

# Meeting New Zealand's Energy Appetite

## Energy Federation of New Zealand

Lunch Seminar

14 June 2007

Presented by: Murray Jackson  
Chief Executive  
Genesis Energy

# Responding to the draft New Zealand Energy Strategy

**We agree with the goal, but  
security of supply is paramount**

DATE	NAME	AREA
2007-2030	Genesis Energy	ENERGY STRATEGY

**TARGET  
2030.**

PLANNING THE FUTURE  
OF NEW ZEALAND ENERGY



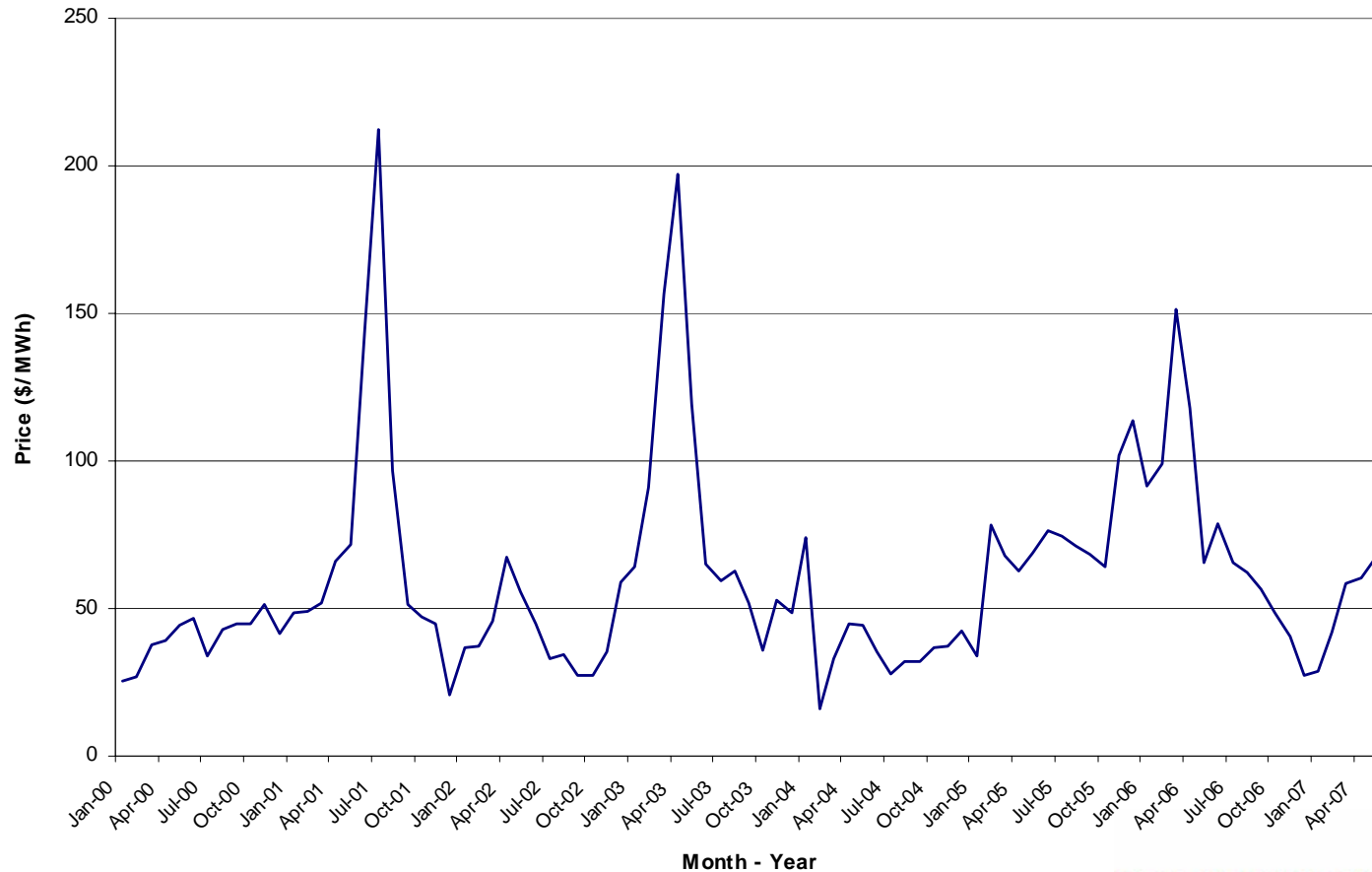
# What's happening in the market

- Big step change in past six months
  - Stern Report on impact of climate change
  - Al Gore's movie – Inconvenient Truth
  - InterGovernmental Panel on Climate Change reports
- **Climate change** roused a deep concern amongst consumers
- Then National Party responded with 50% reduction by 2050
- And the Prime Minister called for a carbon neutral future
- Draft Energy Strategy appeared and focused on closing Huntly by 2015
- Meridian became a certified carbon neutral generator

