



**TransGrid**

# Annual Planning Report 2011

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# Outline of Annual Planning Report for 2011



# Purpose and Context

- Advance information on emerging constraints
- Annual Planning Documents
  - APR                      TNSPs
  - NTNDP                  AEMO
  - ESOO                    AEMO
  - ESDR                    NSW DNSPs



# APR2010 Network Planning Approach

- Described in Appendix 1
  - Jurisdictional Planning Requirements
  - NER Requirements
  - DNSPs licence conditions
  - AEMO's operating practices
- SOC Act includes
  - Social responsibility
  - Sustainable developments
  - Regional Development



# APR2010

## Recently Completed Augmentations

- Details are set out in Section 5.1
- Significant achievements include
  - Uprating of Tamworth to Armidale Line No.86
  - Western 500kV Conversion
  - Tomago 330/132 kV Substation
  - Transformer Replacements



# Committed Augmentations

- Details are set out in Section 5.2
- Significant projects include
  - Development of Supply to the ACT
  - Supply to the CBD and Inner Suburbs
  - Voltage Control in Northern NSW
  - Beaconsfield 132 kV Equipment Replacement
  - Glen Innes to Inverell 132 kV line



# Planned Projects

- Details set out in Section 5.3
- Significant projects include
  - Supply to the NSW Far North Coast
  - Supply to the Lower Mid North Coast
  - Reinforcement of Supply within the Sydney CBD
  - Supply to Lake Munmorah
  - Southern Supply to the ACT



# Proposed Network Developments

- Details set out in Section 6
- Augmentation Proposals prior 2011
  - Supply to Southern Sydney
  - Capacity of the Snowy to Yass/Canberra System
  - Supply to the Gunnedah, Narrabri and Moree Areas
  - Supply to Beryl
- Proposed Replacement Transmission Assets
- Longer term constraints and indicative developments



# Other Items of Note

- Sustainability – Chapter 7
- Connection Point Forecasts
  - As provided by DNSPs
  - Aggregated Major Industrials
- Connection Point Proposals – Appendix 5
- Glossary – Appendix 6
- Contact details – Appendix 7



