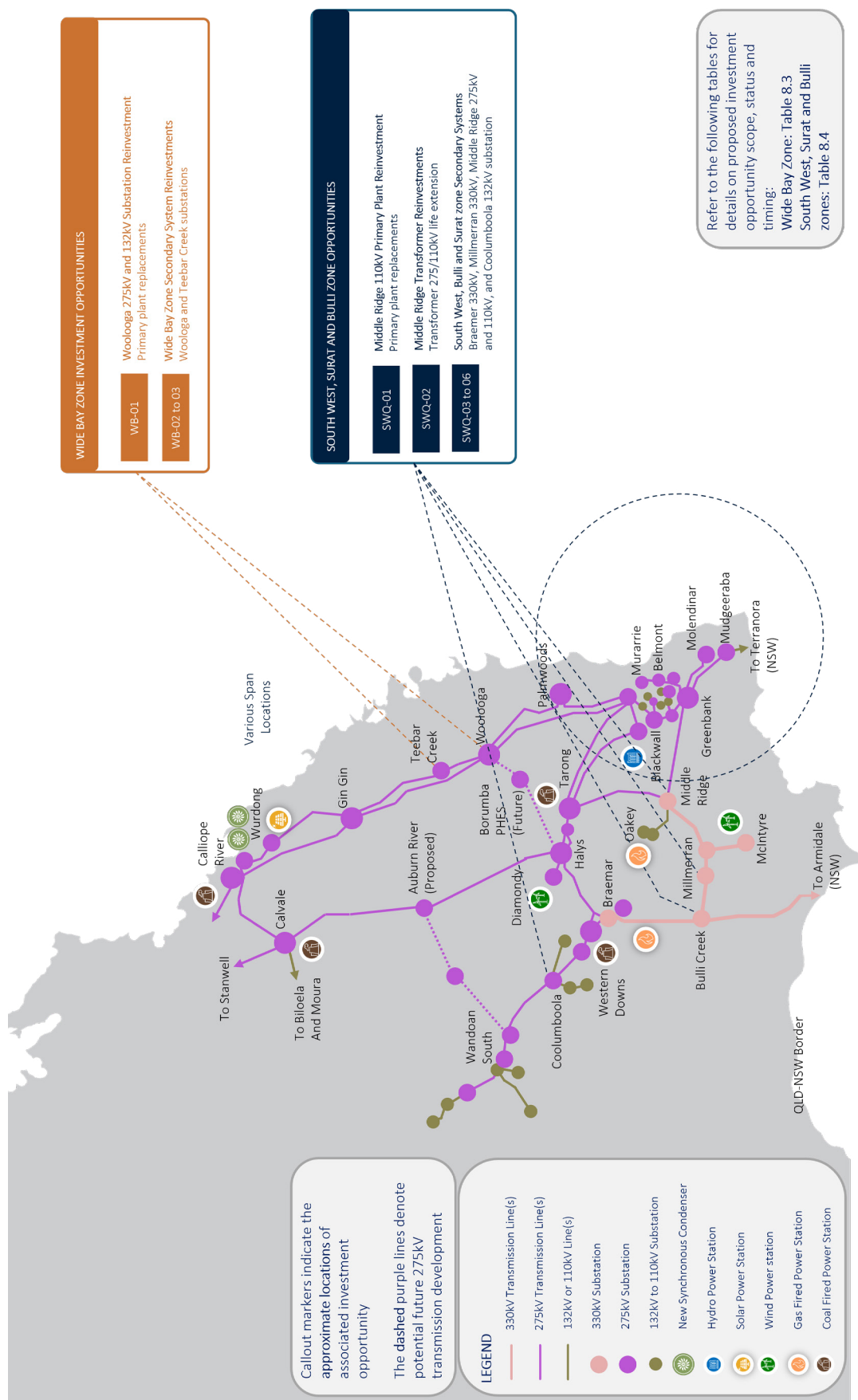
8.4.6 Potential asset retirements

Powerlink has not identified any potential asset retirements across the SWQ-SEQ transmission backbone within the 10-year outlook period.

8.5 Wide Bay, South West, Bulli and Surat zones investment outlook

Figure 8.3 provides a geographic overview of the Wide Bay, South West, Bulli and Surat zones, and the potential investment opportunities discussed in sections 8.6 to 8.7. The overview provides context for the zone-based discussion that follows with further information on the scope, timing and drivers for each opportunity provided in the relevant section.

Figure 8.3 Future investment opportunities for the Wide Bay, South West, Surat and Bulli zones



8.6 Wide Bay zone

The Wide Bay zone supplies loads in Bundaberg, Maryborough, Hervey Bay, Gympie and surrounding regional areas and forms part of the coastal CQ-SQ transmission backbone. The zone includes key Powerlink transmission injection points at the Gin Gin, Teebar Creek, Woolooga and Palmwoods substations.

Local townships and agricultural loads within the Wide Bay zone are supplied via the Energy Queensland transmission and distribution network, comprising predominantly 132kV and lower voltage infrastructure that operates in parallel with Powerlink's 275kV transmission network. Planning assessments for the zone therefore need to consider both local supply requirements and power transfers across the coastal CQ-SQ transmission backbone.

8.6.1 Existing and committed network developments

Powerlink has recently completed the connection of large-scale BESS and hybrid solar and BESS facilities to the CQ-SQ transmission backbone.

Detailed information on completed and committed developments is provided in Chapter 10.

8.6.2 Emerging and evolving investment drivers

Future investment requirements within the Wide Bay zone are expected to be driven primarily by emerging asset condition and obsolescence risks.

8.6.3 Future network investments and opportunities

Powerlink has identified potential network investment opportunities required to address emerging network asset condition and obsolescence risks within the Wide Bay zone in the 10-year outlook.

Table 8.3 summarises these opportunities and their indicative timing with further details provided in the sections that follow. The opportunities do not constitute committed projects, and their scope, timing and implementation remain subject to further assessment and investment decision-making processes.

Investment profiles for projects Powerlink anticipates will be required within five years are included in the investment profile tables following Table 8.3. Other investment opportunities identified in the 10-year outlook are not profiled where their indicative need falls outside the five-year period and are at earlier stages of planning and assessment.

Table 8.3 Wide Bay zone investment opportunities within the 10-year outlook period

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
WB-01	Woolooga 275kV and 132kV primary plant replacement	Selected replacement of 275kV and 132kV primary plant	Maintain supply reliability to the Wide Bay zone	June 2030 (1)	Full replacement of 275kV and 132kV primary plant	\$9 million	Uncommitted
WB-02	Teebar Creek 275kV and 132kV secondary systems replacement	Full replacement of 275kV and 132kV secondary systems	Maintain supply reliability to the Wide Bay zone	June 2034	Selected replacement of the 275kV and 132kV substation bays, and reinforcement of the Wide Bay transmission system from adjacent substations	\$39 million	Uncommitted
WB-03	Woolooga 275kV and 132kV secondary systems replacement	Selected replacement of 275kV and 132kV secondary systems	Maintain supply reliability to the Wide Bay zone	June 2035	Full replacement of 275kV and 132kV secondary systems	\$65 million	Uncommitted

Note:

(1) The change in timing of the network solution from the 2025 TAPR is based upon updated information on the condition of assets.

