



# Trends in Wholesale Electricity Prices in Victoria

PRESENTATION TO AIE'S ENERGY PRICING IN VICTORIA: TRENDS, CAUSES AND THE  
FUTURE, 25 JUNE 2014

**JACOBS**

# Discussion points

1. Focus is on wholesale market
2. Discussion to cover:
  - Historical review
  - Fundamental drivers of price setting
  - Outlook for electricity prices in Victoria

# Background

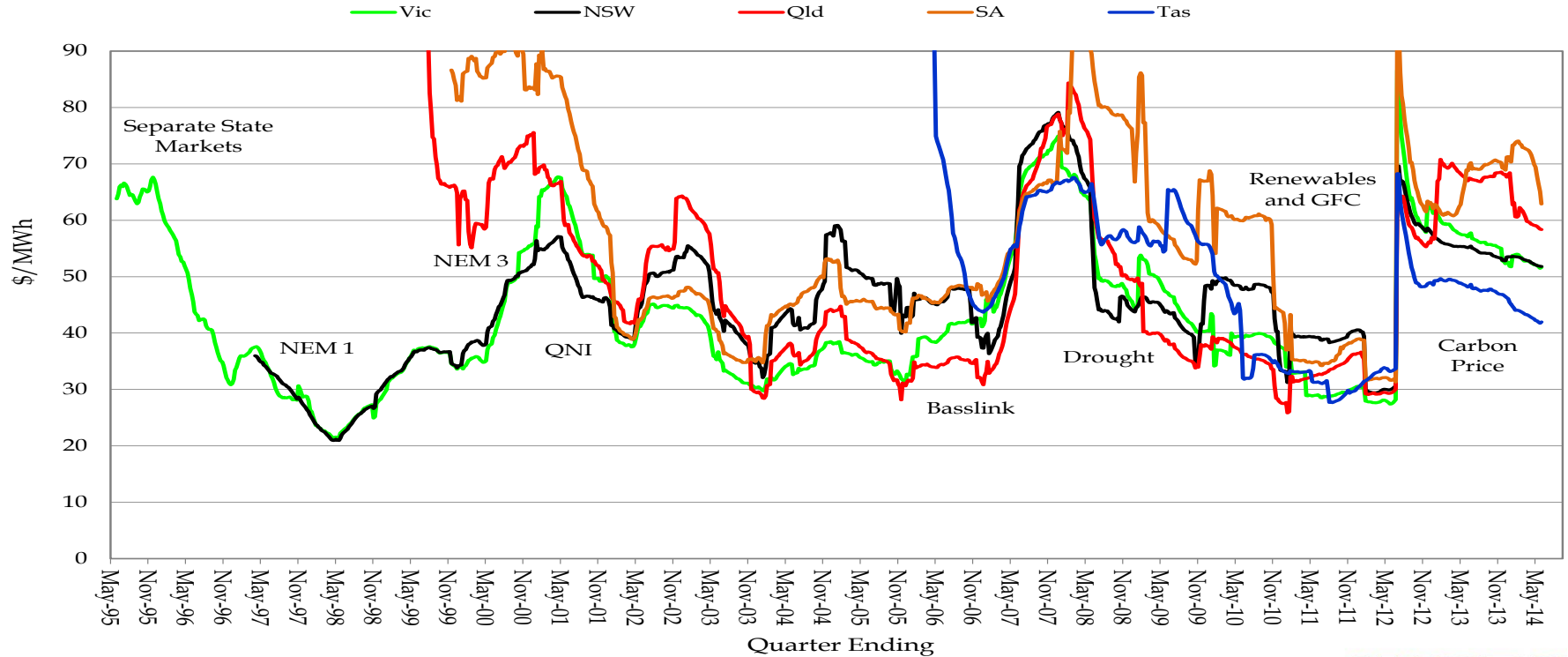
1. NEM commenced operation as a “national” market in December 1998
2. Evolved out of the combined NSW/Victoria pool market linking the SA market into these two markets.
  - Vic Pool operating since 1992
3. Queensland became integrated in 2001 with commissioning of Eastlink and Tasmania in 2006 with commissioning of Basslink.
4. Now fully integrated market

