January 2026

Powerlink 2027-32 Revenue Proposal

Appendix 4.04
Contingent Projects

1. Purpose

Our Revenue Proposal may include proposed contingent capital expenditure which we consider is reasonably required for the purpose of undertaking proposed contingent projects[1].

This Appendix presents our proposed contingent projects for the 2027-32 regulatory period.

1.1. Regulatory requirements

Consistent with clause 6A.8.1(b) of the Rules, the Australian Energy Regulator (AER) must accept proposed contingent projects where it is satisfied that:

- the proposed expenditure is not otherwise provided for (either in part or in whole) in the total of the forecast capital expenditure for the relevant regulatory period
- the proposed expenditure reasonably reflects the capital expenditure criteria
- the proposed expenditure exceeds either $30m or 5% of the value of the maximum allowed revenue (MAR) for the first year of the regulatory period, whichever is the larger amount
- the proposed contingent projects are reasonably required to be undertaken in order to achieve the capital expenditure objectives
- the proposed contingent projects and the proposed expenditure comply with the requirements of any relevant regulatory information instrument, and
- the trigger events for the proposed contingent projects are appropriate.

1.2. Approach to contingent projects

Contingent projects are those which are significant, may arise in the period, but not yet committed and not provided for in the capital expenditure forecast for the relevant regulatory period. Such projects are linked to unique investment drivers such as a major additional point load or generation changes rather than to general investment drivers (such as expectations of load growth within a region).

Those investment drivers we consider as being probable or plausible to occur by 2032 are the subject of proposed contingent projects[2]. We have defined plausible and probable as follows:

- Probable – the development has received required state/federal approvals (where applicable). It has the resources in place to proceed but is not publicly considered a committed development. There may be some speculation around the date of commencement.
- Plausible – the development may not have received final state and/or federal approvals, but it has completed preliminary investigations and reports. There is likely some media attention surrounding the progress of the project. If the development gains momentum it is within reason that network investment should commence before 2032.

We have considered potential contingent projects under two categories of driver:

1. Local demand increase and/or generation reduction.

[1] National Electricity Rules, clause 6A.8.1(a)

[2] The Rules require the occurrence of a contingent project trigger to be probable during the regulatory period. Our definitions of probable and plausible for a development proposal are consistent with it being probable that the trigger event could occur during the regulatory period. This is the same criteria that we applied in both our 2018-22 and 2023-27 Revenue Proposals which were accepted by the AER.

2. Market benefit.

Our Transmission Annual Planning Report (TAPR) identifies potential load developments and generation retirements that could trigger significant expenditure to augment the network to continue to meet our mandated reliability of supply standard. Table 1.1 summarises potential new large loads identified in the 2025 TAPR.

Table 1.1 - Probable or Plausible potential new large loads

Connection Zone	Description	Possible load
North Queensland	• Electrification of existing industrial facilities • New manufacturing facilities	Up to 1,500 MW
Central Queensland	• Hydrogen production facilities • Electrification of existing industrial facilities	Up to 1,372 MW
Southern Queensland	• New technology facilities • Transport infrastructure	Up to 110 MW[3]

For these projects we propose contingent project triggers that identify the level of additional demand or reduction in generating capacity that will lead to failure to meet our mandated reliability of supply standards.

Beyond potential future load developments, the timely connection of new large-scale, low-cost generation is essential to enable the energy transformation and support the orderly retirement of coal-fired power stations. Facilitating this new generation in the most cost-effective way requires targeted transmission investment. Accordingly, a set of contingent projects has been identified to unlock additional generation capacity and ensure the system can efficiently accommodate changing power flows. Least-cost expansion planning has demonstrated that these projects form part of the optimal development pathway.

The Queensland Government through its Energy Roadmap, published in October 2025[4], identified these network augmentations that could deliver net market benefits during the 2027-32 regulatory period. A number of these projects have also been identified by AEMO in the draft 2026 ISP. However, as the final 2026 ISP will not be published until June 2026, we have proposed all the projects identified in the Energy Roadmap as contingent projects in our Revenue Proposal.

In addition, we have proposed two contingent projects for additional synchronous condenser units to meet system strength requirements. These projects relate to discrete parts of the recommended option identified in the Project Assessment Conclusion Report (PACR) published in June 2025. Powerlink has adopted a flexible approach to the implementation of the recommended option and has not fully committed to all nine synchronous condensers to allow time for any potentially lower cost non-network alternatives to become available. These proposed contingent projects will allow Powerlink to implement the recommended option in sufficient time without committing to these costs at this early stage.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Therefore, the proposed contingent projects are described by the most likely network development at the trigger

[3] Subsequent to Powerlink finalising the 2025 TAPR in October 2025 new load proponents have emerged in the North Brisbane area. If these proponents become committed, the load in North Brisbane could increase by a further 360MW.
[4] Queensland Government Energy Roadmap 2025.[5] Feeder 820 (Bouldercombe – Broadsound) and Feeder 821 (Bouldercombe – Nebo) single-circuit lines were constructed between 1977 and 1980. Feeder 834 (Broadsound – Nebo) was built originally as two single circuits in the early 1980s. These lines were later paralleled when the new double circuit 275kV line (8846 and 8847) was built in 2008.

level (the event which will result in a transmission network project of value in excess of the contingent project threshold).

Detailed planning analyses, project scopes, cost estimates and Regulatory Investment Test for Transmission (RIT-T) consultation (where required) will be completed before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

Powerlink's proposed MAR for the first year of the next regulatory period (2027/28) is $989.8m (refer to Table 10.8 of our 2027-32 Revenue Proposal). Five percent of the MAR is $49.5m, which makes this amount the threshold for a contingent project for the purpose of Powerlink's Revenue Proposal. Table 2 summarises the indicative costs of the contingent project detailed in this Appendix.

Table 2 - Indicative cost of contingent projects ($m, real, 2026/27)

Project name	Indicative cost*	
	($m, real 2026/27)	($m, nominal)
Central to North Queensland Reinforcement	$209 to $1,788	$237.6 to $2,032.8
Northern Bowen Basin Reinforcement	$442.3	$502.9
Gladstone Area Augmentation	$76 to $374.5	$86.4 to $425.8
Central Queensland System Strength	$450.0	$511.6
Southern Queensland System Strength	$225.0	$255.8
South West Queensland Augmentation	$79.0	$89.8
North Brisbane Area Network Development	$247.9	$281.9
Brisbane Area Transfer Capacity	$64.6	$73.5
Surat Basin Area Network Development	$643.7	$731.9

* Indicative cost is based on the expected network solution. The actual scope will be determined through a RIT-T should the trigger eventuate (except for system strength projects). There is also expected to be a small incremental increase in operating expenditure

2. Central Queensland to North Queensland Augmentation

Category: Augmentation

Indicative cost: $237.6m to $2,032.8m (nominal)

2.1. Project overview

This proposed contingent project comprises one or more of the following stages to increase power transfer capability between Central Queensland (CQ) and North Queensland (NQ) (refer to Figure 2.1) :

- string the second circuit of an existing double circuit line between Stanwell and Broadsound that currently has only one side strung
- build a double circuit 275kV line between Bouldercombe and Broadsound, via Stanwell
- build a double circuit 275kV line between Broadsound and Nebo, and
- build a double circuit 275kV line to connect the most eastern 275kV circuit between Strathmore – Haughton River – Ross to the proposed CopperString connection substation, Reid River.

The new transmission lines, between Bouldercombe and Nebo, are an advancement of future reinvestment in low-capacity single circuit lines[5] between CQ and NQ as they approach end-of-technical life.

Powerlink considers that the project should be accepted as a contingent project for the 2027-32 regulatory period due to the uncertainty about the trigger event occurring and uncertainty about the scope, cost and timing of the project required to maximise the net economic benefit and maintain reliability of supply.

