



REFCL Compliance Ballarat

Non-Network Options

Notice of Determination under
Clause 5.17.4(c) of the National
Electricity Rules

November 2023

Summary

Powercor Australia Ltd (**Powercor**) has determined under clause 5.17.4(c) of the National Electricity Rules (**Rules**) there is no non-network option that constitutes a potential credible option, or that forms a significant part of a credible option, for the purposes of the Regulatory Investment Test for Distribution (**RIT-D**) project to address the Rapid Earth Fault Current Limiter (**REFCL**) required capacity constraint in the Ballarat area.

Powercor publishes this Notice under clause 5.17.4(d) of the Rules to notify interested parties of this determination. This Notice sets out the reasons for making the determination.

1 Identified Need

The installation of REFCL technology delivers bushfire mitigation benefits to our customers. The REFCL program was established in response to regulations designed to reduce the likelihood of fires being initiated by electricity distribution network assets. More specifically, the Electricity Safety (Bushfire Mitigation) Regulations 2023 (**Regulations**) required Powercor to install REFCL devices at 22 specified zone substations and meet specific REFCL performance requirements (**required capacity**) designed to reduce the fire start potential of electricity distribution assets.

REFCL devices were installed at the Ballarat North (**BAN**) and Ballarat South (**BAS**) zone substations in 2020. Each REFCL device has the capacity to protect a finite portion of the network, dependent on the network configuration. The continued network growth at these two zone substations has resulted in increased capacitive currents at the zone substations which limits the effectiveness of the existing REFCL devices.

Powercor has forecast that the continued network growth at these zone substations will impede the existing REFCLs' ongoing ability to meet the required capacity for the following reasons:

- as the size of the distribution network in Ballarat continues to grow, particularly with new subdivisions being reticulated, this increases the overall physical length of the network. As line capacitive current is directly proportional to line length, it follows that increased network size will increase capacitive current; and
- the installation of underground cables with their tight conductor arrangement makes the cables highly capacitive when compared to the larger spacing of overhead lines.

Augmentation works undertaken at BAN and BAS substations are not sufficient to enable these zone substations to continue to meet the required capacity. Put simply, the identified need is to ensure the BAN and BAS zone substations can continue to meet the required capacity.

Action is being taken now via the planned installation of an isolating substation on the BAS network in 2024. However further intervention is required to ensure that the network can continue to meet compliance obligations.

1.1. Consideration of non-network solutions to resolve REFCL constraints

The AER's RIT-D Guidelines require a RIT-D proponent to screen for non-network options before making a determination under clause 5.17.4(c) of the Rules.

The Guidelines list the following examples of non-network options that should be considered:

- measures or programs targeted at reducing peak demand, including:
 - improvements to or additions of automatic control schemes such as direct load control;
 - energy efficiency programs or a demand management awareness program for consumers;
 - installing smart meters with measures to facilitate cost-reflective pricing.
- increased local or distributed generation/supply options, including:
 - capacity for standby power from existing or new embedded generators;
 - using energy storage systems, load transfer capacity and more.

These non-network options are based on energy consumption reduction and / or offsetting. The REFCL constraint is based on physical attributes of an expanding network which is independent from the load consumption that would be transported by those networks.

Therefore, peak load reduction or offset by local generation, storage or other mechanism will not change the physical characteristics of the network and load management will not address the REFCL constraints.

In accordance with the Rules, we note these reasons are not dependent on any particular assumptions or methodologies.

2 Determination

The identified need of continuing REFCL compliance at BAN and BAS zone substations is driving the need for investment.

There are no credible non-network options to address the identified need, which is to comply with the Regulations. Therefore, in accordance with clause 5.17.4(d) of the Rules, Powercor will not be publishing a non-network options report in relation to the Ballarat area REFCL program.

Powercor will prepare and publish a draft project assessment report in relation to the Ballarat area REFCL program, in accordance with clause 5.17.4(i) of the Rules.

Any questions regarding this Notice or requests for further information should be directed to:

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