

Securing Auckland's Electricity Supply

Roy Hemmingway, Chair

New Zealand Electricity Commission

December 2005



The Electricity Commission

- Established to regulate electricity sector
September 2003 after failure of industry self-governance
- Full-time chair and four part-time commissioners
- 40 staff
- Oversees electricity markets, provides dry year reserves, conducts electricity efficiency programmes, and regulates Transpower



Electricity Issues

- Security of supply
 - Do we have enough for coming months?
- Transmission
 - How much new investment is needed?
- Markets
 - Are they delivering the outcomes we expect?

Security of Supply

Security of Supply

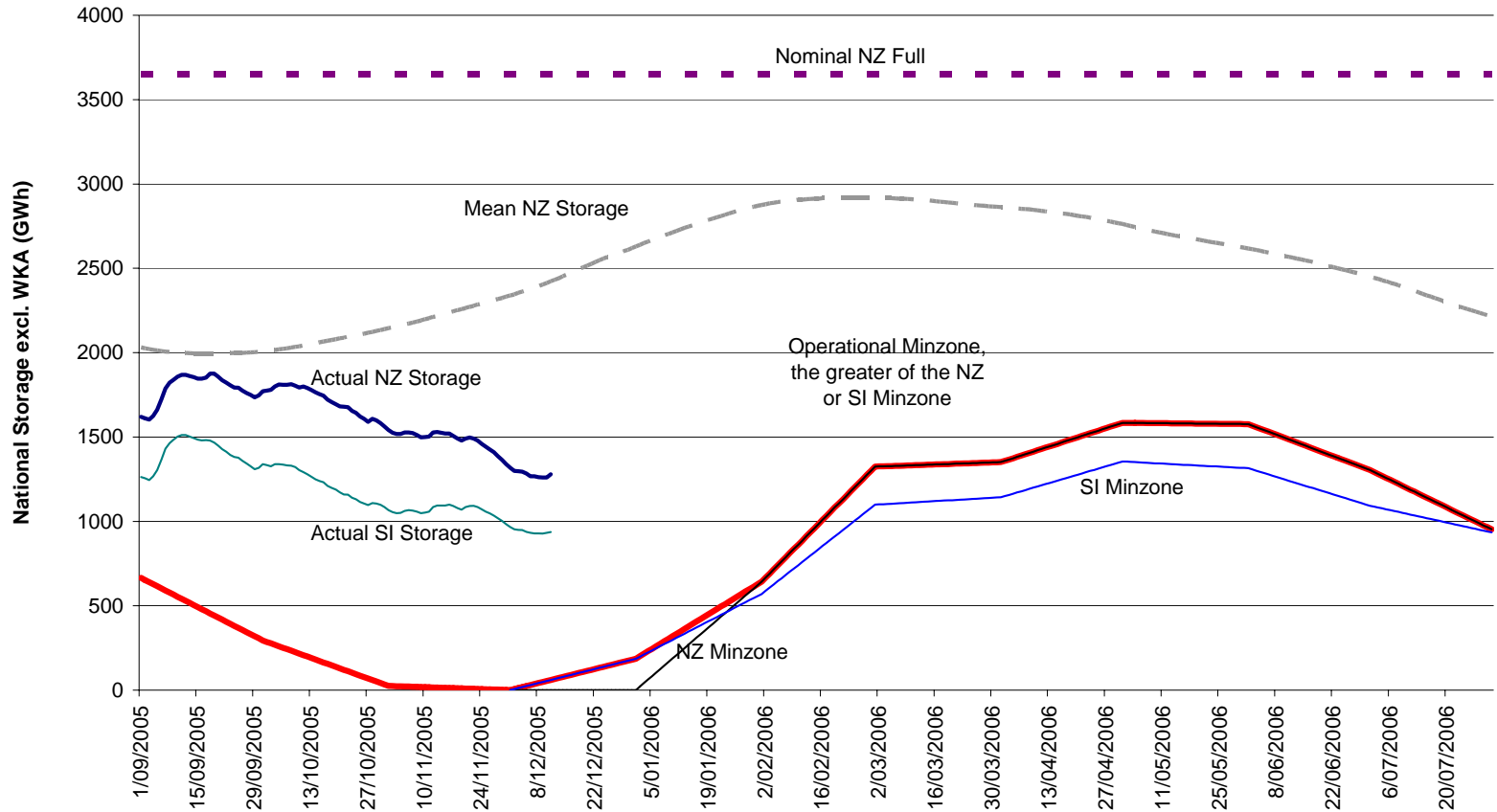
- Hydro storage is currently 52% of mean for this time of year
- South Island lakes are at 45% of mean
- Low inflows are predicted
- 2006 always predicted to be tight on supply

