



National Power Conference

Meeting Auckland's Energy Needs

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“... Much of the region’s infrastructure is reaching design capacity and needs upgrading to meet increasing demand ... There will need to be new and improved infrastructure to accommodate growth to 2050. Over \$7 billion will need to be spent in the first 25 years for water supply, drainage and transport alone....”

*Auckland Regional Growth Strategy 2050*

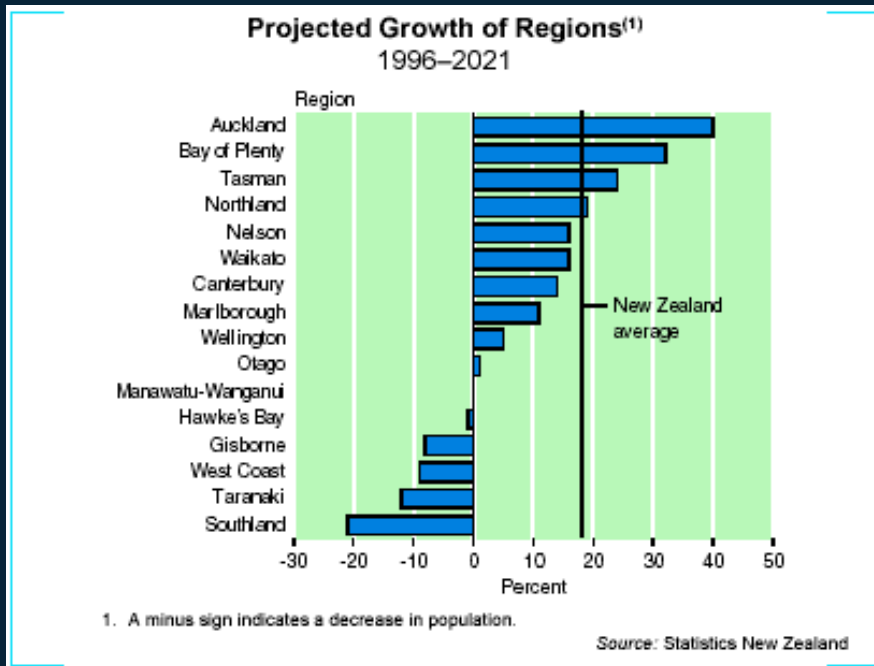
## This presentation ...

- How Vector sees it
- Upper North Island growth
- Supply security implications
- Demand management
- Investment

## How we see it ...

- The issue is recognised – the question is risk tolerance
- Peak demand headroom is shrinking
- An N-G-1 event could see supply shortage
- Common approach is required
- Transmission capacity reinforcement is inevitable

# Upper North Island Growth



“For the past 12 months the Auckland region has been growing at an average of 71 people every day, or one person every 20 minutes – a new North Shore city in the Auckland region every eight years...”

