2012 Statement of Opportunities
Pre-launch briefing

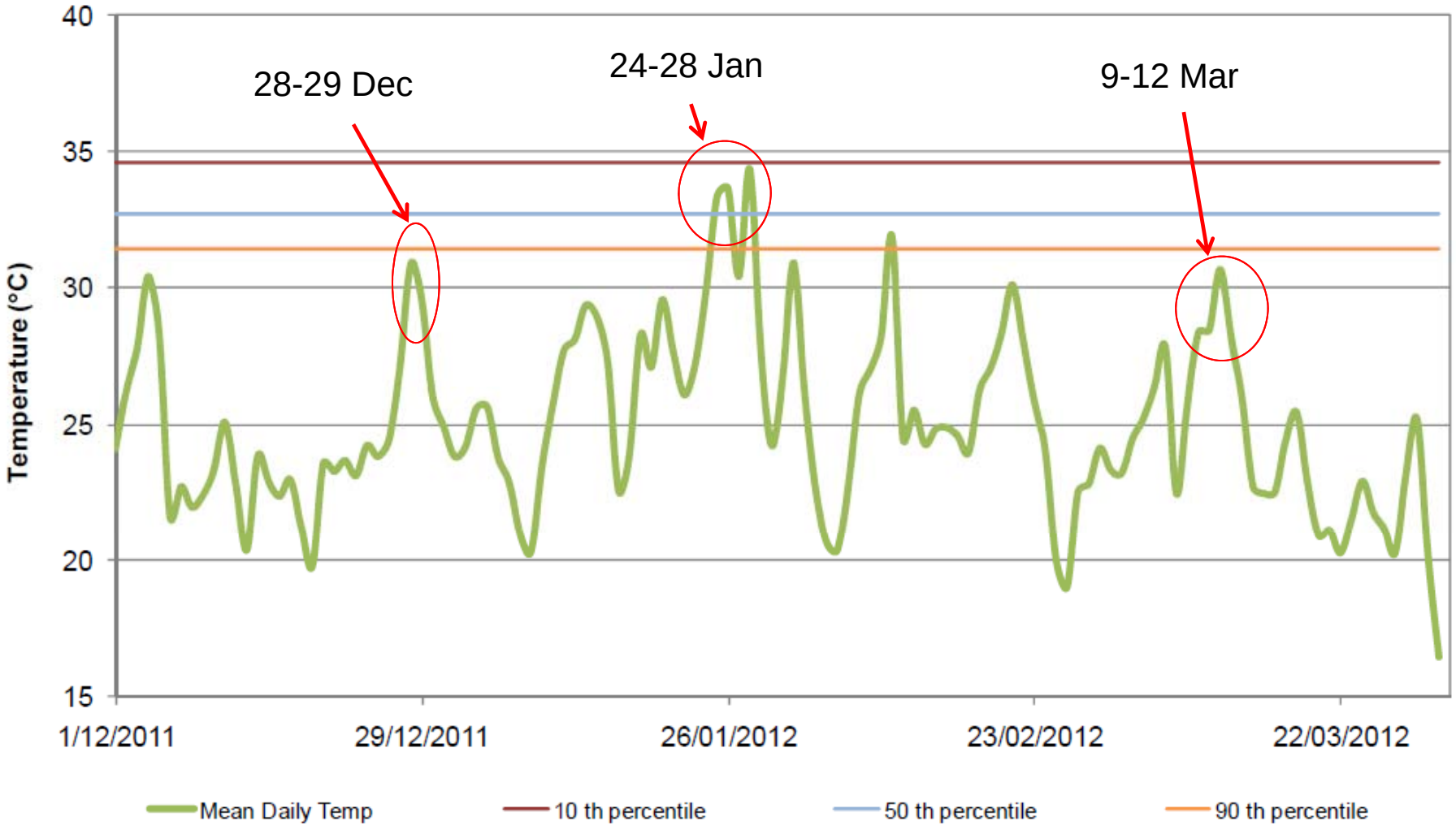
Greg Ruthven
Manager, System Capacity

18/6/2012

Agenda

- 2011/12 summer
- SWIS electricity demand forecasts – 2012/13 to 2022/23
- Emerging trends
- 2014/15 Reserve Capacity Requirement