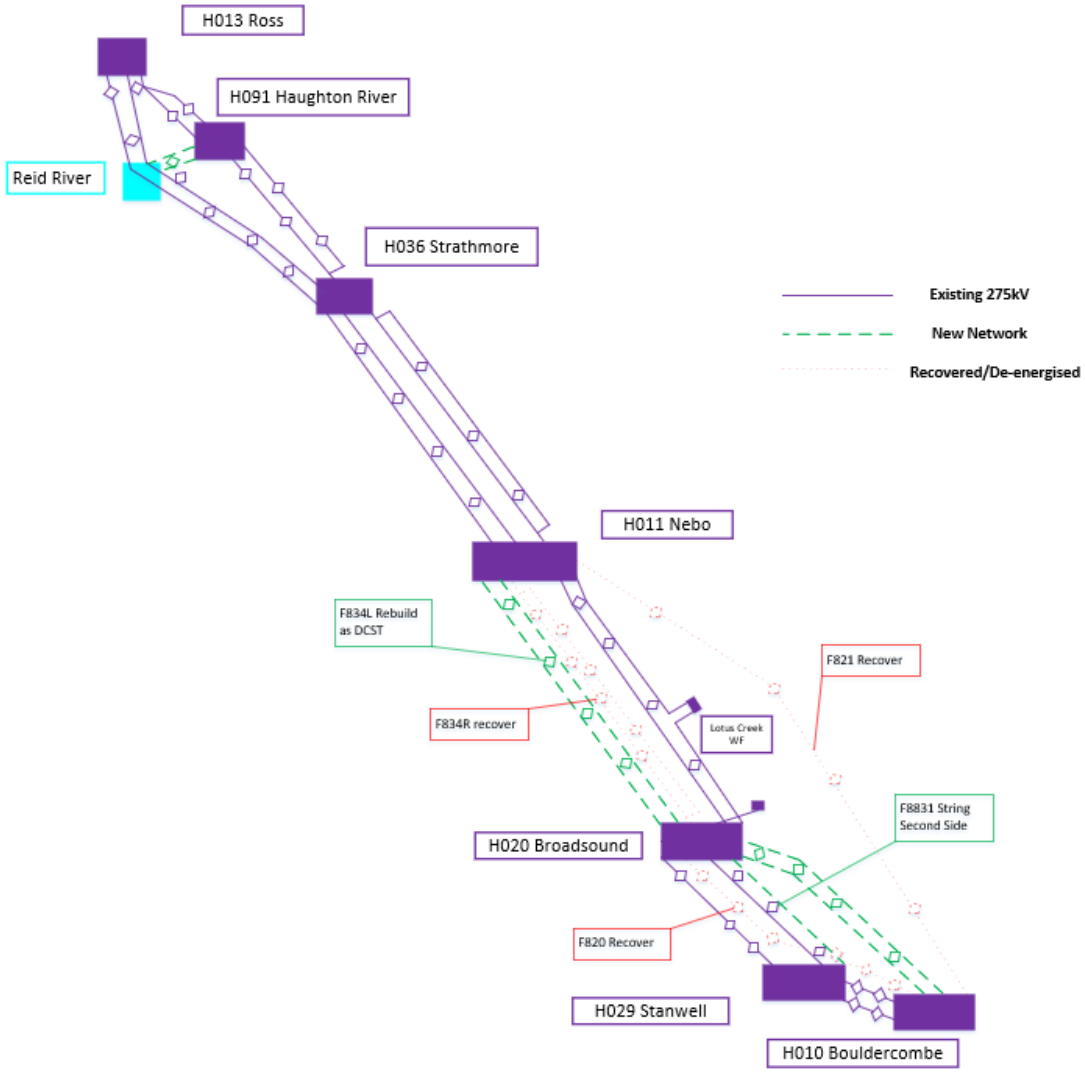
2.2. Background

The CQ to NQ grid section has traditionally supported northerly power flows during periods of high demand in NQ. Power transfer capability into northern Queensland is limited by thermal ratings or voltage stability limitations, depending on prevailing weather conditions and scheduled generation. Thermal limitations may occur on the Bouldercombe to Broadsound 275kV line following a critical contingency of a Stanwell to Broadsound 275kV circuit. Voltage stability limitations may occur following the trip of the Townsville gas turbine or following a contingency of a Stanwell to Broadsound 275kV circuit.

Plausible load developments in NQ may increase the required power flow into NQ beyond the capability of the existing network during the 2027-32 regulatory period.

[5] Feeder 820 (Bouldercombe – Broadsound) and Feeder 821 (Bouldercombe – Nebo) single-circuit lines were constructed between 1977 and 1980. Feeder 834 (Broadsound – Nebo) was built originally as two single circuits in the early 1980s. These lines were later paralleled when the new double circuit 275kV line (8846 and 8847) was built in 2008.

Figure 2.1: CQ-NQ network with Contingent Project



The maximum power transfer south from NQ to CQ, whilst not currently a limitation, would be limited by thermal, voltage and transient instability following contingencies on the 275kV network. The southerly power transfer capability is first limited by the trip of the Stanwell to Broadsound 275kV line.

New wind and solar generation located in North and Far North Queensland has reduced the northerly energy transfer across the grid section, but the peak power transfer remains broadly the same as in earlier years. The additional generation sources are also leading to increasing periods of negative power flows, being power flow from NQ to CQ. The peak power transfer from NQ to CQ has increased in recent years and this is expected to continue to increase as already committed generation enters commercial operation.

Further increases in the southerly direction are possible due to likely developments during the 2027-32 regulatory period.

2.3. Contingent capital expenditure

The proposed contingent project is estimated to cost between $209m and $1,788m (real, 2026/27) or between $237.6m and $2,032.8m (nominal).

The lower bound of this estimate is based on stringing the second side of an existing 275kV double circuit steel tower line between Stanwell and Broadsound Substations while the upper bound also includes the replacement of around 320 km of existing aged 275kV single circuit lines with new 275kV double circuit lines. No allowance has been included for new or widened easements to support the rebuild as this is included in the forecast capital expenditure in our Revenue Proposal. This estimate has been developed using AEMO's Transmission Cost Database and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

2.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[6].

Connection of new or additional loads in NQ, including in the Northern Bowen Basin area, is expected to add load to a level that will require increasing reliance on more expensive generation in northern Queensland to maintain a reliable electricity supply. Undertaking the proposed contingent project will reduce the reliance on this more expensive generation. If the reduction in generation costs exceeds the cost of the proposed contingent project there will be positive net market benefits.

Conversely, if significant new low-cost generating capacity connects in NQ this is expected to lead to increased power flow from NQ to CQ and increasing levels of network congestion. Market modelling demonstrates that undertaking the proposed contingent project to increase power transfer capacity to host more low-cost generation in NQ is part of the optimal development pathway. Under the assumptions applied in the Energy Roadmap, it was shown that investing in the contingent project had the lowest total system cost[7] and the benefits of expanding low-cost generation in NQ with reduced network congestion, exceeds the cost of the proposed contingent project.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

[6] National Electricity Rules, clause 6A.8.1(b)(1)
[7] The total system cost of each option is the annualised, discounted cost, and includes the capital cost of new generation, storage and transmission and operational costs (including fuel cost).

2.5. Trigger event

There are two plausible sources of trigger events.

The first is the commitment of at least 480 MW of additional load in NQ. This trigger is relevant in a future where little or no additional generation is committed in NQ. Under this scenario investment in network is required to meet reliability of supply obligations at least cost.

The second plausible trigger is the completion of the eastern section of the CopperString Project, coupled with the connection of new generation in the region. This allows high quality large-scale wind resources in the Hughenden area to be connected to the National Electricity Market (NEM). The Hughenden wind resource has a diurnal pattern that offers diversity against other wind resources in the NEM. The increasing resource diversity is valuable in maximising efficiency and drives an overall lower cost in generation expansion.

The Queensland Investment Corporation (QIC) will deliver the Eastern Link of CopperString, with major construction commencing by 2028 and commercial operations by 2032 (subject to approvals). Least cost expansion plan market modelling has shown that increasing the transfer capacity of NQ to CQ to facilitate the hosting of this wind resource is a key component of the least cost expansion plan, the benefits of which are greater than the cost of the contingent project.

