

Loss Load Factors on the Northpower Electricity Network

Applicable from 1 April 2016

In accordance with the electricity Industry Participation code, Northpower has reviewed the Loss factor Applicable to ICP's on the Northpower Electricity Network.

The Loss Load Code applicable to each ICP supplied from the network is determined by the voltage and the location within the distribution network at which each ICP is metered. Table 1 below indicates the Loss Load Factor values applicable to each Loss Load Category from April 2009 and April 2016. These have been derived from load-flow modelling of power transformers, sub-transmission circuits, high voltage meters, distribution transformers and the low voltage distribution.

Table 1: Loss Category Codes and Loss factors for ICP's connected to the Northpower network

Loss Category Code	Metering Voltage	Description	Loss Load Factors 1 April 2009	Loss Load factor 1 April 2016
L0	33kV	Metered Adjacent to NSP (GXP)	1.000	1.000
L1	33kV	ICP 0000546037NR9E6	1.023	1.015
L2	11kV	Metered at 11kV	1.045	1.050
L3	400V	150kVA and above, metered near the distribution transformer	1.053	1.058
L4	400V	Not currently used	1.06	1.073
L5	230/400V	Less than 150kVA, metered in the LV distribution network	1.068	1.073
L6	33kV	ICP 0000546038NR638	1.000	1.004
G1	33kV	Wairua generation	1.025 Gen 1.016 Cons	1.025 Gen 1.016 Cons
G2	11kV	Bream Bay generation	1.004 Gen 1.001 Cons	1.004 Gen 1.001 Cons

The above Loss Category Codes and Loss Factors may be added to, altered or deleted at any time at the sole discretion of Northpower. L4 is presently unused by any existing ICP's, however L4 will remain in the Registry as a valid Loss Category Code for possible future use.

Illustration of how Loss Load Factors are applied

If a meter at an ICP with Loss Category L5 records a net usage of 1,000 kWh, the equivalent energy at the relevant Network Supply Point (NSP or GXP) is deemed to be:

$$1.068 \times 1,000\text{kWh} = 1,068\text{kWh from 1 April 2009}$$

$$1.073 \times 1,000\text{kWh} = 1,073\text{kWh from 1 April 2016}$$

Registry obligations

In accordance with obligations in clauses 21 and 22 of Schedule 11.1 of the Electricity Industry participation Code, Northpower maintains the Registry table for Loss Category Codes and Loss Factors for all ICP's on the Northpower network.