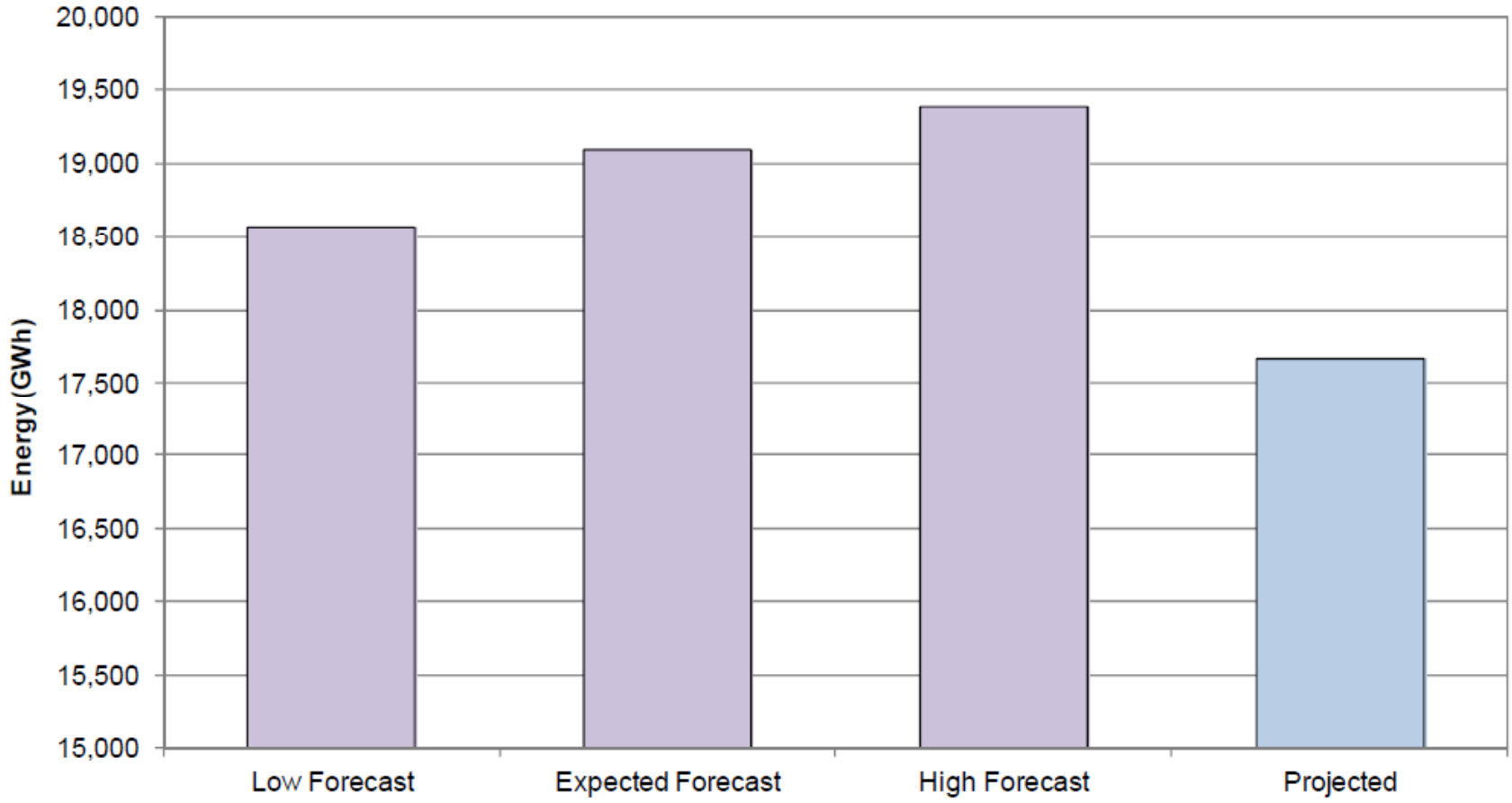
2011/12 summer



2011/12 peak demand

- Peak demand 3,854 MW
  - 25 Jan, 16:30-17:00
- 0.6% above 2010/11 peak
- Substantially lower than forecasts
  - 327 MW below 50% PoE forecast
  - Timing of peak (100-200 MW)
  - Solar PV (approx 50 MW)
  - New major loads (117 MW)