2.5.1. Industrial decarbonisation

Both Queensland and Commonwealth governments have legislated to pursue economy-wide greenhouse gas emissions reductions targets of net zero by 2050. As a result, there is considerable interest in electrification of existing industrial processes at facilities in NQ. An example is the electrification of mining operations discussed in the proposed contingent project for the Norther Bowen Basin – see Section 3.

The Lansdown Eco-Industrial Precinct (LEIP), approximately 40km south of Townsville is a greenfield development with the vision to become northern Australia's foremost precinct for advanced manufacturing, processing, technology, and emerging industries[8]. Possible tenants of the LEIP include energy-intensive industries, quartz manufacturing and hydrogen production facilities, with a potential electrical load of up to 900 MW.

These loads have the potential to impact the CQ-NQ grid section. As demand increases in NQ congestion may occur, requiring northern Queensland generators to be constrained. Network analysis has identified that additional load north of Bouldercombe in excess of 480 MW above Powerlink's 2025 Central demand forecast will result in network congestion between CQ and NQ that will require dispatch of additional, out-of-merit-order generation in NQ. As dispatchable generation costs are higher in northern Queensland, due to reliance on liquid fuels, it may be economic to advance the timing of augmentation to deliver positive net market benefits. The additional load in northern Queensland that would justify the network augmentation in preference to continued network support is between 480 MW and 570 MW. The lower bound assumes the out-of-merit-order generation is predominantly liquid fuelled at approximately $400/MWh, while the upper bound assumes up to 230 MW of gas-fired generation is available at approximately $120/MWh.

2.5.2. CopperString

The CopperString project involves building approximately 840km of new electricity transmission lines to connect Mount Isa to the NEM. It will also allow access to good quality wind generation resources in the Flinders region, around Hughenden.

[8] Townsville City Council, Lansdown Eco-Industrial Precinct

The Energy Roadmap confirms that QIC will deliver the Eastern Link (Townsville to Hughenden) of CopperString with major construction commencing by 2028 and commercial operations by 2032 (subject to approvals). QIC is also beginning work to deliver the Western Link (Hughenden to Mount Isa).

The Eastern Link will be constructed at 330kV and is expected to connect to a new Powerlink switching station at Reid River, by cutting into the existing 275kV network between Strathmore and Ross substations. The Energy Roadmap notes that the Eastern Link will enable the connection of new generation in the Flinders region. The hosting capacity for new generation within this region, together with further generation development in northern Queensland, has the potential to significantly increase power transfers from northern to central Queensland.

Least cost expansion planning has shown that there are net market benefits in expanding the power transfer capability of the NQ to CQ network to unlock the valuable wind resources in NQ. This market modelling was conducted as part of the analysis completed for the Energy Roadmap[9]. Under the assumptions applied in the Energy Roadmap electrification load was also modelled in NQ. This reached levels of 400 MW by late-2030s and over 700 MW by the end of the period. This is evidence that the market benefits from augmenting the NQ to CQ transmission capacity remain robust even with higher load in NQ.

The commitment to construct CopperString is the first step in delivering confidence to renewable energy proponents to connect in the resource rich area near Hughenden and broader NQ. However, without a clear signal to the market that the capacity between NQ and CQ will be augmented there will be no further commitment beyond the existing network capacity as congestion and low marginal loss factors will be a significant deterrent to the bankability of future projects. For this reason, the contingent project trigger cannot be assessed against the commitment of generation above a threshold value, but rather must be linked to the successful completion of a RIT-T demonstrating that the grid section upgrades are part of the optimal development pathway across a range of plausible scenarios.

Powerlink proposes the following trigger events:

- Customer commitment for additional load in excess of 480 MW to be connected north of Bouldercombe that results in higher power flows on the 275kV circuits Stanwell to Broadsound, Bouldercombe to Broadsound and Bouldercombe to Nebo northwards from Stanwell and Bouldercombe substations and requires the dispatch of higher cost liquid fuel or gas generation in northern Queensland to maintain power transfers within limits (that is, “out-of-merit” generation either through network support arrangements or constrained / directed on by AEMO); or
- Commitment from the Queensland Government to construct the eastern section of the CopperString network from Flinders (near Hughenden) to a new 275kV substation south of Townsville (Reid River) with the capability to host at least 1,500 MW of new low cost generation.

and

- successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink’s reliability of supply obligations in the NQ area; and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink’s 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

[9] See: https://www.treasury.qld.gov.au/files/Queensland-Energy-Roadmap-2025-25-043.pdf.

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

2.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 2.3
- reasonably reflects the capital expenditure criteria as set out in Section 2.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 2.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 2.4, and
- has an appropriately defined trigger event as set out in Section 2.5.

3. Northern Bowen Basin Reinforcement

Category: Augmentation

Indicative cost: $502.9m (nominal)

3.1. Project overview

This proposed contingent project comprises the construction of a new high capacity 132kV double circuit transmission line between Powerlink's existing Nebo and Moranbah substations.

3.2. Background

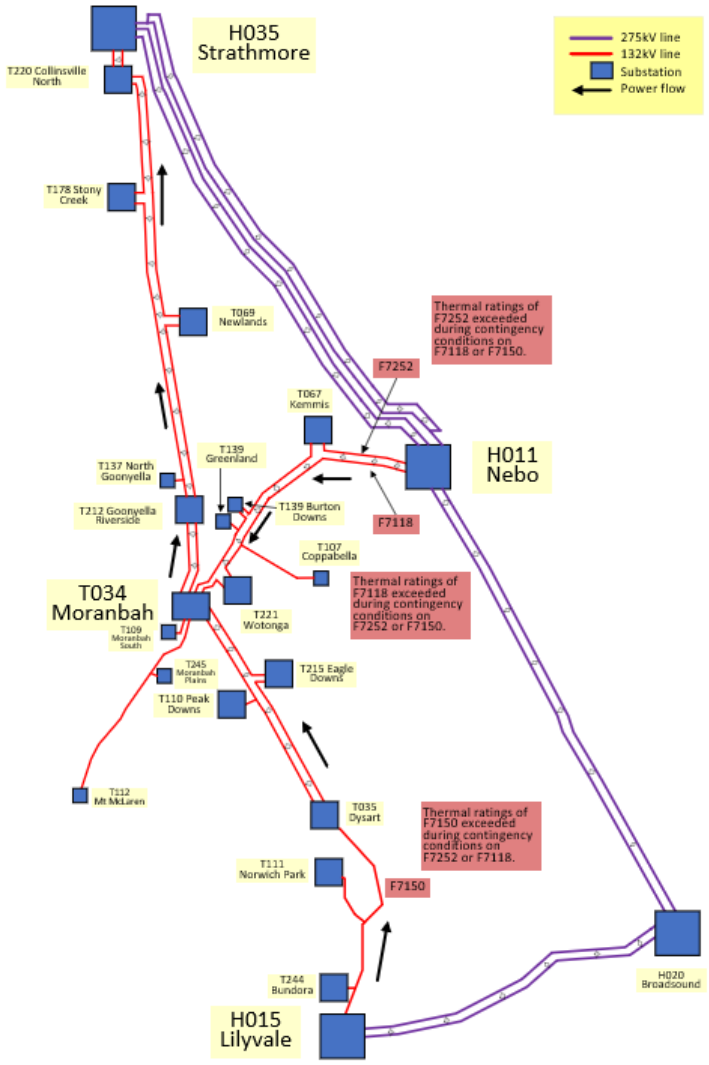
The existing 132kV network between Lilyvale, Nebo and Strathmore (refer to Figure 3.1) supplies the Northern Bowen Basin load. This network is highly utilised with little available spare capacity under Powerlink's Central scenario forecast.

Both Queensland and Commonwealth governments have legislated to pursue economy-wide greenhouse gas emissions reductions targets of net zero by 2050. As a result, there is considerable interest in electrification of mining operations in the Northern Bowen Basin. This would involve replacing diesel fuel with electricity, which could significantly increase electrical demand and drive substantial requirements for new electricity. Investment in new generation is unlikely to be behind the meter, but rather through power purchase agreements (PPAs) with large-scale energy suppliers.

