



Ref. A4758742

20 September, 2021

Dr Kris Funston  
Executive General Manager, Network Regulation  
Australian Energy Regulator  
Level 27, 135 King St  
SYDNEY NSW 2000

Dear Dr Funston,

### **NETWORK SUPPORT PASS THROUGH APPLICATION FOR 2020/21**

Consistent with clause 6A.7.2 of the National Electricity Rules (the Rules) and the Australian Energy Regulator's (AER's) *Procedural guideline for preparing a transmission network support pass through application* (Guideline), Powerlink submits this application for network support pass through for the regulatory year ending 30 June 2021.

The requirement for Powerlink to incur these network support costs was in response to the Australian Energy Market Operator's (AEMO's) report "Notice of Queensland System Strength Requirements and Ross Fault Level Shortfall" to the National Electricity Market (NEM) published on 9 April 2020 under clause 5.20C.2(c) of the Rules. To ensure system strength services were in place to meet this shortfall by 31 August 2021, as required by AEMO, Powerlink incurred costs of \$2,314,358 in 2020/21. These costs comprise:

- the short-term solution where Powerlink entered into a short-term agreement with CleanCo Queensland to provide system strength services between 1 July 2020 and 31 December 2020 through utilising its existing assets in Far North Queensland; and
- the longer-term solution of retuning inverters at the Daydream, Hamilton, Hayman and Whitsunday solar farms in North Queensland.

This network support pass through application only includes costs accrued by Powerlink in 2020/21. As at 30 June 2021, Powerlink was yet to be invoiced by the owners of the four North Queensland solar farms for around \$400,000 in costs related to the inverter modification and testing program. Powerlink may therefore submit a further network support pass through application after 30 June 2022 for the 2021/22 regulatory year to seek to recover those costs.

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Powerlink Queensland is the registered business name of the  
Queensland Electricity Transmission Corporation Limited  
ABN 82 078 849 233

These non-network solutions have already delivered significant benefits to electricity consumers. Powerlink has assessed the ongoing system benefit associated with reduced curtailment of the renewable generators in North Queensland is at least \$3 million a year. This reflects the reduced requirement to run higher-cost plant during periods of constraint, including during planned transmission outages.

Payments related to the short-term arrangement with CleanCo Queensland and the retuning of inverters at four North Queensland solar farms constitute network support payments under the Rules. The AER's revenue determination for Powerlink's 2017-22 regulatory period included no allowance for network support costs.

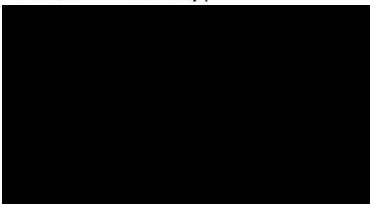
Powerlink therefore seeks the AER's approval for a positive network support pass through amount of \$2,536,987, after adjusting for the time value of money, to be recovered from transmission network users in setting transmission prices for 2022/23.

Powerlink first discussed the fault level shortfall with our Customer Panel in May 2020, soon after the shortfall was declared. We updated the Customer Panel on the expected network support costs, approximately \$3 million, in June 2021. This is part of Powerlink's commitment to engage with customers on matters which directly affect costs to customers.

The network support pass through application (see attachment) has been prepared in accordance with the AER's Guideline. The relevant calculations are contained in a separate spreadsheet model that accompanies this application, in accordance with the Guideline's reporting template.

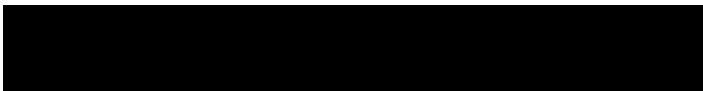
Please contact me if you have any questions regarding our application.

Yours sincerely,



**EXECUTIVE GENERAL MANAGER, ENERGY FUTURES**

Enquiries



## ATTACHMENT

### Powerlink: TNSP network support pass through application information requirements

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#### For the year ended 30 June 2021:

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#### (1) Network support payment allowance

The AER's final revenue determination for the 2017-22 regulatory period provided Powerlink no network support allowance for 2020/21

#### (2) Actual network support expenditure

The total actual expenditure on network support services during 2020/21 was \$2,314,358 This incorporates

- payments to CleanCo Queensland to provide system strength services between 1 July and 31 December 2020 through its assets in Far North Queensland as part of a short-term solution to address the fault level shortfall identified by AEMO, and
- payments to the owners of the Daydream, Hamilton, Hayman and Whitsunday solar farms in North Queensland for some of the costs associated with retuning inverters as part of the long-term solution to address system strength requirements at the Ross 275 kV node

#### (3) Network support pass through amount, including time cost of money calculations

A positive network support event occurred in 2020/21 which resulted in actual costs of \$2,314,358 The positive pass through amount for 2022/23 is \$2,536,987, based on an adjustment for the time value of money that reflects Powerlink's allowed rate of return Powerlink proposes to recover this amount from transmission network users in setting transmission prices for 2022/23, consistent with the cost recovery arrangements under clause 6A 7 2(c)(2) of the Rules