# Price History

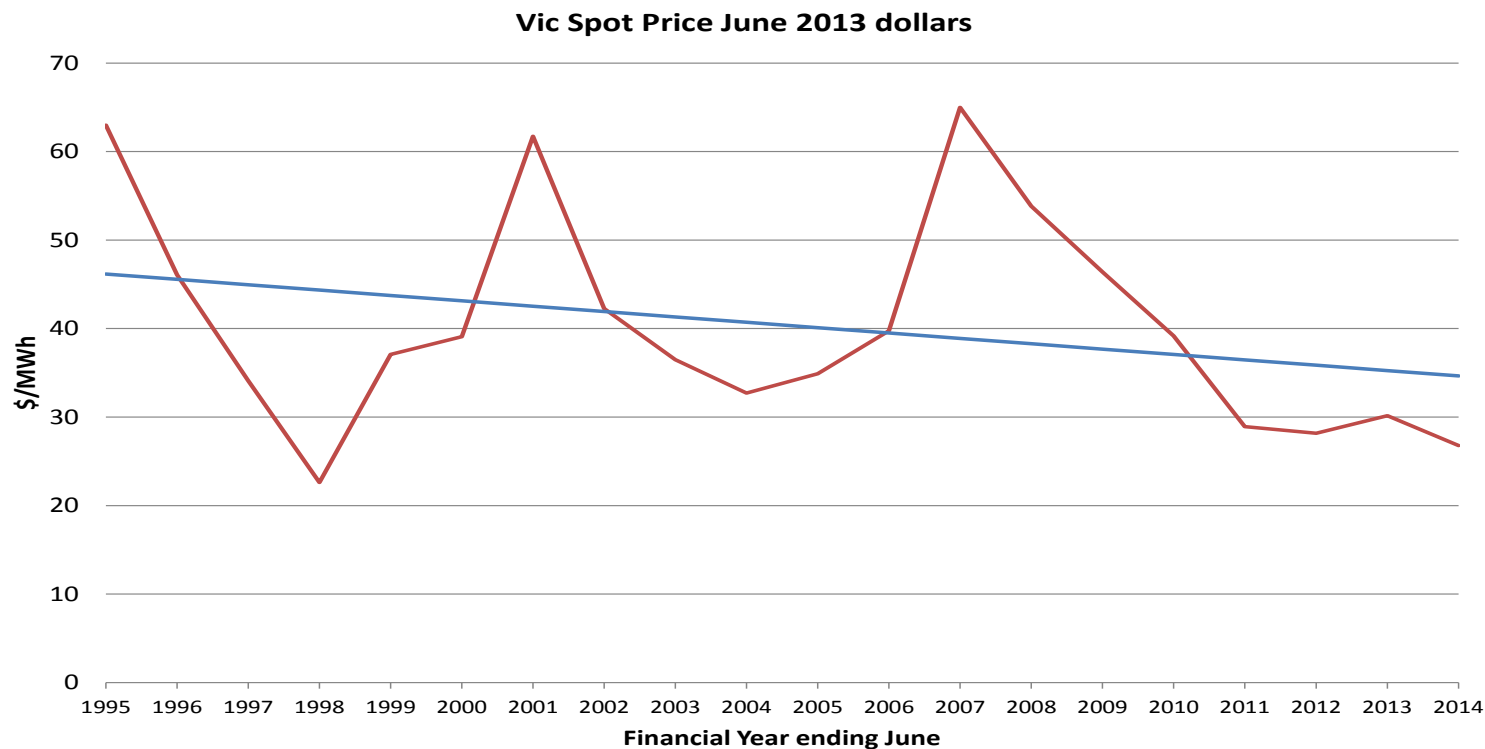
- Prices have moved up and down reflecting broad energy policy changes, temporary supply constraints, adverse weather.
  - In other words, have reacted to changing supply/demand conditions.
- Prices across the States converged especially after interconnection capacity was enhanced
- Prices are currently at the lowest level in real terms since the combined national market commenced operation
  - Prices have recently increased in some states (e.g. Queensland, Victoria) due to capacity withdrawals
- Increased in mid 2012 as a result of the commencement of carbon pricing
  - Around \$20 to \$25/MWh contribution from carbon pricing

# Price History

Real Regional 52 Week Pool Price (\$June 2013)



