# Representative networks from NZ

Note:

* All R, X, values are in Ohms per km;
* All cables drawn in dashed lines, all O/H lines are solid;
* Residential ICP = house;
* Non-residential ICP = shop, school, factory, community centre, pump, petrol station, etc.;
* kW per ICP values are assigned by the Lines Company. They probably denote maximum demand.

## City centre / commercial

#### Network 1

Parameters:

* 19 residential ICPs
* 27 non-residential ICPs
* 5.67 kW per ICP



Figure 7. Schematic of first representative LV network (city/commercial).

#### Network 2

Parameters:

* 0 residential ICPs
* 18 non-residential ICPs
* 11.94 kW per ICP



Figure 8. Schematic of second representative LV network (city/commercial).

#### Network 3

Parameters:

* 58 residential ICPs
* 132 non-residential ICPs
* 4.16 kW per ICP

Figure 9. Schematic of third representative LV network (city/commercial).

## Residential

#### Network 1

Parameters

* 68 residential ICPs
* 3 non-residential ICPs
* 4.35 kW per ICP

Transformer ID: T001C1510103

Figure 15. Schematic of first representative LV network (residential).

Power loss at peak power: 18.7 kW, 6% of peak load. Note that the 3.384m LV Cable rated 265 A is overloaded,[[1]](#footnote-1) as is the transformer (slightly).

#### Network 2

Parameters

* 50 residential ICPs
* 1 non-residential ICPs
* 3.65 kW per ICP

Transformer ID: T001C1620017

Figure 16. Schematic of second representative LV network (residential).

Power loss at peak power: 17.34 kW, 9.32% of peak load.

#### Network 3

Parameters:

* 341 residential ICPs
* 6 non-residential ICPs
* 2.18 kW per ICP

Figure 17. Schematic of third representative LV network (residential).

1. Perhaps an incorrect conductor in the GIS. [↑](#footnote-ref-1)