Power transfer capability into the Northern Bowen Basin area is limited by thermal ratings of the 132kV network. New or expanded mining operations could see a modest increase in load. That in itself may be sufficient to exceed the existing network capability. However, the electrification of existing mining processes could see load increase of up to 600MW. This would cause significant voltage and thermal limitations on the 132kV transmission system supplying the Northern Bowen Basin.

These loads also have the potential to impact the Central Queensland to North Queensland (CQ-NQ) grid section. Possible investment to address limitations across the CQ-NQ grid section are a separate proposed contingent project – see Section 2.

Figure 3.1: Northern Bowen Basin network



As demand increases in the Northern Bown Basin area the loading on the 132kV network will increase to the point where post-contingent overloads will occur on remaining in-service circuits. Depending on system conditions the critical contingency is either an outage of the 132kV circuit between Lilyvale and Dysart or one of the 132kV circuits between Nebo and Moranbah. Following an outage of one of these circuits the Northern Bowen Basin network would be opened south of Goonyella Riverside. This resecures the network such that for the next contingency and subsequent operation of over current protection the Northern Bowen Basin load (excluding Goonyella and north) will be disconnected in a controlled manner.

3.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $442.3m (real, 2026/27) or $502.9m (nominal)

This estimate is based on construction of a new high capacity 132kV double circuit transmission line between Nebo and Moranbah and includes a new / widened easement as the existing aged 132kV double circuit line

cannot be removed from service to construct the new line. This estimate has been developed using AEMO's Transmission Cost Database (with local knowledge applied to the easement component) and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

3.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[10].

Connection of new or additional loads in the Northern Bowen Basin area is expected to add load to a level that will result in post-contingent overloads of one or more of the 132kV circuits in the area. To maintain power flows within the rating of the network equipment will require either pre-contingent[11] and/or post-contingent interruption of electrical load (i.e. blackouts). The level of interruption required exceeds the limits imposed by Powerlink's Transmission Authority.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

3.5. Trigger event

Network analysis indicates that additional load in excess of 30 MW supplied through the Northern Bowen Basin 132kV transmission network is required to trigger the proposed contingent project.

The existing load in the Northern Bowen Basin is centred around the Moranbah area and primarily relates to the mining and transportation of coal. The load is concentrated in a band between Newlands and Dysart, which corresponds to a particularly productive coal seam that supplies around half the world's high quality metallurgical coal used in steelmaking. Coal producers in the Northern Bowen Basin area are flagging their intention to reduce diesel usage through deployment of electric excavators and haul trucks. For example, BHP's most recent Climate Transition Action Plan flags trials of electric excavators and trucks in its Western Australia Iron Ore operations during the mid-2020's before adoption of those technologies more broadly across their operations, including coal mining[12].

[10] National Electricity Rules, clause 6A.8.1(b)(1)
[11] Under the plausible electrification load scenario, power transfers during intact system conditions would exceed the thermal and voltage stability capability of the Northern Bowen Basin network.
[12] Climate Transition Action Plan 2024, BHP, Figure 1.2, BHP - Climate Transition Action Plan | BHP

Powerlink proposes the following trigger event:

- customer commitment of additional load in excess of 30 MW to be supplied through the 132kV network between Lilyvale, Nebo and Strathmore
- successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink's reliability of supply obligations in the Northern Bown Basin area, and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

3.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 3.3
- reasonably reflects the capital expenditure criteria as set out in Section 3.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 3.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 3.4, and
- has an appropriately defined trigger event as set out in Section 3.5.

4. Gladstone Area Augmentation

Category: Augmentation

Indicative cost: $86.4m to $425.8m (nominal)

4.1. Project overview

This proposed contingent project comprises one or more of the following network augmentations to increase power transfer capability into and within the Gladstone area:

- Installation of a power flow control device on the existing low capacity 275kV circuit between Calvale and Wurdong substations
- build a double circuit 275kV line between Calliope River and Larcom Creek substations, and
- build a double circuit 275kV line between Calliope River and Wurdong substations.

The new transmission lines, between Calliope River and Larcom Creek and between Calliope River and Wurdong, are an advancement of future reinvestment in low-capacity single circuit lines[13] in the Gladstone area as they approach end-of-technical life.

4.2. Background

The Gladstone area is one of Queensland's most industrially intensive load centres, hosting major facilities such as the Boyne Island aluminium smelter, metal refineries and heavy manufacturing. These loads produce a relatively flat and consistently high demand profile.

Historically, the secure operation of the area's transmission network has been heavily reliant on the Gladstone Power Station (GPS), which provides essential system services such as system strength, inertia and voltage support, and assists in managing thermal loading on key transmission corridors.

Under Queensland's Priority Transmission Investment (PTI) framework[14] Powerlink is currently progressing the Gladstone Project in order to:

- meet the forecast electrical load in anticipation of Gladstone Power Station's closure
- support the decarbonisation of major industries, and
- compensate for loss of essential system services, such as inertia, system strength and voltage control capability, following the closure of Gladstone Power Station.

Powerlink published the Gladstone Project PTI Final Assessment report in June 2025 and the PTI process continues to progress toward the key milestone of a Queensland Government declaration and Final Investment Decision (FID) in 2026.

The October 2025 release of the Queensland Energy Roadmap reiterated the importance of Powerlink delivering vital reinforcement of the electricity transmission network in Central Queensland.

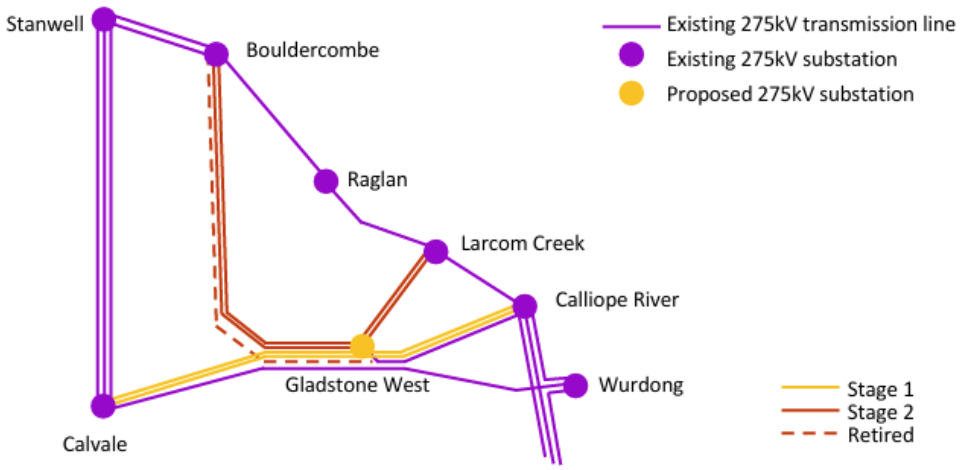
[13] Feeder 820 (Bouldercombe – Broadsound) and Feeder 821 (Bouldercombe – Nebo) single-circuit lines were constructed between 1977 and 1980. Feeder 834 (Broadsound – Nebo) was built originally as two single circuits in the early 1980s. These lines were later paralleled when the new double circuit 275kV line (8846 and 8847) was built in 2008.
[14] Part 5 of the Energy (Infrastructure Facilitation) Act 2024.

The Gladstone Project aims to replace the system strength, thermal capacity and voltage control currently provided by the GPS by delivering:

- Additional 275/132kV transformer at Calliope River
- New high-capacity double-circuit 275kV transmission line between Calvale and Calliope River substations
- New high-capacity double-circuit 275kV transmission line between Bouldercombe and Larcom Creek substations
- Establish Gladstone West Substation by cutting-in the new 275kV circuits, and
- Reactive plant and system-strength assets, including synchronous condensers, to compensate for loss of GPS services.

The scope of works for the proposed Gladstone Project PTI is shown in Figure 4.1.

Figure 4.1: Proposed option for the Gladstone Project



Following the completion of the Gladstone Project PTI the assessed maximum supportable load in the Gladstone area is 1,800 MW.

