



Wellington Electricity Hot Water Load Management Protocol

Version 1 - July 2025

1. Purpose

This document is the standard protocol for the shared management of customers' water heating load on the Wellington Electricity network as required under Clause 5.6(b) of the Default Distributor Agreement (DDA). The protocol provides the means for Retailers to undertake shared hot water load management at ICPs where Wellington has the right to control load under Clause 5.1 of the DDA, ensuring:

1. The safety of customers and their appliances, and
2. The stability of the distribution network and national grid.

Clause 5.6(b)(vi) of the DDA requires that the protocol agreed between the Distributor and a Retailer contains the same or similar terms as protocols agreed between the Distributor and other Retailers. This protocol is Wellington Electricity's standard terms for all Retailers intending to manage customer water heating load, however, Retailers may negotiate alternative terms with Wellington Electricity for the purposes of conducting trials.

Controllable load other than water heating is outside the scope of this protocol. Protocols for managing other types of controllable load will be developed in consultation with Retailers as required.

2. Interpretation

In addition to terms defined in the Code and DDA, the following terms are used in this protocol:

- **Controllable Load:** Customer water heating load that the Retailer seeks to control.
- **Controllable Load Data:** defined in Section 5 of this protocol.
- **Scheduled Management:** a hot water management strategy that operates to a fixed and pre-determined schedule.
- **Dynamic Management:** a hot water management strategy that can be adjusted in response to varying conditions.
- **System Emergency Events (SEE):** Defined for the purposes of the protocol as Grid Emergency Notices (GEN) or Warning Notices (WRN) issued by the System Operator that affect the Wellington Electricity network, consistent with Clause 5.6(b), Schedule 4, and Clauses S8.1(a) and S8.6 of the DDA.
- **Customer Advice Notice (CAN) Events:** Defined for the purposes of this protocol as being specifically CANs issued by the System Operator requesting Distributors to submit difference bids for controllable load.
- **System Security:** Covers non-emergency scenarios such as managing localised distribution network security constraints, consistent with Clauses 4.4(d) and S8.5(a) of the DDA.
- **Ripple Control:** Wellington Electricity's system for managing customer water heating load, consistent with Clause 5.1 of the DDA, with additional information provided at <https://www.welectricity.co.nz/outages/load-control>.

3. Hierarchy of Control

At all times, decisions regarding the management of water heating load shall be guided by the following criteria, in order of importance:

1. Safety.
2. Security of the distribution network and the national grid.
3. Availability of hot water to customers.
4. Wholesale energy value.

A Wellington Electricity ripple control OFF signal shall not be overridden by the Retailer's control system.

4. Control Restrictions

In order to minimise the impact of controllable load on Customers' quality of supply, Wellington Electricity requires retailers to comply with the following restrictions when establishing their hot water management strategies.

- No controllable load shall be scheduled for restoration between 20:30 and 21:30 on weekdays, to avoid load restoration coinciding with the end of Wellington Electricity's Time of Use peak pricing period.

- No more than 25% of Retailer's controllable load (or 0.5 MW if greater) shall be restored within any 15-minute period.
- Retailers shall randomise the timing of restoration of their controllable load within each 15-minute period.

These restrictions do not apply when the Retailer is required to reactively restore individual customers for quality of service reasons.

Non-compliance with these restrictions resulting in voltage fluctuations causing damage to customer appliances will be investigated by Wellington Electricity to ensure liability sits with the causing party.

5. Information Provision

To comply with Clause S8.7(b) of the DDA, the Retailer shall provide the following controllable load data to Wellington Electricity at least monthly, or whenever material changes are made to the data:

- The list of ICPs where the Retailer has obtained a right to manage water heating load
- For each ICP, whether the management strategy is scheduled or dynamic.
- The time schedule being applied for scheduled management.
- The estimated quantity of demand scheduled to be shifted per half hour, in kWh, aggregated at GXP level.

A material change is defined as a change in the number of ICPs on a particular control strategy by more than 10%, or any change to the time schedule for scheduled management.

This data is to be provided in Excel format to hotwatermanagement@welectricity.co.nz.

6. Communications

When notifying Wellington Electricity of its intent to manage Customer load, the Retailer shall provide Wellington Electricity with operational contact details for any communication during System Emergencies, including hours of availability, for the purposes of issuing any notices required under Clause S8.7(a) of the DDA.

7. Events

To comply with Clause 5.6(b) of the DDA, this protocol requires Retailers to undertake actions in response to events as defined below:

Event Type	What does WELL want the Retailer to do?
System Emergency (<i>GEN or WRN</i>)	For a WRN or GEN affecting Wellington, North Island, or National zones, the Retailer is to relinquish hot water management by ensuring all customers are ON for the duration of the notice, if possible. It is recognised that this may not be possible with some meters. WELL will undertake control as directed by System Operator using its ripple control system, endeavouring to balance hot water availability across all customers.
Customer Advice Notice (<i>CAN</i>)	Where Transpower issues a CAN requiring Distributors to update difference bids, the Retailer shall provide an update of their Controllable Load Data if it is materially different to the most recent Data provided, to allow WELL to provide an accurate difference bid of the hot water remaining under its management. The Retailer may undertake normal operation in compliance with the restrictions in Section 4 of this protocol, unless governed by separate agreement.
System Security Management (<i>Non-emergency load coordination, e.g. security constraint</i>)	This is considered to be normal operation of the hot water control systems. <ul style="list-style-type: none"> • Wellington Electricity's ripple control system will manage any security constraints as required. • The Retailer may undertake load management in compliance with the restrictions in Section 4 of this protocol, unless governed by separate agreement.

8. Protocol Review

This protocol will be reviewed periodically by Wellington Electricity in consultation with Retailers.