THEPOWERCOMPANYLTD

Voltage quality and constraints disclosure

August 2024

Electricity distribution information disclosure determination 2012

Customer service is important to us at PowerNet. If for any reason, we do not meet your expectations we would like the opportunity to work through a solution with you, please call our office on 03 2111899. If we are unable to resolve your concern, there is a free and independent resolution service available through Utilities Disputes Limited www.udl.co.nz

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Introduction

This Asset Management Plan disclosure covers the additional narrative requirements prescribed in the Commerce Commission's Targeted Information Disclosure Review (February 2024 decision). These requirements are specified in Clause 2.6.1B and Clause 17.2.2 of Attachment A in the Amendment Determination. The requirements are as follows:

"**2.6.1B** Each EDB is also required to publicly disclose qualitative information in narrative form that describes its practices in a manner that complies with clause 17.2.2 of Attachment A by 31 August 2024 in a standalone document."

Disclosure

1) **A description of any policies or practices for:**
providing sufficient information on current and forecast constraints (including LV network constraints where known) to inform the decision-making of potential consumers connecting to the network and potential providers of non-network solutions, and regarding load and injection constraints on LV networks.

All known constraints are listed in Table 60 of the TPCL AMP 24/25 update. Relevant parts of the table are reproduced here for ease of reference.

Table 60: Network Constraints and Intended Remedy

Constraint	Description	Management Approach
Capacity at Zone Substations	Substations close to (or exceeding) maximum capacity. Glenham, Kelso, North Gore, Tokanui, Riversdale, South Gore and Winton	Loadings are reviewed annually to ensure timing of projects is kept just ahead of load. Upgrades planned for, Glenham, Kelso, and Riversdale during the planning period. Load transfers will be used to keep, North & South Gore, Tokanui plus Winton under their respective capacity.
Gore GXP	Substation demand close to firm capacity of 38 MVA	Transpower has been engaged in the 2021 to upgrade the Gore GXP transformers to 80MVA triggered by the process heat electrification project at the Mataura Valley Milk and the 45MW Kairewa Downs Mercury Energy wind farm. The work is expected to be completed in mid-2023 with both extra load and generation in 2023/24.
North Makarewa GXP	Transpower 220/33kV Transformers Capacity	The existing NMA 220/33kV supply transformer capacity cannot exceed 67 MVA due to restrictions from the circuit breaker and current transformer (67 MVA), 33kV incomer (68 MVA) and disconnector (71 MVA). Although, these transformers are rated for 76/79 MVA (summer/winter). Transpower is intended to replace the circuit breaker and remove the current transformer limit by 2024-2026. However, the 33 kV incomer cables and disconnectors are not due for replacement and will still be limiting the transformer branch to approximately 68 MVA and 71 MVA, respectively. Up-size when load control cannot keep load under this limit.

		Close monitoring of the 66kV load within firm capacity.
Limited Transfer Capacity between Gore and North Makarewa	Limited integration between Gore and North Makarewa GXP.	The 33/66kV transformer at Lumsden intends to provide an N-1 supply for Riversdale Substation, allowing transferable between Gore and North Makarewa. Therefore, the transferable capacity from the overhead line is minimal and can only cover load on Riversdale from North Makarewa or part of Lumsden from Gore, even though the transformer is rated for 15MVA. Investigate network upgrades to improve network reliability during contingency conditions
Capacity available on the 33kV circuit to Makarewa and Underwood substation	The capacity available on the Makarewa and Underwood circuit is expected to reach its design limitation by mid-2023.	Close monitoring the development at the Makarewa and Underwood substation region.
Capacity available on the 33kV circuits to Colyer Road substation	The capacity available on the 33kV lines to the Coloyer Road is close to its design limitation.	Closely monitoring the development at the Seaward Bush, Coloyer Road and Bluff substation region. Sections of the line have been planned to be upgraded in the 2022-23 years to relieve some of the constraints. Investigate network upgrades to improve network capacity.
Athol and Kingston Subdivisions	Possible large developments in Athol and Kingston	Upgrade MV distribution network from the Athol substation and extend the 66kV subtransmission to Kingston if further growth occurs.

Where we have known or forecast injection constraints on the LV network, these are published in map format on our website with the constrained locations indicated. https://powernet.co.nz/future-energy/generation-and-storage/get-connected/

2) **A description of**
   - **any challenges, and progress, towards collecting or procuring data required to inform the EDB of current and forecast constraints on its LV network, including historical consumption data; and**
   - **any analysis and modelling (including limitations and assumptions) the EDB undertakes, or intends to undertake, with that constraint-related Data.**

It is recognised that as the uptake of EVs and other technologies increases, some parts of TPC's network may become constrained. TPC has fortunately invested in smart meters across its network, completed the deployment and is seeing the benefits of data availability of Low voltage (LV) network visibility. This is further enhanced due to TPC's relationship with SmartCo (of which TPC is a shareholder). That has enabled the development of electronic tools to provide this greater visibility of the LV network, providing valuable information for PowerNet as network manager to monitor network loading and congestion and forecast future growth, including use of wider data analytics. Having this insight will enable us to seek the most efficient solution to LV congestion, which may be either a network upgrade or a non-network solution.

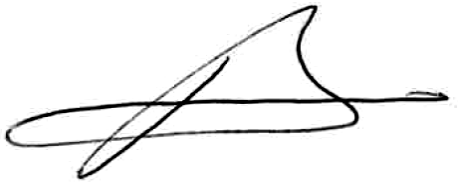
PowerNet is currently developing load forecasting and scenario planning tools to allow constraint mapping and modelling of the LV growth. This will allow better forecasting of LV

and MV constraints with the forecast constraints identified and published, and solutions sought.

Certificate for year-end disclosures

We, Peter William Moynihan and Murray John Wallace, being board members of The Power Company Limited certify that, having made all reasonable enquiry, to the best of our knowledge-

a) the information prepared for the purposes of clauses 2.6.1B of the Electricity Distribution Information Disclosure Determination 2012 and Clause 17.2.2 of Attachment A in the Amendment Determination (Feb 2024) in all material respects complies with that determination.



Peter William Moynihan
Director

Dated: 20 September 2024

Murray John Wallace
Director

Dated: 20 September 2024