4.3. Contingent capital expenditure

The proposed contingent project is estimated to cost between $76m and $374.5m (real, 2026/27) or between $86.4m and $425.8m (nominal).

The lower bound of this estimate is based on installing a power flow control device on the Calvale to Wurdong 275kV circuit. This increases the Gladstone area supportable load to approximately 2,000 MW. The upper bound includes advancing the end of life rebuild of the 275kV circuits between Calliope River and Larcom Creek substations and between Calliope River and Wurdong substations. No allowance has been included for new or widened easements to support the rebuild as this is included in the forecast capital expenditure in our Revenue Proposal. This estimate has been developed using AEMO's Transmission Cost Database and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

4.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[15].

Connection of new or additional loads[16] in the Gladstone area, beyond which can be reliably supplied post the completion of the proposed Gladstone Project PTI, is expected to add load to a level that will result in post-contingent overloads of one or more of the 275kV circuits into and within the Gladstone area. To maintain power flows within the rating of the network equipment will in the first instance require pre-contingent constraints on generation. At higher load reliability of supply will be impacted in excess of the limits imposed by Powerlink's Transmission Authority.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

4.5. Trigger event

Network analysis indicates that forecast total load in excess of 1,800 MW in the Gladstone area is required to trigger the proposed contingent project.

The existing load in the Gladstone area is primarily heavy industrial load including aluminium smelting, metal refining, heavy manufacturing and coal export facilities. The existing industrial electrical loads are supplemented by thermal processes that are primarily fossil-fuelled. Both Queensland and Commonwealth governments have legislated to pursue economy-wide greenhouse gas emissions reductions targets of net zero by 2050. As a result, there is considerable interest in electrification of these fossil-fuelled thermal processes. For example, Rio Tinto is establishing a pilot project at its Yarwun Alumina refinery for a hydrogen electrolyser to trial hydrogen calcination[17].

If large scale electrification of industrial loads occurs in the Gladstone area it will increase the total load in the area above the trigger level. Powerlink has received a significant number of enquiries for connection of new industrial processing loads. The magnitude and timing of these new loads is uncertain but could reach up to 1,372MW above the Central scenario forecast (refer to Table 1.1).

Powerlink proposes the following trigger event:

- customer commitment of additional load that increase the forecast total load in the Gladstone area above 1,800MW

[15] National Electricity Rules, clause 6A.8.1(b)(1)
[16] Including electrification of existing loads
[17] 2025 Climate Action Plan, Rio Tinto, page 51.

- successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink's reliability of supply obligations in the Gladstone area, and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

4.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 4.3
- reasonably reflects the capital expenditure criteria as set out in Section 4.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 4.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 4.4, and
- has an appropriately defined trigger event as set out in Section 4.5.

5. Central Queensland System Strength

Category: System Services

Indicative cost: $511.6m (nominal)

5.1. Project overview

This proposed contingent project comprises the purchase of 2 synchronous condensers and their installation at existing Powerlink substations in Central Queensland.

5.2. Background

System strength is a measure of the ability of the network to maintain and control the voltage both during steady state operation and in response to a network disturbance, such as a sudden change in generation or load, or fault on the network. This includes resisting changes in the magnitude, phase angle, and shape of the voltage waveform. Low system strength in a particular location can adversely affect the security of the broader power system, such as through reducing the ability of generators to operate stably. System strength is also important to support the rapid detection and clearing of system faults, and to ensure acceptable power quality (including harmonics, flicker and negative phase sequence).

The Queensland energy system has historically comprised synchronous generation such as coal-fired power stations, gas turbines and hydro-electric plants. These large synchronous generators have provided system strength as a by-product of their dispatch for energy, enabling the power system to operate stably. Many 'non-synchronous' generators do not inherently provide system strength because they use grid-following inverter technologies to connect to the network. The increased share of generation from inverter based resources (IBR), particularly solar and wind generation, means that system strength is less freely available and must be planned for and delivered by other means.

Powerlink is the System Strength Service Provider (SSSP) under the National Electricity Rules (NER) for the Queensland region. As the SSSP Powerlink must use reasonable endeavours to ensure there are sufficient system strength services to meet the system strength standards set out in Schedule S5.1.14 of the NER. The system strength standards comprise two components:

1. Maintaining minimum fault level requirements for power system stability (minimum level system strength), and
2. Achieving stable voltage waveforms to support IBR (efficient level system strength).

During 2023 – 2025 Powerlink undertook a comprehensive Regulatory Investment Test for Transmission (RIT-T) assessment of credible options (both network and non-network) to provide system strength services so that Powerlink can continue to meet the requirements of the system strength standards. A Project Assessment Conclusion Report (PACR) was published in June 2025 that confirmed a preferred option based on synchronous condenser technology as providing the greatest net economic benefit over the assessment period to 2050.

The preferred option, Portfolio 2 (Synchronous Condensers) involves:

- Nine synchronous condensers across Central and Southern Queensland by June 2034
- Contracts with a range of synchronous units in Southern and Northern Queensland for minimum system strength requirements, and

- Contracts with 550 MW of grid-forming Battery Energy Storage System (BESS) in Southern Queensland, and 1,600 MW of grid-forming BESS in Central / Northern Queensland, for efficient system strength requirements.

In the PACR Powerlink identified that the preferred option would change if alternate solutions progressed to the point they became anticipated or committed. To support this need for flexibility Powerlink identified a total of eight reopening triggers to support moving to alternate system strength solutions as they become available, without the need to start a new RIT-T consultation. The application of reopening triggers is subject to AER oversight and AER approval of actions proposed by Powerlink should a reopening trigger occur.

Consistent with this flexible approach and providing room for efficient non-network solutions to reach maturity Powerlink will submit a Contingent Project Application (CPA) for an initial four synchronous condensers in early 2026. Further synchronous condensers that make up the remainder of the Portfolio 2 option are proposed as contingent projects in the 2027-32 regulatory period with the final number and location to be determined following the application of any applicable RIT-T reopening triggers.

5.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $450.0m (real, 2026/27) or $511.6m (nominal)

This estimate is based on the purchase of 2 synchronous condensers and their installation at existing Powerlink substations in CQ. This estimate is based on the cost estimates currently under development for the System Strength CPA for the first synchronous condensers. It reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

5.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[18].

Powerlink's system strength RIT-T assessment identified the need to invest in a fleet of new synchronous condensers to maintain the minimum required three-phase fault levels at system strength nodes as existing coal-fired synchronous generators reduce operation and progress to retirement. In October 2025 the Queensland Government released its new Energy Roadmap. The Energy Roadmap delays the planned closure of government-owned coal-fired power stations from the dates projected in the 2024 Integrated System Plan (ISP) and on which the PACR was based. To accommodate the changes foreshadowed for the Energy Roadmap the PACR included an appropriate 'change in government policy' reopening trigger.

Powerlink expects the changes from the Energy Roadmap will lead to an increase in the availability of system strength from energy dispatch within the planning horizon for the RIT-T. However, there are many factors that

[18] National Electricity Rules, clause 6A.8.1(b)(1)

determine the amount of system strength that can be expected from energy dispatch, of which the expected retirement date of coal generating units is just one. Prior to retirement, coal generating units may choose to seasonally decommit and/or transition to two-shift operation[19]. Either has an impact on the available system strength and this market operating behaviour is not possible to predict. AEMO's 2025 Transition Plan for System Security confirms that additional system strength services, beyond the first set of synchronous condensers the subject of an upcoming CPA, will be required over the next 10 years[20]. For these reasons Powerlink considers that investment in additional synchronous condensers during the 2027-32 regulatory period is probable. Powerlink will continue to work with AEMO and monitor the outcomes from future Transition Plan for System Security reports before committing to further investment in synchronous condensers.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

5.5. Trigger event

Powerlink proposes the following trigger event:

- Confirmation in AEMO's Transition Plan for System Security that additional system strength to meet minimum three phase fault levels, beyond the initially committed synchronous condensers, is needed in service in Central Queensland by or before 2034[21], and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to specific locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

5.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 5.3
- reasonably reflects the capital expenditure criteria as set out in Section 5.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 5.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 5.4, and

[19] Currently the government owned coal generation units are not signalling two-shift operation due to impact on reliability and maintenance
[20] 2025 Transition Plan for System Security, AEMO, p70 - 2025-transition-plan-for-system-security.pdf
[21] Procurement and installation may take 5 years or longer

- has an appropriately defined trigger event as set out in Section 5.5.

