

NZ Energy Balance

NZ Petroleum Conference

6th March 2006



McDoUALL STUART

NZ Energy – In The Balance

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Energy – In The Balance

2004 Conference Presentation

“Once a Challenge, Now a Crisis”



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Energy – In The Balance

2004 Conference
“Once a Challenge,
Now a Crisis”

Will the Lights Go
Out?

Conclusion

1. Has the government done the modeling I suggest?
2. Are the government energy policy is realistic?
3. Are my scenarios unrealistic?
4. Is LNG a better option than domestic gas?
5. Can, and should, the government do more?
6. What risks should the government take?
7. Will the lights go out?



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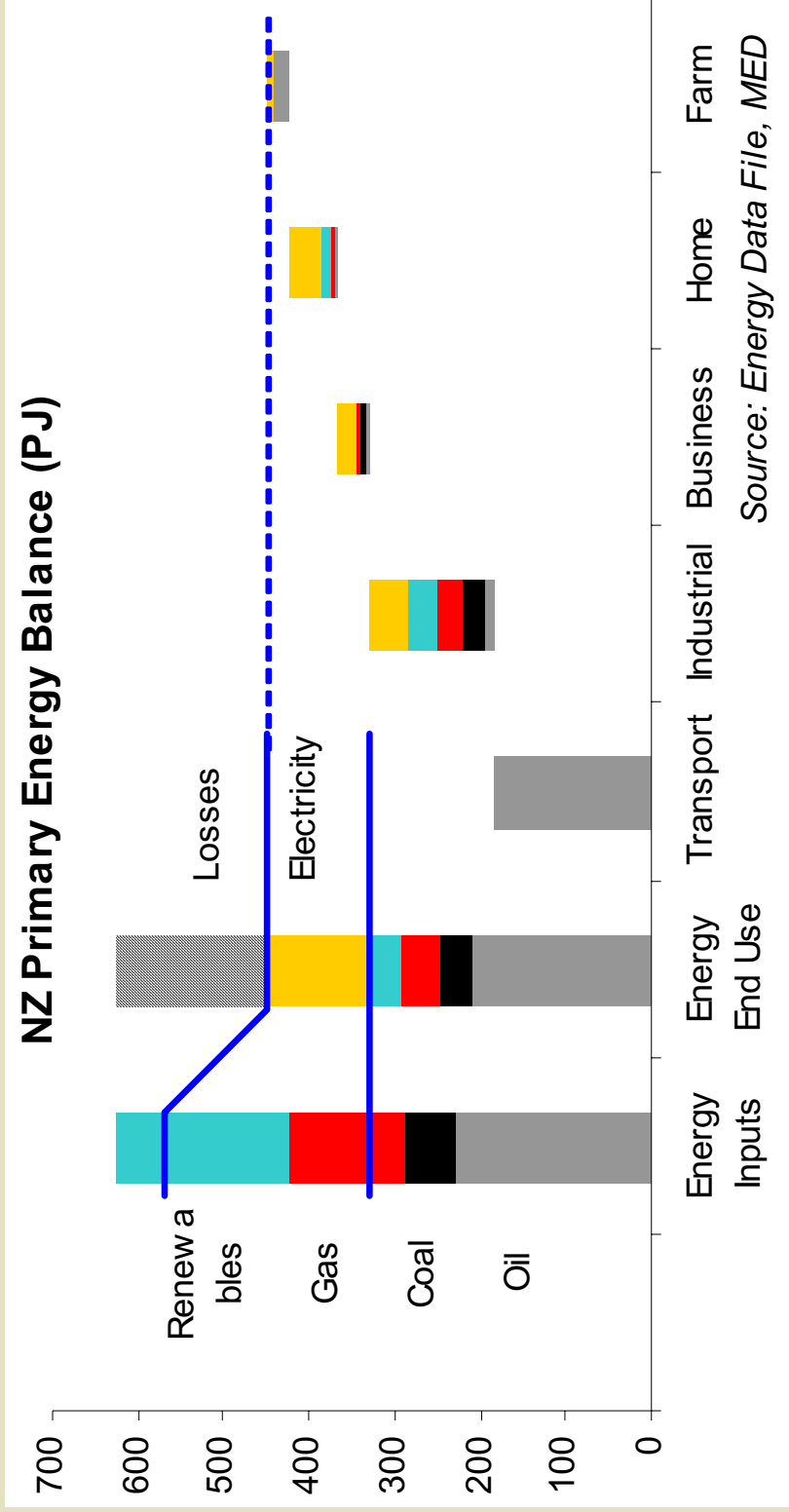
Energy – In The Balance

Issues to cover

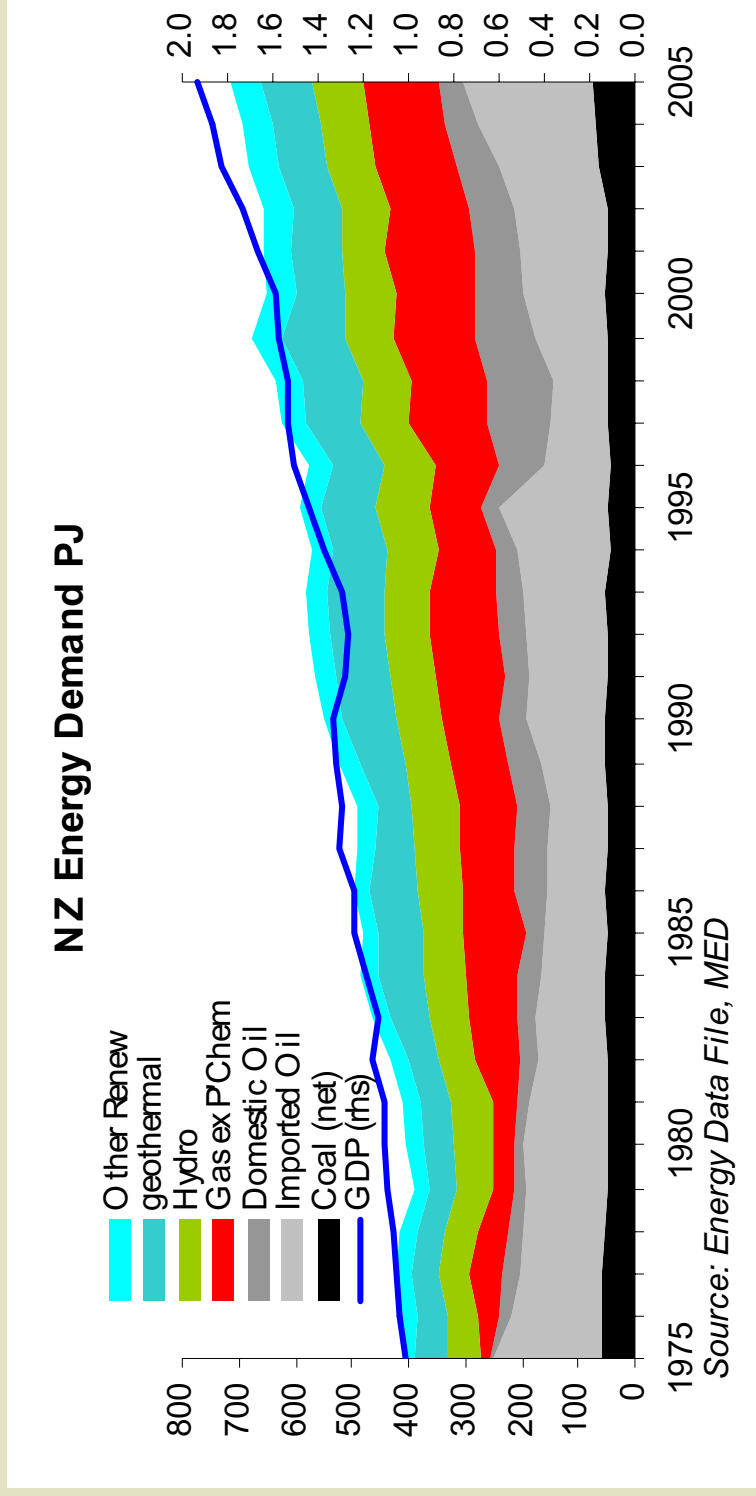
- Security of supply (investment)
- Cost of energy (domestic and imported)
- Economic consequences
- Conclusions