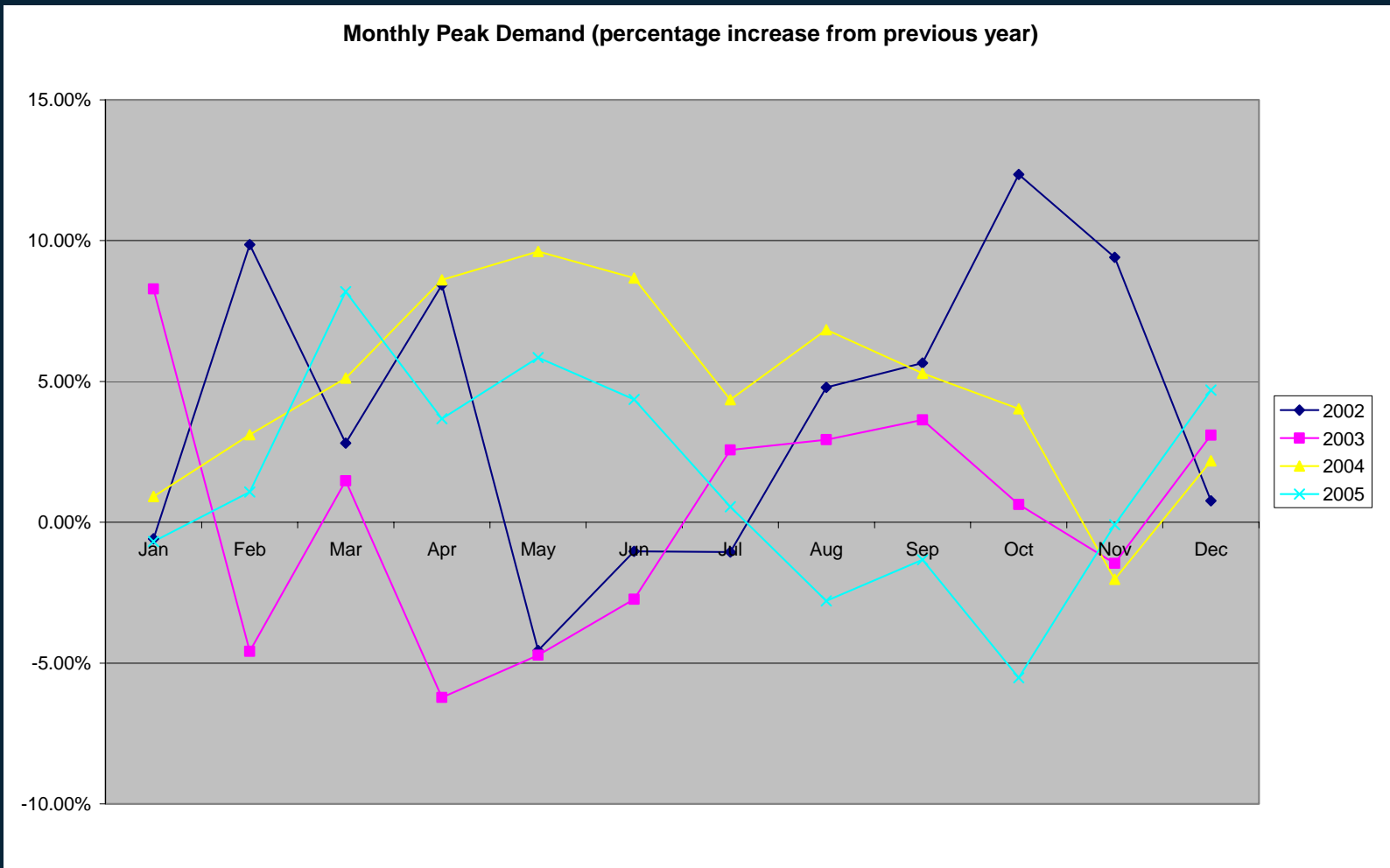
“To accommodate this increase in population requires 24 new households every day, or nearly 9,000 a year....”

“This translates into the need for more than 1000ha of additional land a year at today’s urban densities.”

