

EEA -AMG Resilience Guidelines

Prepared by Tasman Scott

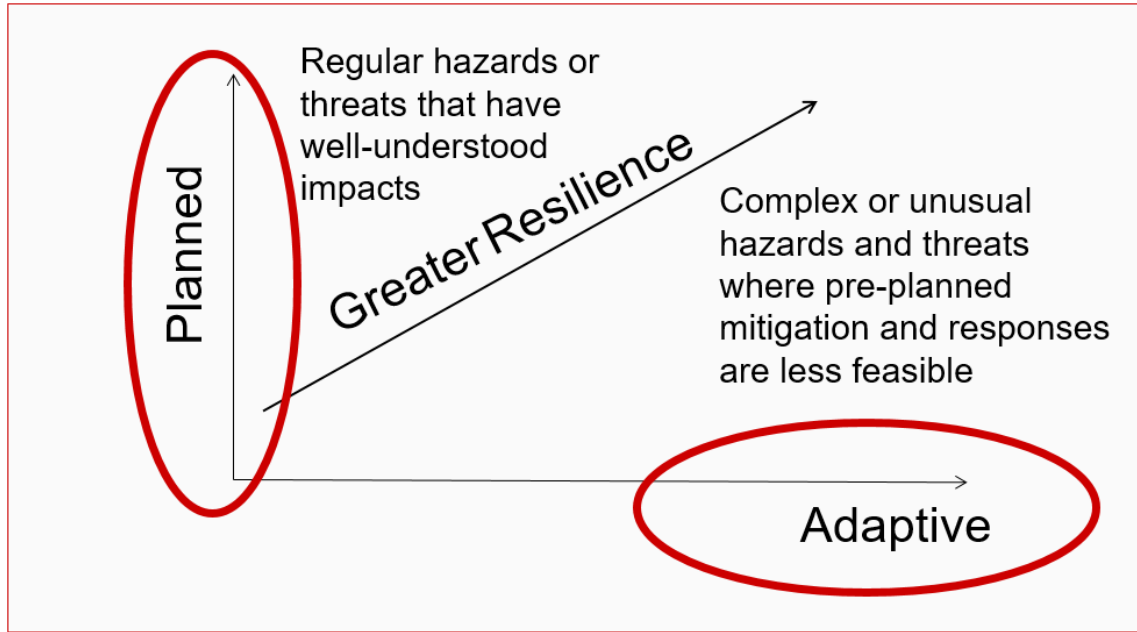
Context

- ▶ Commerce Commission has via an open letter challenged the Electricity Industry to produce an Industry Guideline covering resilience to natural disasters and other HILP events.
- ▶ The Civil Defence Emergency Management Act 2002 provides a suitable structure to determine emergency preparedness for “lifeline Utilities “ such as Line Companies , Generators and Transpower.
- ▶ The 4 X Rs of emergency preparedness provide a structured approach to managing preparedness.

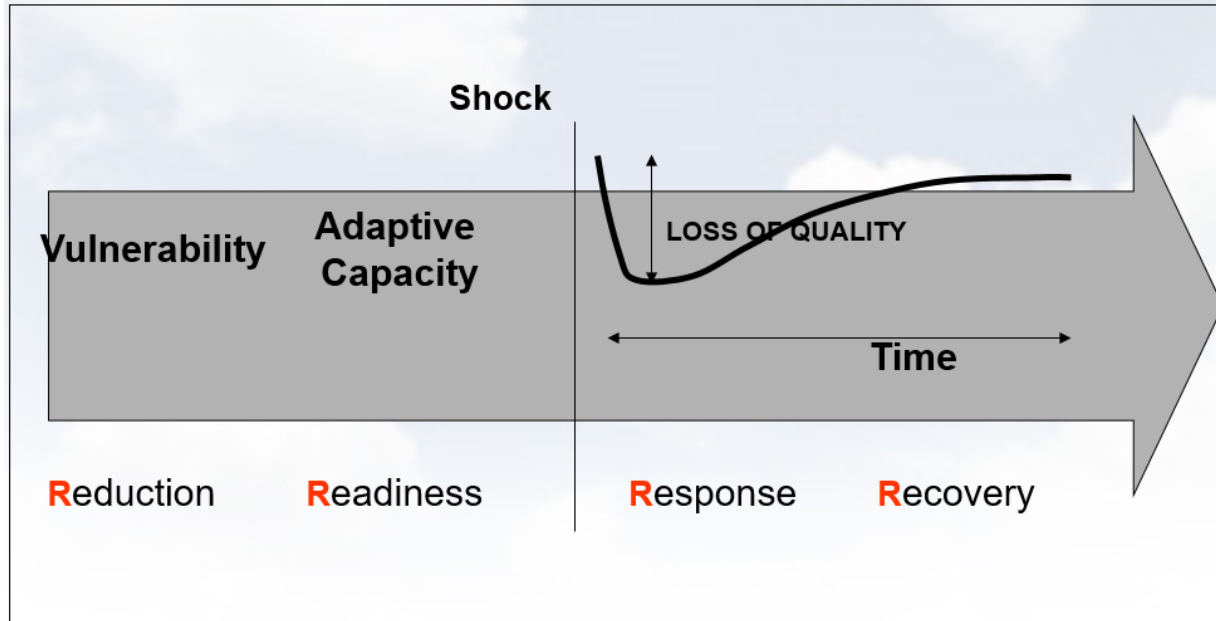
What is Resilience?