# Load Forecast 2011



# NER Obligations

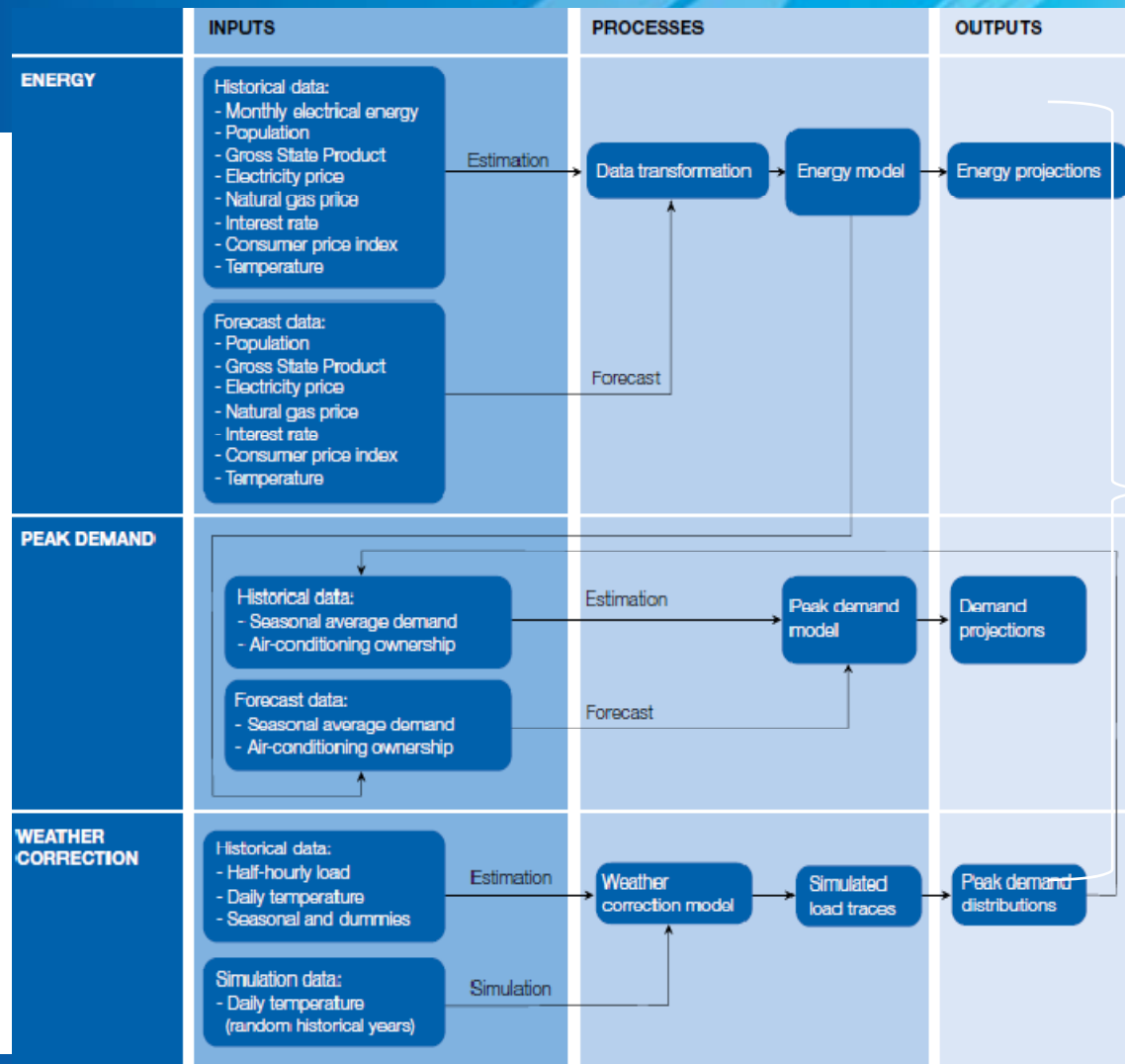
- ESOO clause 3.12.3 (s)
  - JPB to provide AEMO with information AEMO requires
- NTNDP clause 5.6A.5
  - JPB to provide assistance to AEMO in its performance of its NTP function
- APR clause 5.6.2A
  - Publish load forecast submitted by DNSPs



# The AEMO Forecasts

- AEMO makes formal request
  - specifies NSW Global Native Demand and Energy
  - delivery timetable – May 2011
- AEMO provides
  - Economic inputs
  - Renewable projections
- TransGrid provides the model
  - three related models
  - Minor post modelling adjustments (eg for PV)
  - remaining input data from recognised sources eg BoM temperature data, ABS, Reserve Bank