# Price History



# Factors Affecting Recent Price Trends

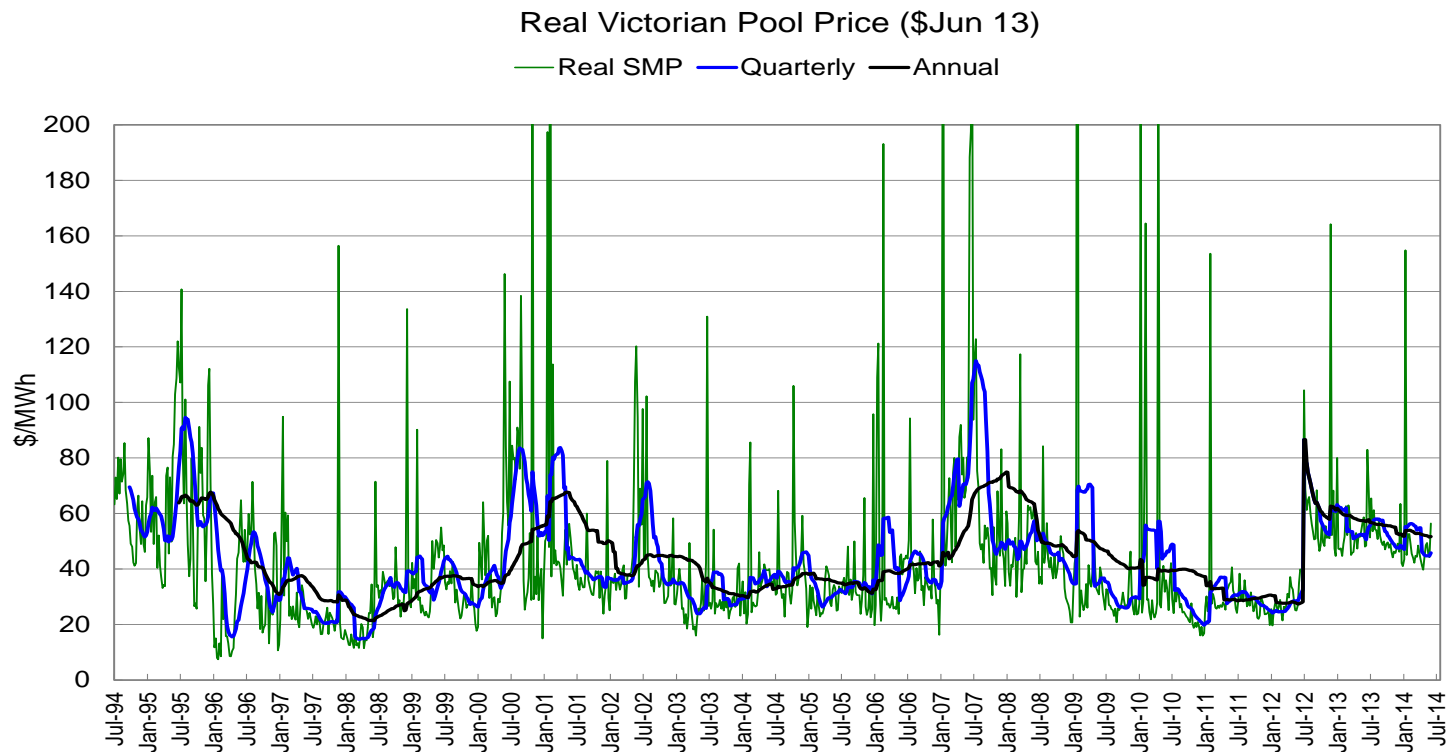
- Demand has shown steady declining trend since 2009
  - Energy efficiency
  - Reaction to high retail prices
  - Industry restructuring
  - Small scale renewable energy generation
- Milder winter and summers
- Large scale renewable energy generation
- Some of these factors will change putting upward pressure on prices
  - Rising fuel prices (legacy contracts expire)
  - Capacity withdrawals
  - Limited strategic bidding
- Basically market is responding to supply/demand balances

# Price Volatility

- Level of volatility is an important indicator of market health
  - Price spikes or increasing incidence of price spikes is an important signal for new investment. It is a key feature of price only markets.
  - But high incidence of price spikes could also be an indicator of market power
- Level of volatility has been up and down!
  - Has been a lower level of incidence in most States (since late 2010)
  - But in some smaller States constrained by interconnect capacity incidence has been at trend levels
  - Also a cyclical pattern to spikes, with increased incidence during summer and mid year in peak demand periods and/or contract renewals



