
Potential solutions for peak electricity capacity issues

Northpower Submission to the Electricity Authority

Northpower

1. Introduction

Northpower appreciates the opportunity to submit to the Electricity Authority (**Authority**) on potential solutions for peak electricity capacity issues.

Northpower is a trust-owned company, our electricity distribution business connects consumers to our electricity network in the Whangarei and Kaipara districts, operating and maintaining a network to more than 62,500 connected customers.

2. Executive Summary

We note that many of the issues and potential solutions discussed in the consultation do not directly relate to electricity distribution businesses (EDBs). Therefore, we have focused on the areas that are relevant to EDBs. In summary, they are:

- **removal of regional coincident peak demand (RCPD);**
- **information visibility between flexibility providers and EDBs; and**
- **insufficient incentives on hot water load control.**

3. Removal of RCPD

While we agree with the causes and drivers discussed in the paper, we note that the paper failed to mention the removal of RCPD under the new Transmission Pricing Methodology (TPM) which can also have a significant impact on peak capacity. In the Monitoring Report published by Transpower in October 2023 below, it mentioned that removal of RCPD resulted in a 157MW increase in average peaks which is 2.2% of national demand.

Peak demand continues clear upward trend of strong growth

Peak electricity demand growth continues to raise concerns for potential capacity issues during peak demand periods. Six of the highest peaks on record occurred in 2023, with the maximum peak of 7122 MW on 2 August 2023 coming just 7 MW short of the record set on 9 August 2021.

Peak demand growth has risen 2% annually on average since 2021, with another increase of 122 MW this winter. This rise in demand can be attributed to the growing electrification of transport, process heat, and space heating. **It is also attributed to the removal of RCPD charges, with analysis published by the Electricity Authority confirming that this is associated with a 157 MW increase in average peaks – or 2.2% of national demand.**

While the purpose of the TPM is not to match generation supply and demand, nonetheless the RCPD price signal provided a price signal to distributors to manage their loads, which assisted with the matching of supply and demand. The removal of this price signal resulted in Northpower (and we understand many other distributors) ceasing to control load for the purposes of managing demand on the grid, and we currently only control load where we have a constraint on our network during planned or unplanned maintenance.

We consider the issue is simple. The TPM has removed the price signal which incentivised distributors to manage their total load, which assisted to match supply of and demand for generation. Distributors are not participants on the spot market, so they now have no price

signal to load control. We suggest the Authority exploring options to reintroduce strong price signals to utilise such available resources from EDBs more efficiently.

4. Information visibility

In principle we are supportive of removing any regulatory roadblocks to encourage connection and participation from battery energy storage system and demand flexibility providers.

However, as mentioned in our previous submission on dispatch notifications, we are concerned that there is a lack of communication and visibility of demand flexibilities and their locations on EDBs' networks. It is our priority to ensure safe and reliable operation of our network. Without sufficient communication and visibility between demand flexibility providers and EDBs, it imposes significant risks to our network, for example, where there is a fault or planned outage on the network, the capacity can be reduced and thus needs to be communicated, otherwise our network can potentially be overloaded creating hazards to network assets and customers.

We appreciate the Authority has planned to investigate into this issue as part of the delivering key distribution sector reform programme of work.

5. Insufficient incentives

At present, Transpower are effectively able to use our DER capability by issuing a request to us to reduce load in a grid emergency situation, at no cost to Transpower. The ability to manage load has a commercial value, and costs EDBs in the form of discounts offered to consumers in exchange for load control, and the cost to procure, install, and maintain ripple devices and ripple plant (for example, we recently invested \$30k on ripple plant upgrade for the purpose of communication security and improved under frequency detection). If Transpower wishes to use this capability, it is appropriate that we are compensated for this. We believe that Transpower should be required to procure this service, and that it should only be provided for free in an emergency.



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