**Post model adjustments**

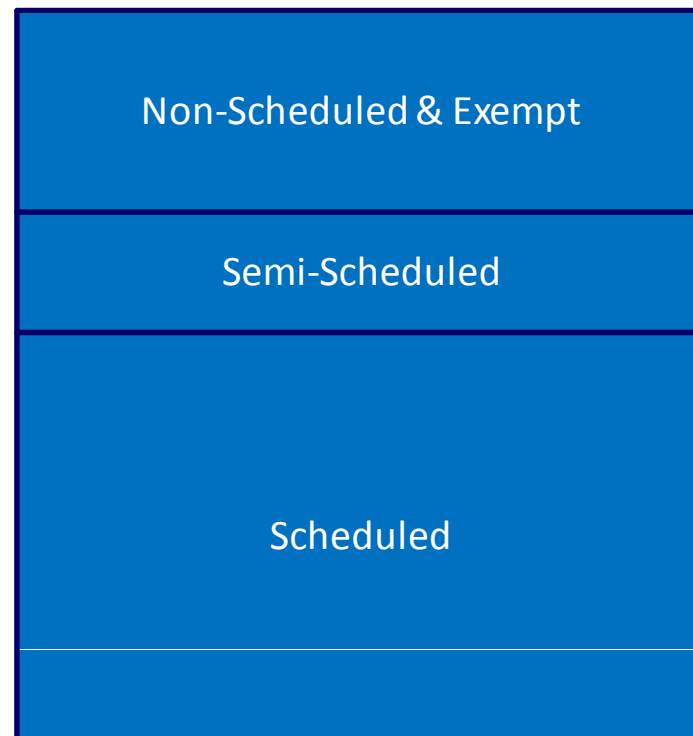


# Definitions

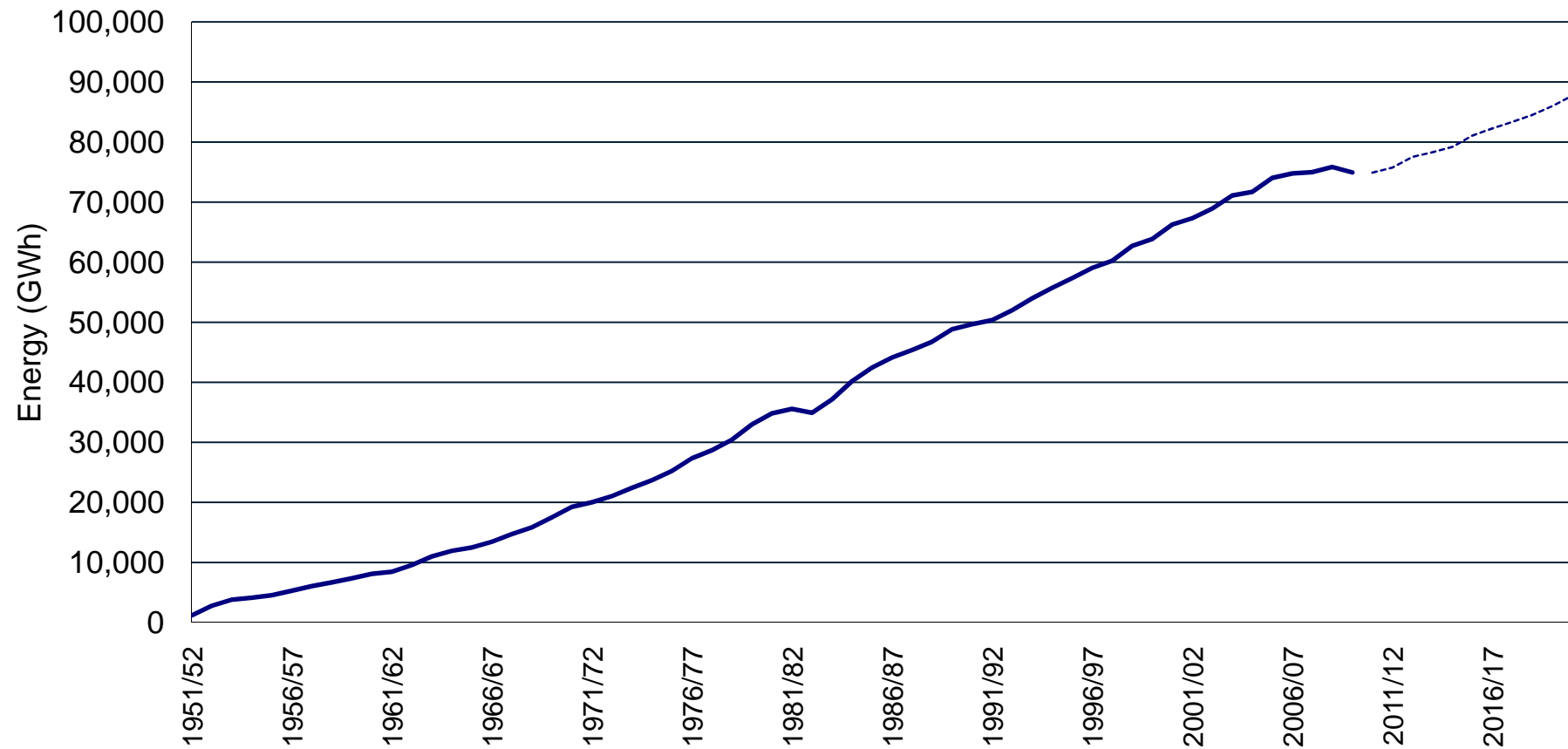
- **Native Energy (Demand)**  
Load supplied by Scheduled + Semi scheduled + Non-scheduled generators
- **Scheduled Energy (Demand)**  
Non-intermittent generators > 30MW capacity included in NEM dispatch process
- **Semi-scheduled Energy (Demand)**  
Intermittent generators (mainly wind) > 30MW capacity
- **Non-scheduled Energy (Demand)**  
Generators < 30MW capacity
- **90%, 50% & 10% POE (Probability of Exceedence)**  
Probability of demand being exceeded (in a scenario)