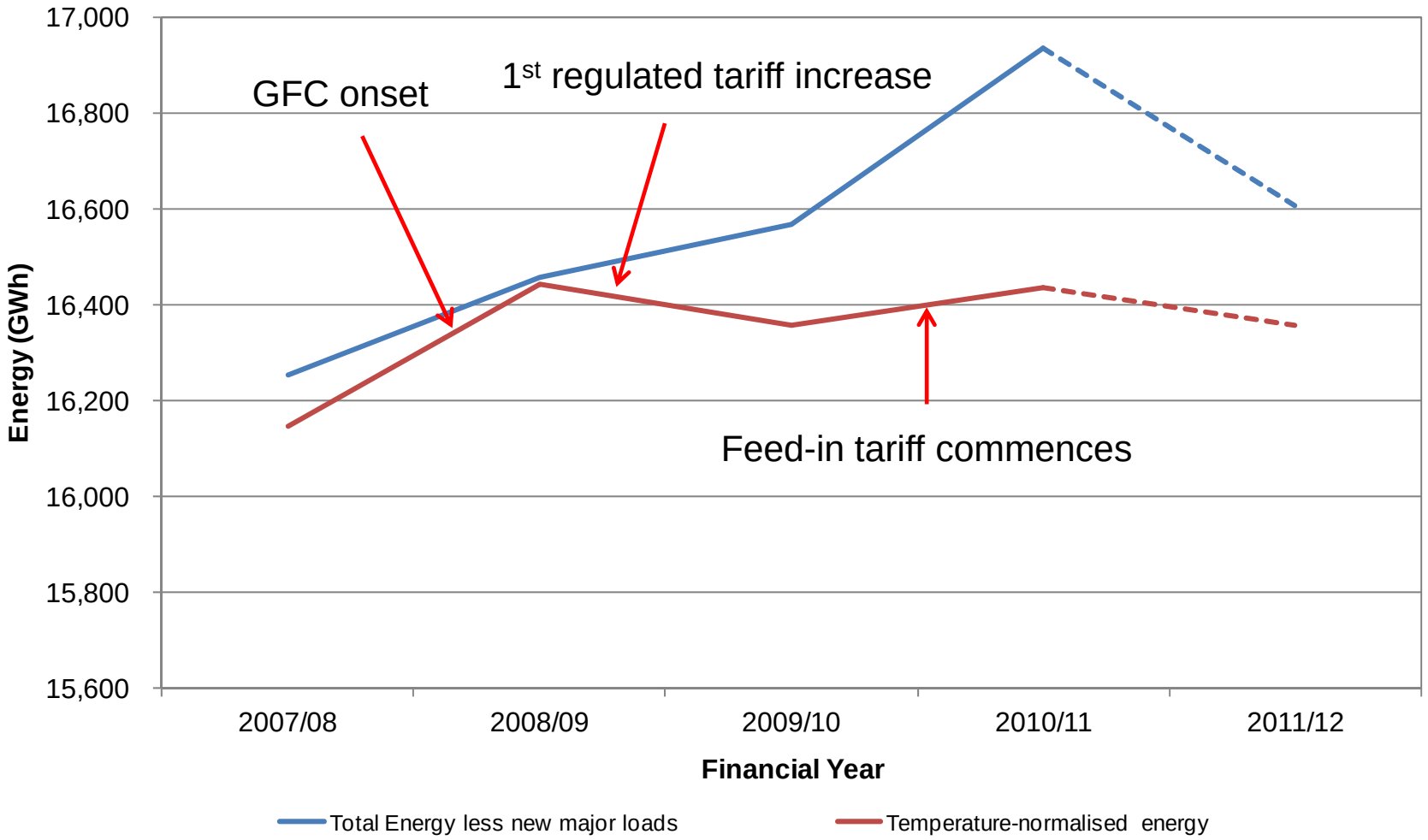
2011/12 sent out energy



2011/12 sent out energy

- Projected sent out energy 17,673 GWh
- Expected forecast 19,088 GWh
- Solar PV (~ 200 GWh)
- New major loads (~ 700 GWh)

Temperature-corrected energy sales



Demand forecasts

- IMO contracts NIEIR to produce SWIS demand forecasts
- Demand for generation and DSM capacity – not end customer consumption
  - Accounts for transmission losses
  - Ensures consistent basis with capacity certification
- Ten year forecast horizon
  - Peak demand and annual energy: Expected, High and Low economic growth scenarios
  - Peak demand: 10%, 50%, 90% PoE