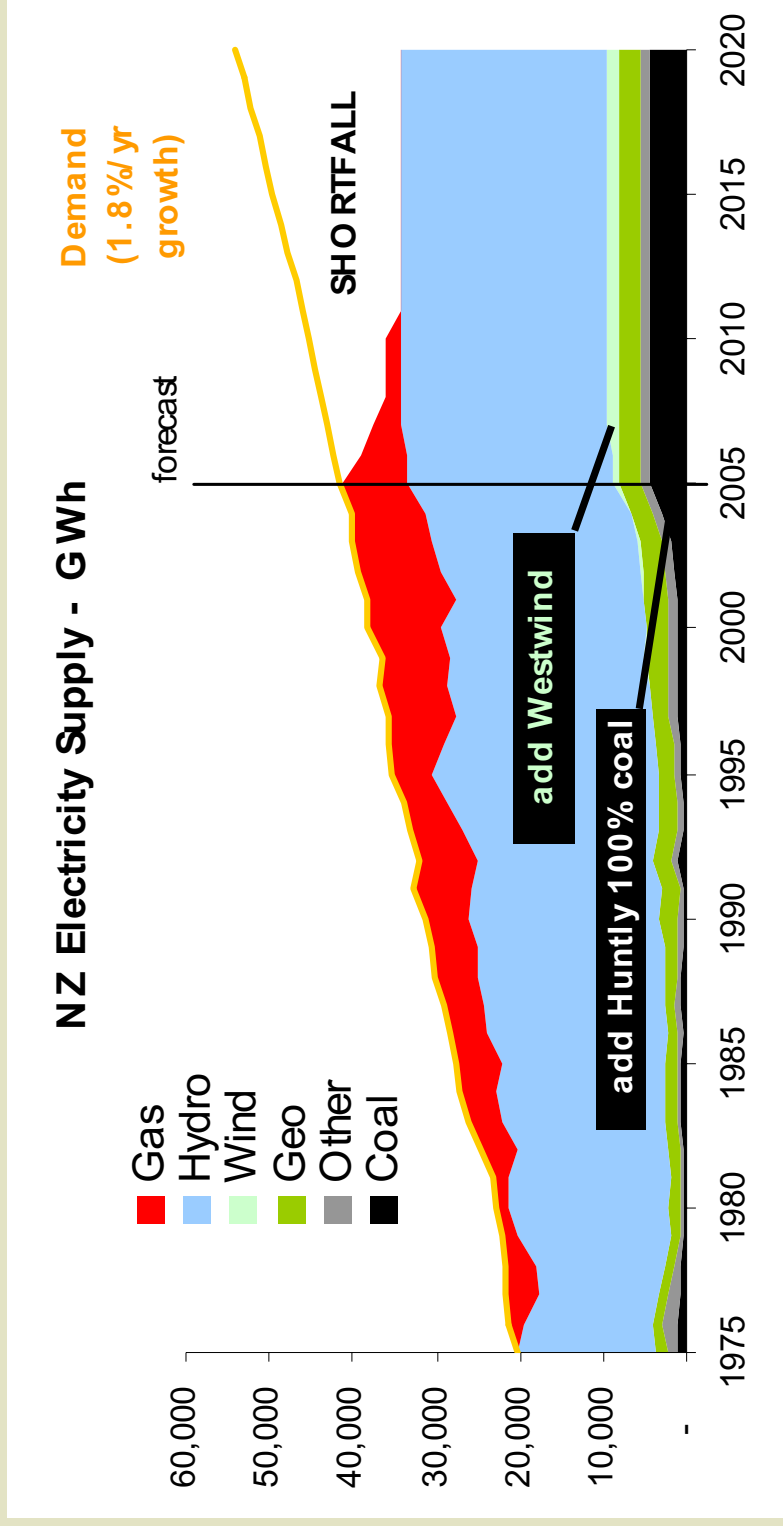
Energy – Supply



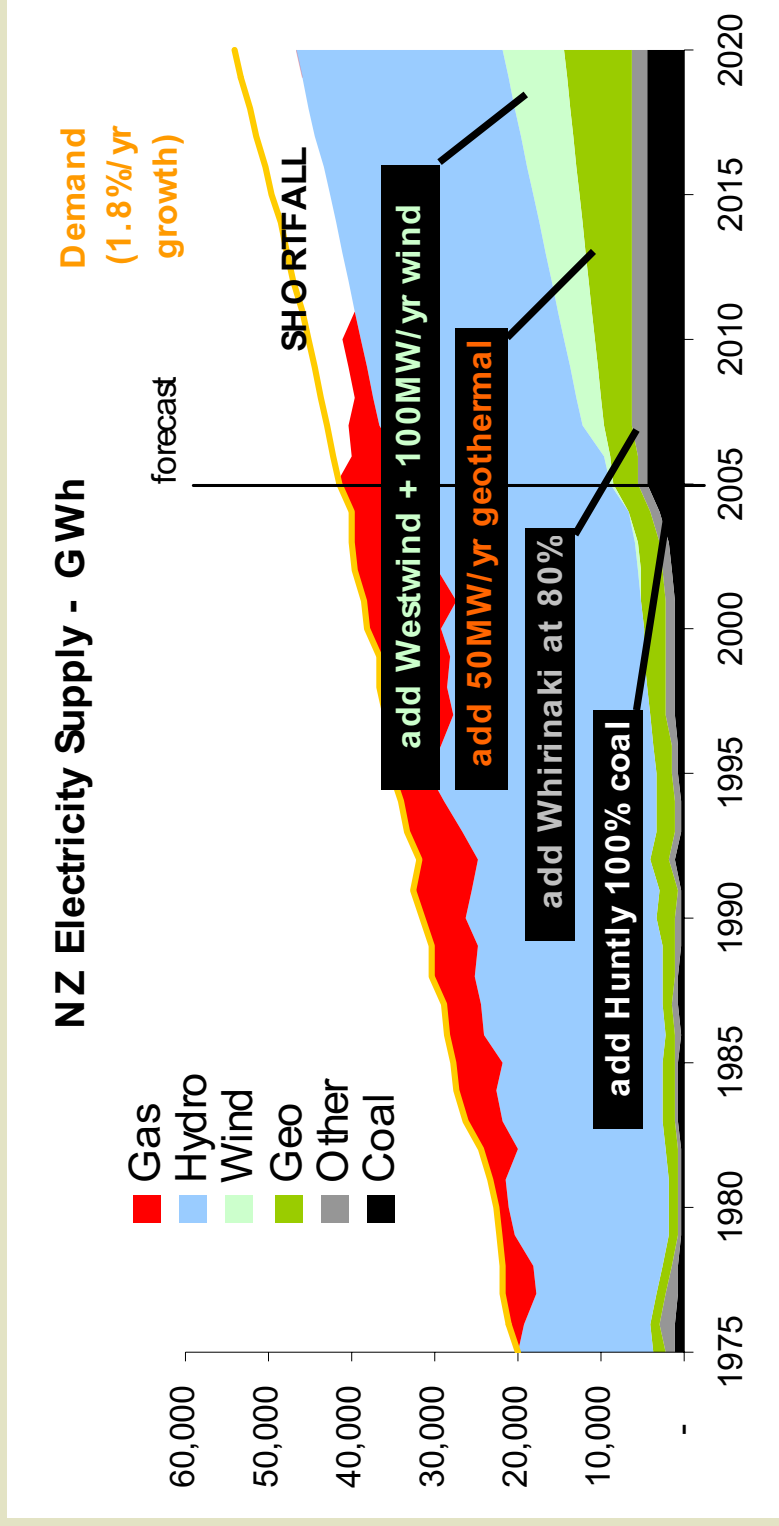
Energy – Supply



Energy – Supply

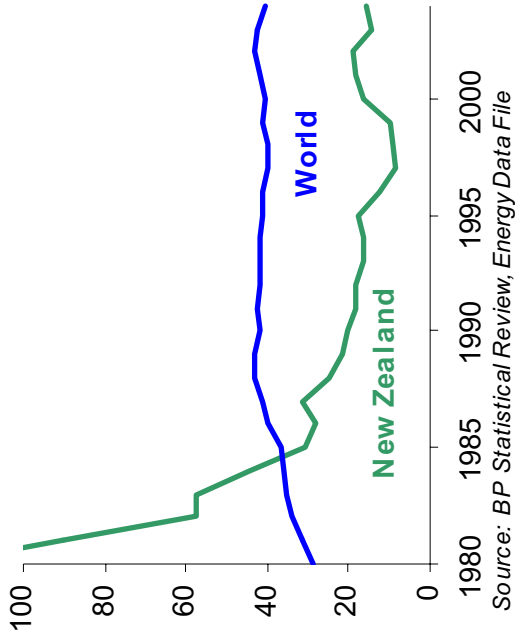


Energy – Supply

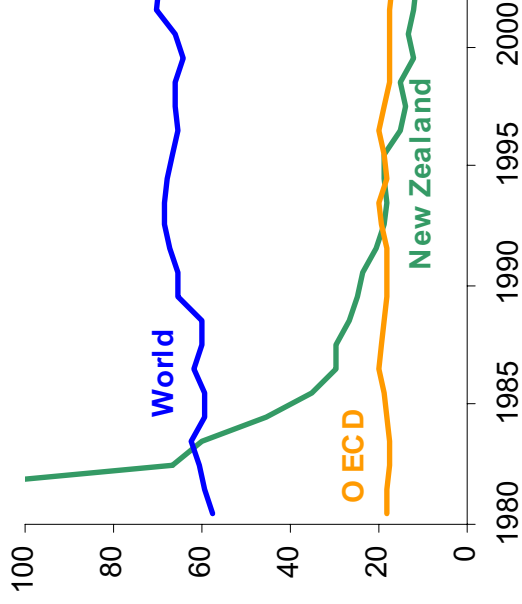


Energy – Supply

Oil Reserves Life - years

