

ABN 70 250 995 390

180 Thomas Street, Sydney
PO Box A1000 Sydney South
NSW 1235 Australia
T (02) 9284 3000
F (02) 9284 3456

Wednesday, 17 January 2024

AER Ringfencing Team
By email: AERringfencing@aer.gov.au

Dear AER Ringfencing Team

Transgrid – Broken Hill Gas Turbine Transmission Ring Fencing Waiver Application

Transgrid wishes to apply for a waiver under clause 3.1 b) to operate the Broken Hill Gas Turbine facility as a generation service as outlined in this letter.

Introduction

Transgrid operates Australia's largest electricity transmission network, maintaining and upgrading the backbone of the National Electricity Market. Our network transports electricity from multiple generation sources, including wind, solar, hydro, gas and coal power plants, to large directly connected industrial customers and the distribution networks that deliver it to more than three million homes and businesses.

Waiver Application

Under the AER's Transmission Ring-fencing guidelines version 4 clause 3.1 b), Transgrid is allowed to provide transmission services, but not other services without an exemption approved by the AER. This requirement comes fully into force 1 March 2024.

Broken Hill Gas Turbines (Units 1 and 2) are registered as a Market Non-Scheduled Generator and Transgrid is the nominated Owner, Controller and Operator. The registration has been approved by AEMO on the basis that Transgrid must use the Facility solely to support reliability of the Broken Hill supply for outages on the Transgrid network.

This application requests a waiver from the AER for Transgrid to provide this generation service for the approved purpose of ongoing network support.

Details of Broken Hill Generation (Network Support) Service

Broken Hill is located in the far west of New South Wales and is part of Transgrid's south-western transmission network. It is currently supplied by a single 220 kV transmission line, 'Line X2', from Buronga which spans approximately 260 km.

Description of Services

During a planned or unplanned outage of Line X2, Broken Hill is supplied by two back-up gas turbines that run on diesel fuel. These generators are located within Transgrid's substation site at Broken Hill. The generators have been owned by Transgrid since 2020 after Essential Energy notified Transgrid in late-2018 of the decision to divest the turbines.

These gas turbines:

- each have nominal capacity rating of 25 MW, which is reduced to 18 MW under adverse ambient temperature conditions; and
- are black-start capable and equipped for islanded operation.

The load in the far-west 220 kV network is centred on Broken Hill, consisting of a 22 kV town load and a 220 kV mine load supplied by Line X4. The average Broken Hill 22 kV load is 17 MW, and the average total Broken Hill load is 36 MW.

Transgrid owns, operates and maintains these generating assets. These are funded through its AER regulated prescribed OPEX and CAPEX allowances.

Justification

Transgrid's NSW Transmission Operators Licence Appendix 2 defines the Reliability and Performance Standard applicable to the Broken Hill substation site. Transgrid is required to plan the network to supply the load and maintain less than the 10 minutes of unserved energy at average demand. Compliance with the NSW Transmission Operator's licence is required by the NSW Government to allow Transgrid to continue to operate the NSW transmission network via 99-year lease arrangement.

Transgrid is currently only able to meet the performance and reliability standards applicable for Broken Hill by utilising the gas turbines for back-up generation during an outage of Line X2. Transgrid's modelling has shown that, in the absence of the gas turbines or an alternative option, involuntary load shedding will occur when Line X2 is on planned or unplanned outage. This would give rise to unserved energy larger than the allowance under the licenced reliability standards.

Both Broken Hill Solar Plant (53 MW) and Silverton Wind Farm (200 MW) provide semi-scheduled, non-synchronous generation. These generators cannot currently provide firm capacity without energy storage to assist given the intermittent nature of their generation. If neither the gas turbines nor Line X2 are in service, these existing renewable generators are not currently able to supply Broken Hill.

Transgrid considered options and alternative solutions to provide back-up and reliable supply to Broken Hill in the Maintaining Reliable Supply to Broken Hill Regulatory Investment Test – Transmission (RIT-T). The Project Assessment and Conclusions Report (PACR), published 26 May 2022, found that the continued operation of the existing diesel-fired turbines as an interim measure, followed by network support provided by the Hydrostor compressed air storage solution (Option 1A (4)) is the top-ranked option, followed closely by refurbishing and continuing the long-term use of the existing diesel-fired turbines (Option 2). Both of these options require operation of the Gas Turbines at Broken Hill for the foreseeable future.

There are no foreseeable impacts on the National Electricity Market in terms of actual or potential discriminatory behaviour as the conditions of registration with AEMO do not allow the assets to be used for Market purposes, except under direction by AEMO.

Additional Actions if Waiver is not Granted

The RIT-T process has confirmed that there are no network or non-network solutions available to meet this reliability requirement in the short term. Should the waiver for this generation service not be granted by the

AER, Transgrid will be required to sell the generators to a third party and require that party to enter into a long term network support agreement.

This is not considered to be in the best interest of consumers as it will of necessity add additional cost and risk to the provision of this service as:

1. Transgrid is currently providing the operation and maintenance of this asset on an efficient actual cost basis. Transgrid is supporting the costs of running the units as required and taking all risks associated with the provision of this service through its prescribed regulatory allowances
2. Any network service agreement with a third party provider would add additional cost to the provision of the service. The provider would need to factor into the costs charged for the provision of the service, a profit margin together with a component of risk based pricing associated with them when taking on the assets and committing to provide the generation service
3. Transgrid has the necessary knowledge, resources and skills to operate these assets and is therefore best placed to provide this service.

Proposed Period of the Waiver

Since the finalisation of the RIT-T process, Transgrid has continued to progress the compressed air storage solution as the preferred long-term solution as per the latest information in Transgrid's Annual Planning Report 2023. The timing of this solution will continue to be reviewed and reported through the Transmission Annual Planning Review process.

As per Transgrid's Annual Planning report 2023, the planned date for the compressed air non-network solution is estimated as 2027. On this basis a waiver period of 5 years is requested to allow for a suitable changeover period as the compressed air storage solution is commissioned and proven.

References

The following external documents provide supporting detail to this waiver request.

[Transmission-Licence-Transgrid-15-September-2023.PDF \(nsw.gov.au\)](#)

[Broken Hill Supply Project RIT-T Documents](#)

[Transgrid Transmission Annual Planning Report 2023](#)

I look forward to engaging on this matter.

Yours faithfully

Andrew McAlpine

Head of Compliance