# Wholesale Price

Droughts have dominated the market

HLY2201 Average Monthly Price



## The Draft NZ Energy Strategy – Genesis Energy's view

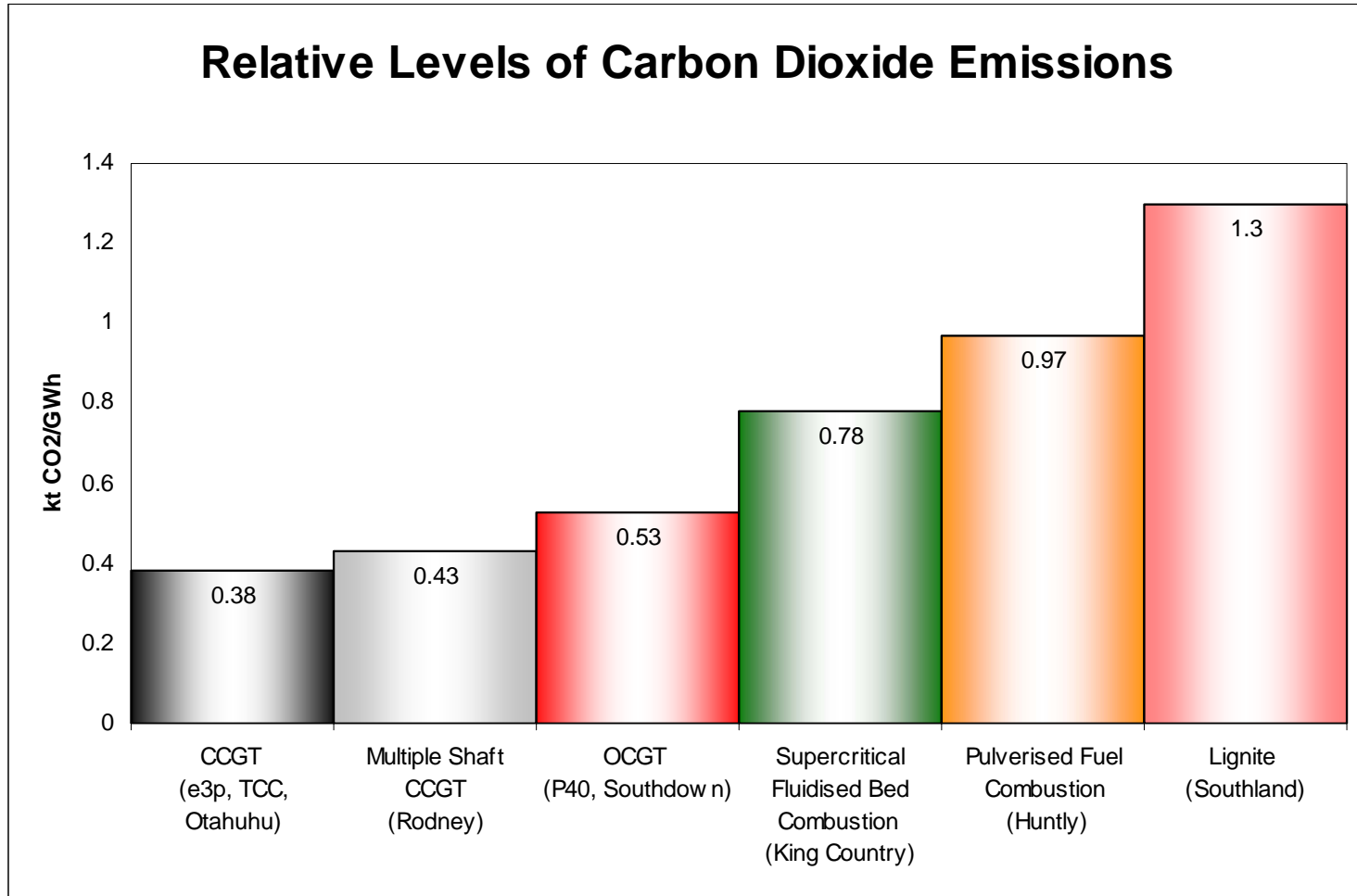
- More like a suite of policy discussion papers
- Outlined a desire to move to a sustainable low emissions energy system
- Wide range of objectives and targets for reducing emissions but no costs provided
- Focused on climate change and emissions
- Said little about high efficiency gas fired generation
- Assumed growth could be reduced from  $> 2.5\%$ pa to  $< 1.5\%$ pa over 20 years