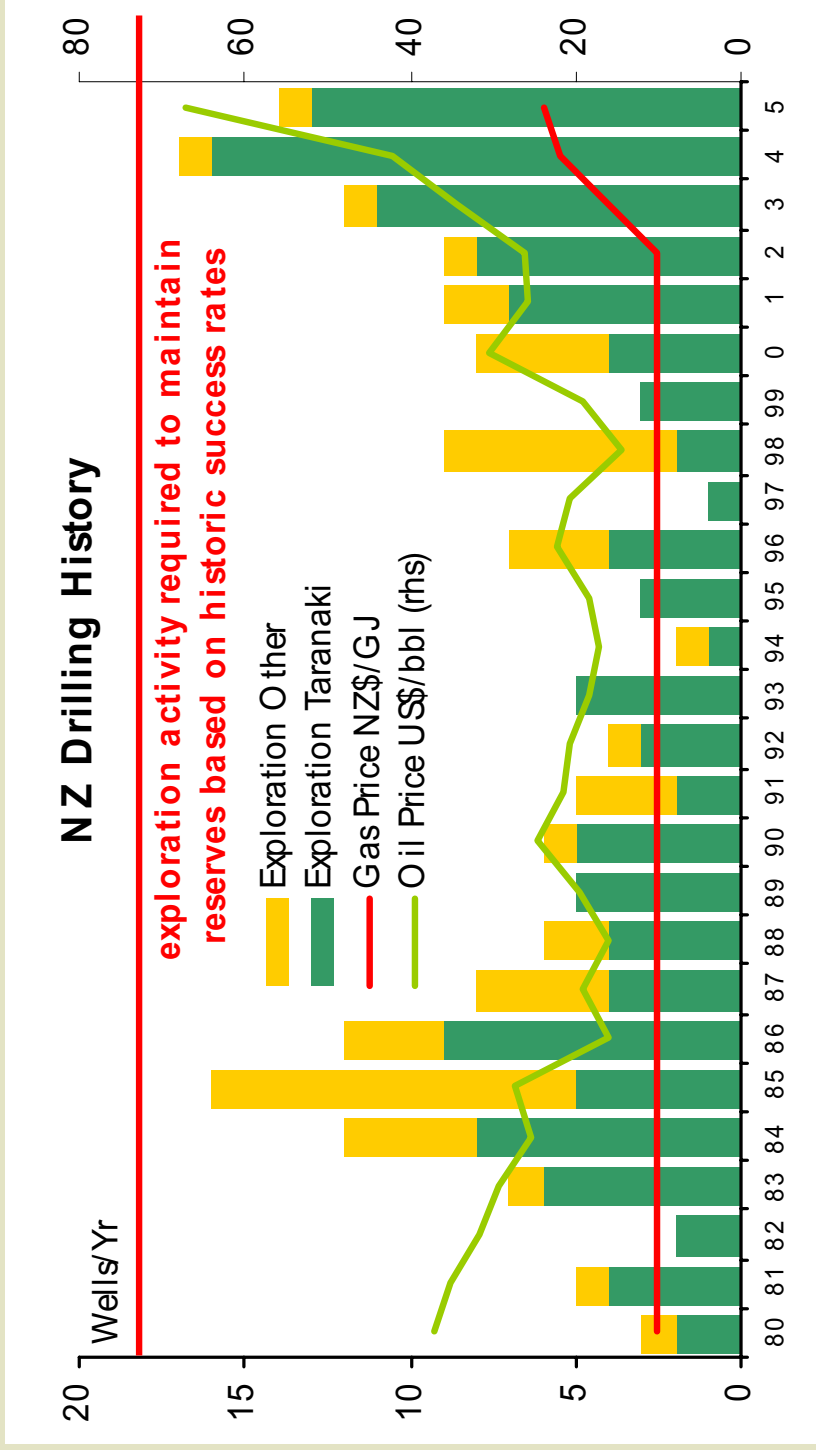


Gas Reserves Life - years

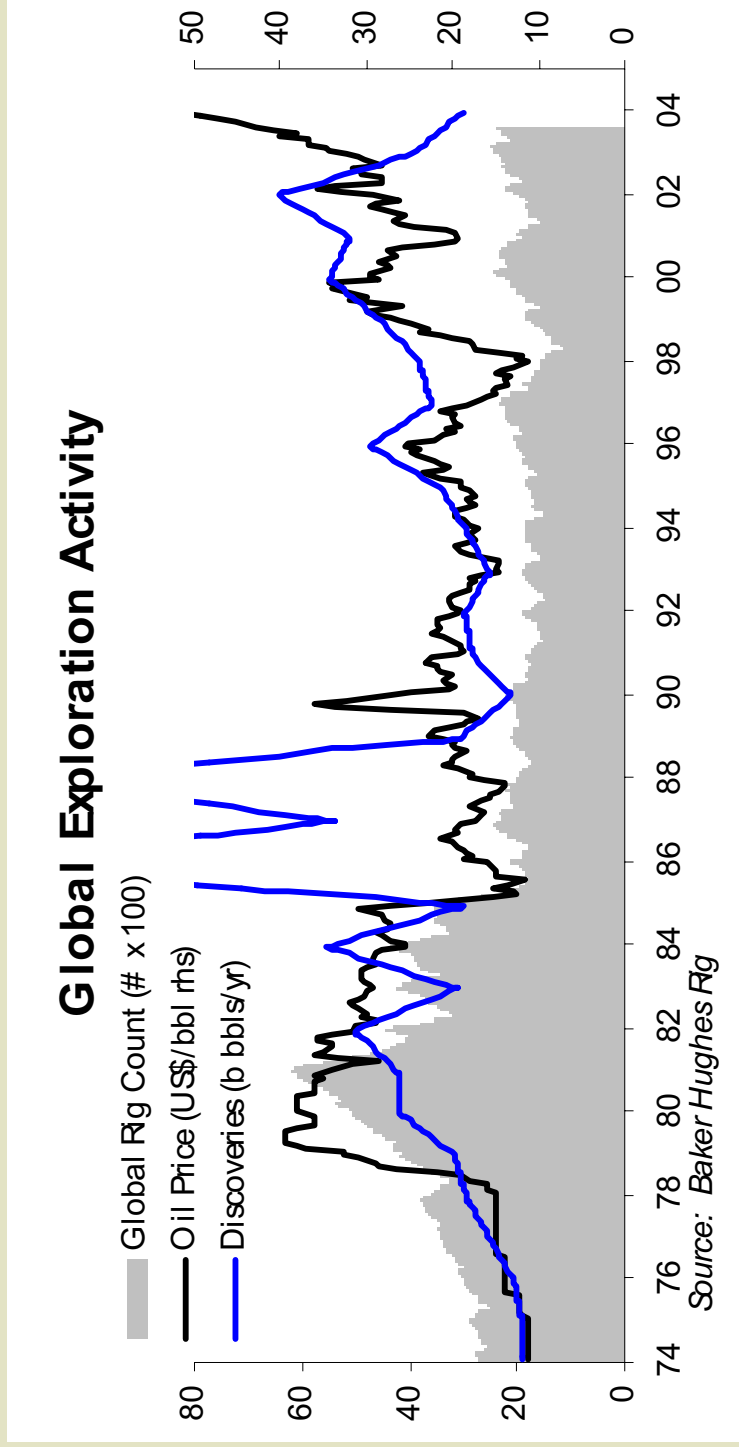


Source: BP Statistical Review, Energy Data File

Energy – Supply



Energy – Supply



Energy – Supply

Options for meeting future needs