6. Southern Queensland System Strength

Category: System Services

Indicative cost: $255.8m (nominal)

6.1. Project overview

This proposed contingent project comprises the purchase of 1 synchronous condenser and installation at an existing Powerlink substation in Southern Queensland.

6.2. Background

System strength is a measure of the ability of the network to maintain and control the voltage both during steady state operation and in response to a network disturbance, such as a sudden change in generation or load, or fault on the network. This includes resisting changes in the magnitude, phase angle, and shape of the voltage waveform. Low system strength in a particular location can adversely affect the security of the broader power system, such as through reducing the ability of generators to operate stably. System strength is also important to support the rapid detection and clearing of system faults, and to ensure acceptable power quality (including harmonics, flicker and negative phase sequence).

The Queensland energy system has historically comprised synchronous generation such as coal-fired power stations, gas turbines and hydro-electric plants. These large synchronous generators have provided system strength as a by-product of their dispatch for energy, enabling the power system to operate stably. Many 'non-synchronous' generators do not inherently provide system strength because they use grid-following inverter technologies to connect to the network. The increased share of generation from inverter based resources (IBR), particularly solar and wind generation, means that system strength is less freely available and must be planned for and delivered by other means.

Powerlink is the System Strength Service Provider (SSSP) under the NER for the Queensland region. As the SSSP Powerlink must use reasonable endeavours to ensure there are sufficient system strength services to meet the system strength standards set out in Schedule S5.1.14 of the NER. The system strength standards comprise two components:

1. Maintaining minimum fault level requirements for power system stability (minimum level system strength), and
2. Achieving stable voltage waveforms to support IBR (efficient level system strength).

During 2023 – 2025 Powerlink undertook a comprehensive Regulatory Investment Test for Transmission (RIT-T) assessment of credible options (both network and non-network) to provide system strength services so that Powerlink can continue to meet the requirements of the system strength standards. A Project Assessment Conclusion Report (PACR) was published in June 2025 that confirmed a preferred option based on synchronous condenser technology as providing the greatest network economic benefit over the assessment period to 2050.

The preferred option, Portfolio 2 (Synchronous Condensers) involves:

- Nine synchronous condensers across Central and Southern Queensland by June 2034

- Contracts with a range of synchronous units in Southern and Northern Queensland for minimum system strength requirements, and
- Contracts with 550 MW of grid-forming Battery Energy Storage System (BESS) in Southern Queensland, and 1,600 MW of grid-forming BESS in Central / Northern Queensland, for efficient system strength requirements.

In the PACR Powerlink identified that the preferred option would change if alternate solutions progressed to the point they became anticipated or committed. To support this need for flexibility Powerlink identified a total of eight reopening triggers to support moving to alternate system strength solutions as they become available, without the need to start a new RIT-T consultation. The application of reopening triggers is subject to AER oversight and AER approval of actions proposed by Powerlink should a reopening trigger occur.

Consistent with this flexible approach and providing room for efficient non-network solutions to reach maturity Powerlink will submit a CPA for an initial set of four synchronous condensers in early 2026. Further synchronous condensers that make up the remainder of the Portfolio 2 option are proposed as contingent projects in the 2027-32 regulatory period with the final number and location to be determined following the application of any applicable RIT-T reopening triggers.

6.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $225.0m (real, 2026/27) or $255.8m (nominal)

This estimate is based on the purchase of 1 synchronous condenser and its installation at an existing Powerlink substation in Southern Queensland. This estimate is based on the cost estimates currently under development for the System Strength CPA for the first synchronous condensers. It reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

6.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[22].

Powerlink's system strength RIT-T assessment identified the need to invest in a fleet of new synchronous condensers to maintain the minimum required three-phase fault levels at system strength nodes as existing coal-fired synchronous generators reduce operation and progress to retirement. It also identified that there were additional low regret non-network solutions for Southern Queensland that provide prudent insurance against the potential for more accelerated coal retirement in Southern Queensland and so remained part of the preferred option. As a result Powerlink did not, at that time, consider investment in a new synchronous condenser in

[22] National Electricity Rules, clause 6A.8.1(b)(1)

Southern Queensland to be a low regret solution and this unit is not part of the initial suite of synchronous condensers the subject of an upcoming CPA.

In October 2025 the Queensland Government released its new Energy Roadmap. The Energy Roadmap delays the planned closure of government-owned coal-fired power stations from the dates projected in the 2024 ISP and on which the PACR was based. To accommodate the changes foreshadowed for the Energy Roadmap the PACR included an appropriate 'change in government policy' reopening trigger.

Powerlink expects the changes from the Energy Roadmap will lead to an increase in the availability of system strength from energy dispatch within the planning horizon for the RIT-T. However, there are many factors that determine the amount of system strength that can be expected from energy dispatch, of which the expected retirement date of coal generating units is just one. Prior to retirement, coal generating units may choose to seasonally decommit and/or transition to two-shift operation[23]. Either has an impact on the available system strength and this market operating behaviour is not possible to predict. AEMO's 2025 Transition Plan for System Security confirms that additional system strength services, beyond the first set of synchronous condensers the subject of an upcoming CPA, will be required over the next 10 years[24]. For these reasons Powerlink considers that investment in additional synchronous condensers during the 2027-32 regulatory period is probable. Powerlink will continue to work with AEMO and monitor the outcomes from future Transition Plan for System Security reports before committing to further investment in synchronous condensers.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

6.5. Trigger event

Powerlink proposes the following trigger event:

- Delayed availability of, and/or inability to conclude contracts with solutions in Southern Queensland to meet the minimum system strength requirements
- Confirmation in AEMO's Transition Plan for System Security that additional system strength to meet minimum three phase fault levels, beyond the initially committed synchronous condensers, is needed in service in Southern Queensland by or before 2034[25], and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and

[23] Currently the government owned coal generation units are not signalling two-shift operation due to impact on reliability and maintenance
[24] 2025 Transition Plan for System Security, AEMO, p70 - 2025-transition-plan-for-system-security.pdf
[25] Procurement and installation may take 5 years or longer

- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

6.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 6.3
- reasonably reflects the capital expenditure criteria as set out in Section 6.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 6.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 6.4, and
- has an appropriately defined trigger event as set out in Section 6.5.

7. South West Queensland Augmentation

Category: Augmentation

Indicative cost: $89.8m (nominal)

7.1. Project overview

This proposed contingent project comprises the replacement of an existing 330/275kV transformer at Middle Ridge Substation with a higher rated unit and installation of additional 330/275kV transformer capacity at Braemar Substation.

7.2. Background

Following the completion of the QNI Minor Project the power transfer capacity between northern New South Wales (NSW) and southern Queensland will increase to 950 MW northward and 1,450 MW southward. While this augmentation provides market benefits from increases in energy trading and reserve sharing between the Queensland and NSW regions, it also increases the risk of congestion between the Darling Downs area and South East Queensland. With the existing and committed generation, together with northerly flow on QNI, the available capacity of the 330/275kV network in the Darling Downs area is fully utilised.

The existing McIntyre Designated Network Asset (DNA) includes scope for additional generation to connect beyond the foundational proponent, McIntyre Windfarm. Additional generation in this area will further increase the potential for congestion between the Darling Downs and South East Queensland. Outside of the McIntyre DNA there is also continued interest from project developers to connect to the transmission network in the Darling Downs area.

AEMO's 2025 Transition Plan for System Security[26] forecasts over 4,000 MW of new inverter base resources (IBR) associated with the Western Downs system strength node, which includes the Darling Downs area. Congestion between the Darling Downs area and South East Queensland will result in increased reliance on higher cost generation sources. Investments to relieve this congestion may provide net economic benefits. The draft 2026 ISP identified upgrading the 330/275kV transformer capacity by 2035/36 under the Step Change scenario.