8.6.4 Five-year investment profiles

Powerlink has identified one potential network investment above the RIT-T cost threshold that may be required to address the risks arising from the condition of assets within the Wide Bay zone within the next five years.

WB-01 Maintain reliability of supply to the Wide Bay zone

Item	Description
Location	Woolooga Substation is located approximately 165km north west of Brisbane
Asset details	The substation was commissioned in 1973
Investment context	Woolooga Substation was established to support development of the CQ-SQ transmission backbone. The substation comprises 275kV and 132kV switchyards and provides transformation capacity to the Wide Bay 132kV network.
Investment driver	Condition driven replacement to address emerging condition risks associated with 275kV and 132kV primary plant required to maintain reliability of supply
Indicative timing	June 2030
Status	Uncommitted
Proposed network solution	Selected replacement of 275kV and 132kV primary plant at an indicative cost of \$9 million
Other potential network solutions	Full replacement of 275kV and 132kV primary plant
Potential non-network solutions	Potential non-network solutions would need to provide supply to the Woolooga area of up to 6MW and up to 35MWh per day. The non-network solution would be required to operate on a continuous basis to maintain supply to a Queensland Rail traction substation. The impacted primary plant also connects the 120MW Munna Creek Solar Farm
Inter-network impact	No material inter-network impact identified

8.6.5 Other potential developments

Continued population growth, urban expansion and development of strategic growth areas may influence future transmission and distribution network requirements over the longer-term. Powerlink will continue to monitor these developments through its annual planning process and ongoing joint planning activities with Energy Queensland.

8.6.6 Possible asset retirements

Powerlink has not identified any potential asset retirements in the Wide Bay area within the 10-year outlook period.

8.7 South West, Surat and Bulli zones

The South West, Surat and Bulli zones extend across southern Queensland, from the Surat Basin and Darling Downs to the Queensland-New South Wales (NSW) border.

8.7.1 Existing and committed network developments

Powerlink is progressing the Tangkam 110kV secondary systems replacement and reinvestment works at the Tarong and Chinchilla substations.

Further information on completed and committed developments is provided in Chapter 10.

8.7.2 Emerging and evolving investment drivers

The existing transmission network is expected to continue providing sufficient capacity to meet forecast electricity demand within the South West, Surat and Bulli zones. Future reinvestment needs are expected to be driven primarily by emerging condition and obsolescence risks.

Recently there has been interest in the connection of significant block load developments within South West Queensland associated with data centres and advanced computing facilities. These facilities, together with potential investment in new generation have the potential to change power flow transfers and transmission infrastructure requirements within these zones.

8.7.3 Future network investment and opportunities

Powerlink has identified potential network opportunities to address emerging network needs and asset condition risks in the South West, Surat and Bulli zones within the 10-year outlook period.

Table 8.4 summarises these opportunities and their indicative timing with further detail provided in the following sections. These opportunities do not constitute committed projects, and their scope, timing and implementation remain subject to further assessment and investment decision making processes.

Investment profiles for projects Powerlink anticipates will be required within five years are included in the investment profile tables following Table 8.4. Other investment opportunities identified in the 10-year outlook are not profiled where their indicative need falls outside the five-year period and are at earlier stages of planning and assessment.

Table 8.4 South West, Surat and Bulli zone investment opportunities within the 10-year outlook period

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
SWQ-01	Middle Ridge 110kV primary plant replacement	Selected replacement of 110kV primary plant	Maintain supply reliability in the South West zone	June 2032	Full replacement of 110kV primary plant	\$15 million	Uncommitted
SWQ-02	Middle Ridge 275/110kV transformers life extension	Life extension of transformers 2 and 3	Maintain supply reliability in the South West zone	June 2032	Replacement of transformers 2 and 3	\$6 million	Uncommitted
SWQ-03	Braemar 330kV secondary systems replacement non-IPASS	Selected replacement of 330kV secondary systems	Maintain supply reliability in the Bulli zone	June 2034	Full replacement of 330kV secondary systems	\$23 million	Uncommitted
SWQ-04	Millmerran 330kV Air-Insulated Switchgear (AIS) secondary systems replacement	Selected replacement of 330kV secondary systems	Maintain supply reliability in the Bulli zone	December 2035	Full replacement of 330kV secondary systems	\$14 million	Uncommitted
SWQ-05	Middle Ridge 275kV and 110kV secondary systems replacement	Selected replacement of 275/110kV secondary systems equipment	Maintain supply reliability in the South West zone	June 2032	Full replacement of 275kV and 110kV secondary systems	\$63 million	Uncommitted
SWQ-06	Columboola 132kV secondary systems replacement	Selected replacement of 132kV secondary systems	Maintain supply reliability in the Surat zone	June 2035	Full replacement of 132kV secondary systems	\$17 million	Uncommitted

8.7.4 Five-year investment profiles

Powerlink anticipates two potential network investments above the RIT-T cost threshold may be required to address the risks arising from the condition of assets in the South West, Bulli and Surat zones within the next five years.

There is also potential for the Middle Ridge Substation network needs (SWQ-01 and SWQ-05) to be consolidated under one RIT-T.

SWQ-01 Maintaining reliability of supply at Middle Ridge

Item	Description
Location	Approximately 130km west of Brisbane
Asset details	Established in 1965
Investment context	Middle Ridge 275/110kV Substation is a transmission connection point for the Toowoomba and Darling Downs area supplying local townships, agricultural loads, and providing connections for gas fired generation facilities
Investment driver	Condition driven replacement to address emerging condition risks associated with the 110kV primary plant
Indicative timing	June 2032
Status	Uncommitted
Proposed network solution	Selected replacement of 110kV primary plant at Middle Ridge Substation at an estimated cost of \$15 million
Other potential network solutions	Full replacement of 110kV primary plant
Potential non-network solutions	Potential non-network solutions would need to provide supply to the Middle Ridge 110kV network of up to 120MW and 2,300MWh per day
Inter-network impact	This network development is not anticipated to have material inter-network impacts

SWQ-05 Addressing secondary systems condition risks at Middle Ridge

Item	Description
Location	Approximately 130km west of Brisbane
Asset details	Established in 1965. Extensions with load growth have resulted in a mixture of secondary systems from 2002 through to 2011
Investment context	Middle Ridge 275/110kV Substation is a transmission connection point for the Toowoomba and Darling Downs area supplying local townships, agricultural loads, and providing connections for gas fired generation facilities
Network need	Condition driven replacement to address emerging condition and obsolescence risks associated with the 275kV and 110kV secondary systems
Indicative timing	June 2032
Status	Uncommitted
Proposed network Solution	Selected replacement of the 275kV and 110kV secondary systems at Middle Ridge Substation at an estimated cost of \$63 million
Other potential network solutions	Full replacement of the 275kV and 110kV secondary systems
Potential non-network solutions	Potential non-network solutions would need to provide supply to the 110kV network of up to 120MW and 2,300MWh per day
Inter-network Impact	This network development is not anticipated to have material inter-network impacts

8.7.5 Other potential developments

No major committed developments have been identified within the South West, Surat and Bulli zones that are expected to materially alter transmission requirements over the 10-year outlook period.