#### (4) Reasons for variation

The variation in expenditure from Powerlink's network support allowance of zero in the current regulatory period reflects the requirement for network support payments triggered through the report "Notice of Queensland System Strength Requirements and Ross Fault Level Shortfall" AEMO published this report on 9 April 2020 under clause 5 20C 2(c) of the Rules, which followed a review of minimum fault level requirements within the Powerlink network

Powerlink, as the System Strength Service Provider for Queensland, has responsibility to resolve a fault level shortfall as efficiently as possible In accordance with clause 5 20C 2(c) of the Rules, AEMO specified 31 August 2021 as the date by which Powerlink should ensure the necessary system strength services are available to address the fault level shortfall



Immediately following the fault level shortfall declaration, Powerlink commenced an Expression of Interest (EOI) process for short and long-term non-network solutions to address the shortfall<sup>1</sup>. As part of the engagement process:

- AEMO issued a market notice to all NEM participants on Powerlink's behalf on 16 April 2020;
- Powerlink emailed around 40 entities on its Non-Network Engagement Stakeholder Register on 9 April 2020; and
- Powerlink completed ten pre-submission meetings with interested parties to ensure they understood the requirements to meet the shortfall.

As a result of the pre-submission meetings, Powerlink issued a clarification document on its website on 30 April 2020 in relation to the shortfall, which provided further context and technical advice about system strength requirements.

Powerlink received 15 responses by the EOI's closing date (13 May 2020), including six from new proponents. Parties offered a range of system strength services to address the fault level shortfall. Many submissions offered various combinations of new installations, including synchronous condensers, synchronous generators plus storage equipment, and batteries plus grid-forming inverters. Some of these technologies would have been new to Australia.

The EOI confirmed there were a range of non-network solutions that were more cost-effective than the feasible network solutions such as new equipment installations near the Ross node.

As a short-term, partial solution until 31 December 2020, Powerlink entered into an agreement with CleanCo Queensland to provide system strength services from its hydroelectric generation assets in Far North Queensland. These services, while not fully meeting the fault level shortfall, reduced the incidence of constraints on inverter-based generation in North Queensland and represented a cost-effective substitute for network augmentation.

The responses to the EOI process also included an offer to modify control settings and firmware of the inverters at Daydream, Hamilton, Hayman and Whitsunday solar farms that connect to Powerlink's Strathmore Substation. Modelling by Powerlink and subsequent due diligence by AEMO provided confidence that this inverter retuning would assist with the daytime solution for the system strength shortfall. On this basis, Powerlink entered into an agreement to retune the four plants, with the required changes finalised and completed by May 2021. Powerlink reimbursed the four solar farm owners for the costs incurred in upgrading inverter firmware, retuning the inverters and the subsequent testing and validation.

Powerlink also worked with Mt Emerald wind farm and AEMO on control setting changes. Modelling indicated that these changes could significantly reduce the overall system strength requirement at Ross.

Following its assessment of the implementation of the inverter retuning and updated control settings, AEMO issued a "Notice of Change to System Strength Requirement and Shortfall at Ross" on 28 June 2021. The Notice advised that, taking into account the solutions implemented by Powerlink, the minimum fault level requirement at Ross is being met, with no shortfall.

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<sup>1</sup> Available at: [System Strength Consultations | Powerlink](#)

**(5) Verification of actual network support expenditure**

The Queensland Audit Office (QAO) – an independent organisation with appropriately qualified expertise – has reviewed Powerlink’s actual network support expenditure. A copy of the QAO review opinion is included with this application as a confidential attachment. The expenses incurred will also be subject to an independent review of Powerlink’s regulatory financial statements, which will be submitted to the AER by 31 October 2021.

**(6) Date network support pass through application submitted to the AER**

20 September 2021. This is within 60 business days of the end of the 2020/21 regulatory year, as required under clause 6A.7.2(c) of the Rules.

**(7) Details on contractual arrangements**

As outlined in item 4, Powerlink entered into contracts with

- CleanCo Queensland to provide system strength services until 31 December 2020. Under this contract, Powerlink paid CleanCo Queensland a fixed price to operate a minimum number of synchronous generation units, either in export or synchronous condenser mode, for a six-month period, and
- the owners of the four North Queensland solar farms where the inverters were returned. Powerlink reimbursed the owners for the costs they actually incurred in carrying out the inverter modification and testing program.

While these contracts have now been completed, as at 30 June 2021, Powerlink was yet to be invoiced by the owners of the four North Queensland solar farms for around \$400,000 in costs related to the inverter modification and testing program. Powerlink expects network support services in relation to this matter will not be required beyond 2021/22.

**(8) Details on Powerlink’s decisions that may have affected the magnitude of the network support event**

Powerlink acted promptly following AEMO’s fault level shortfall declaration to seek proposals from market participants for both short and long-term non-network solutions. The EOI process, which closed on 13 May 2020, identified a range of feasible non-network solutions that were more cost-effective than network solutions.

As the EOI process requested information on both short and long-term solutions, it enabled Powerlink to implement a cost-effective short-term solution and allowed further time to investigate longer-term technical solutions. This has resulted in a mix of solutions that delivered the lowest overall cost to address the fault level shortfall at the Ross node.

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