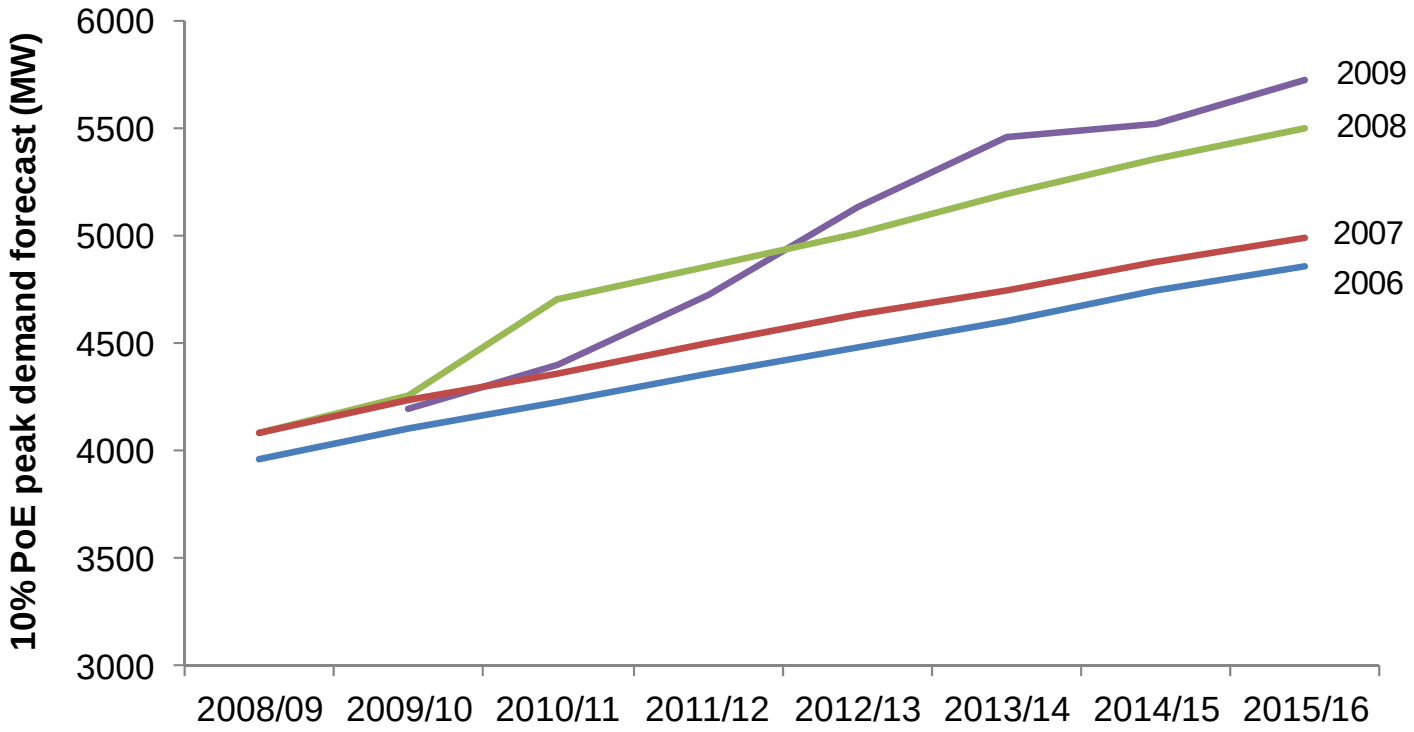
How are forecasts produced?

- Top-down econometric models link electricity consumption to a range of factors such as:
  - economic activity by industry sector
  - population, household size and customer numbers
  - appliance penetration and efficiency
  - household incomes
  - energy prices
  - weather conditions
  - major new loads
- Bottom-up end use models