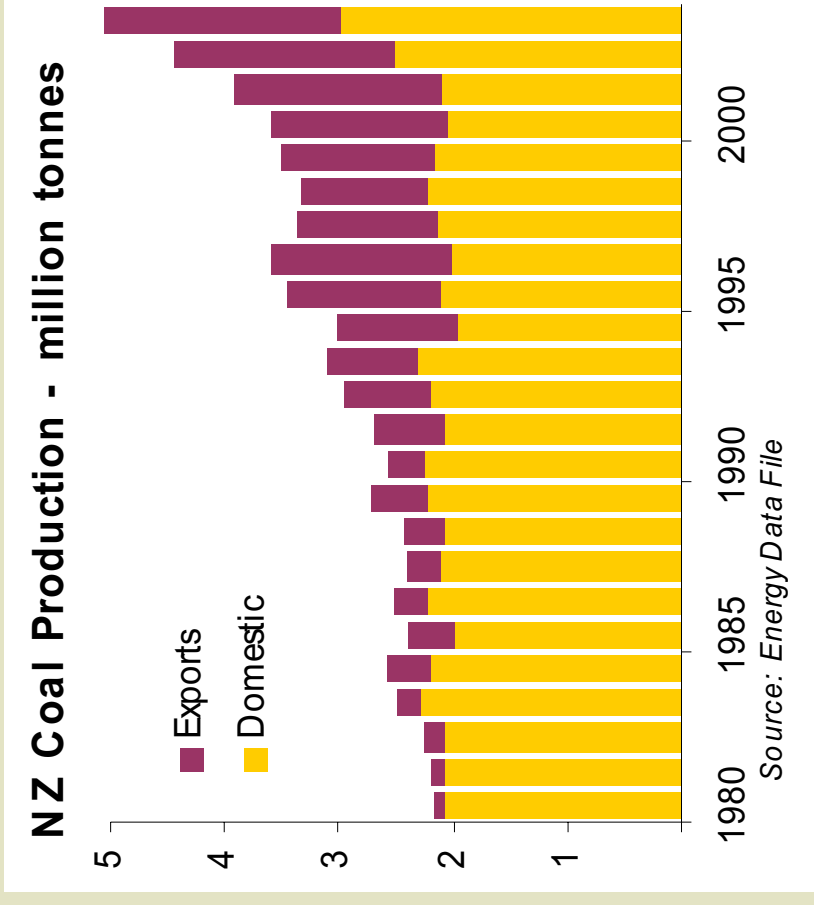
- Renewables – opportunity, but not benign
- Oil – a transport fuel, not used in industry
- Gas – a big step to import LNG or CNG
- Coal – huge opportunity, but enviro concerns
- Efficiency – it comes at a cost
- Conservation – buy your sweater today



