

Transmission Issues

- Spur connected
- High transmission pricing
- Transmission line and GXP capacity constrained
- Security poor – no benefit from core grid
- Diversity not recognised between GXP's

Network Issues

- Long lines – difficult to support
- Low consumption per connection
- Population concentrated in Gisborne
- Poorly coordinated security standards
- Load control not optimum
- Security and capacity constrained

Consumer Issues

- Changing load demographics
 - Shifting load centre
 - Rural to urban/ domestic to industrial
 - Seasonal load – holiday/harvest
- New service levels demanded
- High growth forecasts (in % terms)

Objectives

- Least cost supply - funding renewal/upgrade
- Rural Economics – justify investment
- Optimise entire supply value chain
- Maximise region's ability to create wealth
- Exploit DG as valuing added opportunity

Balance Rural/Urban Issues

- Economics driven by Load Density
- Different service standards
- Capacity, security, reliability – nothing to do with selling units of electricity
- Shift focus to capacity & availability of assets servicing all energy requirements

Strategy for Rural Network

- Reduce asset investment – net capacity
- Change to power flow management model
- Increase storage, load diversity, and energy alternatives – adds capacity
- Release domestic capacity for wealth creation business use – defers upgrade

Solve Constraint by Increasing Constraint

- Reduce asset investment to minimum proven workable – capture good habits
- Carry no spare capacity, disconnect used ICP's ASAP, eliminate extremes
- Handover Service lines – creates user stakeholding in investment
- High user investment hurdle to requesting more capacity

Maintain High Constraint Pressures

- ENL has removed zone subs
- Operate to limit of lowest voltage
- User pays for upgrade deeper into network
- Increases hurdle before line solution opted for by risk taker
- Increases uptake of DG and energy management solutions

Coordinate Security

- Networks over invest in security
- Focus on not having faults not fault response
- New high tech but less asset
- Non lines solutions – DG
- Avoid one standard for all – identify need, interruption tolerance, probability

Manage Diversity

- Alternative energy sources – solar, wind, biomass
- DG – household/township scale
- Increase storage capability - SHW
- Interconnection at lower voltages – net power flow – less line asset

Possibilities

- Low capacity connections 1kVA
- Trickle charge/battery storage/inverter
- Solar HW electric boost – storage
- Gas/Wood cooking/heating – diversity
- Long runs 1km LV interconnection
- 3.3kV distribution (cable, SWER)
- Community scale DG – no sub-transmission

Comments

- Power flow not distribution being managed
- Higher Tech, more dynamic, extending into installations, better integration
- Core business still providing and managing physical assets
- Consumer behaviour governed by involvement in investment decision
- Higher return – non monopoly business