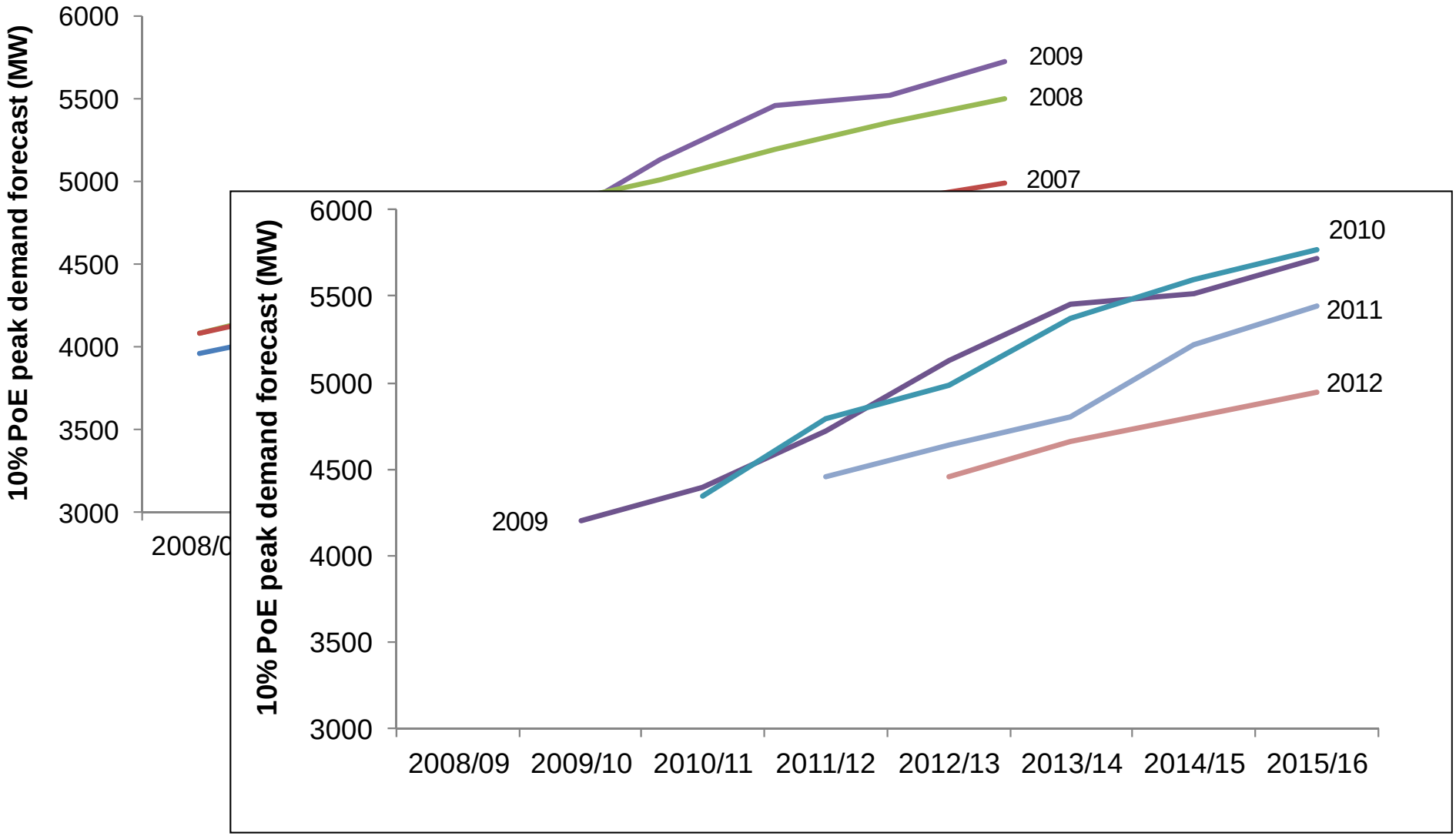
Dealing with change

- Prepared using best available information at the time
- Reviewed annually to reflect:
  - changes to input variables
  - changes to relationships between input variables and electricity consumption

Forecast history



Forecast history

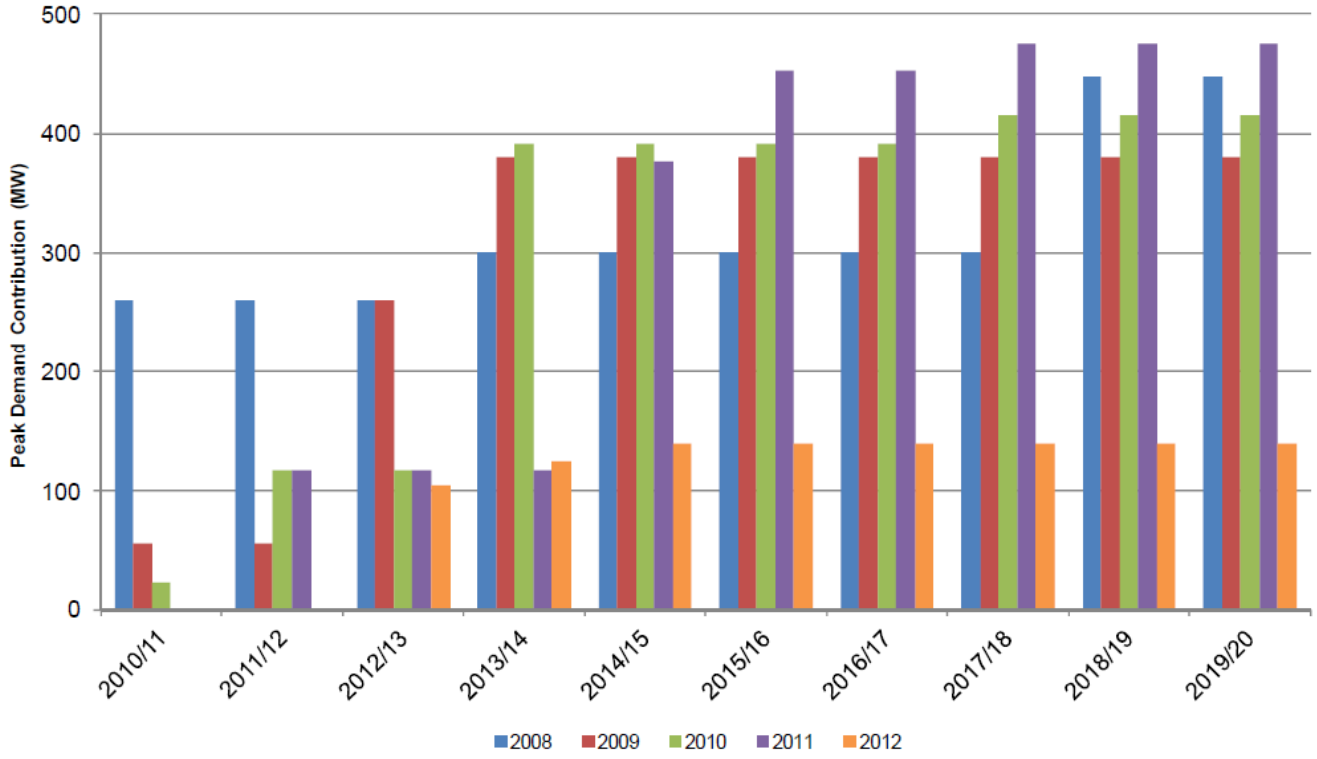


Temperature sensitive load growth

- NIEIR's forecasts consider temperature sensitive and non-temperature sensitive load
- Consider air conditioner sales and characteristic of available systems
- Strong growth in temperature sensitive load in first decade of 2000's
- Trend has changed – recalibration of model in 2011, approx 300 MW reduction