# Assumptions driving this 'profile'

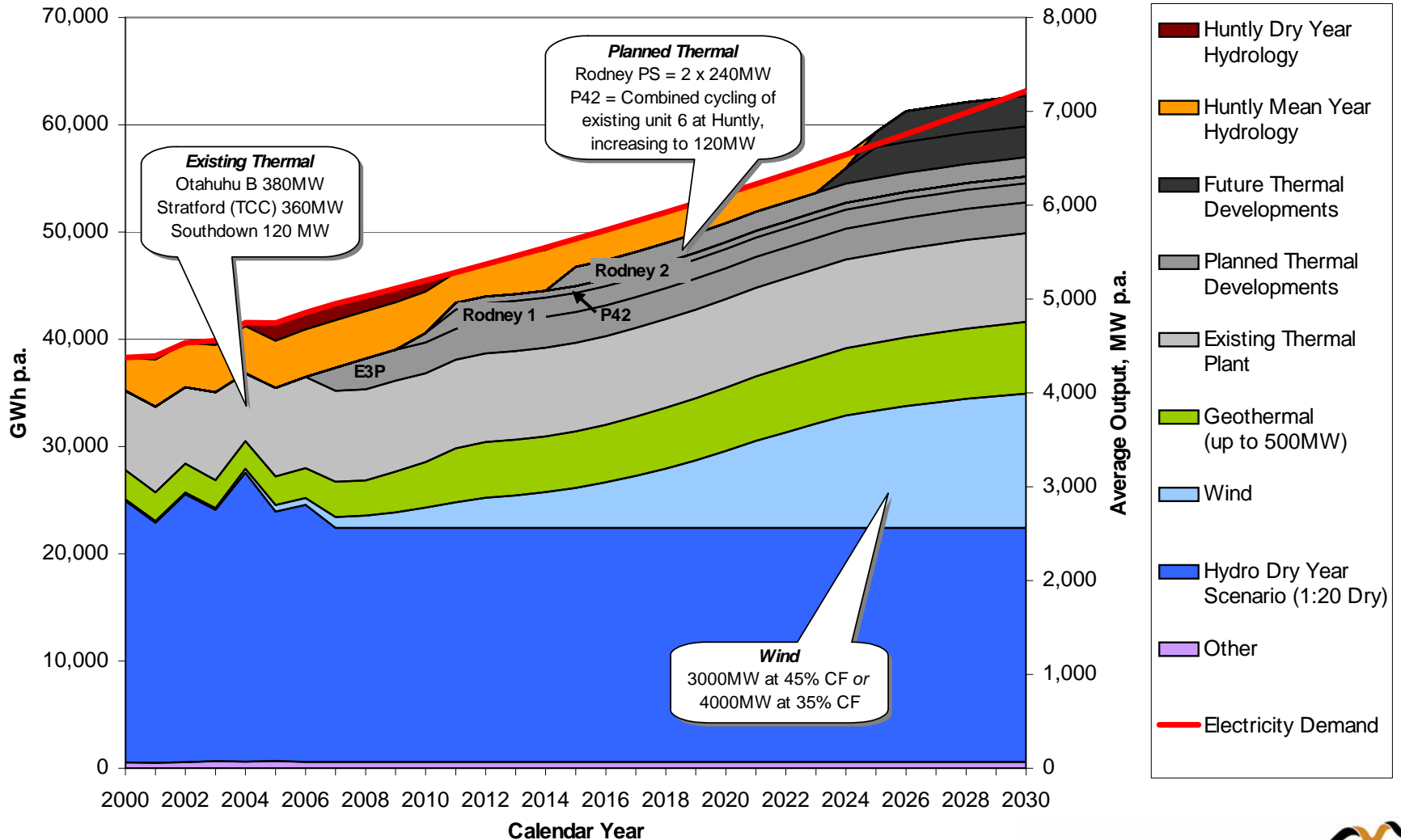
- Moderate demand growth of 1.3%
  - lower GDP growth & Energy/GDP intensity