Energy – Supply

Coal

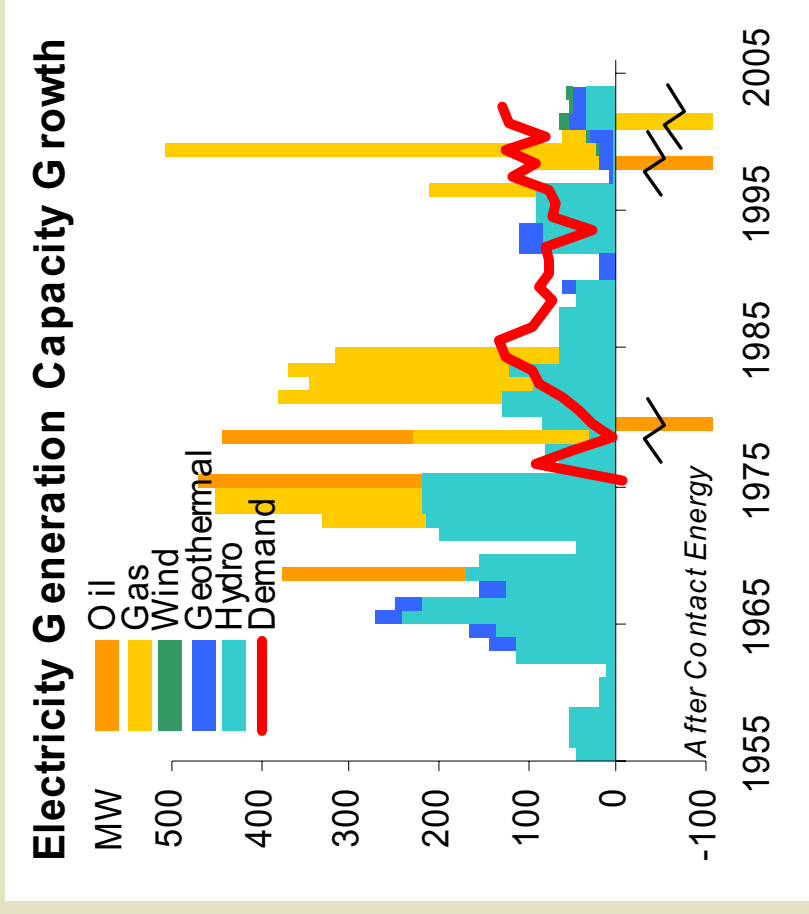
- Domestic use flat
- Huntly now burning imported coal
- Exports growing
- Huge reserves – >200 years
- Barriers to growth – commercial? real?



Energy – Supply

Electricity

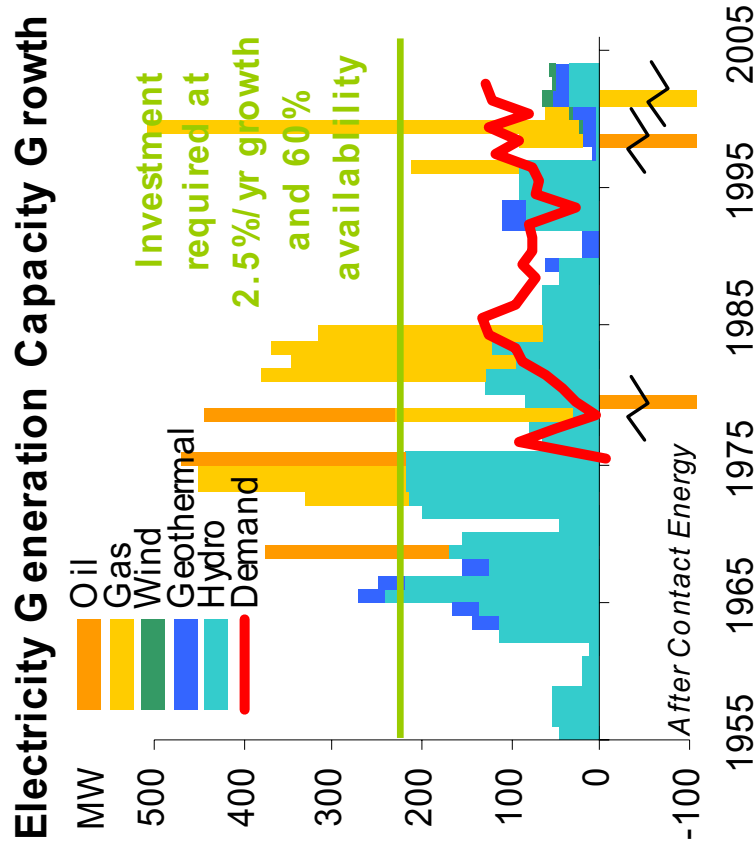
- History of hydro
- Maui drove gas-fired plants



Energy – Supply

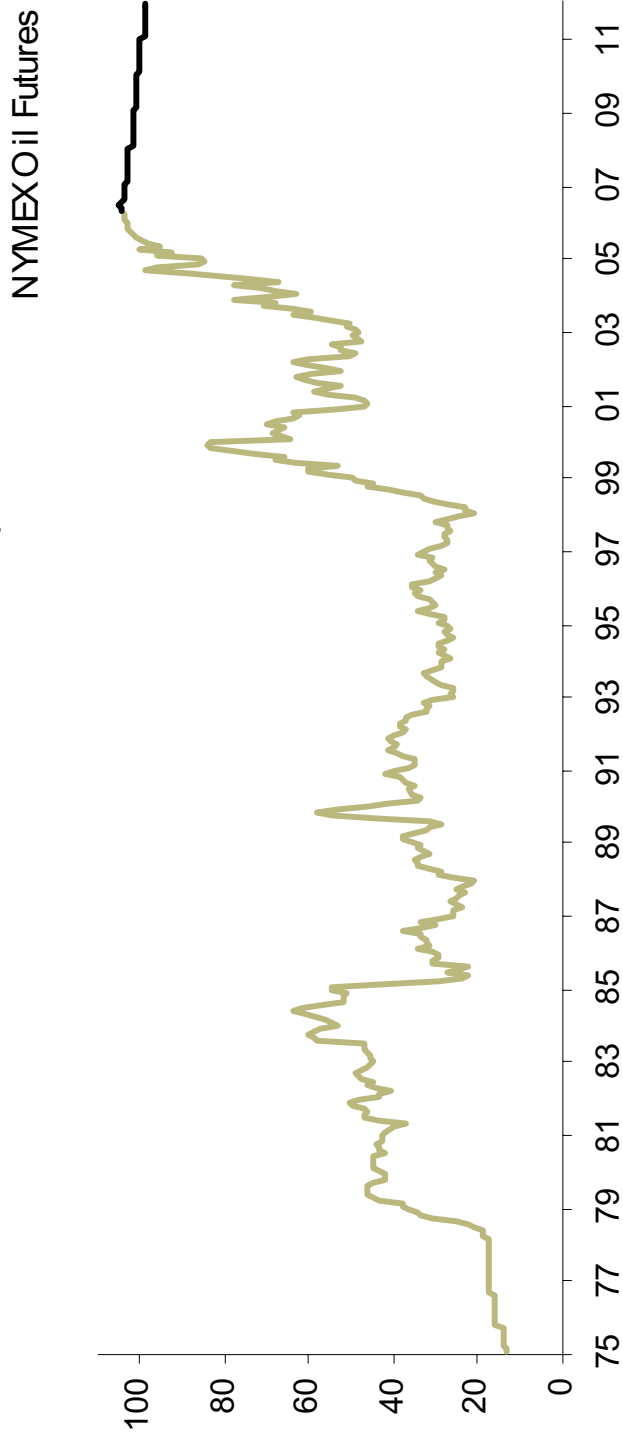
Electricity

- History of hydro
- Maui drove gas-fired plants
- Investment falling well behind demand
- Price (and volatility) rising