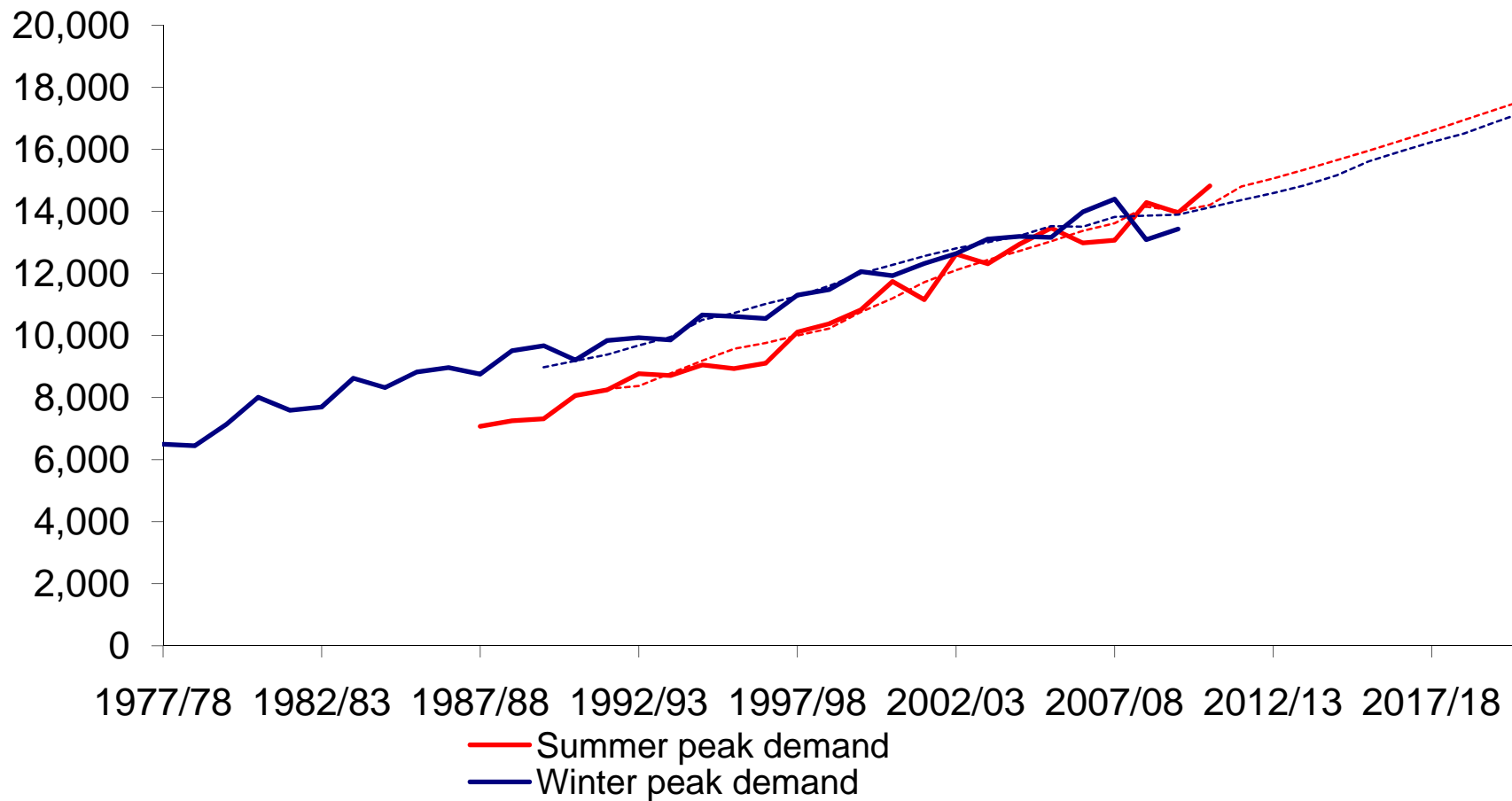
# Components of Native Demand and Energy