- ▶ The electricity infrastructure is a critical lifeline system and of utmost importance to our daily lives.
- ▶ Power system resilience characterizes the ability to resist, adapt to, and timely recover from disruptions.

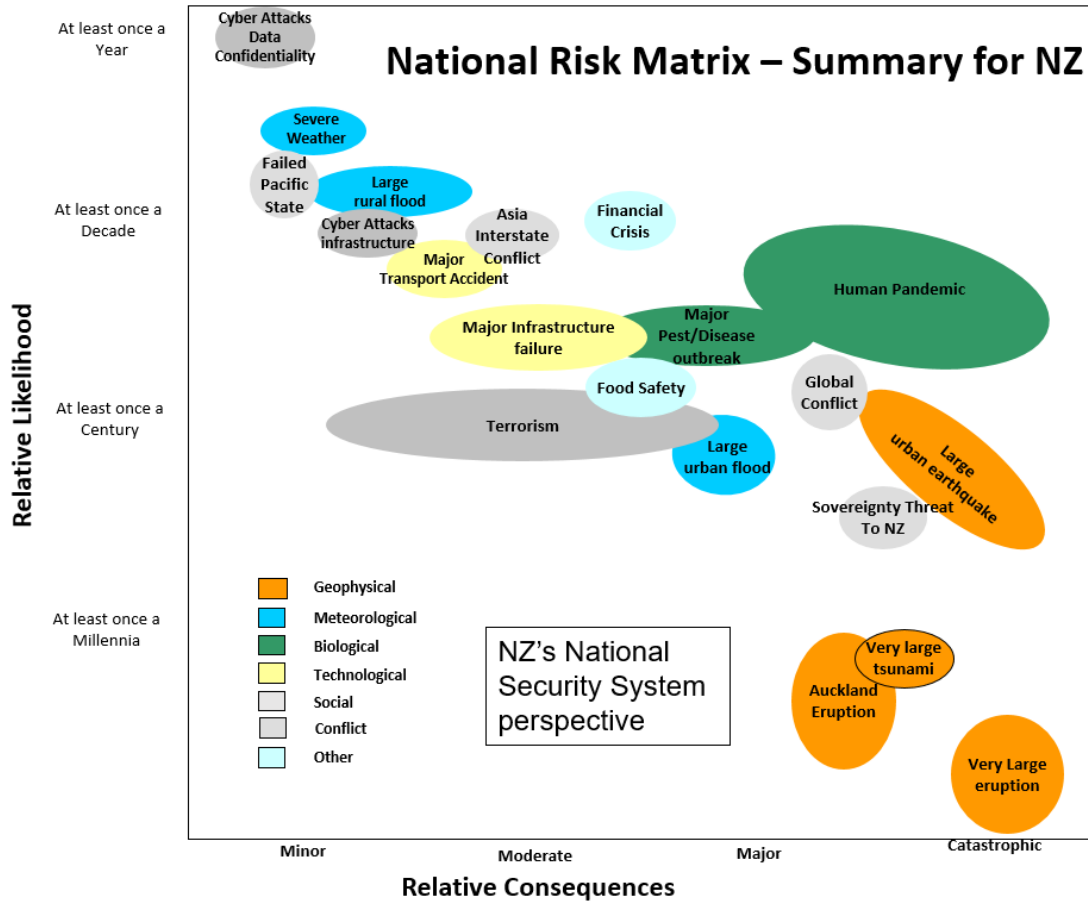
Planned and adaptive capacities....



Quantifying resilience....



National Risk Matrix – Summary for NZ



Applying the 4 R's to Electricity Networks

- ▶ **Reduction (of Risk)** Assessing probabilities and consequences and applying context to determining risk, then developing risk reduction plans. In Orion's case strengthening older brick substation buildings, stronger line designs, specific 66kV cable bridge strengthening, pole foundation improvement, and introducing new improved design standards with better snow and earthquake shock loading resilience.
- ▶ **Readiness** Ensuring operational systems and capabilities are in place e.g. control rooms and backups, contractor resources, communication plans, specific asset risk management/contingency plans. Practice those plans.
- ▶ **Response** Safety of the public, centralised assessment before action, activate contingency plans, mutual aid arrangements if required, keep the public informed. Carry out short term repairs to restore power.
- ▶ **Recovery** The objective here is to restore the network to an acceptable service level by rehabilitation and restoration of network, communicating re severity of problems and likely restoration time. Take customer priorities into account. Identify and effect priorities for permanent repairs.

Electricity Distribution Companies will be judged by how they handle events like earthquakes !

Capturing Supply Industry wide Guidelines in an EEA Guideline on “Resilience”

- ▶ Stay-live emergency preparedness working group considerations and outcomes could be summarised with references to published plans / principles.
- ▶ Seems desirable to engage with national based Contractors in respect to resource deployment in case of large Emergencies.
- ▶ Distribution input from groups such as the Combined Network Operators Group (CNOG) - this is Based in the South Island – currently exploring “mutual aid arrangements”.
- ▶ Existing disaster management plans formulated in the Distribution sector can be used as examples of Industry practice.

Major rock-fall damage Sumner Christchurch