# Albany City – a new business centre



# Peak demand by month



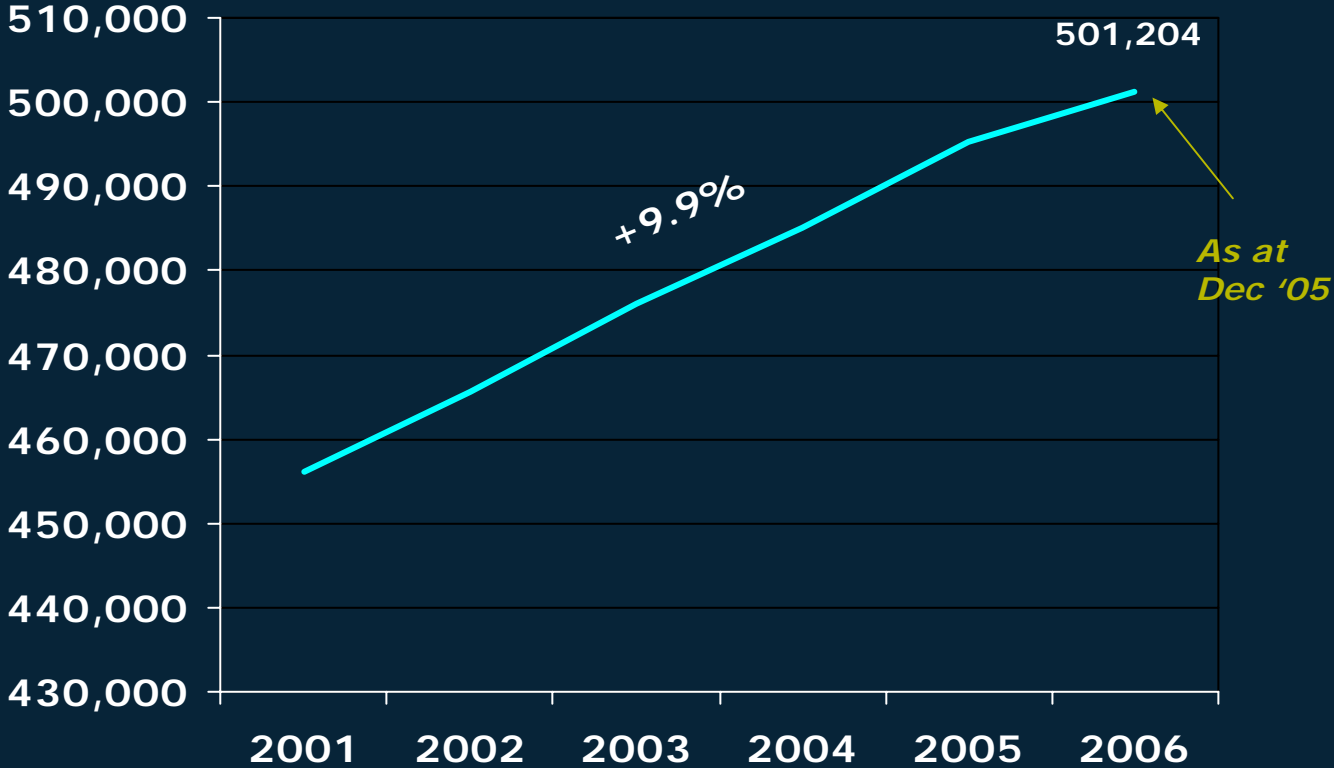
## Energy supply security

- Energy supply security is an ongoing issue
- Short-term
  - Auckland electricity supply, dry year risk, mobile generation
  - Electricity transmission investment
- Medium-term
  - Gas transmission investment to support new generation
  - Renewables, smart metering, demand side management
  - Incentives for domestic gas exploration
- Long-term
  - Gas importation
  - Carbon capture and storage