# Historical Energy



# Historical Demand



# Model Performance Check 2011

- Hot Weather
  - Week commencing 31 January
- North Parramatta
  - 41 Deg C – 34%POE
  - Weighted average temp 38% POE
- Native Demand
  - 14,820MW at 4:30pm on 1 February
  - 20% POE
- Reasonably good alignment

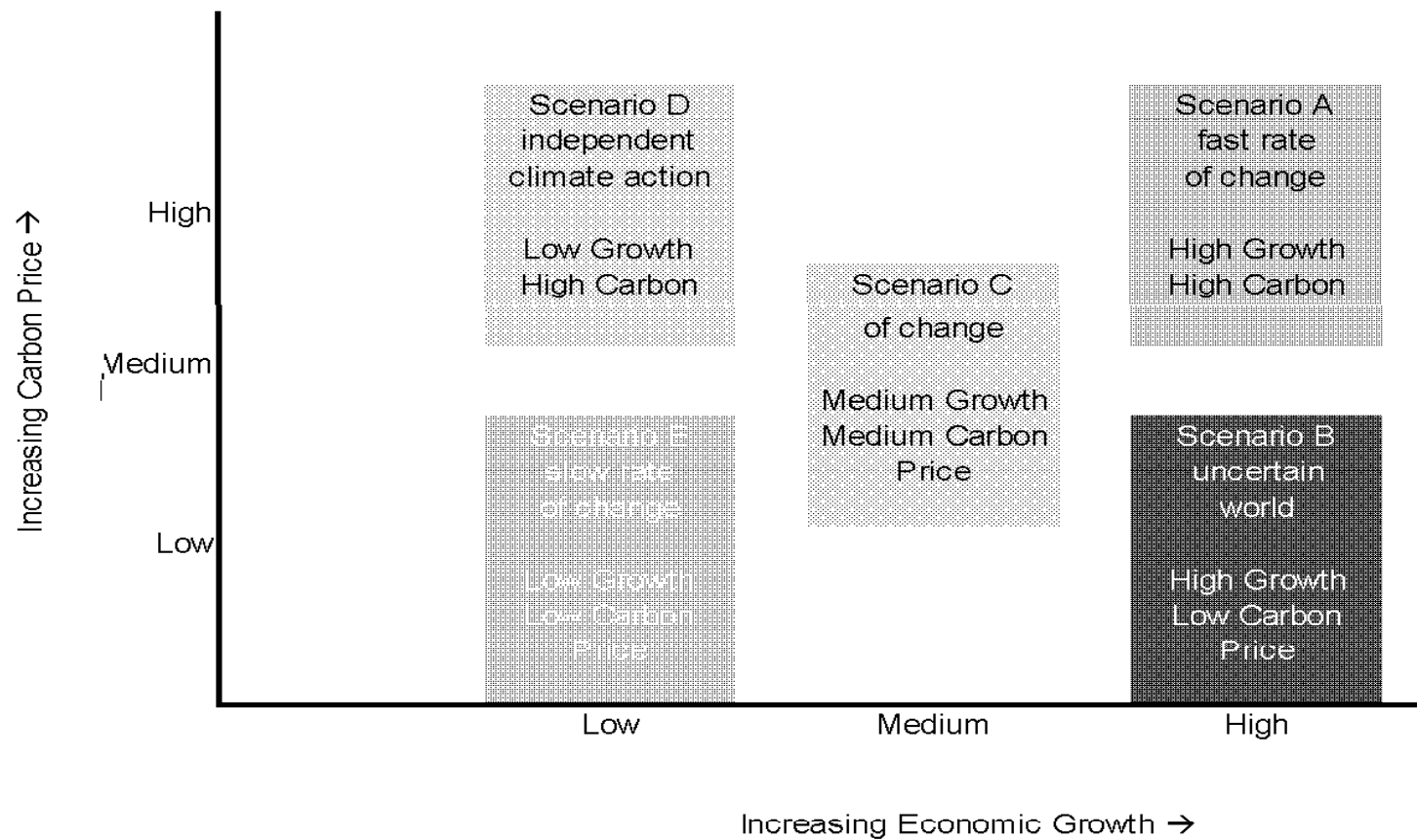


# Scenarios and Data

- Five NTNDP scenarios based on
  - Carbon price
  - Economic growth
  - AEMO did not assign probabilities
- AEMO engage KPMG to provide inputs
  - Scenarios A, C and E
- TG engaged KPMG to provide inputs
  - Scenarios B and D



# AEMO Scenario Map



# Forecast Risks

- Very significant in 2011
  - Modelling and Data Limitations
  - Price Elasticity
  - Economic Circumstances
- When will consumption return to normal?
  - Reserve bank thinks big adjustments have taken place
  - Confidence still not high