*Comment: appears low*
- Huntly out of energy market by 2015
- No new baseload thermal plant
- No dry-year firming investment
- Renewables investment of 150-250MW/pa meets new demand but also replaces existing coal and gas
  - Mix of wind and geothermal

# Relative CO<sub>2</sub> Emissions for Different Technologies

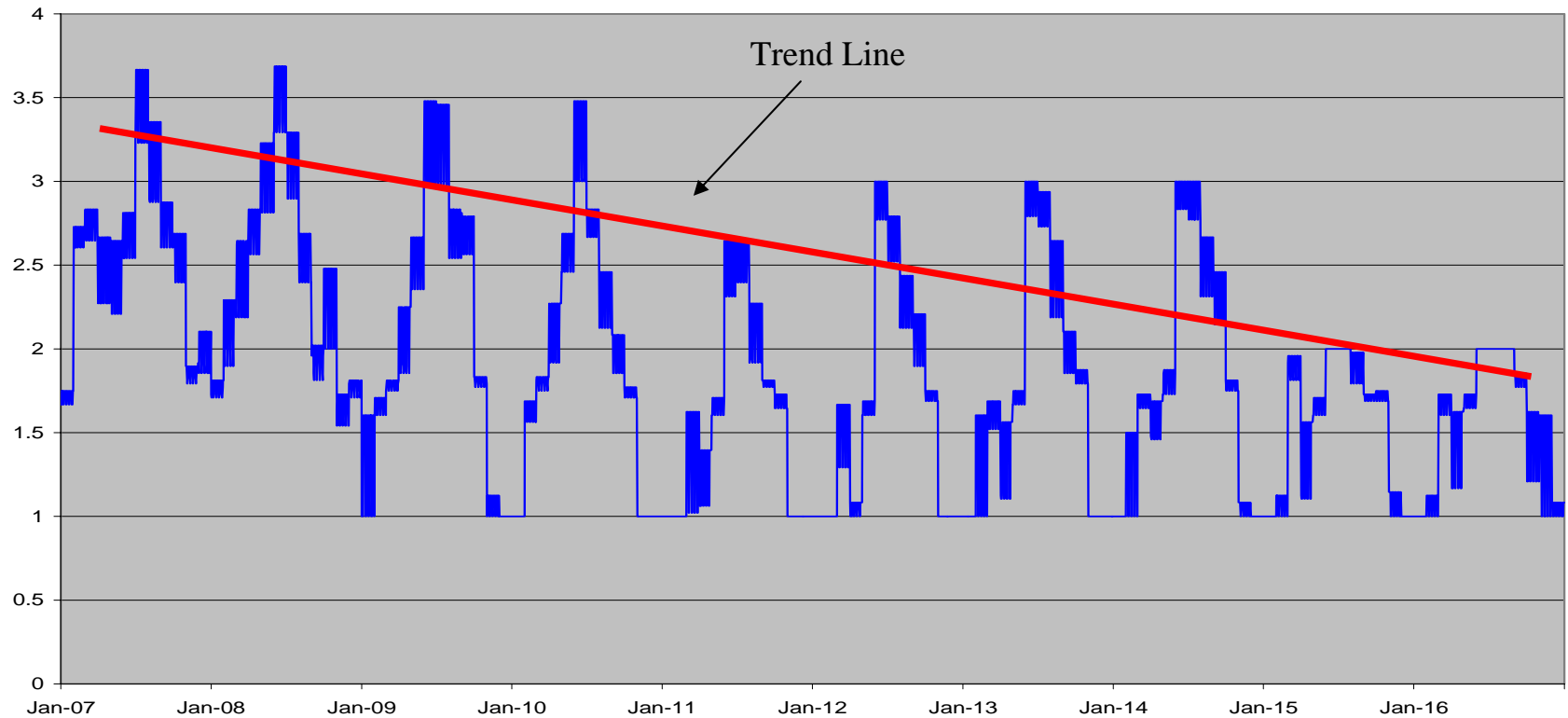


# Dry Year Supply and Demand

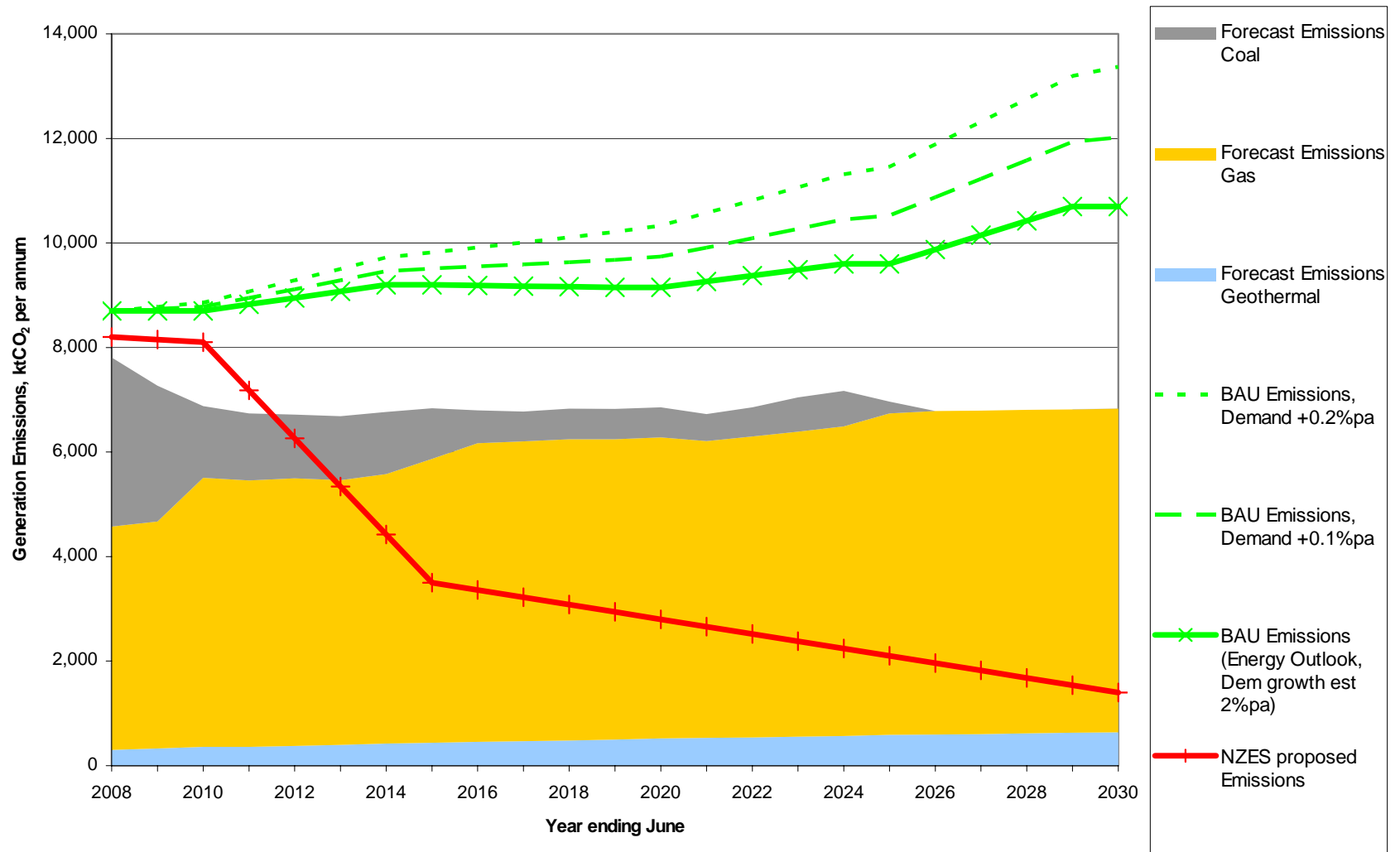


# Huntly Unit Commitment (Alternative scenario Mean year)

Huntly Daily Average Number of Units in a Mean Year (Alternative Scenario)



# Comparison of Emissions Forecasts for Power Generation



Sources: NZES and BAU (Energy Outlook) emissions from draft NZES ('Powering Our Future', Dec 2006)  
Forecast Emissions from Genesis Energy internal modelling Dec 2006/ Jan 2007

## But the draft NZES exposes market to risk

- Price impacts are likely to be dramatic
- Financial impact on wholesale and retail pricing
- Sunk cost nature of Huntly means it is ideal for dry year reserve
- Emission reductions at Huntly need carbon capture and storage
- Trade off between security of supply and low emissions
- Timing is the issue
- No costing provided