7.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $79m (real, 2026/27) or $89.8m (nominal)

This estimate is based on the replacement of one 330/275kV transformer at Middle Ridge Substation with a higher rated unit. At Braemar Substation the scope includes connecting the existing higher rated spare transformer to one 275kV bus (and diverting one of the 330kV circuits from Bulli Creek Substation to this transformer via a new 330kV bay) and connecting the two lower rated transformers to the other 275kV bus (refer to Figure 7.1). The disconnected lower rater transformer at Middle Ridge Substation becomes the new system spare. This estimate has been developed using both Powerlink's own estimating database and AEMO's estimate from the draft 2026 ISP Appendix 5, and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

[26] AEMO | 2025 Transition Plan for System Security (TPSS)

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period. The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

7.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[27].

Connection of new generation to the 330kV network in the Darling Downs area is expected to increase power flows through the existing 330/275kV transformers at Middle Ridge and Braemar substations. The original transformers installed at these sites are rated 1,125 MVA[28], which is less than the rating of the 330kV transmission lines and makes the rating of these transformers the limiting factor that determines power transfer capability.

The 330/275kV transformer limitation is therefore an impediment to the development of new generation connecting to the 330kV network in the Darling Downs area. New generation connecting to the 330kV network in the Darling Downs area will also compete with QNI transfers. Due to the market design, this generation can bid to protect their dispatch[29]. In doing so, more generation in the southern states may have to be displaced to clear the congestion than otherwise would occur without this market power. This results in more higher cost generation needing to be dispatched downstream of the limitation to relieve the constraint.

Therefore, undertaking the proposed contingent project will reduce network congestion and reduce generation costs. If the benefits exceed the cost of the proposed contingent project, there will be positive net market benefits.

In assessing these benefits, it is also critical to take into account whether expanding the capacity of this network to unlock coincident QNI northerly capacity and further generation development in this area is part of the least cost expansion plan to meet the energy transformation. This can only be assessed under a RIT-T to demonstrate that the network investment is robust across plausible future scenarios.

Signalling this to the market during the RIT-T process that the network upgrades are part of the optimal development pathway then gives the generation proponents sufficient confidence in the bankability of their project.

For this reason, the contingent project trigger cannot be assessed against the commitment of generation above a threshold value, but rather must be linked to the successful completion of the RIT-T.

In meeting the requirements of the RIT-T, the proposed contingent project would meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all

[27] National Electricity Rules, clause 6A.8.1(b)(1)
[28] One of the two transformers at Middle Ridge is rated 1,500 MVA
[29] Generation in SWQ can bid at the market floor, still take the South Pine spot price, and in doing so outbid southern generators (QNI)

applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

7.5. Trigger event

Powerlink proposes the following trigger event:

- Successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink's reliability of supply obligations in the Southern Queensland area; and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

7.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 7.3
- reasonably reflects the capital expenditure criteria as set out in Section 7.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 7.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 7.4, and
- has an appropriately defined trigger event as set out in Section 7.5.

8. North Brisbane Area Network Development

Category: Augmentation

Indicative cost: $281.9m (nominal)

8.1. Project overview

This proposed contingent project comprises the 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.

8.2. Background

The northern Brisbane area is home to several large and strategically important industrial loads located within the Australia TradeCoast development area. This area includes the Port of Brisbane and the Brisbane International Airport. On the north side of the Brisbane River the primary electricity supply is via a high capacity 110kV line from Powerlink's South Pine Substation to Energex's Nudgee Substation. This first half of this line is owned by Powerlink as far as Energex's Sandgate Substation and is a 275kV construction energised at 110kV. It then connects to Energex's 110kV feeder to supply Nudgee Substation. The Powerlink section between South Pine and Sandgate has approximately 2km of underground cable. The rating of this cable (at 110kV operation) limits the maximum supportable load in the area[30]The Australia TradeCoast area continues to develop and attract new industries, primarily related to aviation, shipping and logistics, however the high technology sector, including artificial intelligence and quantum computing are also looking to locate in this area.

PsiQuantum has secured commitments from both the Commonwealth and Queensland Governments to invest up to $940 million in the form of equity, grants and loans to build a utility-scale quantum computer at a site adjacent to the Brisbane Airport. A quantum computing facility will impose a substantial electrical load to power the cryogenic plant needed to cool the components to -269°C (near absolute zero).

8.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $247.9m (real, 2026/27) or $281.9m (nominal)

This estimate is based on 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. The estimated cost includes allowance for substation site and transmission line easement acquisition costs as the existing section of 110kV double circuit line between Sandgate and Banyo cannot be removed from service to construct the new line. This estimate has been developed using AEMO's Transmission Cost Database (with local knowledge applied to the easement component) and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

[30] The 275/110kV transformation capacity at the South Pine Eastern bus is the next limiting network element under a transformer outage condition.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

8.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[31].

Connection of significant new or additional loads in the northern Brisbane area is expected to add load to a level that will exceed the capacity of the existing 110kV lines supplying Nudgee Substation. To maintain power flows within the rating of the network equipment will require either pre-contingent and/or post-contingent interruption of electrical load (i.e. blackouts). The level of interruption required exceeds the limits imposed by Powerlink's Transmission Authority.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

8.5. Trigger event

Network analysis indicates that additional load in excess of at least an additional 88 MW[32] supplied through the South Pine to Nudgee 110kV transmission network is required to trigger the proposed contingent project.

Powerlink proposes the following trigger event:

- customer commitment of additional load in excess of 88 MW to be supplied through Energex's Nudgee Substation
- successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink's reliability of supply obligations in the North Brisbane area, and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives

[31] National Electricity Rules, clause 6A.8.1(b)(1)
[32] Compared to the 2025 Central scenario 50% PoE 2031/32 forecast

- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

8.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 8.3
- reasonably reflects the capital expenditure criteria as set out in Section 8.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 8.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 8.4, and
- has an appropriately defined trigger event as set out in Section 8.5.

9. Brisbane Area Transfer Capacity

Category: Augmentation

Indicative cost: $73.5m (nominal)

9.1. Project overview

This proposed contingent project comprises augmenting the 275kV network between Blackwall, Rocklea and South Pine. The scope involves constructing a high capacity double circuit 275kV line between Blackwall and Karana Downs and reconfiguring the existing network to form dedicated double circuits between Blackwall and Rocklea and between Blackwall and South Pine.

9.2. Background

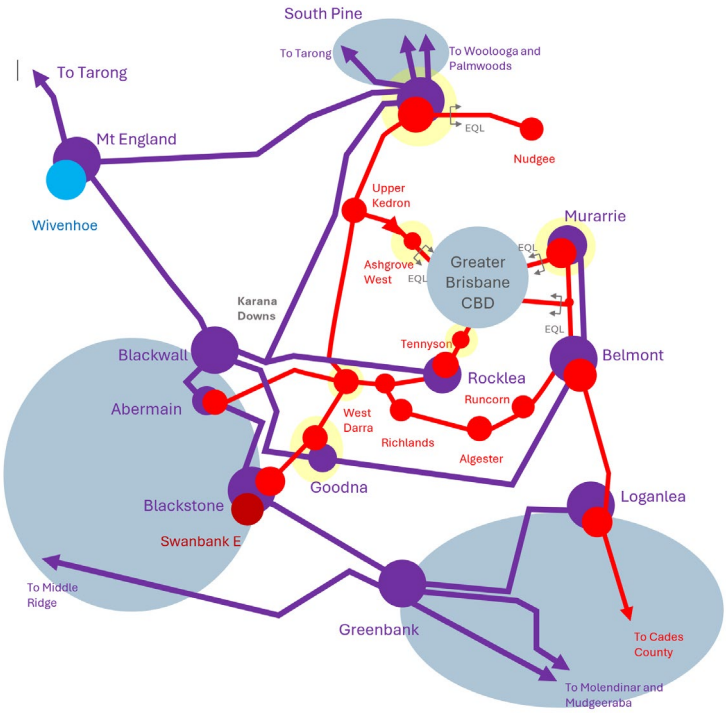
A schematic of the 275kV and 110kV network into and within South East Queensland is shown in Figure 9.1. Power transfer into South Pine from the south and west is via two 275kV single circuits from Tarong and Mt England and one side of a double circuit line from Blackwall.