Status of Current Storage

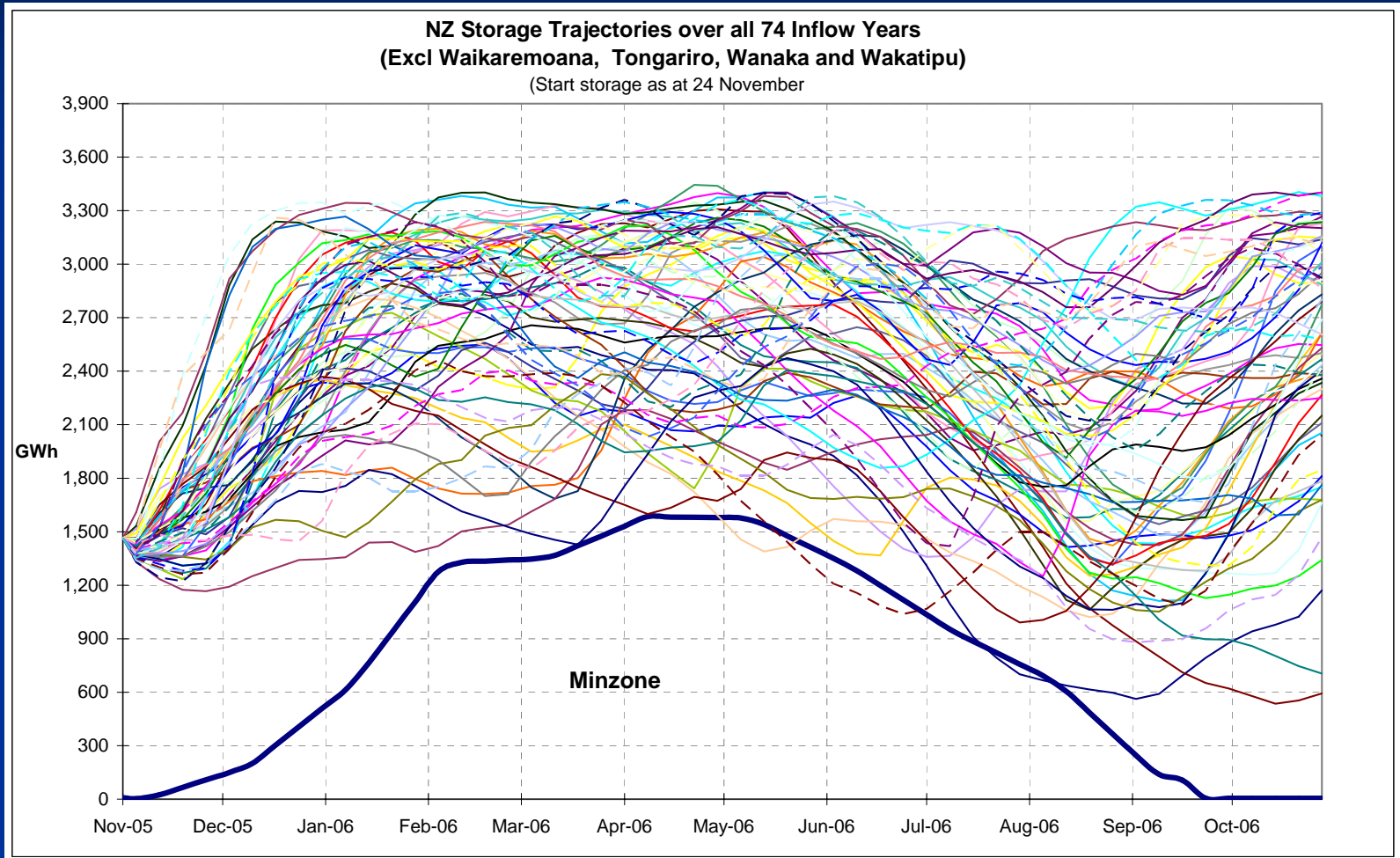
NZ Minzone Guideline for Sep 2005 to Aug 2006 (Incl Whirinaki)

Taupo, Tekapo, Pukaki, Hawea, Te Anau & Manapouri

11 December 2005



Simulated Storage Trajectories



2006 Summary

- Low lake levels, but it is early in year
- Analysis still shows demand will be met
- High wholesale prices
- Whirinaki running
- Security risk much lower for 2007

Transmission Investment

Transpower

- Owner and operator of national grid.
- Transpower proposes Grid Upgrade Plans (GUPs) to Commission
 - GUP contains proposals for transmission upgrades (including proposed 400kV Whakamaru-Otahuhu)
- Commission considers GUP against Grid Investment Test (GIT)
- Transpower must follow RMA process. Commission not involved in that process

Why Is Commission Involved?

- Load in Auckland growing
- Solution needed to meet peak demand by 2010
- Transpower requires Commission approval to pass costs of investment on to its customers
- Commission apply GIT to decide if Transpower's proposal is best solution
- Commission must analyse other options, including generation and demand-side alternatives

Transpower's 400 kv Proposal

- From Whakamaru to Otahuhu
- To serve Auckland peak loads
- Pylons up to 67 metres tall
- \$500 million cost, plus or minus
- First of major grid upgrades
- Intention to build by 2010
- First line in NZ to seek exclusive corridor

Alternatives

- Transmission alternatives
 - Other voltages, HVDC, use of existing pylons
- Generation alternatives
 - Peaking turbines, major new generators, small generators
- Demand-side alternatives
 - Gas conversion, insulation, CFLs, load shifting, major retrofits

Summary and Next Steps

- Assessment of “short short-list” now underway (generation, demand-side, and transmission alternatives)
- Comparison of short-listed alternatives and Transpower’s proposal (January 2006)
- Draft decision on Transpower’s proposed 400kV project (February/March 2006)
- Consultation (March/April/May 2006)
- Final decision (June 2006)

Electricity Markets

Electricity Markets

- New Zealand has competitive wholesale and retail markets
- Wholesale market: 240+ nodes, trading every half hour
- Retail market: every customer can choose supplier

Working Markets?

- Good level of investment in generation
- Prices very unstable in wholesale market
- Little trading outside of half-hourly market
- Regional retail markets have developed
- Retailer competition for load (customers) is poor
- Customers bearing risk
- No independent generators or retailers

Market Evolution

- Diagnosis and treatment difficult
- Hedge Market Development Steering Group working
- Study of market structure weakness completed
- Study of market structure solutions completed
- Study of competition by Commerce Comm.
- Demand side efforts
- Commitment to make markets work

Conclusion

- Electricity system is sound
- Security of supply probably OK, but 2006 risk is increasing
- Auckland 2010 supply a major focus
- Generation investment appears sufficient
- Markets not operating as they should

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