Powerlink will continue to monitor emerging large-scale load proposals, including data centre and advanced computing developments, and assess any implications for future network requirements.

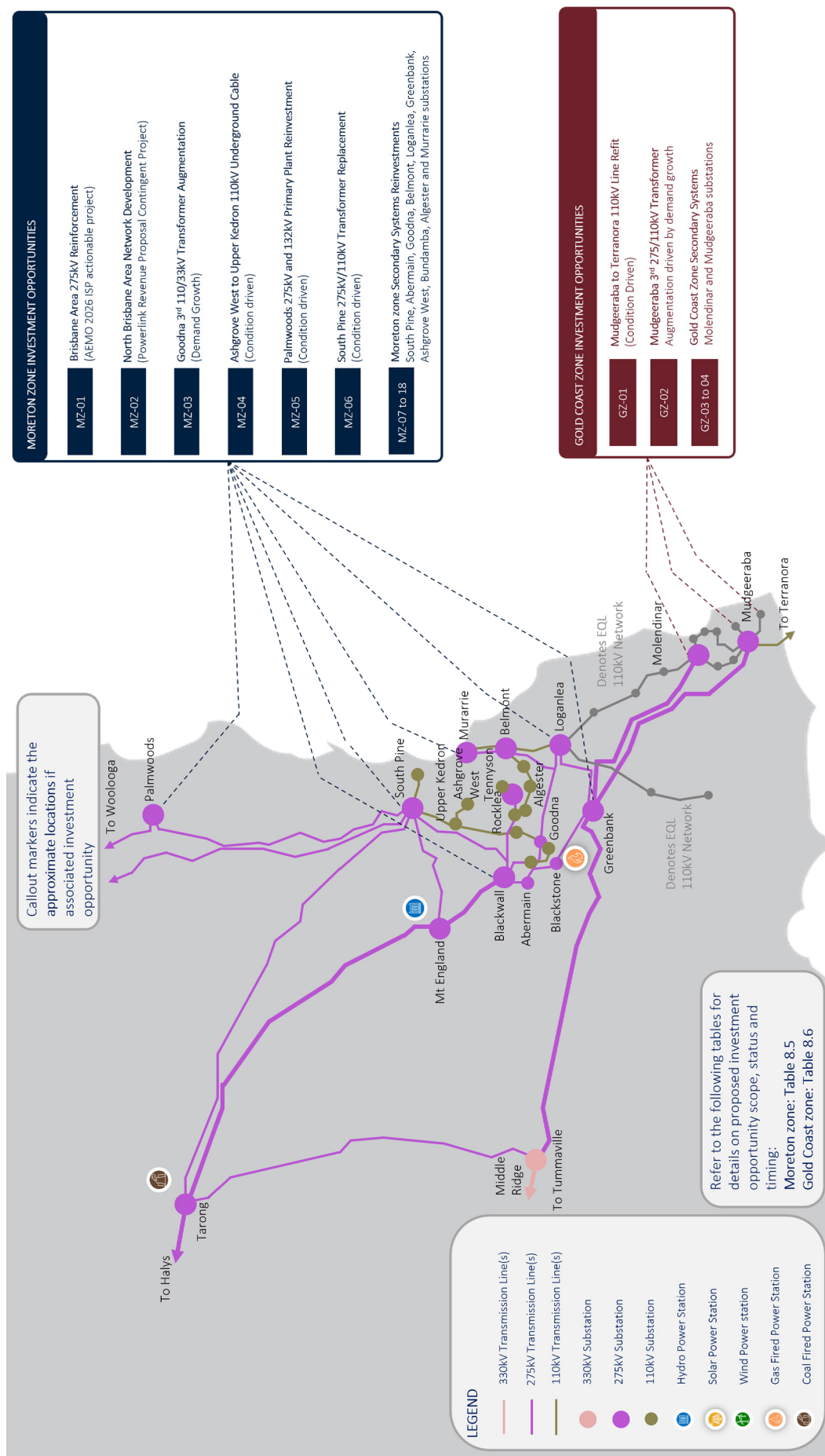
8.7.6 Possible asset retirements

Powerlink has not identified any potential asset retirements in the South West, Surat and Bulli zones within the 10-year outlook period.

8.8 Moreton and Gold Coast zones investment outlook

Figure 8.4 provides a geographic overview of the Moreton and Gold Coast zones and the potential investment opportunities discussed in sections 8.9 and 8.10. The overview provides context for the zone-based discussion that follows with further information on the scope, timing and drivers for each opportunity provided in the relevant sections.

Figure 8.4 Future investment opportunities for the Moreton and Gold Coast zones



8.9 Moreton zone

The Moreton zone comprises the 275kV and 110kV transmission networks supplying major load centres across South East Queensland, including Brisbane, Ipswich, the Sunshine Coast and the Logan region. The zone contains Queensland's highest concentration of electricity demand, supporting significant residential, commercial, industrial, transport and logistics activities, while also providing key transmission interconnections within South East Queensland.

The 110kV network was progressively developed from the 1960s with the 275kV network established and expanded from the early 1980s to support sustained load growth. The main generation sources are Wivenhoe Pumped Storage Hydro Power Station and Swanbank E gas-fired power station located within the Ipswich area.

8.9.1 Existing and committed network developments

Powerlink has completed reinvestment works across the Moreton zone to address condition and obsolescence related risks associated with aged network assets, including target line refits, primary plant and transformer replacements, and secondary systems reinvestments.

Powerlink has also completed connection of the Supernode BESS Stages 1 and 2 at South Pine Substation, and commissioned Swanbank BESS.

Further information on completed and committed developments is provided in Chapter 10.

8.9.2 Emerging and evolving investment drivers

Future network requirements within the Moreton zone are expected to be influenced by population growth, urban expansion, industrial development, increasing electrification, large customer connections, and emerging asset condition, obsolescence and compliance requirements.

Large block loads within Brisbane have the potential to drive significant block load growth and influence future transmission investment requirements.

While no specific transmission upgrades have currently been identified to support the Brisbane 2032 Olympic and Paralympic Games, the development of venues, supporting infrastructure and associated growth may influence future transmission network requirements. The extent of any impacts will depend on the location, scale and timing of these developments, and will be assessed as part of continued joint planning with Energex.

8.9.3 Future network investment and opportunities

Powerlink has identified network investments to address emerging transmission network limitations and condition related risks associated with ageing network assets within the Moreton zone within the 10-year outlook. AEMO has also identified the Brisbane Area 275kV Reinforcement as an actionable project within the 2026 ISP.

