

OtagoNet Joint Venture (OJV)

OJV, through SmartCo, are working with Meter Equipment Provider (MEP) to retrieve smart meter data to develop and improve practices for monitoring voltage quality on its low voltage (LV) networks. Once this is being received from MEPs to SmartCo, OJV will be able to leverage the existing work that SmartCo has done.

This includes, but is not limited to, access to a dashboard that highlight voltage performance over time aggregated from meter information to different levels of the network (including customer, transformer, and network)

It will also include a dashboard which highlights LV networks that are congested. This takes customer voltage information aggregated by LV network, performs analytics and groups LV network by these statistics. The analytics performed on demand coincident (from smart meter data as well) with minimum voltage by LV network is used to derive maximum capacity of each LV network. This means OJV will be able to identify congested networks as well as those that can deliver additional demands.

Additionally, it will include a Suspect Neutral dashboard that highlights potential neutral issues in LV networks by using a developed algorithm that inputs aggregated customer voltage QoS data.

Finally, it will include a dashboard that highlights customers that have Distributed Generation (DG) installed but are experiencing voltage issues which will hint to customers/installers that have likely incorrectly set up the correct inverter Volt-VAr protection settings."

"Voltage quality issues are raised by stakeholders (typically through the customer complaints process). A check for loose or degraded connections will be made and a logger will be installed at site to determine the extent of the voltage quality issue.

If voltage non-compliance is present, the LV network may be upgraded with larger conductors, or if the distribution transformer is overloaded it may be replaced with a larger capacity transformer. Alternatively, a new transformer may be added to the network in a strategic location to reduce the loading on the existing transformer and LV conductors.

When voltage quality issues are raised by stakeholders (typically through the customer complaints process), a logger will be installed at site. This has traditionally resulted in an approach of 'adding more copper' by increasing transformer and/or conductor size. OJV is eager to evolve from this traditional approach as it can be expensive and is investigating options of DER control. OJV has identified that this bottom-up approach will be important, especially as the number of prosumers on its network increase, DG is added, and bi-directional power flow and voltage issues becomes a concern.

When voltage quality issues are raised by stakeholders (typically through customer complaints process), the customer is kept in the loop through the process which will include information on what is required to improve voltage quality to them as an affected consumer.