



Keep the Lights On

An Argument for Mobile Substations

Agenda

- ▶ Introduction to Mobile Substations
- ▶ Operational Considerations
- ▶ All the Benefits

Here's a mobile substation:



Now, here's an ElectroNet mobile substation:



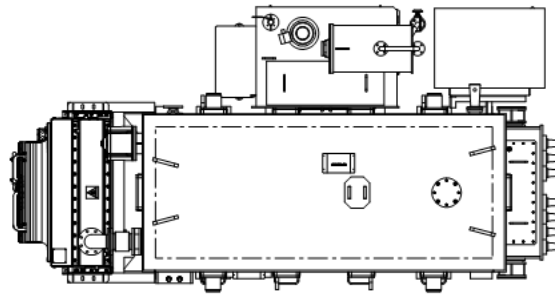
Proven History



Compact, light indoor switchgear + control



“Skinny” transformers



Plan View

Heavy trailers and combination vehicles

(full, semi, simple, pole, A- and B-train)

Factsheet

13c

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This factsheet describes the legal requirements in the Land Transport Rule: Vehicle Dimensions and Mass 2016 relating to the dimension and mass limits for heavy trailers (Classes TC (3.5 to 10.0 tonnes) and TD (over 10 tonnes), and heavy-vehicle combinations. Please refer to factsheet 13 for general dimension and mass limits and towing requirements.

What are the general specifications for heavy trailers?

Projecting loads

A load is allowed to project outside of the sides of a trailer, as long as the maximum allowable dimensions are not exceeded. See factsheet 13 *Vehicle dimensions and mass* for information about the maximum projections allowed and the hazard warning devices you need to attach to projecting loads.

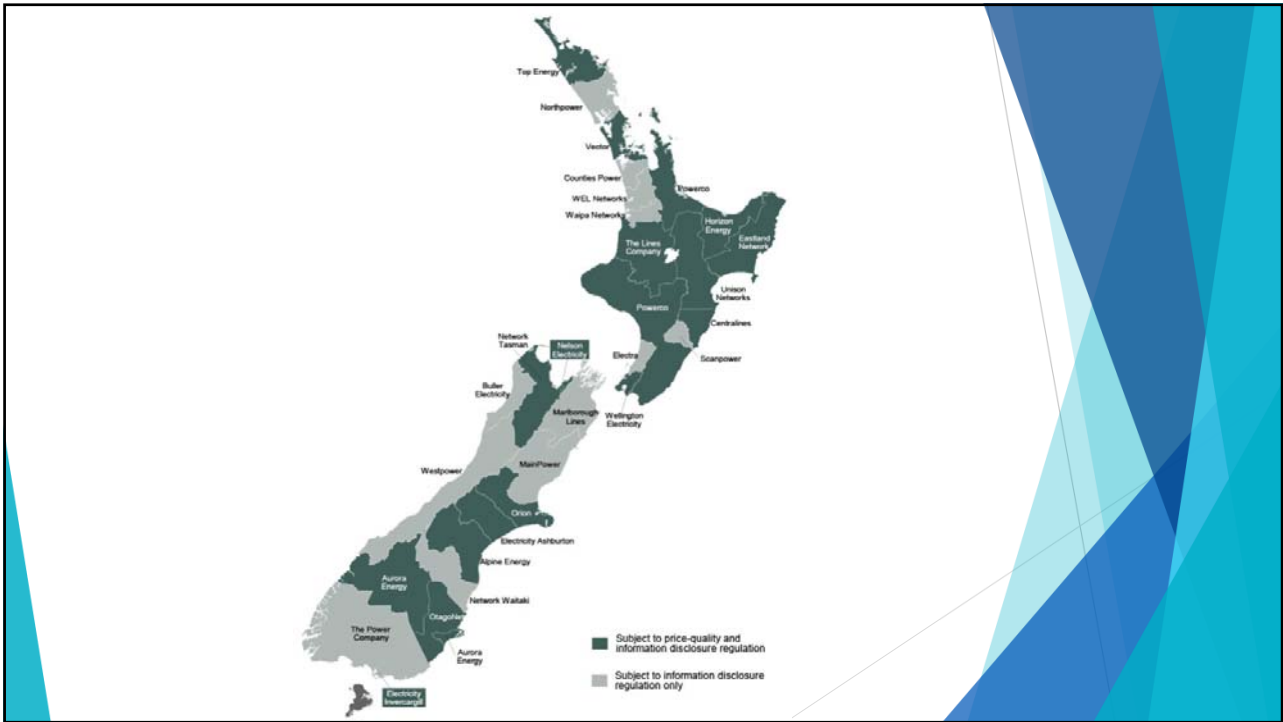
Load sharing

Operational Considerations

- ▶ Trailer – Category 1 NZTA
- ▶ Mobile substation storage
- ▶ Planned – Site Made Ready
- ▶ Unplanned – difficult unless Site Made Ready