The critical contingency is an outage of the 275kV circuit between Mt England and South Pine. Under high load conditions in the Moreton North area and/or lower generation output in Central and Northern Queensland the contingency can result in an overload of the Blackwall to South Pine circuit.

This thermal limitation has the potential to significantly impact the efficient market dispatch by limiting the ability of generation in South Queensland to support Moreton North, Sunshine Coast, Wide Bay and areas further north.

Market modelling will need to demonstrate that undertaking the proposed contingent project to increase power transfer capacity to host more renewable generation in the Darling Downs and Surat Basin areas is part of the optimal development pathway.

Figure 9.1: South East Queensland transmission network



9.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $64.6m (real, 2026/27) or $73.5m (nominal)

This estimate is based on constructing a new high capacity double circuit 275kV line between Blackwall and Karana Downs and reconfiguring the existing network to form dedicated double circuits between Blackwall and Rocklea and between Blackwall and South Pine.

The estimated cost includes allowance for transmission line easement costs. This estimate has been developed using Powerlink's own estimating database and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

9.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[33].

Market modelling has demonstrated that undertaking the proposed contingent project to increase power transfer capacity between Blackwall and South Pine substations is part of the optimal development pathway. Under the assumptions applied in the Energy Roadmap, it was shown that investing in the contingent project had the lowest total system cost[34] and the benefits of reduced network congestion, including reduced generation investment and operating costs, exceeds the cost of the proposed contingent project.

If the trigger event occurs the proposed contingent project would be reasonably required to meet the Rules capital expenditure objectives to efficiently meet expected demand for prescribed transmission services, comply with all applicable regulatory obligations associated with the provision of prescribed transmission services and maintain the quality, reliability and security of supply of prescribed services.

9.5. Trigger event

Powerlink proposes the following trigger event:

- Successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink's reliability of supply obligations in the Southern Queensland area, and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended
- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

9.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 9.3
- reasonably reflects the capital expenditure criteria as set out in Section 9.3, noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 9.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 9.4, and

[33] National Electricity Rules, clause 6A.8.1(b)(1)
[34] The total system cost of each option is the annualised, discounted cost, and includes the capital cost of new generation, storage and transmission and operational costs (including fuel cost).

- has an appropriately defined trigger event as set out in Section 9.5.

10. Surat Basin Area Network Development

Category: Augmentation

Indicative cost: $731.9m (nominal)

10.1. Project overview

This proposed contingent project comprises the construction of a new high capacity 275kV double circuit transmission line between a new 275kV substation in the Surat Basin region and a new 275kV substation at the approximate midpoint of the existing Calvale to Halys 275kV transmission line, in the vicinity of Auburn River.

10.2. Background

The Darling Downs area contains plentiful energy generation resources including wind, solar and coal seam gas. A range of project developers are seeking to connect to the transmission network in the area. The Bungaban wind energy project is one of a number of new renewable energy generation projects proposed in the northern part of the Darling Downs. The project is well advanced with Powerlink already working with the developer to secure an easement to provide a connection to the Surat Basin 275kV network at Powerlink's existing Wandoan South Substation. This network is a radial supply from Powerlink's Western Downs Substation.

The Surat Basin network was originally developed to supply major new loads associated with the coal seam gas industry with over 600 MW of peak demand supplied from the transmission network to loads in the Surat zone. The connection of significant new generating capacity to the Surat Basin network will see that network shift from being a net consumer to a net exporter of electricity.

With existing and committed load and generation, should the Bungaban wind energy project commit, then the capacity of Surat radial network to Westerns Downs is fully utilised.

There is substantial developer interest in the area. AEMO has forecast an additional 4,000+ MW of inverter based resources (IBR) associated with the Western Down system strength node by 2032. Little of this can connect, nor commit to connect, unless there is a clear signal how the network in the area will be developed to unlock this hosting potential. Market modelling will need to demonstrate that undertaking the proposed contingent project to increase power transfer capacity to host more renewable generation in the Darling Downs and Surat Basin areas is part of the optimal development pathway.

10.3. Contingent capital expenditure

The proposed contingent project is estimated to cost $643.7m (real, 2026/27) or $731.9m (nominal)

This estimate is based on the establishment of two new 275kV substations, assumed to be at Waranna adjacent to the Bungaban Windfarm and at Auburn River at the mid-point of the existing Calvale to Halys 275kV transmission line and construction of a new high capacity 275kV double circuit line between them (refer to Figure 10.1). The estimated cost includes allowance for substation site and transmission line easement acquisition costs. This estimate has been developed using AEMO's Transmission Cost Database (with local knowledge applied to the easement component) and reasonably reflects the capital expenditure criteria, as discussed in Appendix 4.01 Operating and Capital Expenditure Criteria and Factors.

The forecast capital expenditure in our Revenue Proposal does not include any allowance for projects that overlap in scope with this proposed contingent project.

By definition, it is not possible to completely define the scope of proposed contingent projects at this early stage. Detailed planning analyses, project scopes and cost estimates will be required before any amendment to the revenue determination is considered by the AER should the specified trigger event for a proposed contingent project occur during the 2027-32 regulatory period.

The estimated net contingent capital expenditure exceeds the contingent project threshold of $49.5m (nominal).

10.4. Project requirement

A proposed contingent project must be reasonably required to be undertaken to achieve any of the capital expenditure objectives[35].

With the anticipated commitment of the Bungaban Windfarm the radial 275kV network supplying the Surat area will operate at capacity. No material new generation can connect to the 275kV Surat Basin network without significant congestion. This is a significant deterrent to the bankability of future projects.

Undertaking the proposed contingent project will create a through path from Wandoan South to Auburn River via the Bungaban Windfarm. This will increase the generation hosting capacity allowing additional export of new low-cost generation from the Surat Basin network and efficiently deliver it to demand centres in Central Queensland (via Calvale Substation) and Southern Queensland (via Halys Substation). Expanding the network capacity to unlock more generation hosting capacity in the Darling Downs and Surat Basin is part of optimal development pathway to meet the energy transformation. This will be assessed under a RIT-T to demonstrate that the contingent project investment is robust across plausible future scenarios.

Signalling this to the market during the RIT-T process that the network upgrades are part of the optimal development pathway then gives the generation proponents sufficient confidence in the bankability of their project.

For this reason, the contingent project trigger cannot be assessed against the commitment of generation above a threshold value, but rather must be linked to the successful completion of the RIT-T.

10.5. Trigger event

Powerlink proposes the following trigger event:

- Additional generating capacity in excess of 1,400 MW to be connected to the 275kV Surat Basin network
- Successful completion of the RIT-T, including a comprehensive assessment of credible options, that demonstrates a network investment by Powerlink maximises the net market benefits while meeting Powerlink's reliability of supply obligations in the Central and Southern Queensland area, and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's 2027-32 revenue determination pursuant to the Rules.

These triggers are appropriate in relation to the proposed contingent project in that they:

- are specific and capable of objective verification and are all that is required for the revenue determination to be amended

[35] National Electricity Rules, clause 6A.8.1(b)(1)

- are of a nature that if they occur the undertaking of the proposed contingent project is reasonably necessary to achieve the capital expenditure objectives
- relate to a specific location or locations on the transmission network and not the transmission network as a whole, and
- are probable but too uncertain to include the proposed contingent project in the capital expenditure forecast.

10.6. Demonstration of Rules compliance

Powerlink considers the project should be accepted as a contingent project for the 2027-32 regulatory period as it is:

- not otherwise provided for in the total forecast capital expenditure as set out in Section 10.3
- reasonably reflects the capital expenditure criteria as set out in Section 10.3 noting that the costs are an estimate at this time
- exceeds the contingent project threshold as set out in Section 10.3
- is reasonably required to achieve the capital expenditure objectives as set out in Section 10.4, and
- has an appropriately defined trigger event as set out in Section 10.5.