Table 8.5 summarises these opportunities and their indicative timing with further detail provided in the following sections. These opportunities do not constitute committed projects, and their scope, timing and implementation remain subject to further assessment and investment decision-making processes.

Investment profiles for projects Powerlink anticipates will be required within five years are included in the investment profile tables following Table 8.5. Other investment opportunities identified in the 10-year outlook are not profiled where their indicative need falls outside the five-year period and are at earlier stages of planning and assessment.

Table 8.5 Moreton zone investment opportunities within the 10-year outlook period

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
MZ-01	Brisbane Area 275kV Reinforcement	Construction of new 275kV double circuit line between Blackwall and Karana Downs and reconfiguring the existing network	Increase transfer capability for market benefits	June 2032	Construction of new 275kV double circuit line between Blackwall and South Pine substations	\$65 million	AEMO 2026 ISP Actionable Project. Currently undergoing RIT-T with PADR required to be published by June 2028
MZ-02	North Brisbane Area Network Development (1)	Establishment of new 275kV double circuit line between South Pine Substation and Banyo in northern Brisbane, including a new 275/110kV substation at Banyo	Development of new loads exceeding the capability of the existing 110kV network	Subject to the scale, pace and timing of new load developments	Establishment of new cross river 275kV cable from Murarrie to a new 275/110kV substation in northern Brisbane	\$248 million	Proposed contingent project in Powerlink's 2027–32 Revenue Proposal
MZ-03	Goodna third 110/33kV transformer augmentation	Install third Goodna 110/33kV transformer	Maintain supply reliability to the Goodna area	June 2030	Replace the existing Goodna 110/33kV transformers with larger capacity units	\$15 million	Uncommitted
MZ-04	Replacement of the 110kV underground cable between Upper Kedron and Ashgrove West	Replace the 110kV underground cable between Upper Kedron and Ashgrove West substations along an alternate easement	Maintain supply reliability in the Moreton zone	December 2032	In-situ replacement of the 110kV cable between Upper Kedron and Ashgrove West substations	\$100 million (3)	Uncommitted
MZ-05	Palmwoods 275kV and 132kV selected primary plant replacement	Selected replacement of 275kV and 132kV primary plant	Maintain supply reliability to the Wide Bay zone	June 2034	Full replacement of 275kV and 132kV primary plant	\$18 million	Uncommitted
MZ-06	South Pine 275/110kV transformer replacement	Replacement of the existing 275/110kV transformer	Maintain supply reliability in the Moreton zone	December 2030	Increasing 110kV network capacity into central business district (CBD) west from Rocklea Substation	\$16 million	Uncommitted
MZ-07	South Pine 275kV secondary systems replacement	Selected 275kV secondary systems replacement	Maintain supply reliability in the Moreton zone	December 2031	Full 275kV secondary systems replacement	\$45 million (3)	Uncommitted

Table 8.5 Moreton zone investment opportunities within the 10-year outlook period (*continued*)

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
MZ-08	Abermain 275kV and 110kV secondary systems replacement	Full replacement of 275kV and 110kV secondary systems	Maintain supply reliability in the Moreton zone	June 2036	Staged replacement of 275kV and 110kV secondary systems	\$10 million	Uncommitted
MZ-09	Goodna 275kV and 110kV secondary systems replacement	Full replacement of 275kV and 110kV secondary systems	Maintain supply reliability in the Moreton zone	December 2029	Selected replacement of 275kV and 110kV secondary systems and 110kV reinforcement from Blackstone Substation	\$39 million	Uncommitted
MZ-10	Belmont 275kV and 110kV secondary systems replacement	Full replacement of 275kV and 110kV secondary systems	Maintain supply reliability in the Moreton zone	June 2034	Selected replacement of 275kV and 110kV secondary systems and new 275kV transmission from adjacent substations	\$24 million	Uncommitted
MZ-11	Loganlea 275kV secondary systems replacement	Selective replacement of 275kV secondary systems	Maintain supply reliability in the Moreton zone	December 2034	Full replacement of 275kV secondary systems	\$8 million (3)	Uncommitted
MZ-12	Greenbank 275kV secondary systems replacement	Full replacement of 275kV secondary systems	Maintain supply reliability in the Moreton zone	June 2034	Selected replacement of 275kV secondary systems and new 275kV transmission from adjacent substations	\$71 million	Uncommitted
MZ-13	South Pine 110kV secondary systems replacement	Full replacement of 110kV secondary systems	Maintain supply reliability in the Moreton zone	June 2031	Selected replacement of 110kV secondary systems and new 110kV transmission from adjacent substations	\$55 million (3)	Uncommitted
MZ-14	Ashgrove West 110kV secondary systems replacement	Full replacement of 110kV secondary systems and selected metering capacity voltage transformer (CVT) replacements	Maintain reliability of supply in the Moreton zone	December 2029	Selected replacement of 110kV secondary systems and new 110kV transmission from adjacent substations	\$19 million	Current RIT-T

Table 8.5 Moreton zone investment opportunities within the 10-year outlook period (*continued*)

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
MZ-15	Bundamba 110kV secondary systems replacement	Full replacement of 110kV secondary systems	Maintain supply reliability in the Moreton zone	June 2035	Selected replacement of 110kV secondary systems and new 110kV transmission from adjacent substations	\$17 million	Uncommitted
MZ-16	West Darra 110kV secondary systems replacement	Full replacement of 110kV secondary systems	Maintain supply reliability in the Moreton zone	June 2032	Selected replacement of 110kV secondary systems and new 110kV transmission from adjacent substations	\$12 million	Uncommitted
MZ-17	Algester 110kV secondary systems replacement	Full replacement of 110kV secondary systems	Maintain supply reliability in the Moreton zone	June 2035	Selected replacement of 110kV secondary systems and new 110kV transmission from adjacent substations	\$31 million	Uncommitted
MZ-18	Murarrie 110kV secondary systems replacement	Full replacement of 110kV secondary systems	Maintain reliability of supply in the Moreton zone	June 2031 (2)	Selected replacement of 110kV secondary systems and new 110kV transmission from Belmont substation	\$58 million	Uncommitted

Notes:

- (1) The final status of this project will be determined as part of the AER's Final Determination on Powerlink's 2027-32 Revenue Proposal to be published in April 2027.
- (2) The change in timing of the network solution from the 2025 TAPR is based upon updated information on the condition of assets.
- (3) Compared to the 2025 TAPR, the change in the estimated cost of the proposed network solution is based upon updated information on the condition of the assets and scope of work.

8.9.4 Five-year investment profiles

Powerlink anticipates several potential network investments above the RIT-T cost threshold may be required to address the risks arising from the condition of assets within the Moreton zone within the next five years.

Greater North Brisbane

The greater north Brisbane five-year outlook comprises reinvestment works at the South Pine and Ashgrove West substations, and the Brisbane Area 275kV Reinforcement actionable ISP project.