# Price Volatility



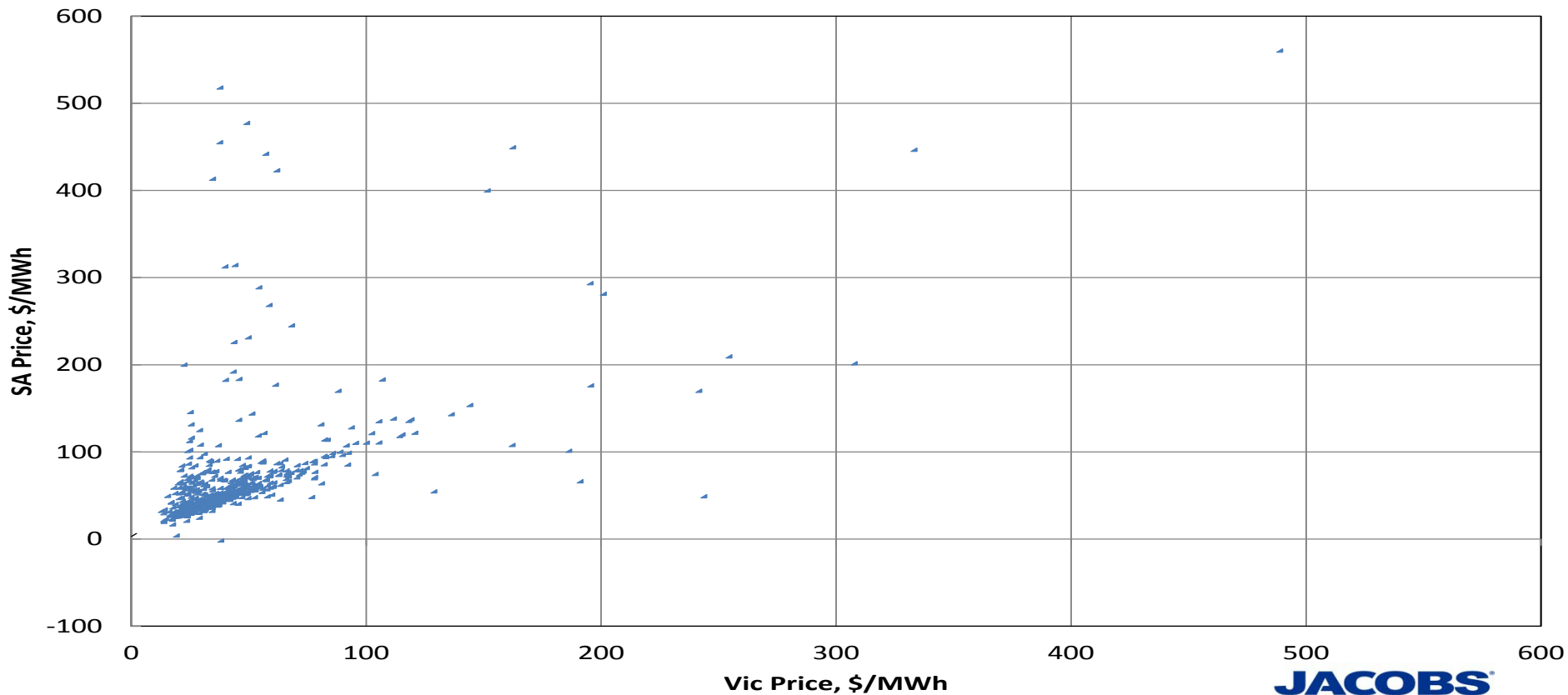
# Price Volatility

- Conditions for price volatility
  - Recent increase in reserve margin has dampened volatility
  - Only during temporary tight supply/demand balance periods (last summer)
  - Some instances of temporary price spikes in off-peak periods
  - Induced price volatility during contract renewal periods to maximise contract premiums
  - But retailers have responded to historical price spikes by building their own peaking capacity

# Level of Competition

- Generally the spot market has been competitive
  - Interregional networks have been unconstrained 95% of the dispatch intervals so not allowing for many periods of price separation.
  - Very few instances of yearly moving average prices going above new entry levels
- There have been some instances of strategic bidding
  - Difficult to determine whether this is due generators using their market power
  - Or bidding to maintain reasonable profits
- But increasing levels of horizontal and vertical integration
  - Increasing vertical integration probably not yet reached level to be a problem
  - Barriers or costs for new entrants becoming high
- Vic market not as prone to strategic bidding