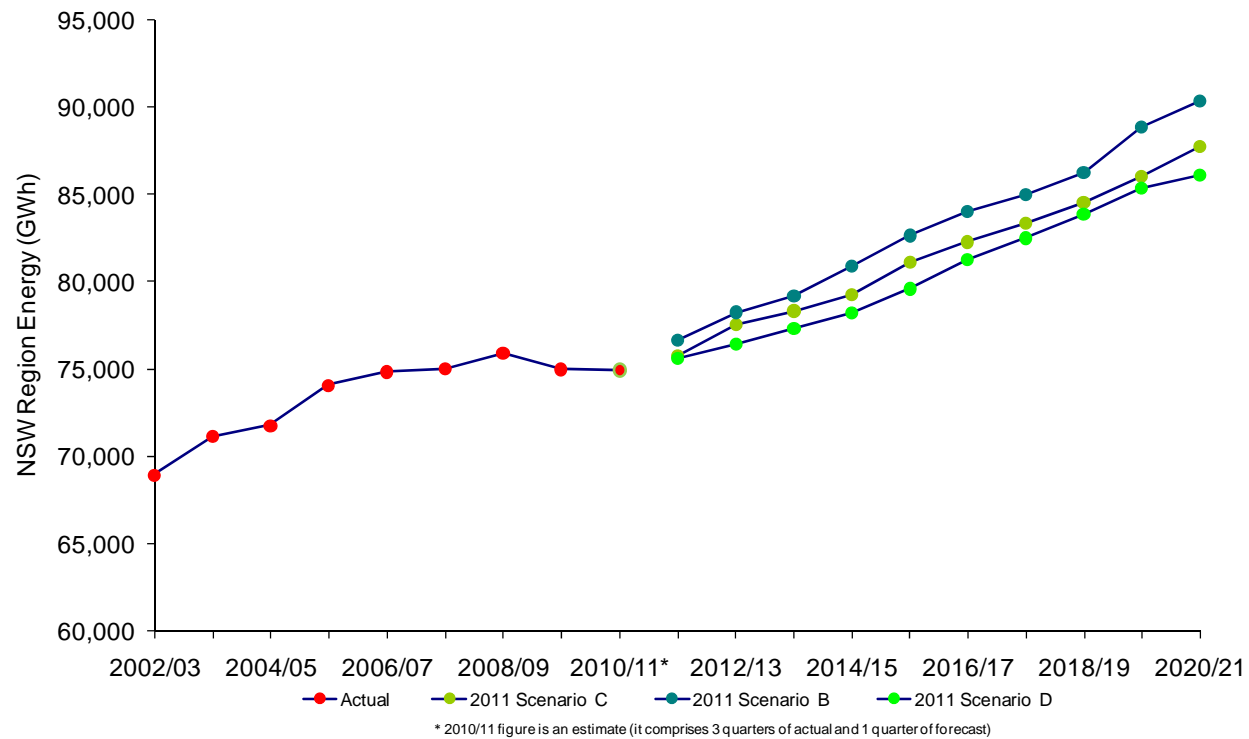


# Energy Projections

- Energy Sent Out – average growth 1.6%pa
  - Down from APR 2010
  - Driven by KPMG economic inputs
- 6.0 percent lower for the 2011-12 financial year compared to last year; and
- An average of 5.0 percent lower over the forecast period.