# Networks connections – total

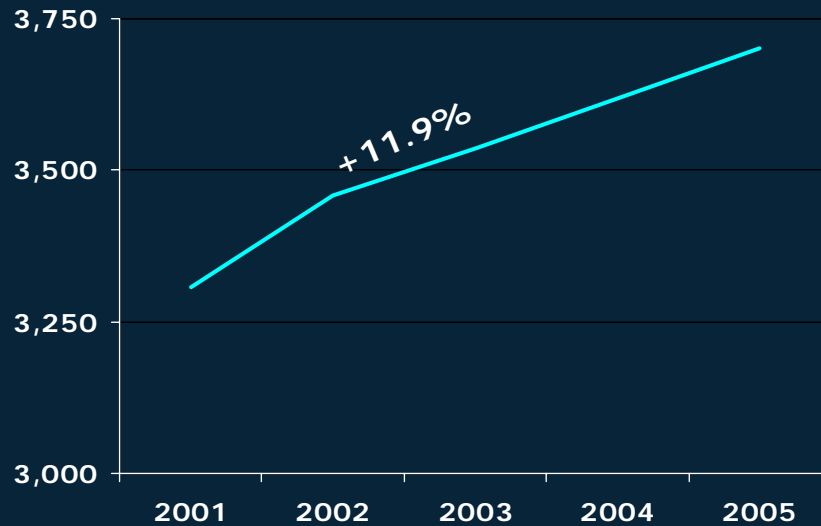


As at 30 June

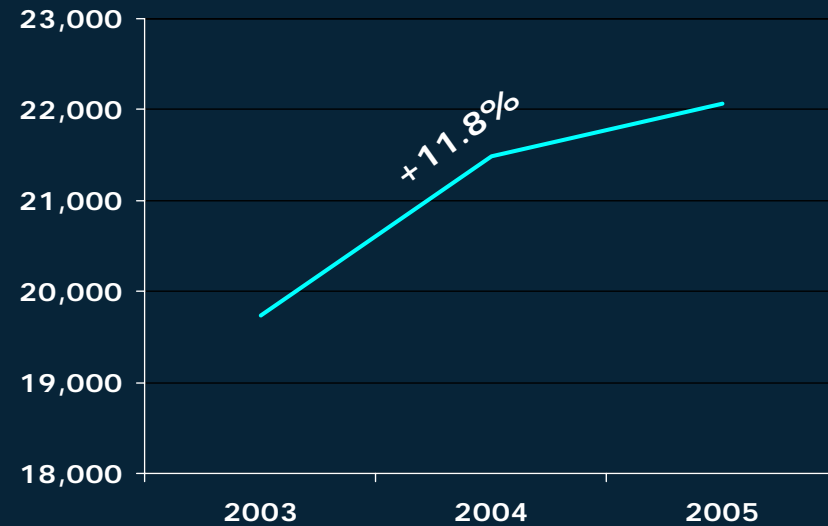


## Networks growth – Auckland region

### Transformer Capacity (MVA)

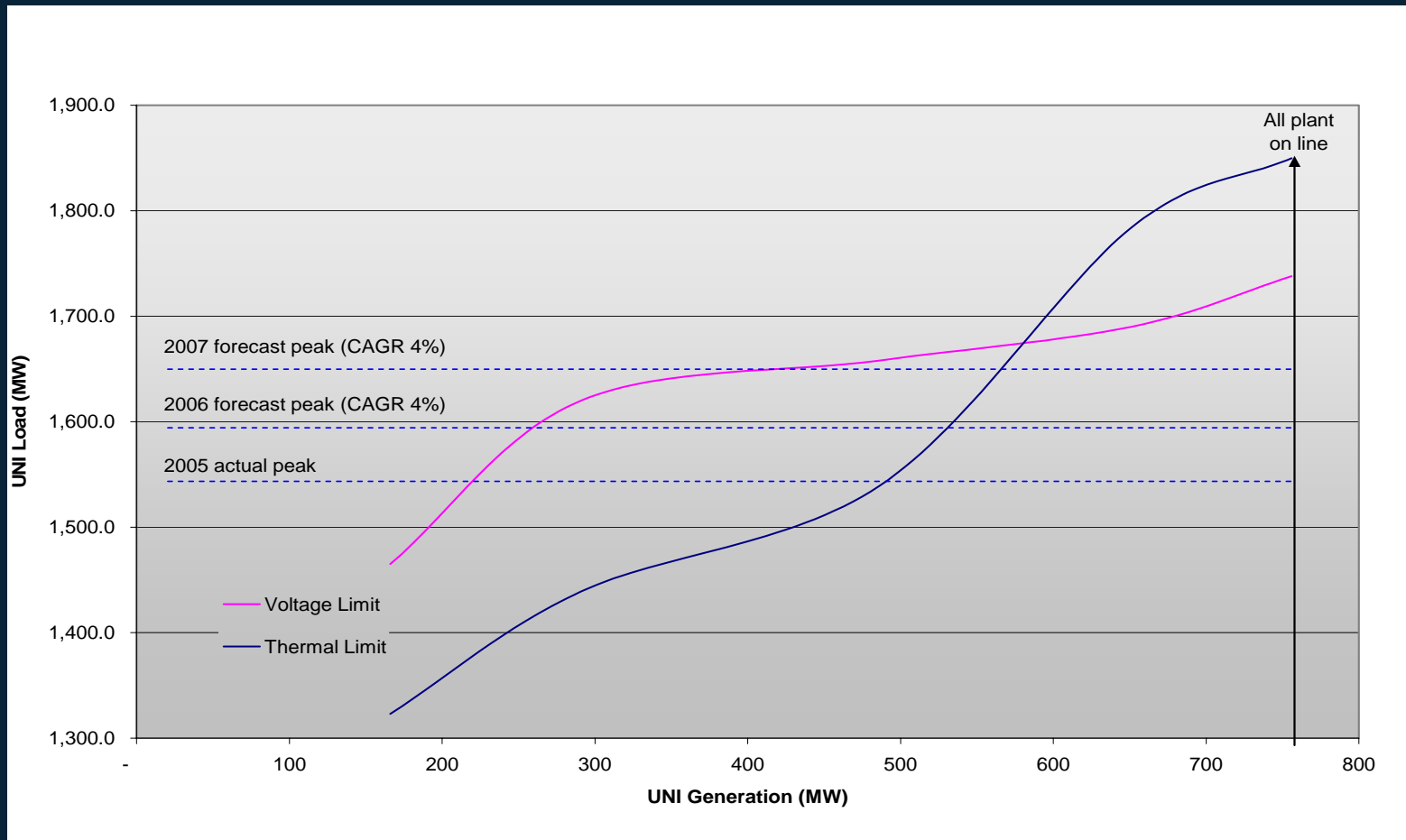


### Network Length (km)

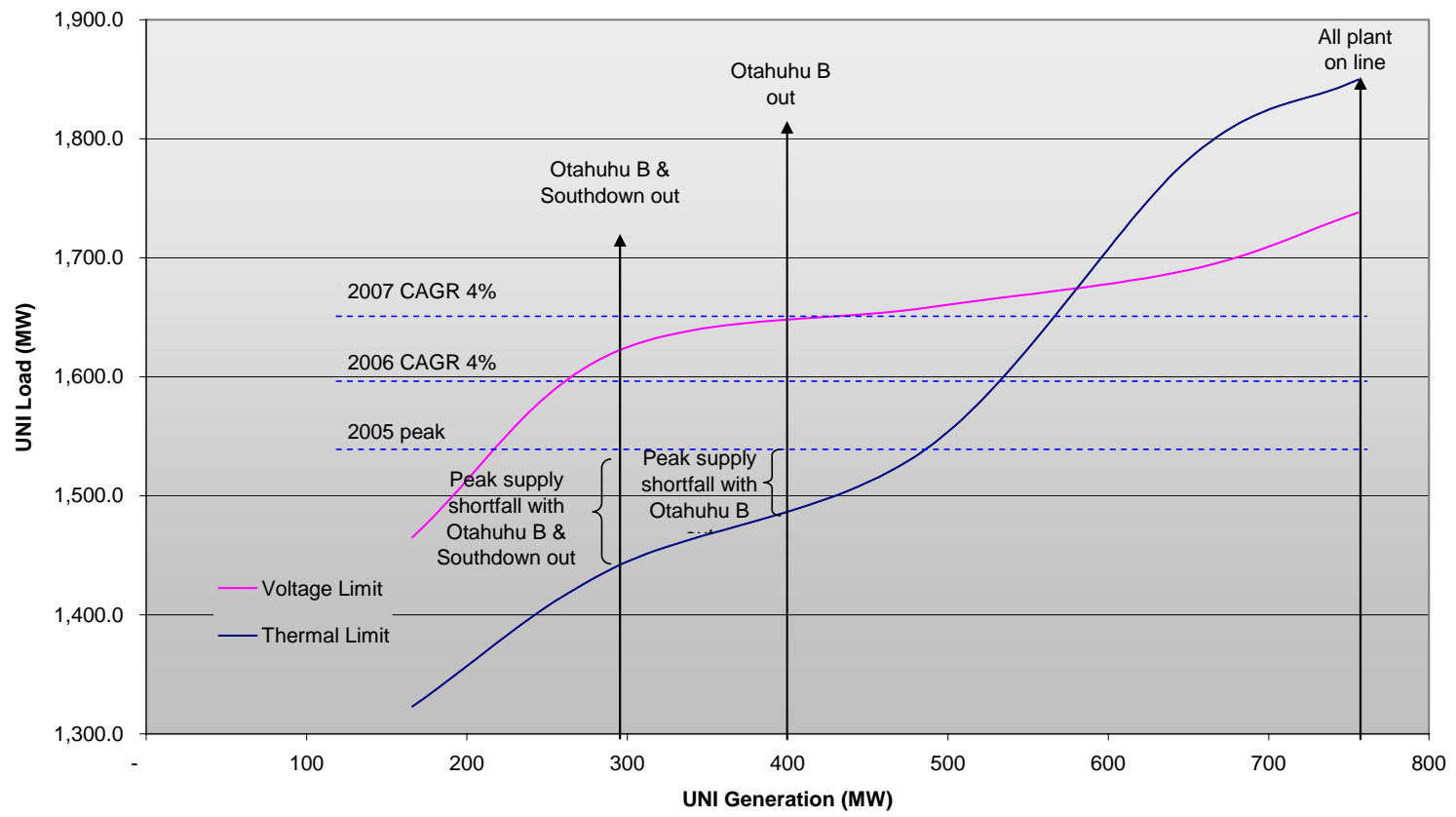


- 4 zone substations built 2001 – 2005
- 16 zone substations planned next 5 years