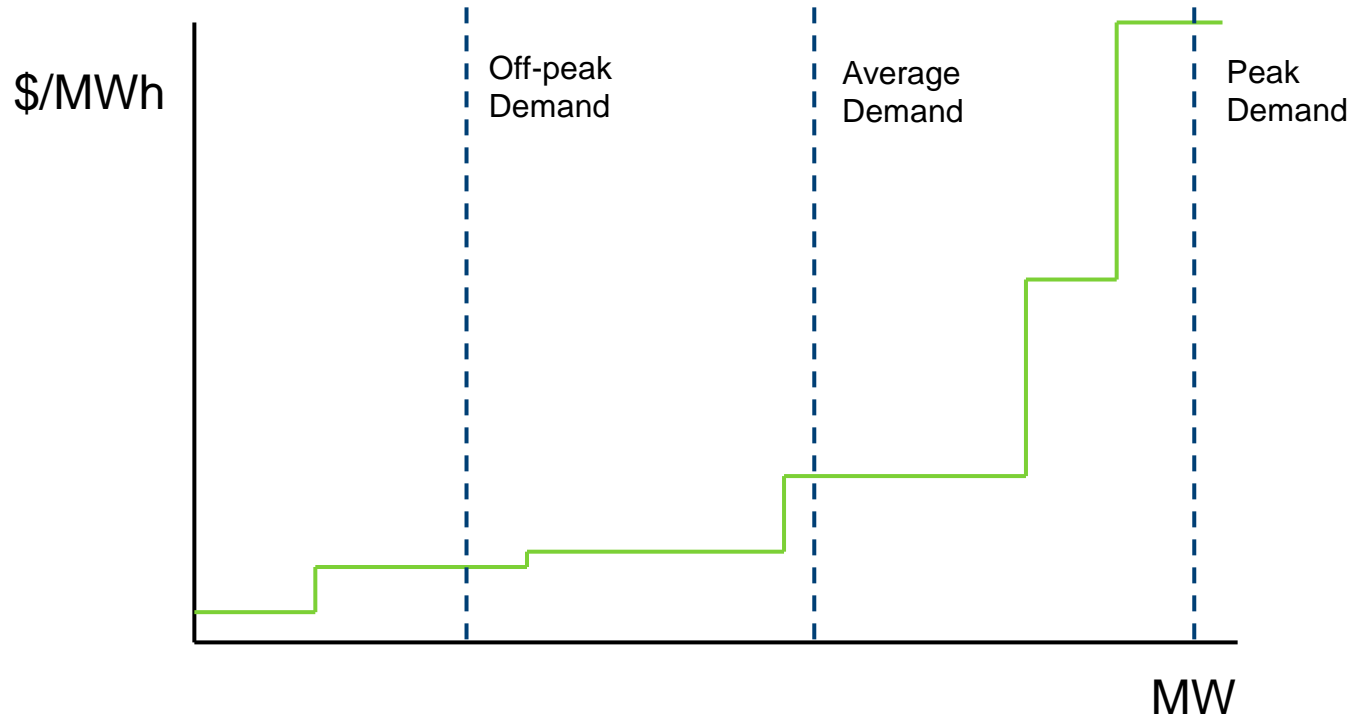
# Incidence of Price Separation: Vic/SA



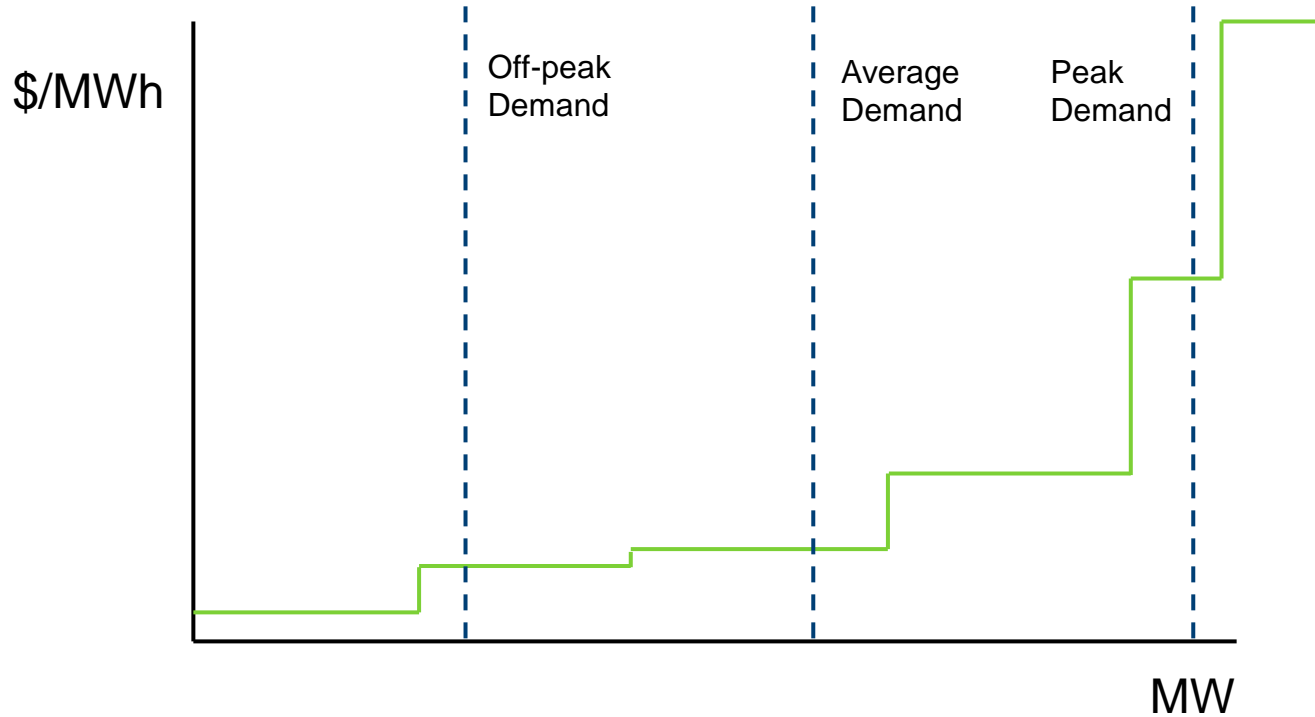
# Price fundamentals

- Electricity markets exhibit a mean reversion characteristic
  - In the long run prices converge to the long run marginal cost of new entry
  - In the short term, prices deviate to short time supply demand conditions
- Most State markets exhibit a supply (bid) curve that is relatively low for a high portion of capacity and then a sharp rise in marginal costs for small portion of capacity
  - This is adjusting slowly over time as more shoulder/peaking plant enter the market
  - But affected by other factors such as renewable energy support policy

# Price fundamentals



# Price fundamentals



# Outlook for Price

- Uncertain times ahead
- Drivers of price trends
  - Policy developments
  - Demand trends
  - Capital costs
  - Fuel prices
  - Strategic decisions