New major loads

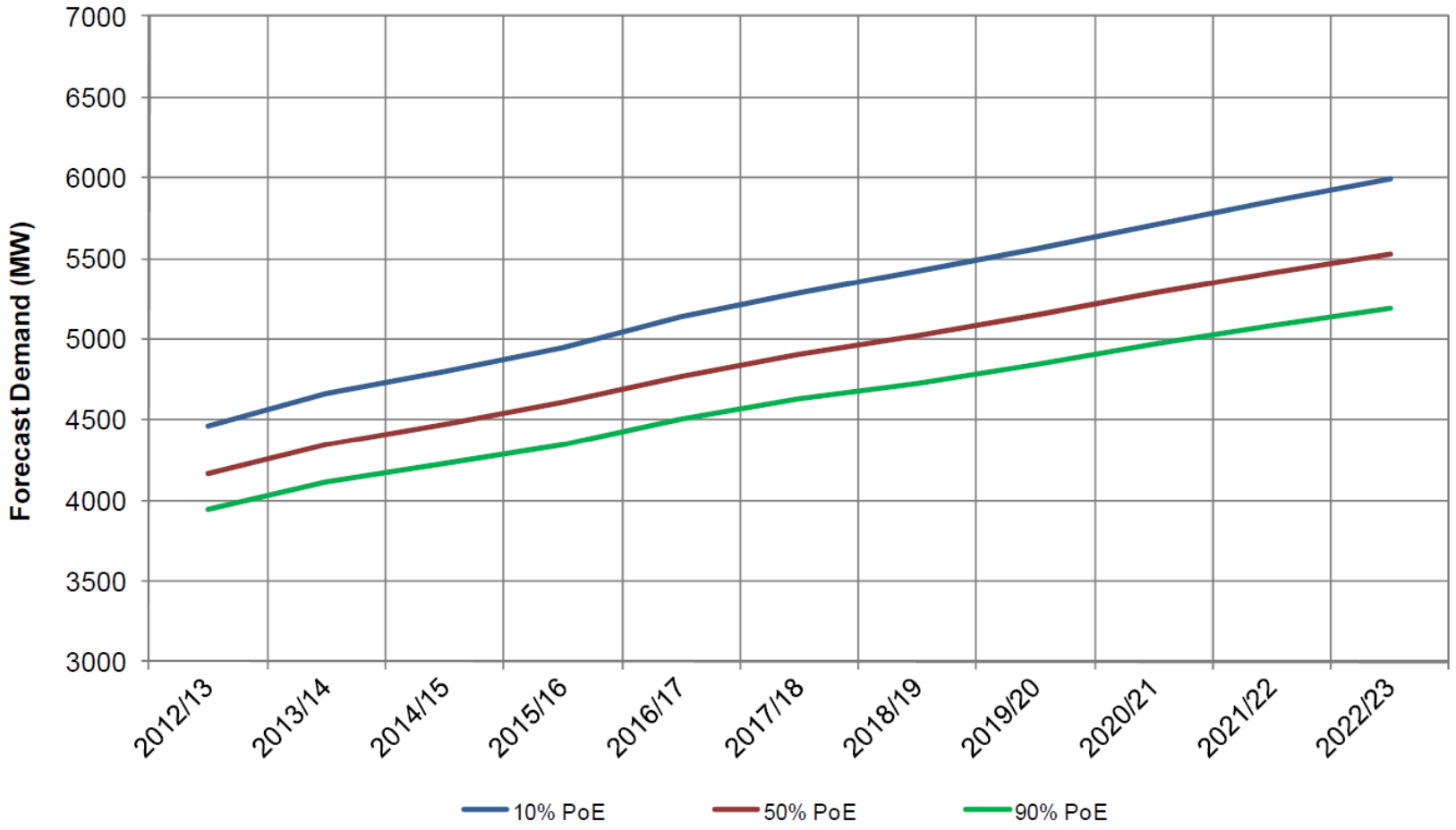
- New loads can lead to substantial increase in demand
- Separately considered in demand forecasts
- Uncertainty around development decisions, project timing