MZ-01 Brisbane Area 275kV Reinforcement

Item	Description
Location	Between Blackwall, Rocklea and South Pine substations approximately 20km west and north of the Brisbane CBD
Asset details	The Blackwall to Rocklea and South Pine 275kV network forms a three-way mesh via the Karana Downs location. The circuits from Karana Downs to South Pine and Rocklea were constructed in the 1970s. They were connected into Blackwall substation via establishment of a short 275kV double circuit line section in the late 1990s
Investment context	Thermal limitation between the Blackwall and South Pine substations has the potential to significantly impact the efficient market development and dispatch by limiting the ability of generation in South Queensland to support Moreton North, Sunshine Coast, Wide Bay and areas further north.
Investment driver	Market benefits
Status	Identified as an actionable project within the AEMO 2026 ISP. Currently undergoing a RIT-T with the PADR required to be published by June 2028
Indicative timing	2032
Proposed network solution	Construct a new high-capacity double circuit 275kV line between Blackwall and Karana Downs and reconfigure the existing network to form dedicated double circuits between Blackwall and Rocklea and between Blackwall and South Pine substations
Other potential network solutions	<ol style="list-style-type: none"> 1. Reconfigure the existing 275kV arrangement at Karana Downs as double tee mesh. This involves establishing a new double tee connection at Karana Downs connecting Blackwall to South Pine and Rocklea substations 2. Establish dedicated double circuit connections to South Pine and Rocklea as per the proposed network solution together with reconductoring the reconfigured Karana Downs to South Pine 275kV double circuit line with high temperature conductor to enable higher levels of power transfer across this transmission corridor
Potential non-network solutions	Possible non-network solutions will be assessed as part of the RIT-T process
Inter-network impact	No material inter-network impact is anticipated but will be assessed as part of the RIT-T process

MZ-02 North Brisbane area network development

Item	Description
Location	North Brisbane approximately 18km north of the Brisbane CBD
Asset details	South Pine Substation is one of the supply hubs supplying the greater north Brisbane area. Residential and industrial load east of South Pine substation is currently supplied via the Energex 110kV network to Sandgate Substation. There is increasing load growth in the area due to urban expansion and residential development
Investment context	The development of load growth and block load developments above current load forecasts are likely to exceed the thermal capability of the South Pine to Sandgate 110kV transmission network which will require network reinforcement to maintain reliability of supply
Investment driver	Potential network limitations associated with load growth and block load developments in the north Brisbane area
Status	Included as a contingent project within Powerlink's 2027–32 Revenue Proposal
Indicative timing	Dependent on load growth and/or block load development
Proposed network solution	Establishment of a new 275kV double circuit line between South Pine Substation and Banyo in northern Brisbane, including a new 275/110kV substation at Banyo. The scope involves uprating an existing transmission line between South Pine Substation and Sandgate to 275kV operation, constructing a new section of double circuit 275kV line between Sandgate and Banyo and establishing a new 275/110kV substation at Banyo to connect to the existing 110kV circuits to Nudgee Substation
Other potential network solutions	Potential future network developments may include either a new Brisbane River cable crossing between Murarrie Substation and a proposed North Brisbane 275/110kV Substation, or incremental augmentation of the existing 110kV network within the Energex distribution network for lower levels of load growth. Powerlink and Energex will continue joint planning to identify the most economic and efficient solution to address future demand growth above forecast levels
Potential non-network solutions	Possible non-network solutions will be assessed as part of the RIT-T process
Inter-network impact	No material inter-network impact identified

MZ-06 Maintain reliability of supply and transfer capability at South Pine

Item	Description
Location	Approximately 20km north of the Brisbane CBD
Asset details	South Pine Transformer 5 (T5) was commissioned in 1981
Investment context	South Pine Substation provides essential switching and injection of power from Central and SWQ to SEQ loads. In the mid-2000s a series of major equipment replacement projects were undertaken to address both primary plant and secondary systems equipment condition. South Pine 275/110kV Transformers T4 and T5 act as a bulk supply point for suburbs in north-west Brisbane as well as parts of Brisbane CBD. Detailed condition assessments have determined there are emerging condition risks associated with Transformer T5 which need to be addressed to maintain reliability of supply.
Investment driver	Condition driven replacement to address emerging condition and reliability of supply risks associated with the existing South Pine 275/110kV transformer
Indicative timing	December 2030
Status	Uncommitted
Proposed network solution	Replacement of the existing South Pine 275/110kV transformer at an estimated cost of \$16 million
Other potential network solutions	Increasing network capacity into the CBD West from Rocklea Substation
Potential non-network solutions	Potential non-network solutions would need to supply approximately 165MW and 1,350MWh per day under network contingency conditions. The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages.
Inter-network impact	No material inter-network impact identified

MZ-07 Addressing the 275kV secondary systems condition risks at South Pine

Item	Description
Location	Approximately 20km north of the Brisbane CBD
Asset details	Established in 1964 and later expanded to include 275/110kV transformation
Investment context	South Pine Substation provides essential switching and injection of power from Central and SWQ to SEQ loads. In the mid-2000s a series of major equipment replacement projects were undertaken to address both primary plant and secondary systems equipment condition. Recent condition assessments have identified additional 275kV secondary systems components that have emerging condition and obsolescence related risks that need to be addressed to maintain reliability of supply
Investment driver	Condition driven replacement to address emerging condition and obsolescence risks associated with the 275kV secondary systems
Indicative timing	December 2031
Status	Uncommitted. Note it is likely that a RIT-T consultation will combine MZ-06 and MZ-07
Proposed network solution	Selected replacement of 275kV secondary systems within their existing control building and full replacement of the remaining 275kV secondary systems in a new control building at an estimated cost of \$45 million
Other potential network solutions	Full replacement of selected 275kV secondary systems, decommissioning of selected functionality, additional 110kV cable capacity from Rocklea Substation into the CBD West 110kV ring, and additional 110kV capacity between the Sunshine Coast and South Pine Substation
Potential non-network solutions	Potential non-network solutions would need to supply approximately 390MW and 2,960 MWh per day. The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	No material inter-network impact identified

MZ-13 Addressing the 110kV secondary systems condition risks at South Pine

Item	Description
Location	Approximately 20km north of the Brisbane CBD
Asset details	Established in 1964 and later expanded to include 275/110kV transformation
Investment context	South Pine Substation provides essential switching and injection of power from Central and SWQ to SEQ loads. In the mid-2000s a series of major equipment replacement projects were undertaken to address both primary plant and secondary systems equipment condition. Recent condition assessments have identified additional 110kV secondary systems components that have emerging condition and obsolescence related risks that need to be addressed to maintain reliability of supply
Investment driver	Condition driven replacement to address emerging condition and obsolescence risks associated with the 110kV secondary systems
Indicative timing	June 2031
Status	Uncommitted. Note it is likely that a RIT-T consultation will combine MZ-06 and MZ-07
Proposed network solution	Full replacement of 110kV secondary systems and buildings at an estimated cost of \$55 million
Other potential network solutions	In-situ replacement of 110kV secondary systems, decommissioning of selected functionality, and additional 110kV cable capacity from Rocklea Substation into the CBD West 110kV ring
Potential non-network solutions	Potential non-network solutions would need to supply approximately 165MW and 1,350MWh per day (western 110kV bus) and 380MW and 3,330MWh per day (eastern 110kV bus). The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	No material inter-network impact identified