# Role of coal and gas in the future



- Huntly will have a significant role to play until new base load technology is available
- Gas provides a 'bridge' and certainty for renewables
- Solar and tidal power are emerging small scale technologies

# Huntly e3p reduces CO<sub>2</sub> emissions by 1 million tpa

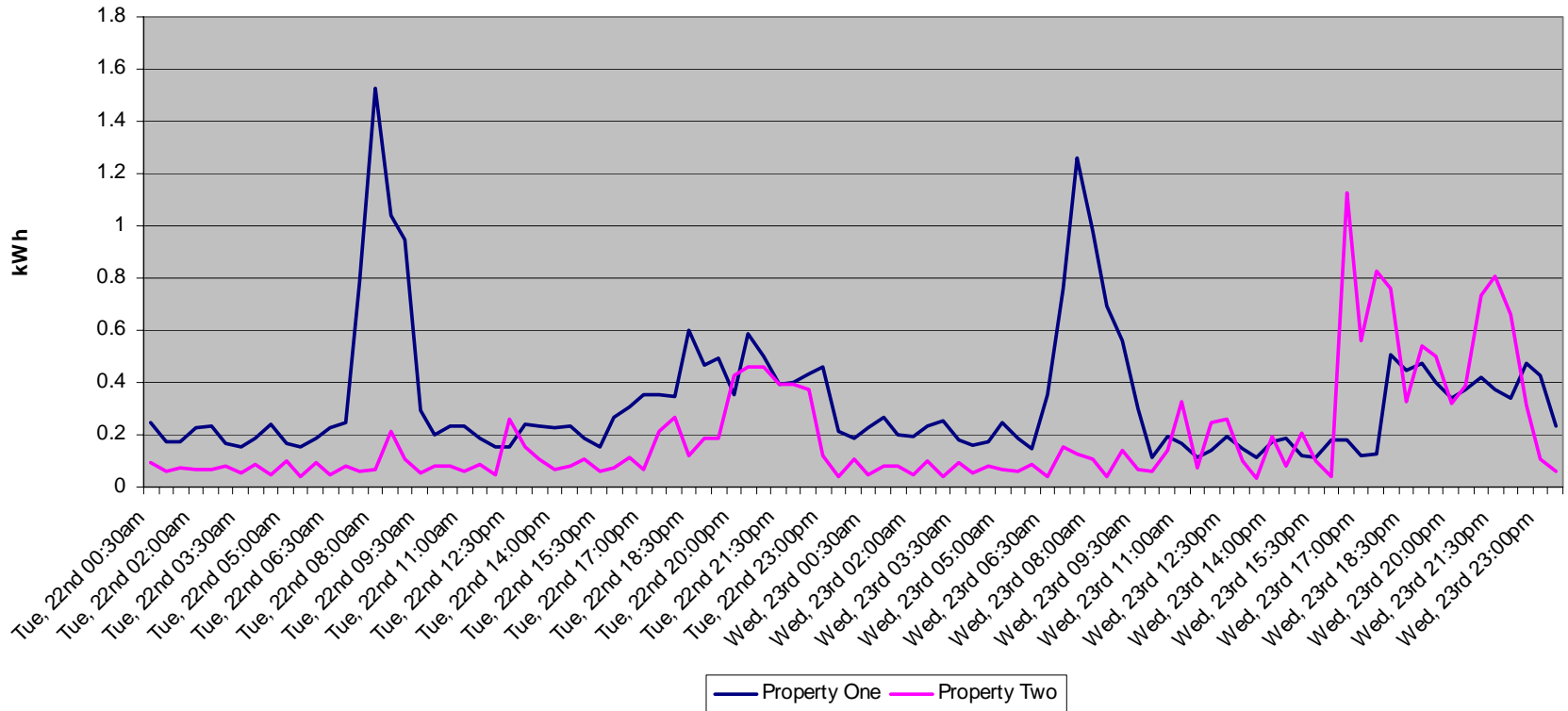


# Customers Can Help Reduce CO<sub>2</sub> Emissions

- Retailers move to smart metering
- Customers to shift away from peak demand
- Building design regulations need to reinforce energy efficiency
- Dishwashers are energy guzzlers
- Heat pumps are preferable to air conditioners
- Window shades and verandas reduce extremes of temperature
- Gas is an alternative for heating and cooking