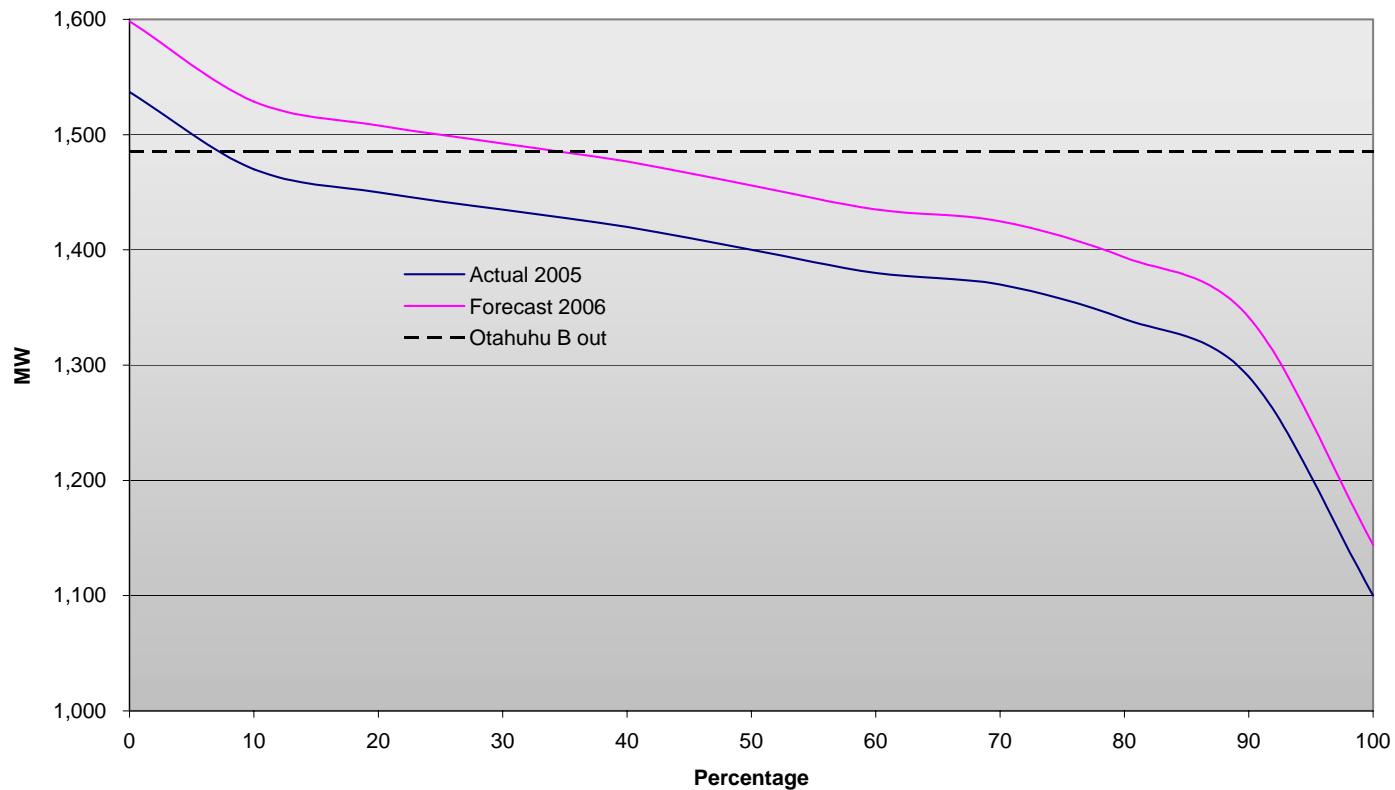
# Upper NI security - summer



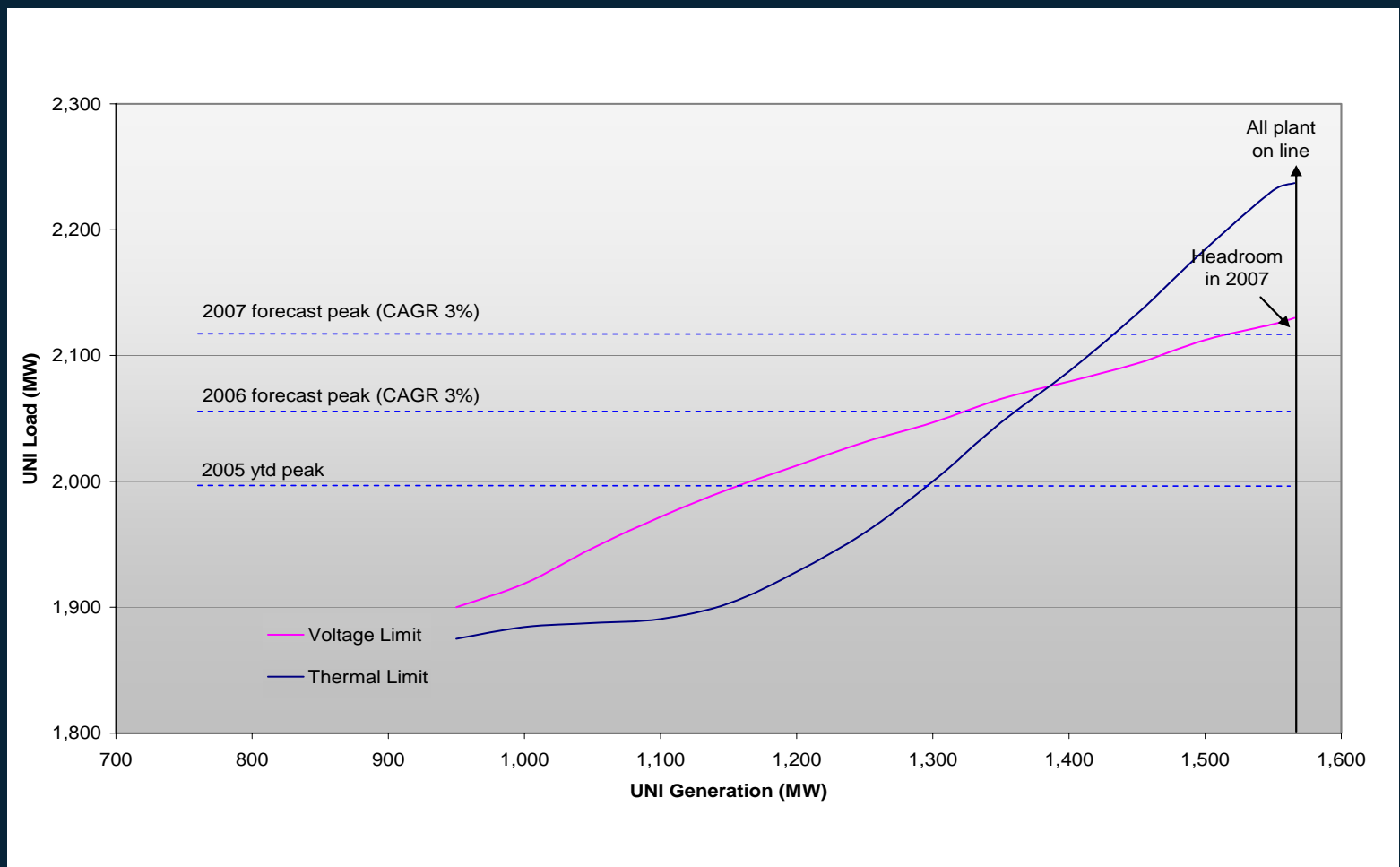
# Upper NI security - summer



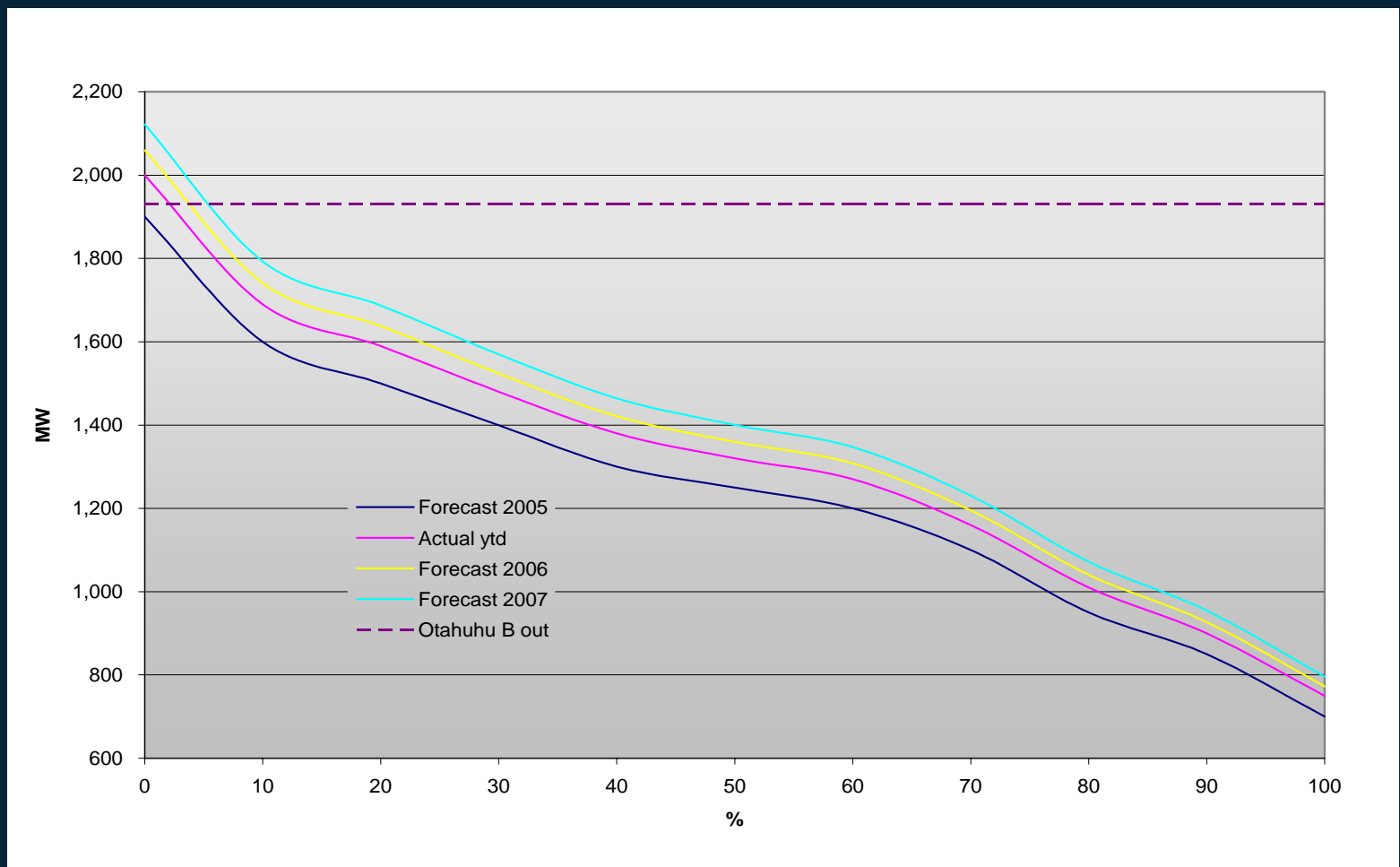
# Upper NI security – summer load duration



# Upper NI security – winter



# Upper NI security – winter load duration



# Demand management ...

Solar



Gas



Smart Metering



Eco Bulbs

## Industry response ...

- Industry is responding with a range of options under consideration
- Should security standards be based on consumer risk tolerance?
- Will the solutions be ready in 2010?
- Is the investment climate right for infrastructure investment?

## Investment policy issues

- Who can best manage investment risks?
- Are asymmetric risks and options valued?
- Should risk-takers bear the gains and losses of their actions?
- Investment incentives:
  - fiscal tax regime encourages investment to some extent
  - does the regulatory tax regime support the fiscal tax regime?
  - should investors bear the gains and losses of M&A activity?
  - should NZ compete with other jurisdictions for investment?
  - should NZ consider a wider set of incentives, eg regulatory holidays?
  - the role of Government infrastructure bonds?
- How are efficiency gains and losses shared with consumers over time?

## Conclusions

- Growth eroding capacity headroom
- Demand management will help but only defers necessity for transmission upgrade
- Risk tolerance must match consumers reasonable expectations

Questions?