Small-scale solar PV

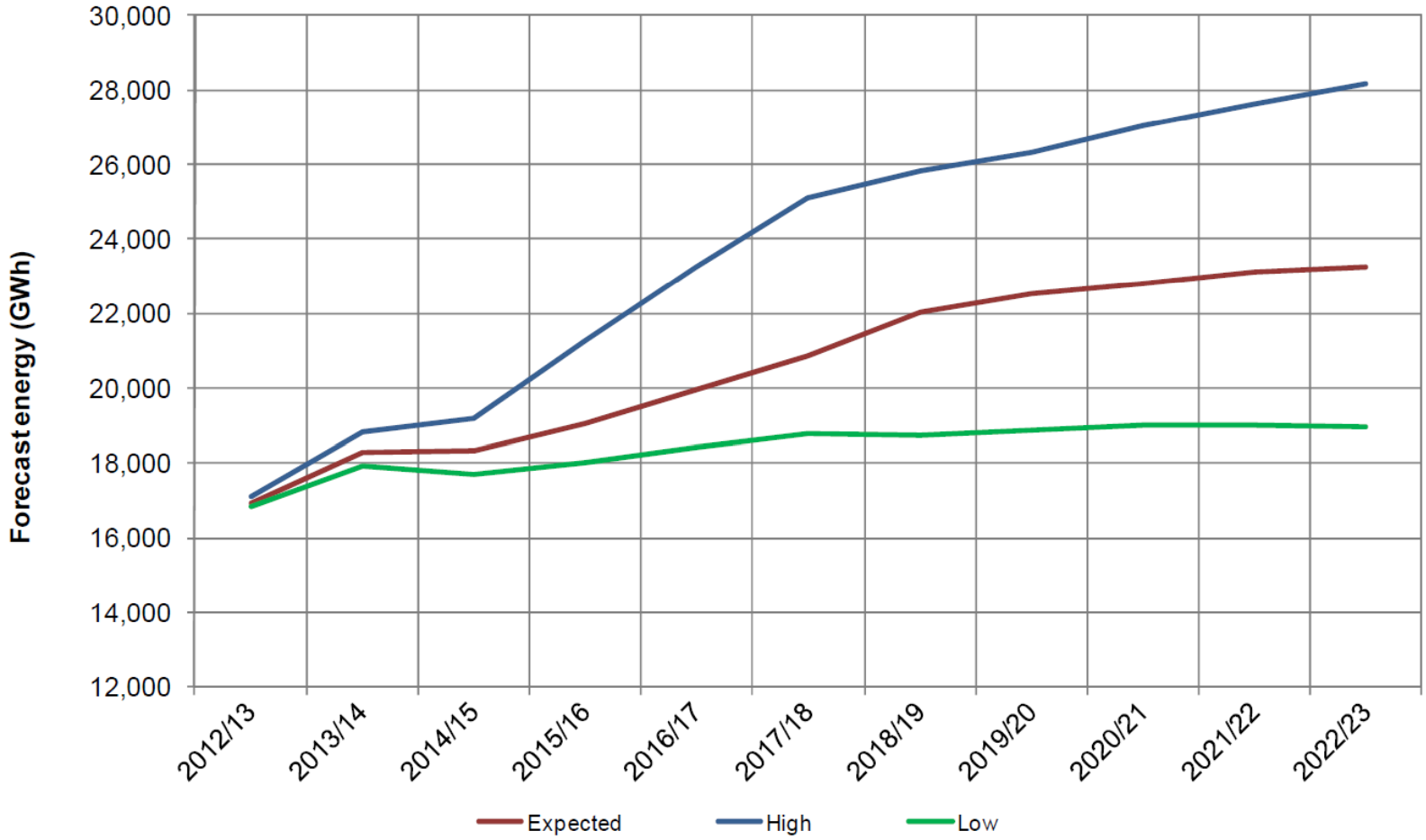
- Penetration has increased sharply in a few years:
  - Government subsidies, including feed-in tariffs
  - Decreasing system costs
- Seen by market as reduced consumption
- Not previously considered due to lack of information
- Reduction in peak demand forecasts approaches 200 MW by 2023

Peak demand forecasts



Growth rate 3.0% pa

Energy forecasts



Growth rate 2.1% pa

Influences on future electricity consumption

- Potential of solar PV in commercial & industrial sectors
- Energy efficiency programs
- Initiatives enabled by smart meters

Measure	Reported impact
In-Home Displays	6.8% reduction in energy consumption
Living Smart behaviour change program	8.5% reduction in energy consumption
Direct Load Control of air-conditioners	20% reduction at peak time
Time of use tariffs	10.9% reduction at peak time
Home Eco-Consultations	7.8% reduction in energy consumption

Perth Solar City, Annual Report 2011

Reserve Capacity Target

- Critical parameter for Reserve Capacity Mechanism
- Require sufficient capacity in two years' time to:
  - meet 1-in-10 year (10% PoE) peak demand
    + reserve margin (8.2% of peak or largest generator)
    + allowances for frequency keeping and embedded generation
  - limit expected unserved energy to 0.002% of annual consumption
- **Reserve Capacity Target for 2014/15 is 5,308 MW**

