



Economic Regulation Authority

Application for exemption from the Technical Rules – Bounty Substation and Kondinin-Bounty Sub-Network

Issues paper

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Invitation to make submissions

Submissions are due by 4:00 pm WST, Tuesday, 29 August 2023.

The ERA invites comment on this paper and encourages all interested parties to provide comment on the matters discussed in this paper and any other issues or concerns not already raised in this paper.

We would prefer to receive your comments via our online submission form <https://www.erawa.com.au/consultation>

You can also send comments through:

Email: publicsubmissions@erawa.com.au

Post: Level 4, Albert Facey House, 469 Wellington Street, Perth WA 6000

Please note that submissions provided electronically do not need to be provided separately in hard copy.

All submissions will be made available on our website unless arrangements are made in advance between the author and the ERA. This is because it is preferable that all submissions be publicly available to facilitate an informed and transparent consultative process. Parties wishing to submit confidential information are requested to contact us at info@erawa.com.au.

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1.1 Introduction

Western Power has submitted an application to the Economic Regulation Authority for exemption from compliance with clause 2.5.2.2 (N-1 criterion) of the Technical Rules in respect to the Kondinin – Bounty (KDN-BNY) sub-network and the Bounty zone substation (BNY).¹

The application has been made under section 12.40 of the *Electricity Networks Access Code 2004*.

The Technical Rules are the standards, procedures and planning criteria governing the construction and operation of an electricity network and are required under the Access Code for all covered networks.

A service provider may apply to the ERA for an exemption from one or more requirements of its technical rules. The ERA must grant the exemption if it determines that in all the circumstances, the disadvantages of requiring compliance with the Technical Rules are likely to exceed the advantages.

1.2 Western Power's application

The Bounty zone substation is approximately 370 km east of Perth. It is supplied by a 154 km single circuit transmission line from the Kondinin zone substation. The Kondinin zone substation is located midway between Muja and West Kalgoorlie.

The Bounty zone substation supplies two existing mining and mineral-processing loads via a 57 km distribution feeder. There are no residential customers supplied from the Bounty zone substation and no adjoining distribution networks for interconnection. The total contracted load for the two connected customers is 9.7 MVA.

The default planning criterion for most of the Western Power transmission network is N-1. This means it is designed to a level of network redundancy so that if a single transmission element (a transmission line or transformer) fails, power is not lost as it is rerouted via an alternative transmission asset.

However, clause 2.2.5.1(b) of the Technical Rules permits sub-networks with a peak load of less than 20 MVA and zone substations with a peak load of less than 10 MVA to be designed to N-0. This means, if there is a loss of a single transmission element (a transmission line or a transformer), power cannot be restored until the transmission element has been repaired or replaced.

As the current load on the Bounty zone substation is less than 10 MVA, the transmission line from Kondinin and the Bounty zone substation are designed to N-0.

Western Power is currently progressing a connection application for connection of a new lithium mine and concentrating facility with a load of 13.5 MVA to the Bounty zone substation. This will increase total demand on the Kondinin – Bounty sub-network and Bounty zone substation to 23.2 MVA. Consequently, it will be above the threshold specified in the Technical

¹ Terminology such as “N-1” is commonly used for describing the level of security of the transmission system. N-1 requires supply to be maintained and load shedding avoided if one transmission element, such as a transmission line or transformer.

Rules that allows an N-0 design and will instead be captured by clause 2.5.2.2 that requires it to be designed to N-1.

Western Power has identified three network elements that it considers would need to be upgraded to meet an N-1 design:

- Build a second transmission line from Kondinin to the Bounty substation.
- Augment the Kondinin zone substation.
- Augment the Bounty zone substation.

To enable the new customer to be connected as soon as possible, Western Power proposes initially connecting the customer on a non-firm basis with load shedding capability and is seeking the following exemptions from the Technical Rules:

- Part A – Western Power has estimated the cost of building a new transmission line from Kondinin to the Bounty substation would be in excess of \$100 million and would not be economic for the forecast load. So it is seeking a permanent exemption from clause 2.5.2.2 for the transmission line between the Kondinin and Bounty zone substations to enable a peak load of up to 29 MVA to be supplied at N-0 reliability subject to Western Power ensuring the reliability and quality of supply to the existing network loads will not be adversely affected.
- Part B – Western Power has identified several options to augment the Kondinin substation but it will take a number of years to determine the best option and then plan and build. So it is seeking a 5-year temporary exemption for the transformer at the Kondinin zone substation to enable a peak load of up to 27MVA to be supplied at N-0 reliability subject to Western Power supplying new loads on a curtailable basis and ensuring the reliability and quality of supply to existing network loads will not be adversely affected.
- Part C – Western Power has identified several options to augment the Bounty substation but it will take a number of years to determine the best option and then plan and build. So it is seeking a 5-year temporary exemption for the Bounty zone substation to enable peak load of up to 27MVA to be supplied at N-0 reliability subject to Western Power supplying new loads on a curtailable basis and ensuring the reliability and quality of supply to existing network loads will not be adversely affected.

1.3 Matters to be considered

In considering whether to approve Western Power's application, the ERA must, having regard to the effect the proposed exemption will have on the service provider and users of the network and any interconnected network, grant the exemption if it determines that in all the circumstances, the disadvantages of requiring compliance with the Technical Rules are likely to exceed the advantages.

Western Power states that the new customer load will be connected on a non-standard access contract with load shedding capability. Western Power has provided a letter confirming the new customer acknowledges the risk of connecting on this basis and prefers to accept this risk rather than deferring its project for several years.

Western Power submits that the requested exemptions will allow for timely supply to the new applicant while not altering the existing customer's reliability due to planned or unplanned outages. Rejecting the exemptions will delay the new customer's connection and mining operation for 3-5 years.

Submissions are invited from interested parties on Western Power's application, in particular regarding:

- Whether there are any other reasonable alternative options which would be compliant with the Technical Rules.
- Whether the proposed exemptions will materially affect users.
- Whether the proposed exemptions will materially affect the safety and reliability of the Western Power network.