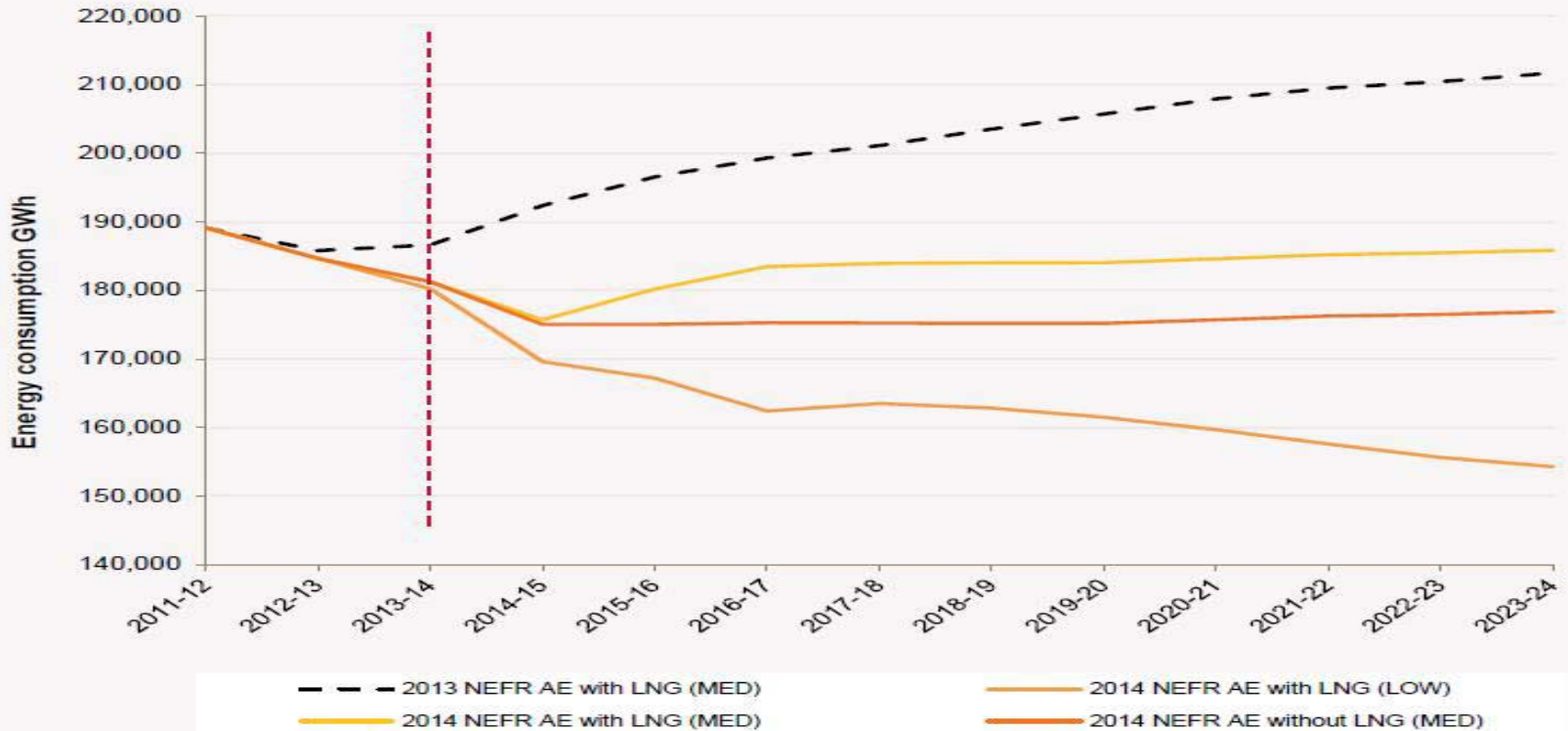
# Policy

- Carbon mitigation policy
  - Carbon price likely to be repealed
  - Replaced by ERF
    - Energy efficiency
    - Some low emission generation
  - What will occur in the long term
    - Some form of carbon pricing reintroduced?
    - Indirect action
    - Investor response
- Renewable energy policy
  - Current review
  - Target reduction
    - Even a reduced target (real 20%) will likely see around 2,000 to 3,000 MW of additional renewables
  - Other support policy (CEFC, ARENA)