MZ-14 Maintain reliability of supply and address condition risks at Ashgrove West

Item	Description
Location	Approximately 5km west of the Brisbane CBD
Asset details	Established in 1979
Investment context	Ashgrove West Substation provides an injection point into the Energex distribution network supplying power to the north west Brisbane area. There are emerging condition and obsolescence risks associated with the 110kV secondary systems that need to be addressed to maintain reliability of supply
Investment driver	Condition driven replacement to address emerging condition and obsolescence risks on the 110kV secondary systems and capacitive voltage transformers
Indicative timing	December 2029
Status	Current RIT-T. Submissions to the PSCR closed on 30 June 2026
Proposed preferred solution	Replace all secondary systems within the existing panels (in situ) located in the existing control building by 2029, and replace selected capacitive voltage transformers and metering equipment at an estimated cost of \$19 million
Other potential network solutions	Replace all secondary systems in new panels in new building by 2029, and replace selected capacitive voltage transformers and metering equipment
Potential non-network solutions	A non-network option would need to provide supply to the 33kV network of up to 220MW and up to 2,400MWh per day on a continuous basis
Inter-network Impact	No material inter-network impact identified

Western Brisbane corridor

The western Brisbane corridor extends from inner Brisbane west through to the Ipswich area. Investments that may be required within the five-year outlook comprise transformer augmentations at Goodna Substation, and condition related works to address emerging condition and obsolescence risks required to maintain reliability of supply.

MZ-03 Maintain reliability of supply at Goodna

Item	Description
Location	Approximately 22km south west of the Brisbane CBD
Asset details	Established in 2006
Investment context	Goodna 110/33kV Substation is a bulk supply point for the south west Brisbane and Ipswich areas. The substation also supports 275kV and 110kV network switching in the greater Brisbane meshed network
Investment driver	Power system assessments and joint planning activities have identified emerging transformer capacity limitations that need to be addressed to maintain reliability of supply
Indicative timing	June 2030
Status	Uncommitted
Proposed network solution	Installation of third Goodna 110/33kV transformer at an estimated cost of \$15 million
Other potential network solutions	A new 33kV feeder comprising of overhead and underground sections to permanently transfer loads to the Redbank zone Substation
Potential non-network solutions	Potential non-network solutions would need to supply approximately 75MW and 820MWh per day within the Goodna load area. The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	No material inter-network impact identified

08. Southern region development outlook

MZ-09 Maintain reliability of supply and address condition risks at Goodna

Item	Description
Location	Approximately 22km south west of the Brisbane CBD
Asset details	Established in 2006
Investment context	Goodna 275/110kV Substation is a bulk supply point for the south west Brisbane and Ipswich areas. The substation also supports 275kV and 110kV network switching in the greater Brisbane meshed network
Investment driver	Condition driven reinvestments to address emerging condition and obsolescence risks on the 275kV and 110kV secondary systems
Indicative timing	December 2029
Status	Uncommitted. This may be combined as a single RIT-T consultation with MZ-03
Proposed network solution	Full replacement of all 275kV and 110kV secondary systems within the existing control buildings at an estimated cost of \$39 million
Other potential network solutions	Replacement of selected secondary systems, additional transformer capacity at Blackstone Substation, and additional 110kV network capacity between Blackstone and Goodna substations
Potential non-network solutions	Potential non-network solutions would need to supply approximately 510MW and 7,800MWh per day within the Goodna load area. The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	No material inter-network impact identified

MZ-16 Address secondary systems condition risks at West Darra

Item	Description
Location	Approximately 18km south west of the Brisbane CBD
Asset details	Established in 1983. Contains secondary systems progressively installed between 2007 and 2016
Investment context	West Darra 110kV Substation functions as a local switching substation within the SEQ transmission network. The substation plays an integral role in the 110kV network providing bulk supply to suburbs within the south west Brisbane
Investment driver	Condition driven reinvestment to address emerging condition and obsolescence risks on the 110kV secondary systems
Indicative timing	June 2032
Status	Uncommitted
Proposed network solution	Full replacement of the 110kV secondary systems at West Darra Substation at an estimated cost of \$12 million
Other potential network solutions	Staged replacement of 110kV secondary systems
Potential non-network solutions	Potential non-network solutions would need to supply approximately 165MW and 1,350MWh per day within transmission network supplied through West Darra Substation. The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	No material inter-network impact identified

Greater South Brisbane area

Investments that may be required in the greater south Brisbane area comprise condition related works to address emerging condition and obsolescence risks required to maintain reliability of supply.

MZ-18 Addressing secondary systems condition risks at Murarrie

Item	Description
Location	Approximately 8km east of Brisbane CBD
Asset details	Established in 2003
Investment context	Murarrie Substation is a major 275/110kV substation supplying the eastern part of Brisbane, Brisbane Trade Coast precinct and Port of Brisbane. The substation is supplied primarily through 275kV and 110kV circuits from Belmont Substation
Network driver	Condition driven reinvestment to address emerging condition and obsolescence risks on the 110kV secondary systems
Indicative timing	June 2031
Status	Uncommitted
Proposed network solution	Full secondary systems replacement at Murarrie Substation at an estimated cost of \$58 million
Other potential network options	Replacement of selected secondary systems, decommission selected functionality, installation of additional network capacity at Belmont, and establish additional 110kV network capacity between Belmont and Murarrie substations
Potential non-network solutions	Potential non-network solutions would need to supply approximately 165MW and 1,350MWh per day within the Murarrie supply area. The non-network solution would be required under contingency events and be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	No material inter-network impact identified

8.9.5 Other potential developments

The Sunshine Coast continues to experience strong population growth and urban development. Increasing demand across the region is expected to increase power transfers on the 132kV and 110kV transmission network. Over the medium to longer-term, additional capacity at Palmwoods Substation and reinforcement of the 132kV and 110kV network may be required to maintain reliable supply and support continued regional growth.

Across Brisbane's northern growth corridor, significant residential and urban greenfield development is planned within the greater North Brisbane and Caboolture West area. The Queensland Government has designated the Waraba Priority Development Area (PDA) for future urban and community development, which may require network reinforcement if load growth is higher than current forecasts. The potential development of large-scale load connections within North Brisbane may also require network augmentations to maintain reliability of supply.

Within Brisbane's western growth corridor, ongoing development in areas including Springfield and the greater Ipswich area, and the establishment of Ripley Valley PDA over the medium to longer-term are expected to increase loadings within the 275kV and 110kV transmission networks.