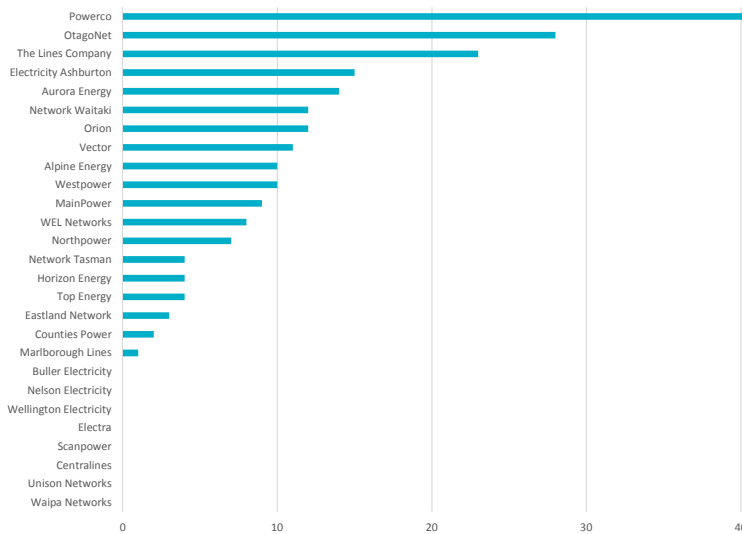
Mobile Substation Deployed



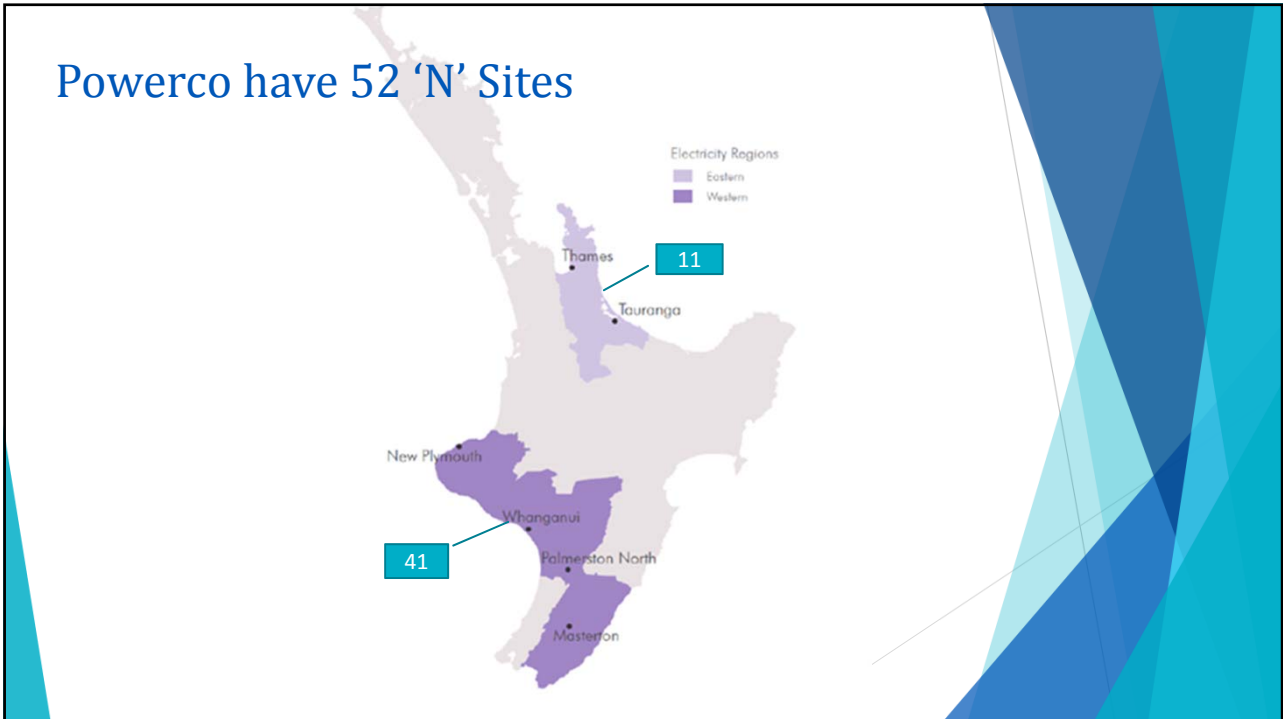


230+ sites with only 'N' Security in NZ

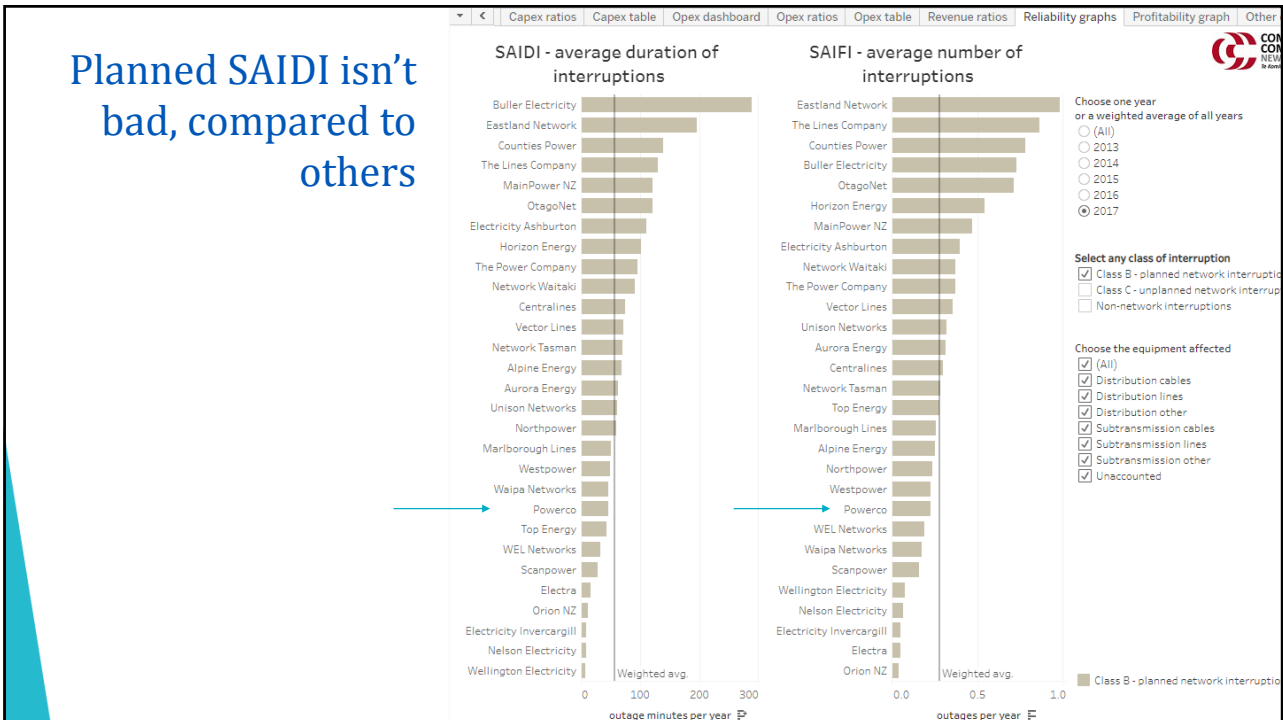
Security of Supply - N Type Substations



Powerco have 52 'N' Sites

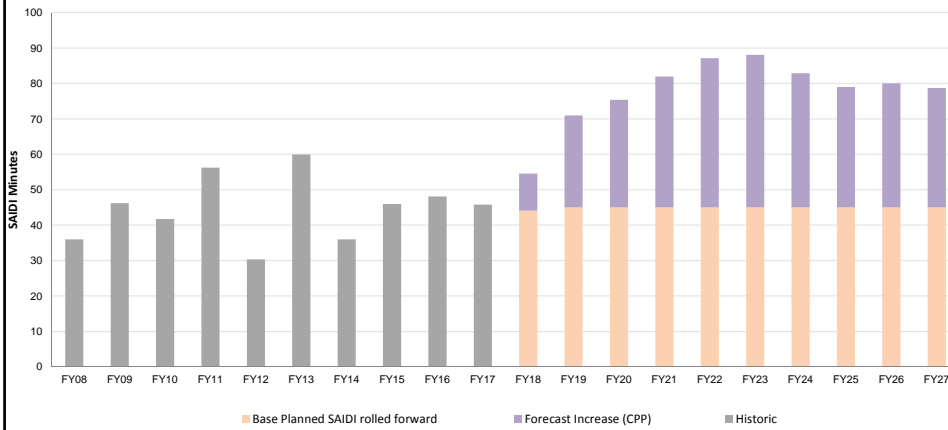


Planned SAIDI isn't bad, compared to others



Forecast Planned SAIDI is set to increase

Quality Path - Planned SAIDI Forecast



High Level Economic Analysis

- ▶ Do nothing.
- ▶ Hire diesel generation.
- ▶ Design meshed network.
- ▶ Mobile substation!

Additional Benefits

- ▶ Transformer fault response (unplanned outages).
- ▶ Enable planned SAIDI minutes to be used for planned capital works.
- ▶ Hire out to other distribution companies.
- ▶ Safety.

Summary

- ▶ Mature, proven technology
- ▶ Reduce planned SAIDI minutes
- ▶ Least Cost Option