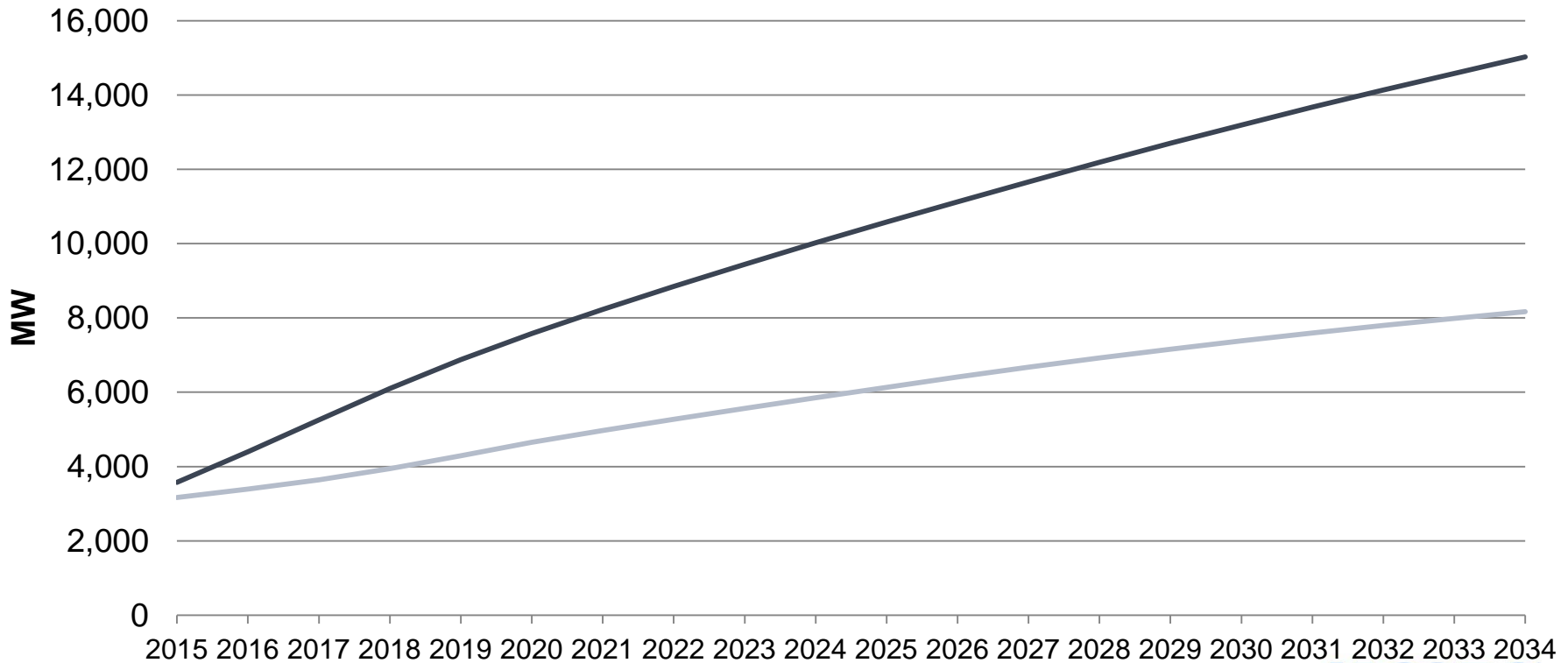
# Demand trends

- AEMO's latest forecasts indicate subdued demand growth
  - Substantial reductions from last year
  - Large industrial loads leaving
- Uncertainties in demand
  - Ongoing operation of other large loads
  - Small-scale generation uptake
  - Energy efficiency
    - Some wind back of government policy
    - But more attention being paid to energy efficiency by large scale enterprises