In the south of the zone, development within the Greater Flagstone and Logan areas is expected to drive future network requirements over the medium to longer-term. The Bromelton State Development Area has the potential to accommodate large-scale industrial, logistics, warehousing and manufacturing activities and may require new transmission supply as development progresses.

Future load growth may also arise from expansion of strategic industrial and employment precincts, including the Australia Trade Coast, which continues to attract logistics, freight, aviation and advanced manufacturing developments. While these developments remain uncertain, they may require transmission reinforcement works should they proceed.

Powerlink will continue to monitor these developments through its annual planning process and ongoing joint planning activities with Energex.

8.9.6 Possible asset retirements

Powerlink has not identified any potential asset retirements in the Moreton zone within the 10-year outlook period.

8.10 Gold Coast zone

The Gold Coast zone supplies a diverse range of residential, commercial, tourism and urban development areas, including major coastal centres such as Surfers Paradise, Broadbeach and Burleigh Heads, together with rapidly growing communities across the northern Gold Coast corridor. The network also supports major economic and social infrastructure, including hospitals, universities, transport infrastructure, the Gold Coast Airport and tourism-related developments. Continued population growth and urban expansion across the region are expected to influence future network requirements.

The southern portion of the zone interfaces with the northern NSW network through the Terranora Interconnector. This link supports power transfers between Queensland and NSW, and plays an important role in maintaining reliable supply across the southern Gold Coast and Tweed regions under a range of operating conditions.

8.10.1 Existing and committed network developments

Powerlink has completed a range of transmission line and substation reinvestment works over the past decade in the Gold Coast zone to address emerging condition related risks and maintain reliability of supply.

8.10.2 Emerging and evolving investment drivers

Within the 10-year outlook, additional transformer capacity at Mudgeeraba Substation may be required to maintain reliability of supply to support load growth within the southern Gold Coast and northern NSW Tweed area.

Future reinvestment needs are primarily related to addressing emerging condition risks within the older overhead lines and substations.

8.10.3 Future network investment and opportunities

Powerlink has identified potential network investment opportunities required to address emerging network asset condition and obsolescence risks within the Gold Coast zone in the 10-year outlook.

Table 8.6 summarises these opportunities and their indicative timing with further details provided in the sections that follow. The opportunities do not constitute committed projects, and their scope, timing and implementation remain subject to further assessment and investment decision-making processes.

Investment profiles for projects Powerlink anticipates will be required within five years are included in the investment profile tables following Table 8.6. The Mudgeeraba primary and secondary systems replacement identified in the 10-year outlook is not profiled as the indicative need falls outside the five-year period.

Table 8.6 Gold Coast zone investment opportunities within the 10-year outlook period

ID	Potential project	High level scope	Purpose	Indicative timing	Alternatives	Indicative cost	Status
GCZ-01	Line refit works on the 110kV transmission line between Mudgeeraba Substation and Terranora	Targeted line refit works on steel lattice towers	Maintain supply reliability from Queensland to New South Wales Interconnector	June 2028	Rebuild of the existing Mudgeeraba to Terranora 110kV double circuit line (to the Queensland to NSW border)	\$10 million	Uncommitted
GCZ-02	Mudgeeraba 275/110kV transformer augmentation	Installation of third 275/110kV transformer at Mudgeeraba Substation	Maintain supply reliability to the southern Gold Coast and northern NSW Tweed area	December 2032	Installation of third 275/110kV transformer at Molendinar Substation, and reinforcement of the Molendinar to Mudgeeraba 110kV network	\$35 million	Uncommitted
GCZ-03	Mudgeeraba 275/110kV primary plant and 110kV secondary systems replacement	Selected 275kV and 110kV primary plant replacement and replacement of 110kV secondary systems in the existing building including in-panel replacement	Maintain supply reliability to the southern Gold Coast and northern NSW Tweed area	June 2033	Full replacement of 275/110kV primary plant and full replacement of 110kV secondary systems and replacement of the transformer	\$51 million	Uncommitted
GCZ-04	Molendinar 275kV secondary systems replacement	Full replacement of 275kV secondary systems	Maintain supply reliability in the Gold Coast zone	June 2031	Selected 275kV secondary systems replacement, and 110kV reinforcement of Molendinar from the adjacent Loganlea 275kV Substation	\$53 million	Uncommitted

8.10.4 Five-year investment profiles

Powerlink anticipates three potential network investments above the RIT-T cost threshold may be required to address the risks arising from the condition of assets and load growth within the Gold Coast zone within the next five years.

GCZ-01 Addressing Terranora Interconnector capability

The greater Gold Coast five-year outlook comprises reinvestment works at Terranora, Mudgeeraba and Molendinar area.

Item	Description
Location	From the Tweed Valley New South Wales into Queensland
Asset details	Constructed in 1976
Investment context	The Mudgeeraba to Terranora 110kV transmission line was first established to augment electricity supply to the Tweed Valley in New South Wales from Queensland. It is a double circuit 110kV steel tower transmission line which consists of 58 structures with the ownership of the asset split between Powerlink and Essential Energy. Powerlink maintains the feeders from Mudgeeraba Substation up to and including structure 1731 along a 13.5km corridor comprising of 18 tension and 14 suspension structures. The line operates in a coastal environment with elevated sections exposed to marine pollutants and is now nearly 50 years old
Investment driver	Emerging condition risks with the Powerlink section of the Terranora Interconnector due to structural corrosion
Indicative timing	June 2028
Status	Uncommitted
Proposed network solution	Refit of the Powerlink portion of the existing Mudgeeraba to Terranora 110kV double circuit transmission line at an estimated cost of \$10 million
Other potential network solutions	Staged refit of selected structures on the Mudgeeraba to Terranora line with the first stage to be completed by 2028 and the second stage by 2033
Potential non-network solutions	Potential non-network solutions would need to maintain up to 110MW and 1,500MWh per day to the northern NSW Tweed area, and facilitate inter-regional power transfers
Inter-network impact	Powerlink considers the proposed network solution will not have a material inter-network impact, noting there may be potential for inter-network impacts to occur during construction outage periods. Potential impacts will be analysed closer to the identified need timing and as part of the RIT-T consultation process

GCZ-02 Addressing reliability of supply to the southern Gold Coast and Tweed area