Reserve Capacity Target – 2013/14 to 2014/15

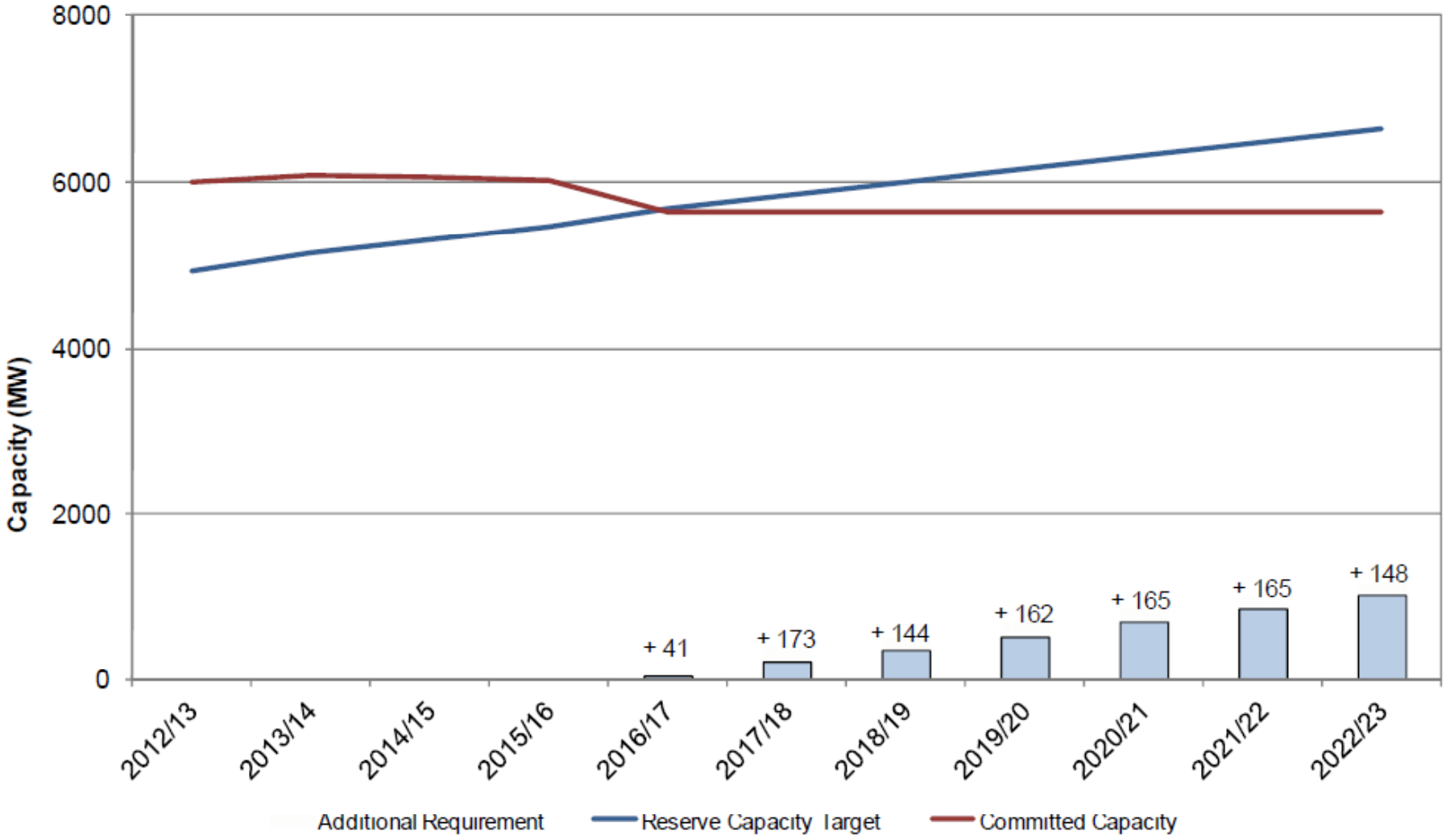
2013/14 Reserve Capacity Requirement	**5,312 MW**
Changes to 2013/14 block load assumptions (plus 8.2%)	+ 9 MW
Additional block load assumed for 2014/15 (plus 8.2%)	+ 16 MW
Inclusion of 2013/14 solar PV (plus 8.2%)	- 77 MW
Additional solar PV for 2014/15 (plus 8.2%)	- 14 MW
Change to Load Following requirement	- 5 MW
Year-on-year change in underlying demand forecast	+ 67 MW
2014/15 Reserve Capacity Requirement	**5,308 MW**

Availability Curve

- Seeks to ensure capacity with sufficient availability to satisfy year-round energy requirements

Availability Curve Information	2013/14 (MW)	2014/15 (MW)	2015/16 (MW)
Market Rule 4.5.12(a):			
Capacity required for more than 24 Hours	4,469	4,605	4,741
Capacity required for more than 48 Hours	4,300	4,429	4,561
Capacity required for more than 72 Hours	4,188	4,314	4,441
Market Rule 4.5.12(b):			
Minimum Generation Required	4,281	4,438	4,592
Market Rule 4.5.12(c):			
Capacity associated with Availability Class 1	4,281	4,438	4,592
Capacity associated with Availability Class 2	19	0	0
Capacity associated with Availability Class 3	169	167	150
Capacity associated with Availability Class 4	677	703	731

Supply-demand balance



Questions