# Household demand

Customer Demand

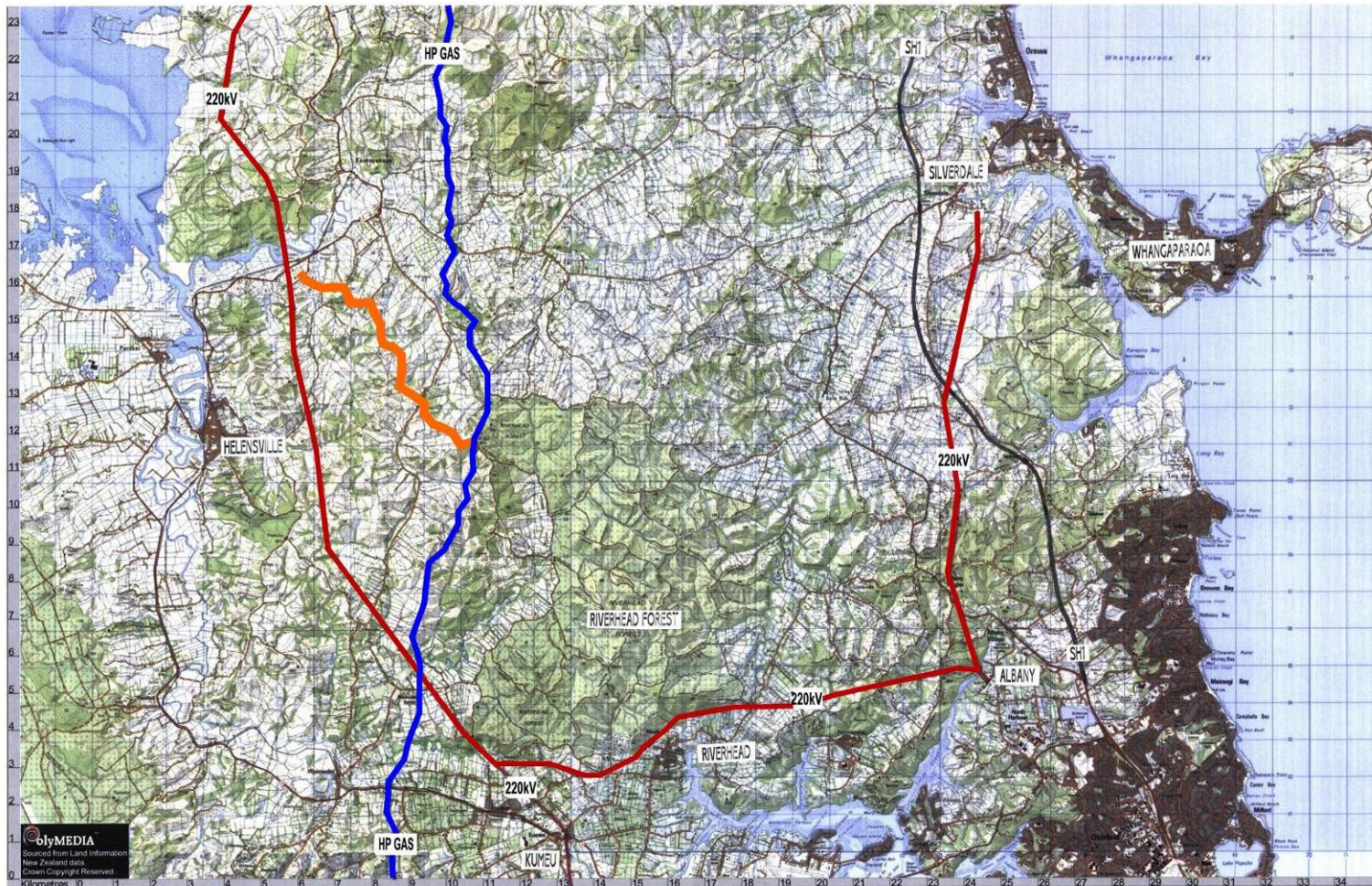


# Transpower Auckland HV upgrade proposal

- Split 220kV circuits between Huntly and Auckland
- 400kV from Whakamaru to Pakuranga proposal
- New 220kV covered switchyard at Otahuhu proposed
- New 220kV cable via Vector Tunnel and Harbour Bridge to Albany proposed

# Providing reliable power to Northland

## Rodney 220kV transmission line and gas pipeline



# Providing reliable power to Northland

Rodney 2 x 240MW site layout, commissioning Stage I 2009-10



# Making a difference to New Zealand

**HELLO TOMORROW**

