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Congestion Management Policy

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Introduction

Vector provides electricity lines services to consumers via its electricity distribution network within the Auckland region. The distribution network is shared by many customers, each receiving the quantity and quality of power sufficient to meet their specific electrical needs.

Any localised over-supply of energy from distributed generation ("DG") has the potential to cause undue high voltage on the distribution network adversely impacting customers. Operationally, Vector strives to ensure that the distribution network is safe for both those personnel working on it, and for those customers with equipment connected to it. We work to help ensure exposure to damage and costly remedial works are avoided where possible.

The Electricity Industry Participation Code 2010 (the Code) governs the connection of DG to ensure that the operation of New Zealand's electricity grid remains safe and reliable. In accordance with Part 6 of the Code, Vector allows the connection of DG to its distribution network when all appropriate requirements and conditions are met.

Scope

This policy applies to all forms of DG which are connected to the Vector distribution network. This policy also applies to other types of technology capable of injecting electricity into Vector's distribution network.

Causes of Export Congestion

"Export Congestion" is defined in Clause 1.1(1) of the Code as – a situation in which a distribution network is unable to accept electricity exported from DG because the injection of additional electricity into the distribution network would:

- Directly cause a component in the network to operate beyond the component's rated maximum capacity, or
- Give rise to an unacceptably high level of voltage at the point of supply between the distribution network and the DG.

The following specifies the circumstances under which electrical output (i.e. energy injected into Vector's distribution network) may need to be curtailed or disconnected from the network (Refer to Clause 6.3(2)(d) of Part 6 of the Code):

1. Electrical output may cause the network to exceed voltage limits set by the Electricity (Safety) Regulations Clause 28(1)(b).
2. Connection of the DG may cause overloading of network equipment.
3. Connection of the DG may cause the prospective fault current to exceed the fault rating of network equipment.

Applications to Connect

Vector will review all DG applications (for both new DG connections and changes to existing DG connections e.g. changes to nameplate capacity) and identify situations where the connection of DG may compromise the safety and operational performance of the network. If in Vector's assessment, the connection of the proposed DG will result in network congestion, we will offer guidance to the applicant to help enable them to meet our requirements. If the proposed DG installation is still unable to meet our requirements to avoid congestion, the application to connect to the network will be declined (with an explanation). Where the application is declined, the applicant may wish to resubmit a revised application addressing the issues in the original application.

For larger DG proposals (>10kW), Vector may work with the applicant to identify potential solutions that may allow us to reverse the declined application. For example, this may include restricting export to certain time periods.

Congestion Management

Curtailment (refer to Clause 11 of Schedule 6.2 of the Code)

Electricity networks are dynamic. Future changes to the distribution network (such as reconfiguration of the distribution network) may result in an export congestion. Where congestions are identified Vector may accept a DG connection provided the DG operator configure voltage influence control (Volt -VAr control) and configure Volt - Watt control (both Standard in AS/NZS 4777.2 compliant inverters) or implement output curtail or disconnect their operation of the DG to reduce output, operate within nominated times or under nominated conditions, or of or all of the aforementioned. No compensation will be paid by Vector should DG output be curtailed under these conditions.

Disconnection (refer to Clause 11 of Schedule 6.2 of the Code)

If curtailment of the DG is still insufficient to address the congestion compromising the network, disconnection of any or all of the DG installations connected to the affected part of the network may be required.

All DG installations must adhere to Vector's technical standards before their approval to connected is granted. The standards require an inverter to automatically disconnect the DG from the network when severe overvoltage occurs. DG reconnection may be re-established following clearance of the condition.

Expiry of Approved Applications (refer to Clause 15A of Schedule 6.2 of the Code)

Approved DG applications will be cancelled if they are not installed within the timeframe for construction stipulated in the code. The applicant will be advised by email to the email address on the application. A new DG application is required if the applicant wishes to continue to connect.

If the applicant only partially installs the approved DG on the application, the remainder will be cancelled after the timeframe for construction has lapsed. A new application must be submitted for the remaining DG following the cancellation.