Guide to Powerco connection requirements

This is an overview of common technical requirements, taken from the Powerco Electricity Network Connection Standard.
The full version of the standard can be downloaded from https://www.powerco.co.nz/our-partners/for-electricians
Contact us at customerworkseastern@powerco.co.nz

Standard supply
Single phase, 230V supply up to 60 amps.

Connection work
Connection can only be made by a Powerco contractor. Powerco has contracts in place with qualified contractors for this work.

Network point of connection
This will be determined by Powerco to suit the existing network architecture. Isolation of any ICP (installation control point) must be possible without affecting the delivery of supply to any other ICP or the integrity of the network.

Point of supply
This is the point where ownership of the equipment changes between Powerco and the customer. Typically, this is at the property boundary, but it can vary. Check with the Powerco Customer Works Team.

Larger capacity connections
Where a capacity larger than the standard supply is requested, Powerco will determine whether this is available from the existing network or if an upgrade is required. The customer may be required to contribute towards the cost of the work to install a larger connection.

Builders' temporary supplies
These must be located on property owned by the customer, rather than in road reserve.

Temporary supplies shall not be fixed to Powerco assets of any type, and they must be metered.

The cable must be properly connected into the service box by a Powerco contractor. It must be dug under and then into the pillar, not run across the ground and forced under the lid.

If the temporary supply is installed on the permanent service main cable it will avoid a second connection fee.

Load control
All new installations with suitable interruptible loads shall be capable of being controlled by Powerco's load control system through an approved ripple receiver or relay.

LV service box connection

Connection can be made at a low voltage (LV) service box where it is at the property boundary and on the same side of the road as the new connection.
Where a subdivided lot is not immediately adjacent to an existing service box, a new service box will need to be established at the property boundary.

LV pole-top connection

Where the LV network is overhead, customers may, with prior approval from Powerco, be connected via an LV service cable from a fuse at the pole top. The pole must be on the same side of the street as the consumer and immediately adjacent to the boundary line.
The service cable must be copper neutral screened.
Allow an additional nine meters of cable to go up the pole.
The installation of the cable up the pole and the connection to the fuse must be done by a Powerco contractor.

Rural area supplies

Some parts of the rural network are only two-wire or SWER (single wire earth return). In those areas only a single phase 230V or split phase 240V/480V supply will be available.

A network upgrade may be required for larger connections. In these situations, the customer may be required to contribute towards the cost of the work.

If a customer is more than 150m from an existing transformer, a high voltage (HV) extension and new transformer may be required.

Three phase connections should be used in rural areas where a three phase LV supply is available

Customer service mains

The customer generally owns the cables within their property.
The cables must comply with AS/NZS3000. The neutral conductors should be the same size as the phase conductors.
In general, service cables should be run to the boundary with sufficient length for the approved contractor to reach the approved connection point. If this condition is not met, it will result in additional costs being passed on to the customer.
With prior approval of Powerco (and subject to council permission), there may be situations where a portion of service cable can be installed in road reserve. It must be laid parallel or at right angles to the street, must be installed with 600mm cover, and have mechanical protection. All trenching and reinstatement must meet council requirements, including street opening approval.
An as-built plan of any service cable installed in road reserve must be provided to the approved contractor making the connection.

Metering

Metering is generally the responsibility of the customer's electricity retailer.

Connections must not have summated meter readings from multiple meters, and they must comply with Powerco protection and isolation requirements.
Powerco may require 11kV metering for situations such as embedded networks or where there are to be multiple non Powerco ICPs or multiple transformers on site.

Generation and export connections (solar/distributed generation)

Customers wishing to export electricity to the network must get prior approval from Powerco. Import/export metering, from the customer's retailer, will need to be installed.

Applications for distributed generation can be made at : https://www.powerco.co.nz/get-connected/utility-scale-generation

The installer of the distributed generation (DG) equipment must contact a Powerco contractor before livening the equipment. The contractor will view the Certificate of Compliance and install safety warning signs at the point of connection to the network. The installer must advise Powerco of the completion of the work and that the DG equipment has been livened.

Multiple connections and isolation

Generally, between two and five connections on a common property are to be individually fused at the Powerco network connection point. Any variation to this policy will be considered on a case by case basis.

If there are more than five tenancies, they may have a single three-phase fuse disconnect unit in the boundary pillar or transformer, with individual fusing/isolation on site.

Multiple tenancy installations

These are buildings that have a single point of connection to the Powerco network, with multiple tenancies that are individually metered. Each tenancy must be able to be isolated separately and have its own ICP.

Applications for multiple tenancy installations need to include information on capacity, proposed fusing and isolation, and a site/building layout.

Load power factor

The power factor of a customer's load, measured at the metering point, shall not be less than 0.95 (lead or lag). A guide to the required capacitance to meet the 0.95 power factor is available from Powerco.

Harmonic disturbances

Harmonics shall be managed in accordance with EEA power quality guidelines: https://eea.co.nz/publication/power-quality-guide-pdf/

Motor starting

AC motors of up to and including the following sizes may be started direct-on-line without specific permission:

Urban residential
- Single phase 1.5kW
- Three phase 4.0kW

Urban non-residential
- Single phase 2.2kW
- Three phase 7.5kW

Rural
- Single phase 0.75kW
- Three phase 2.5kW

All motors or pumps larger than those above must be approved by Powerco before connection. Please contact the Customer Works Team for more information or for an application form.