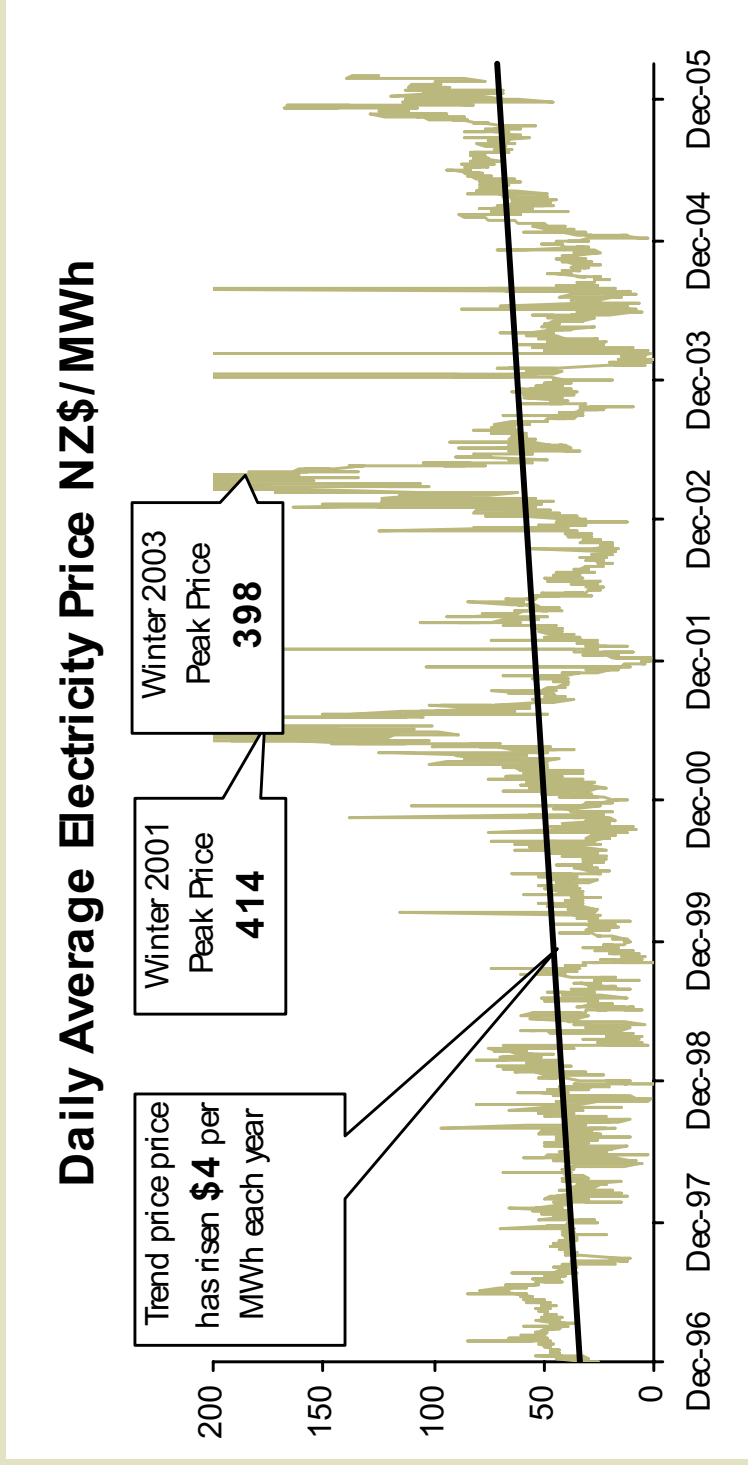


Energy – Price

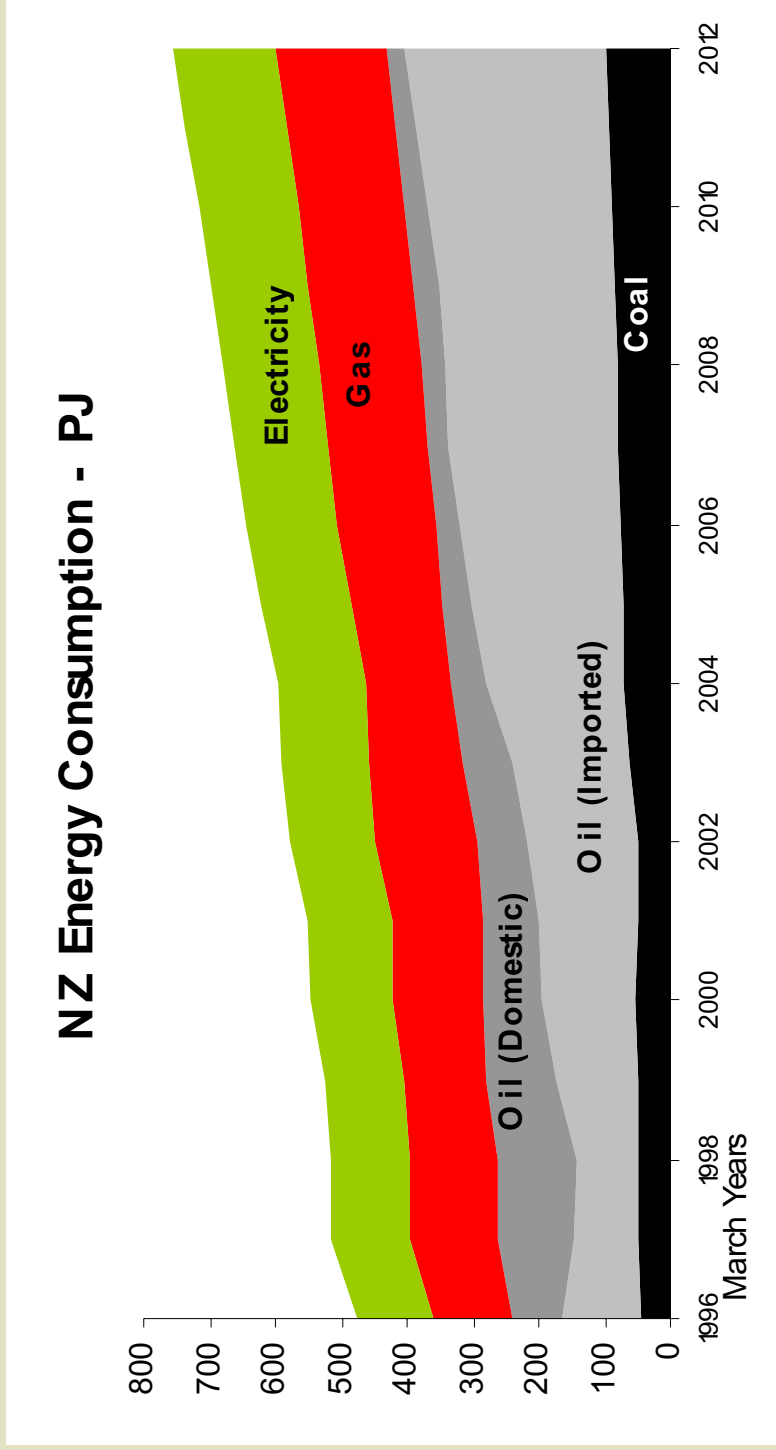
Crude Oil Price - NZ\$/bbl



Energy – Price



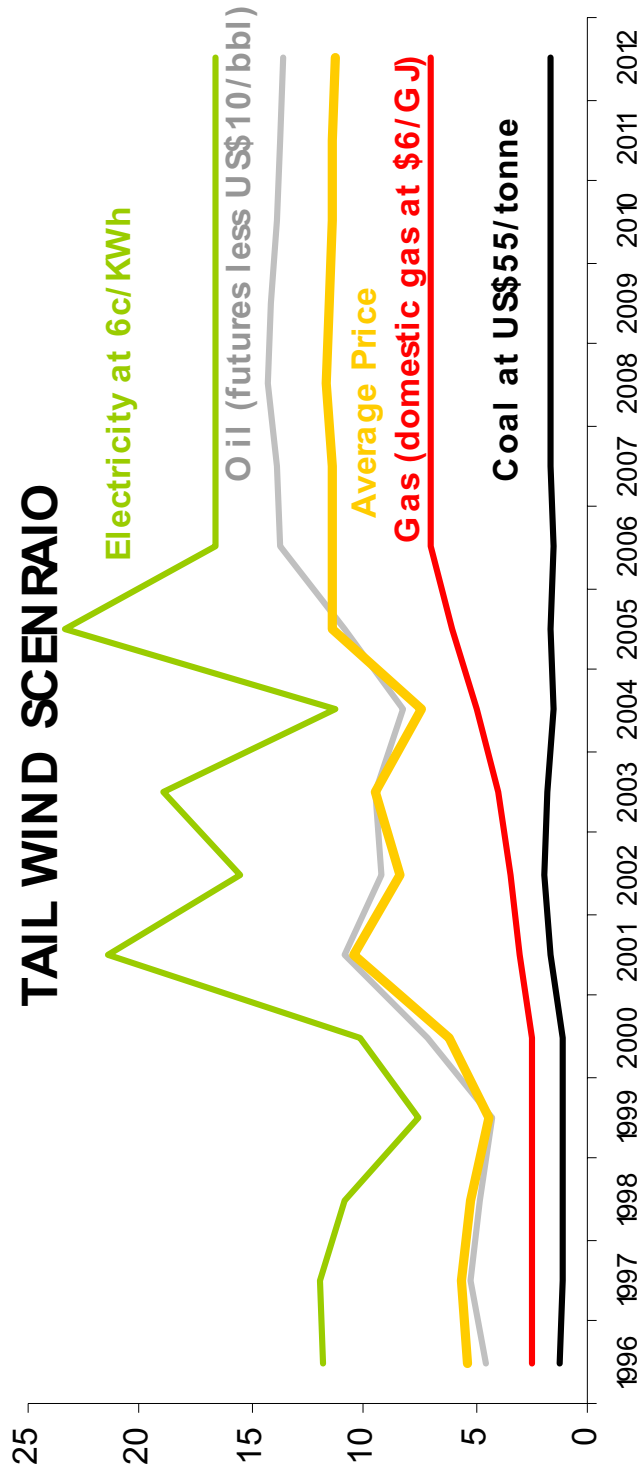
Energy – Economic Cost



Energy – Economic Cost

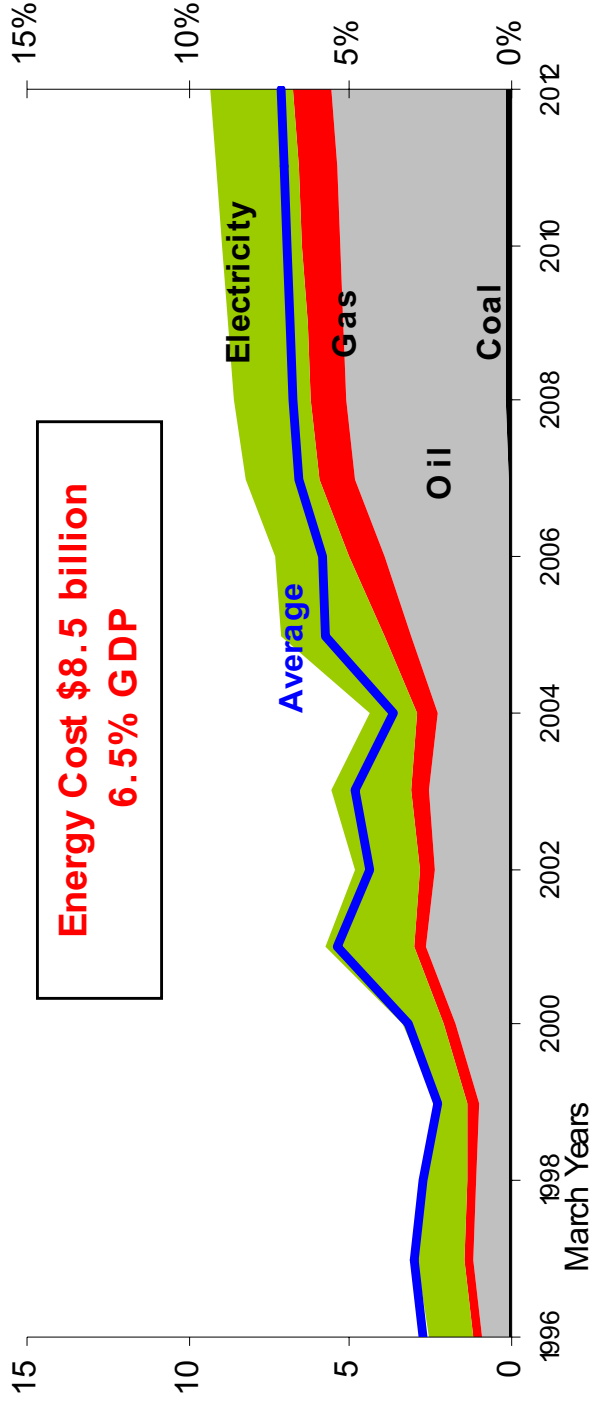
NZ\$ Energy Prices - NZ\$m/PJ

TAIL WIND SCENARIO



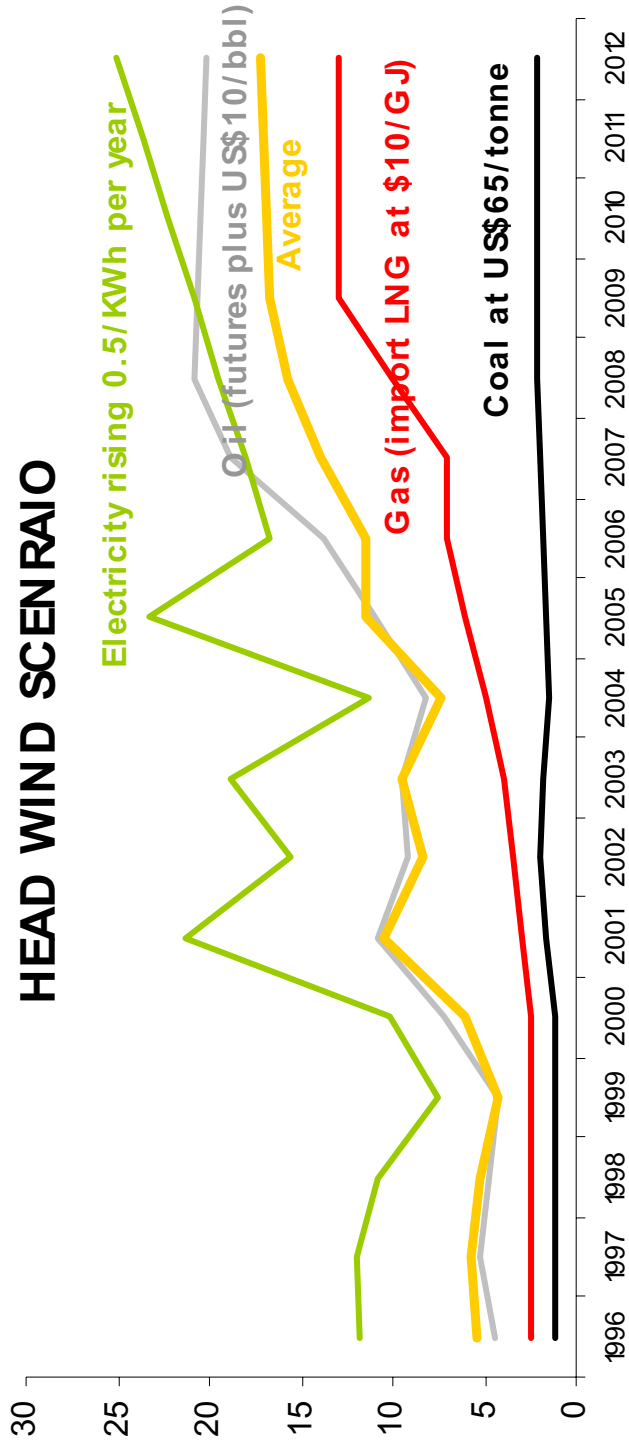
Energy – Economic Cost

NZ Energy Consumption - NZ\$ billion
TAIL WIND SCENRAIO

