



Orion New Zealand Limited

Voltage quality and constraints disclosure

August 2024

Electricity distribution
information disclosure
determination 2012

Approved 6 August 2024



Voltage quality and constraints

17.2 a description of the EDB's practices for:

17.2.2 monitoring load and injection constraints, including:

- a) any challenges, and progress, towards collecting or procuring data required to inform the EDB of current and forecast constraints on its low voltage network, including historical consumption data; and**

Last year, Orion made significant progress in obtaining smart meter Network Operational Data (NOD) by reaching an agreement with Bluecurrent, who provide smart metering services for approximately 90% of Orion's ICPs. This data is provided on an overnight basis and is unlocking capability around proactive LV constraint identification and network management. However, there is still a significant challenge in procuring smart meter data from other metering providers to achieve full network coverage due to contractual and financial considerations.

Current service offerings vary between metering equipment providers (MEPs) and often lack functionality to provide near-real-time smart meter event/ping information. This restricts data uses to long-term planning rather than operational applications. As an alternative, Orion is intending to make use of its low voltage monitoring to fill this gap.

While historical consumption data has some utility in informing network capacity constraints, it generally of lower resolution than NOD and cannot provide a full picture of network performance. Additionally, default data agreements are typically restrictive in their permitted use cases which can limit their applications (for example, investigating the viability of flexibility services).

Other than smart meter data, there are several other data sources which are required to accurately forecast growth in load and generation and subsequent constraints at an LV level. These include, but are not limited to:

- Higher resolution data on EV uptake
- More accurate and higher resolution council growth figures
- Council building consent applications & development plans
- Data from EV chargers and inverters to understand behaviour

- b) any analysis and modelling (including any assumptions and limitations) the EDB undertakes, or intends to undertake, with the data described in clause 17.2.2(a).**

Orion is currently undertaking in-house analysis using smart meter data to inform network voltage performance, asset utilisation and load profiling. There are several challenges and limitations around this analysis including,

- lack of full smart meter data coverage
- limited data around LV customer phasing and service mains
- integration of data into network model
- magnitude of computation required

Therefore, we are also developing data handling, modelling and analysis methodologies to mitigate the impacts of these limitations, where possible, and quantify the level of accuracy that can be expected.

In addition to in-house analysis, we are also trialling platforms with two smart meter analytics providers, Gridsight and Future-Grid, to understand existing applications on the market, the current limitations, development roadmaps and which areas of the business they will provide maximum benefit.

In future, we intend to combine low voltage monitoring and smart meter data to our LV network modelling and layer on forecasts to inform with network planning, constraint mapping, optimisation opportunities and hosting capacity.

Certification for year-end disclosures

We, Paul Jason Munro and Michael Earl Sang being directors of Orion New Zealand Limited certify that, having made all reasonable enquiry, to the best of our knowledge-

- a. the information prepared for the purposes of clauses 2.3.1, 2.3.2, 2.3.8 - 2.3.12, 2.4.21, 2.4.22, 2.5.1(1)(a)-(e), 2.5.2, 2.6.1B and 2.7.1 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination; and
- b. the historical information used in the preparation of Schedules 8, 9a, 9b, 9c, 9d, 9e, 10 and 14 has been properly extracted from the Orion New Zealand Limited's accounting and other records sourced from its financial and non-financial systems, and that sufficient appropriate records have been retained.
- c. In respect of information concerning assets, costs and revenues valued or disclosed in accordance with clause 2.3.6 of the Electricity Distribution Information Disclosure Determination 2012 and clauses 2.2.11(1)(g) and 2.2.11(5) of the Electricity Distribution Services Input Methodologies Determination 2012, we are satisfied that-
 - i. the costs and values of assets or goods or services acquired from a related party comply, in all material respects, with clauses 2.3.6(1) and 2.3.6(3) of the Electricity Distribution Information Disclosure Determination 2012 and clauses 2.2.11(1)(g) and 2.2.11(5)(a)-2.2.11(5)(b) of the Electricity Distribution Services Input Methodologies Determination 2012; and
 - ii. the value of assets or goods or services sold or supplied to a related party comply, in all material respects, with clause 2.3.6(2) of the Electricity Distribution Information Disclosure Determination 2012.



Paul Jason Munro

Director



Michael Earl Sang

Director

