

Lower South Island Power System Reliability

Stakeholder Meeting

10 October 2008

TRANSPower



Overview of Electricity Transmission

Transpower is responsible for the interconnected power grid between major power stations and where electricity supplies large users direct or goes into the local distribution networks (owned by lines companies) – this grid forms the “backbone” of the power system

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What is the “Lower South Island”

- Includes Otago, Central Otago and Southland
- The power stations at Clyde, Roxburgh, Waipori and Manapouri
 - Plus smaller embedded stations including Monowai, Teviot and Whitehills
- Lines companies distribution networks - Aurora, PowerNet and OtagoNet

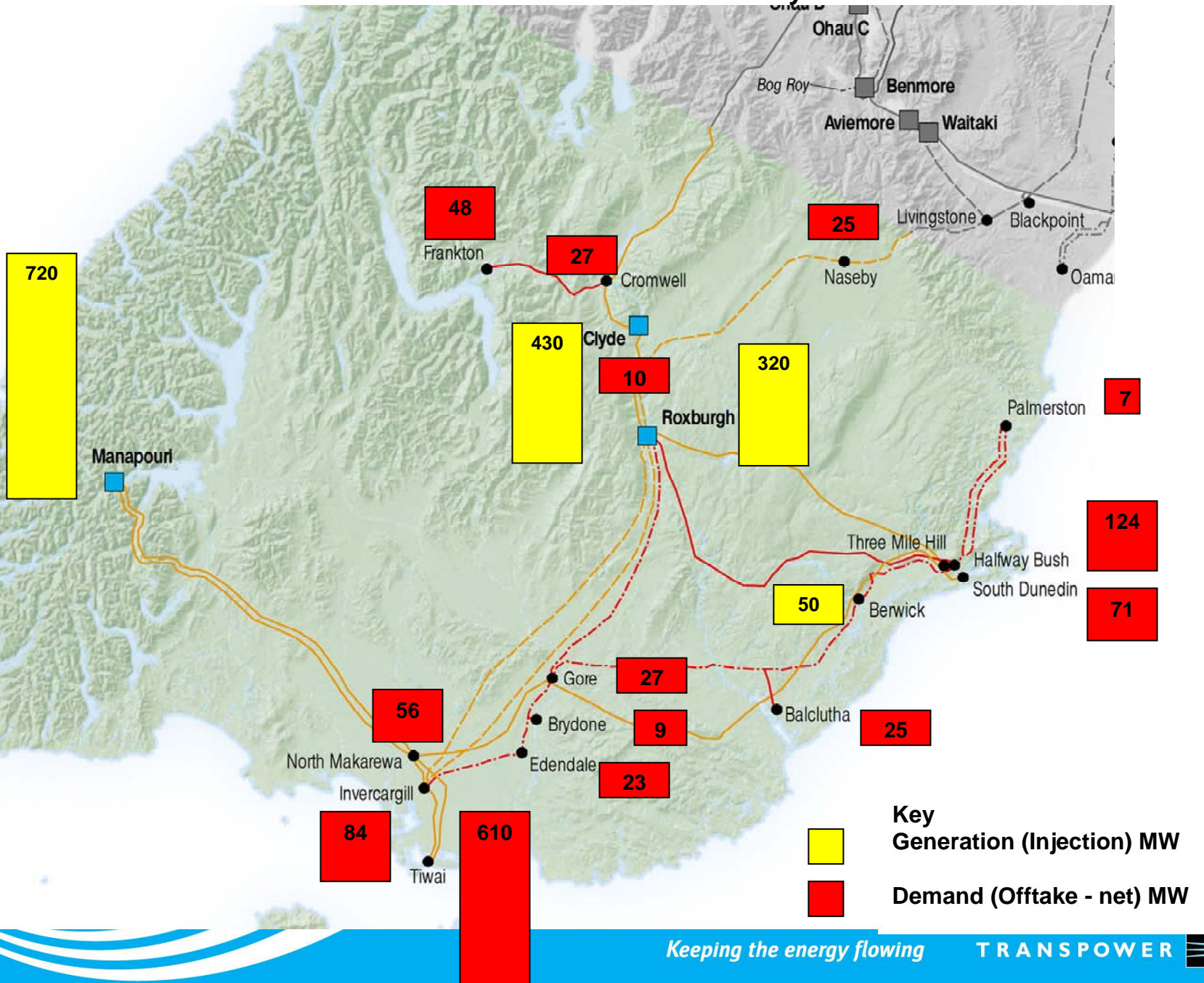


LSI - Facts and Figures

- Region takes up to 1100 MW of the 6600 MW NZ wide winter peak demand of electricity.
- Includes NZ largest electrical energy user – NZAS 14% of NZ's electricity demand
 - NZAS takes 610 MW of electricity 24/7.
 - NZAS accounts for ~70% of the energy used in the region each year.
- LSI has close to 1500 MW of hydro generation capacity within the region – however this predominantly dependant on rain and storage



Lower South Island Power System



Transmission network in the Lower South Island

- Connected to the rest of the South Island with three high voltage (220 kV) lines to the Waitaki Valley power stations.
- A 220 kV “ring” between Roxburgh, Dunedin and Invercargill with 220 kV lines direct from Manapouri to Tiwai via Invercargill.
- A 110 kV regional network stretches from Palmerston via Dunedin, Balclutha and Gore to Invercargill.



LSI - Issues

- Can export ~500 MW to the rest of the South Island
- Several new generation projects planned – will increase export.
- At times of low generation in region needs to import 500 MW from rest of New Zealand.
- Growth in regional electricity use - creating issues in regional 110 kV network and constraining the operation of the large generators in the region.