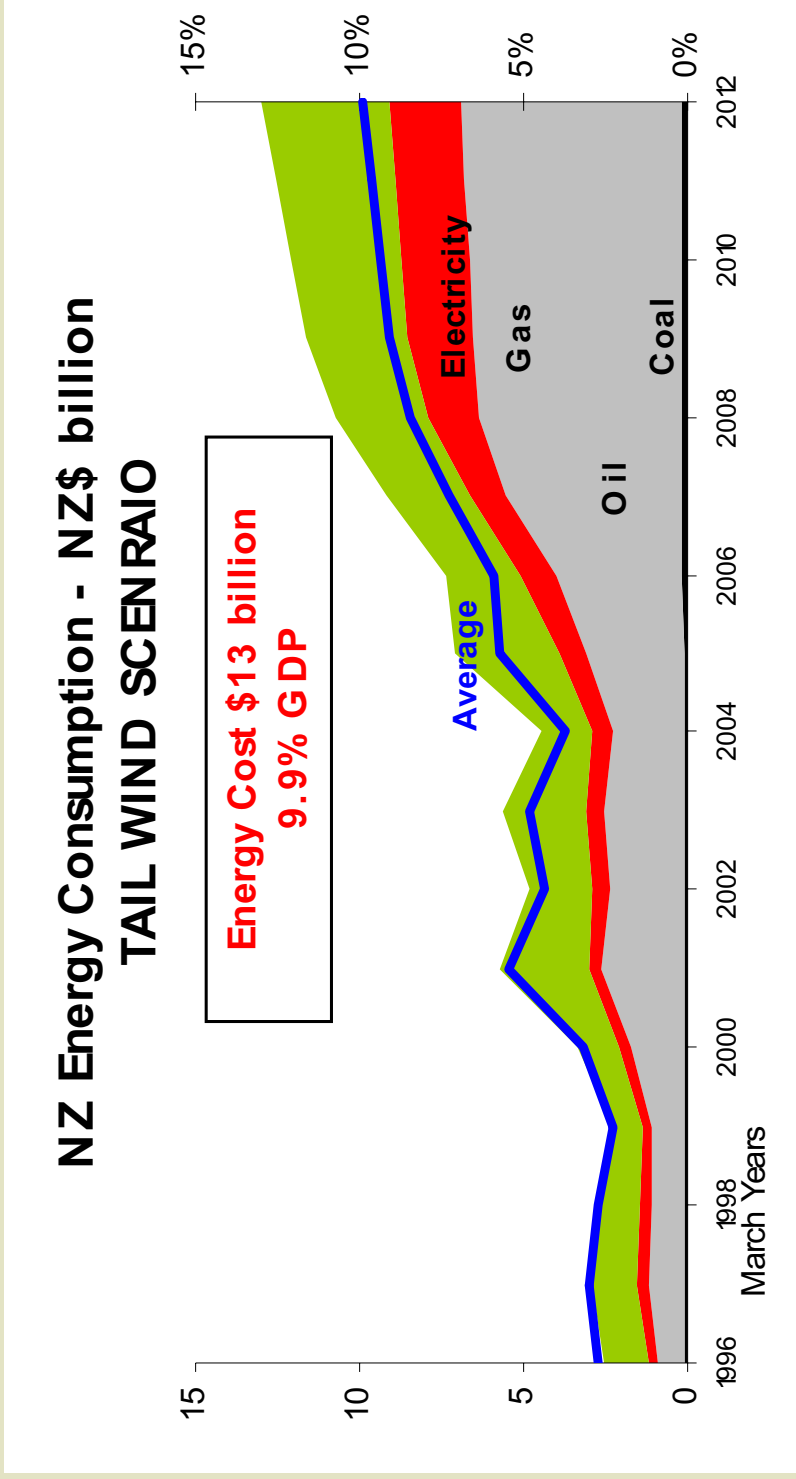


Energy – Economic Cost

NZ\$ Energy Prices - NZ\$m/PJ
HEAD WIND SCENRAIO



Energy – Economic Cost



Energy – Economic Cost

NZ is investing far too little. Why?

- Commercial risks too high (market access not assured)
- Price too low for threshold return
 - (or perhaps return maximised by not investing)
- Regulatory risks
- Consenting risks – RMA / NIMBY
- Imported solutions are incremental and seem easy



Why We Should Care?

- Priorities in economic planning will soon be exposed
- A power blackout will relegate virtuous environmental issues well behind security of supply
 - Opponents of projects will go from hero to zero
 - The snails will get trodden underfoot

This is not a desirable scenario. We could all just wish for well-communicated, clear, far-sighted planning



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