# Energy Projections

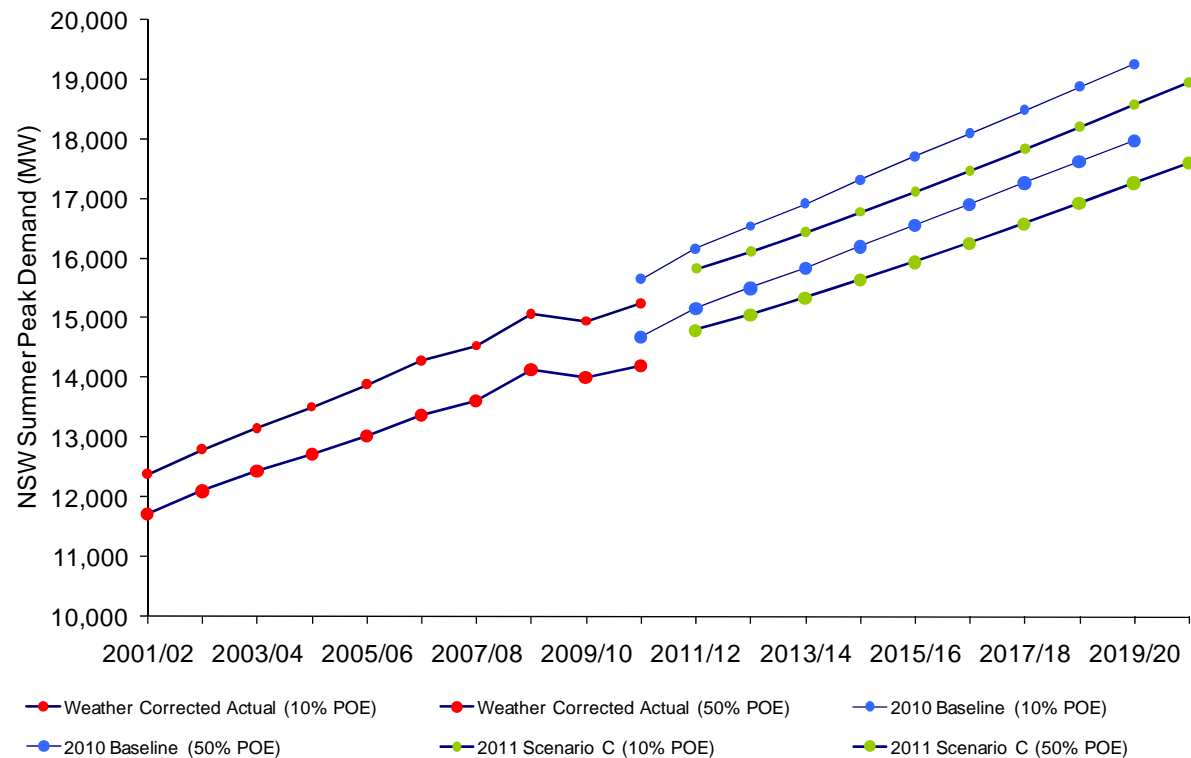


# Summer Demand

- Compared with the 2010 projection the 2011 10 percent POE summer demand projection is:
  - 341 MW, or 2.1 percent lower for the 2011/12 summer; and
  - 672 MW, or 3.5 percent lower for the 2019/20 summer.
- Growth rate of 2.0%pa over the forecast period (was 2.3%pa in APR 2010)