Item	Description
Location	Located within the southern part of the Gold Coast area
Asset details	Mudgeeraba substation was constructed in 1972
Investment context	Mudgeeraba 275/110kV Substation is one of two major injection points into the Gold Coast area and is supplied from Greenbank Substation by two 275kV single circuit transmission lines. The substation was established in the early 1970s to support growing demand in the southern Gold Coast and has two 275/110kV, 250MVA transformers. These transformers provide the primary interface between Powerlink's 275kV transmission network and the 110kV network supplying the southern Gold Coast, Terranora and parts of northern NSW, while also supporting power transfers via Directlink. Continued regional demand growth has created an emerging need for a third transformer to maintain reliability of supply.
Investment driver	Load growth and development within the southern Gold Coast and northern NSW Tweed area
Indicative timing	December 2032
Status	Uncommitted
Proposed network solution	Installation of third 275/110kV transformer at Mudgeeraba Substation
Other potential network solutions	Installation of 275kV bus and third 275/110kV transformer at Molendinar Substation, and reinforcement of the 110kV network from Molendinar to Mudgeeraba substations
Potential non-network solutions	Potential non-network solutions would need to provide supply of up to 180MW and up to 1,100 MWh per day to the southern Gold Coast area. The non-network solution would be required for a contingency and to be able to operate on a continuous basis until normal supply is restored. Supply would also be required for planned outages
Inter-network impact	Powerlink considers the proposed network solution will not have a material inter-network impact, noting there may be the potential for inter-network impacts to occur during construction outage periods. Potential impacts will be analysed closer to the identified need timing and as part of the RIT-T consultation process

GCZ-04 Maintain reliability of supply and address condition risks at Molendinar

Item	Description
Location	Located within the northern part of the Gold Coast area
Asset details	Established in 2003
Investment context	Molendinar 275/110kV Substation is one of two major injection points into the Gold Coast area and is supplied from Greenbank Substation by a 275kV double circuit transmission line. The Energy Queensland 110kV network from Molendinar to Mudgeeraba links the coastal bulk supply points at Southport, Surfers Paradise, Broadbeach and Merrimac via an underground cable network. An inland overhead 110kV network supplies Robina and Nerang substations to the south and Cades County Substation to the north. A condition assessment of the Molendinar Substation secondary systems identified various secondary systems components that require replacement. The proposed network solution is based on the complexity of in-situ replacement and network constraints
Investment driver	Condition driven replacement to address emerging condition and obsolescence risks on the 275kV secondary systems
Indicative timing	June 2031
Status	Uncommitted
Proposed network solution	Full replacement of 275kV secondary systems at Molendinar Substation at an estimated cost of \$53 million
Other potential network solutions	Replacement of selected 275kV secondary systems at Molendinar substation, and reinforcement of the 110kV network from Loganlea to Molendinar, and Mudgeeraba to Molendinar substations
Potential non-network solutions	Potential non-network solutions would need to provide up to 530MW at peak demand times and up to 7,000MWh per day. The non-network solution would be required to operate on a continuous basis.
Inter-network impact	No material inter-network impact identified

8.10.5 Other potential developments

Continued population growth, urban expansion, and the development of strategic growth areas may influence future transmission and distribution network requirements over the medium to longer-term.

Powerlink will continue to monitor these developments through its annual planning process and ongoing joint planning activities with Energex.

8.10.6 Possible asset retirements

Powerlink has not identified any potential asset retirements in the Gold Coast zone within the 10-year outlook period.

8.11 Southern Region line refit program

Where smaller transmission line refit requirements have been identified within the Southern Region, these may be grouped into regional programs as part of Powerlink's Geographic Line Refit Program. This approach is intended to improve delivery efficiency and reduce costs by coordinating geographically proximate transmission line refit requirements that might otherwise be addressed separately. Transmission lines currently identified for potential inclusion in the Southern Region line refit program are summarised in Table 8.7.

Table 8.7 Transmission lines under consideration for inclusion in the Southern Region line refit program in the 10-year outlook period

Transmission line	Zone	Potential line refit program
Line refit works on the 275kV transmission line between Palmwoods and Woolooga substations	Wide Bay	Southern
Line refit works on the 275kV transmission line between South Pine and Palmwoods substations	Wide Bay	Southern
Line refit works on the 275kV transmission lines between Woolooga and Gin Gin substations	Wide Bay	Southern
Line refit works on the 275kV transmission line between Goodna and Belmont substations	Moreton	Southern
Line refit works on the 275kV transmission line between Blackwall and Goodna substations	Moreton	Southern
Line refit works on the 110kV transmission line between Blackstone and Abermain substations	Moreton	Southern
Line refit works on the 110kV transmission line between Belmont and Loganlea substations	Moreton	Southern
Line refit works on the 110kV transmission line between West Darra and Sumner substations	Moreton	Southern
Line refit works on the two 275kV transmission lines between Greenbank and Mudgeeraba substations	Gold Coast	Southern

8.12 Southern Region transmission lines approaching end of technical service life

Table 8.8 provides a consolidated outlook of transmission lines in the Southern Region expected to approach end of technical service life within the 10-year outlook period. These include transmission lines identified within Powerlink's Geographic Line Refit Program, transmission lines associated with investment opportunities identified in this chapter, and other assets subject to ongoing asset management, planning and network assessments.

The response for each transmission line will depend on its enduring network need and may include continued operation through operational management strategies, life extension, refit, replacement, reconfiguration or retirement.

Transmission lines that may require future intervention or investment responses beyond the 2026 TAPR outlook period, in the next 10 to 20 years, are identified in Appendix F.

Table 8.8 Southern Region transmission lines approaching end of technical service: 10-year outlook

Zone	Feeder	Voltage	General location
Wide Bay	807	275kV	Between South Pine and Woolooga substations
Wide Bay	808	275kV	Between South Pine and Palmwoods substations
Wide Bay	810	275kV	Between Palmwoods and Woolooga substations
Wide Bay	813/1, 813/2 814/1, 814/2	275kV	Between Calliope River and Woolooga tee Gin Gin substations
Wide Bay	819	275kV	Between Teebar Creek and Wurdong substations
Moreton	809	275kV	Between Rocklea and South Pine substations
Moreton	838	275kV	Between Blackwall and South Pine substations
Moreton	8819	275kV	Between Blackwall and Goodna substations
Moreton	8842	275kV	Between Goodna and Belmont substations
Moreton	708	110kV	Between West Darra and Sumner substations
Moreton	709	110kV	Between Richlands and Algester substations
Moreton	710	110kV	Between Rocklea and Richlands substations
Moreton	715	110kV	Between Blackstone and Abermain substations
Moreton	716	110kV	Between Bundamba and Abermain substations
Moreton	717	110kV	Between Blackstone and Redbank Plains substations
Moreton	718	110kV	Between Blackstone and Goodna substations
Moreton	721, 722	110kV	Between South Pine and Upper Kedron substations
Moreton	751, 792	110kV	Between Belmont and Loganlea substations
Moreton	776	110kV	Between West Darra and Upper Kedron substations
Moreton	7256, 7257	110kV	Between Upper Kedron and Ashgrove West substations
Moreton	7258	110kV	Between Upper Kedron and Abermain substations
Moreton	7294	110kV	Between Algester and Richlands substations
Moreton	7324	110kV	Between Blackstone and Bundamba substations
Gold Coast	835	275kV	Between Greenbank and Mudgeeraba substations
Gold Coast	836	275kV	Between Greenbank and Mudgeeraba substations
Gold Coast	757, 758	110kV	Between Mudgeeraba and Terranora substations