# Summer Demand Projections

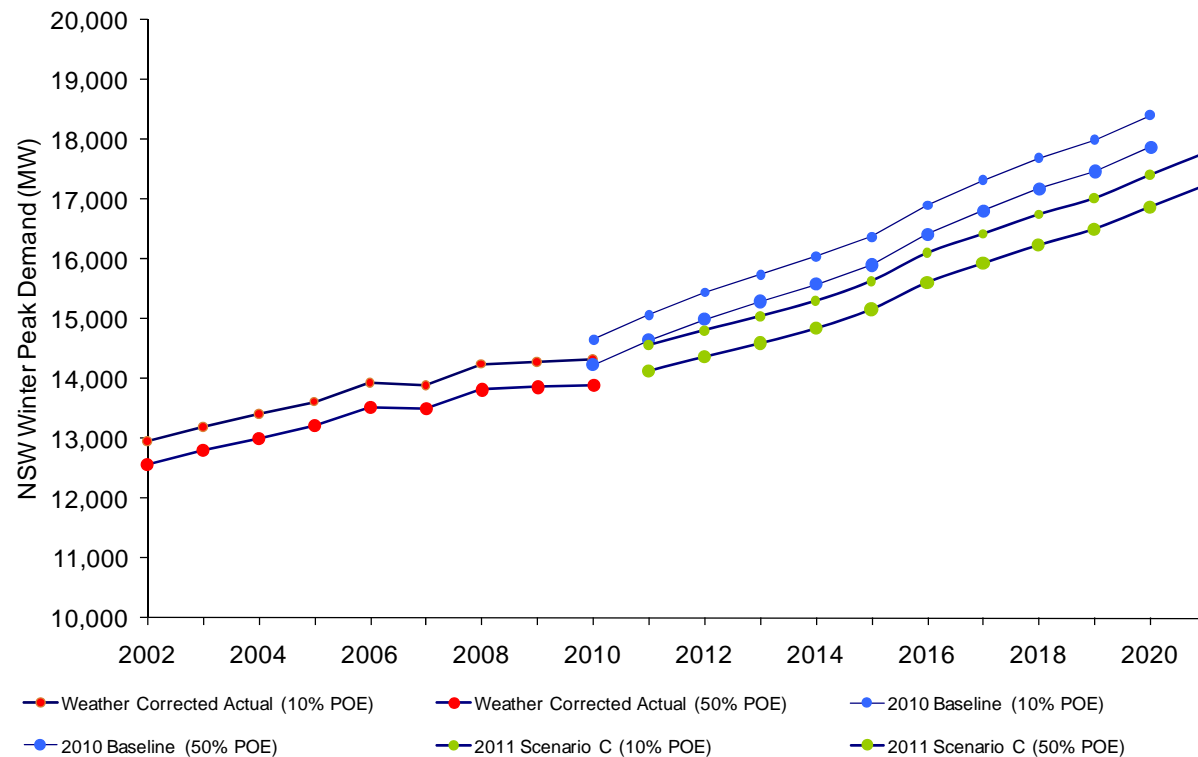


# Winter Demand

- Compared with the 2010 projection the 2011 10 percent POE winter demand projection is:
  - 509 MW, or 3.4 percent lower for winter 2011; and
  - 996 MW, or 5.4 percent lower for winter 2020.
- Growth rate of 2.0%pa over the forecast period (was 2.2%pa in APR 2010)



# Winter Demand Projections



# Global and Connection Point Alignment



# Summer