# Demand trends- AEMO Projections



## Demand trends – PV uptake

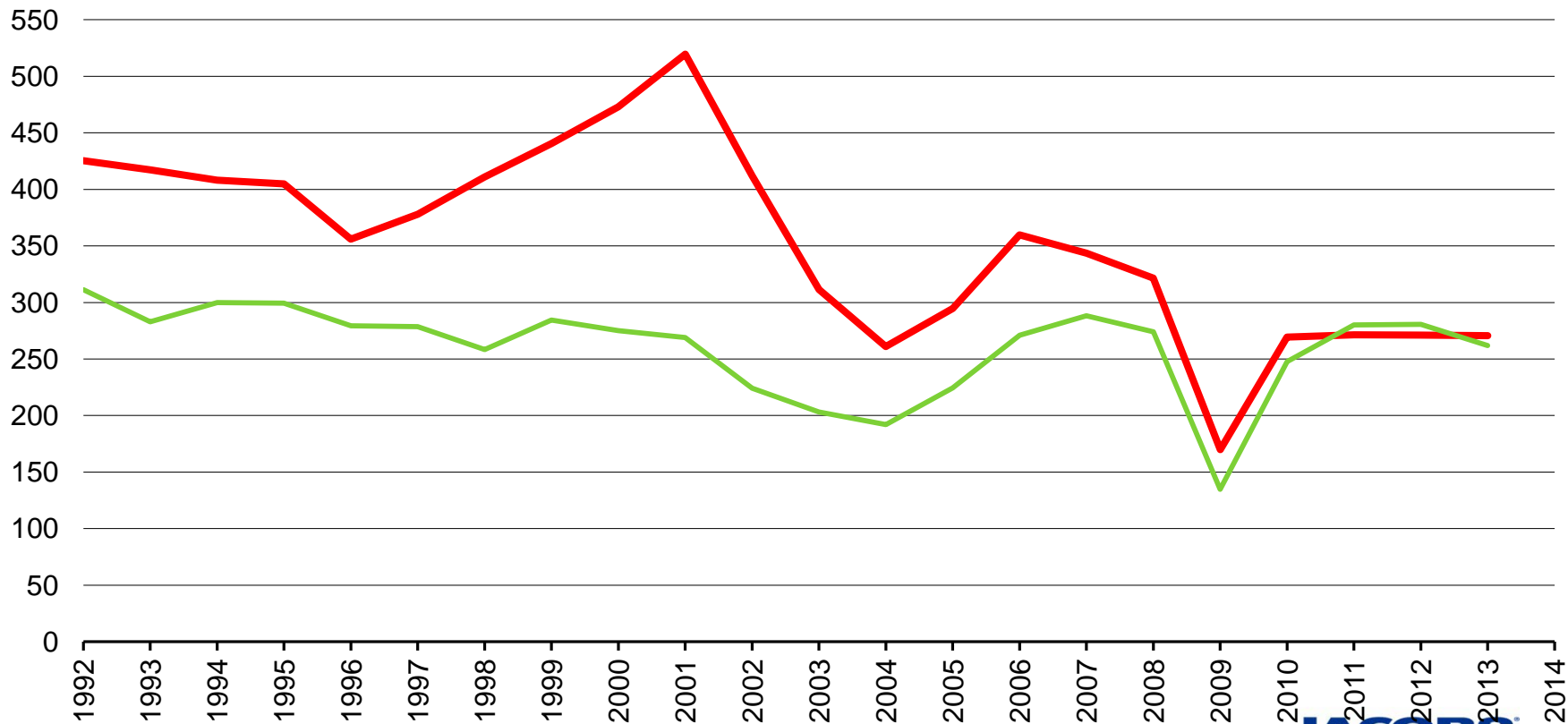


# Capital costs

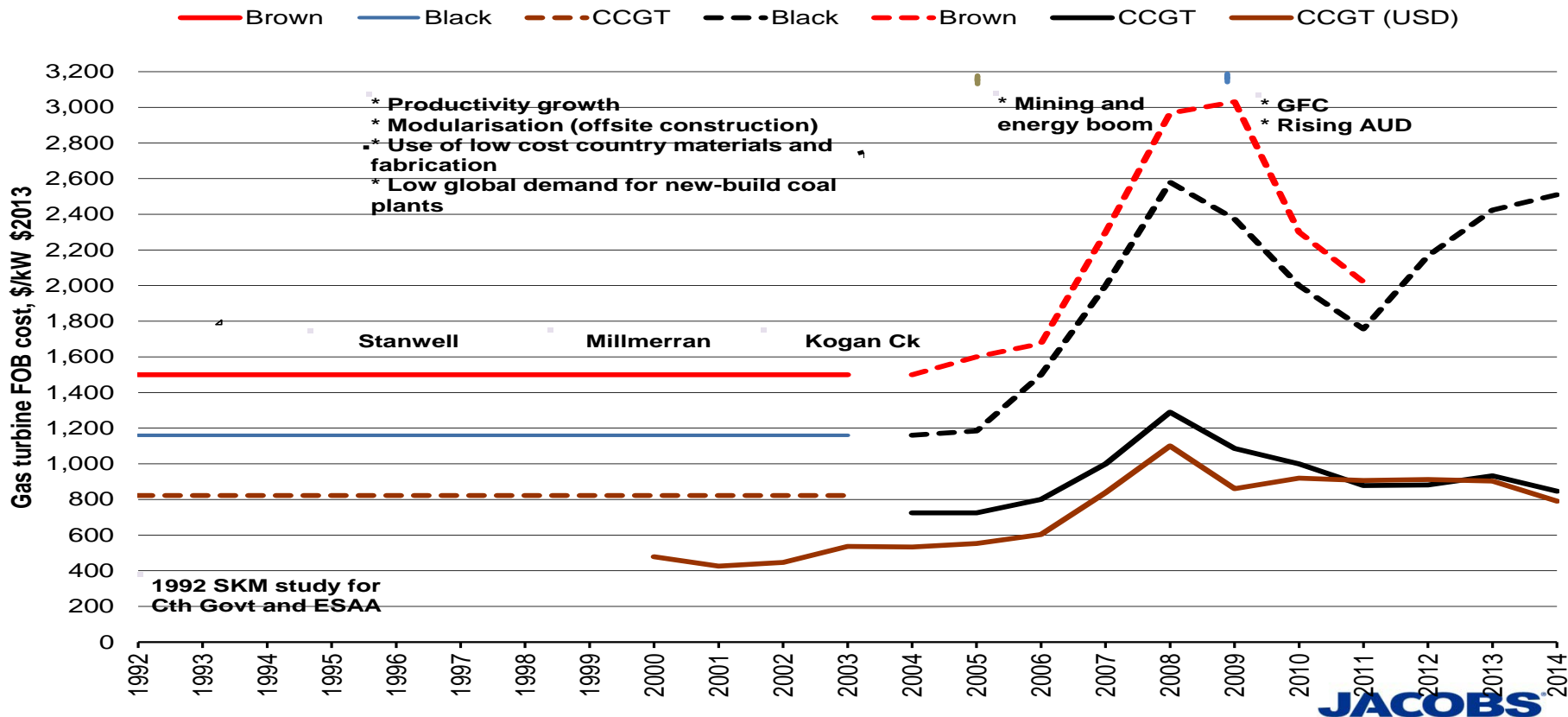
- Prime determinant of long run marginal costs
- Historical long term decline but with major cycles
- Latest costs are higher than long term historical trends
  - Cyclical and/or structural
  - Differences in cost trends across technologies

# Capital costs

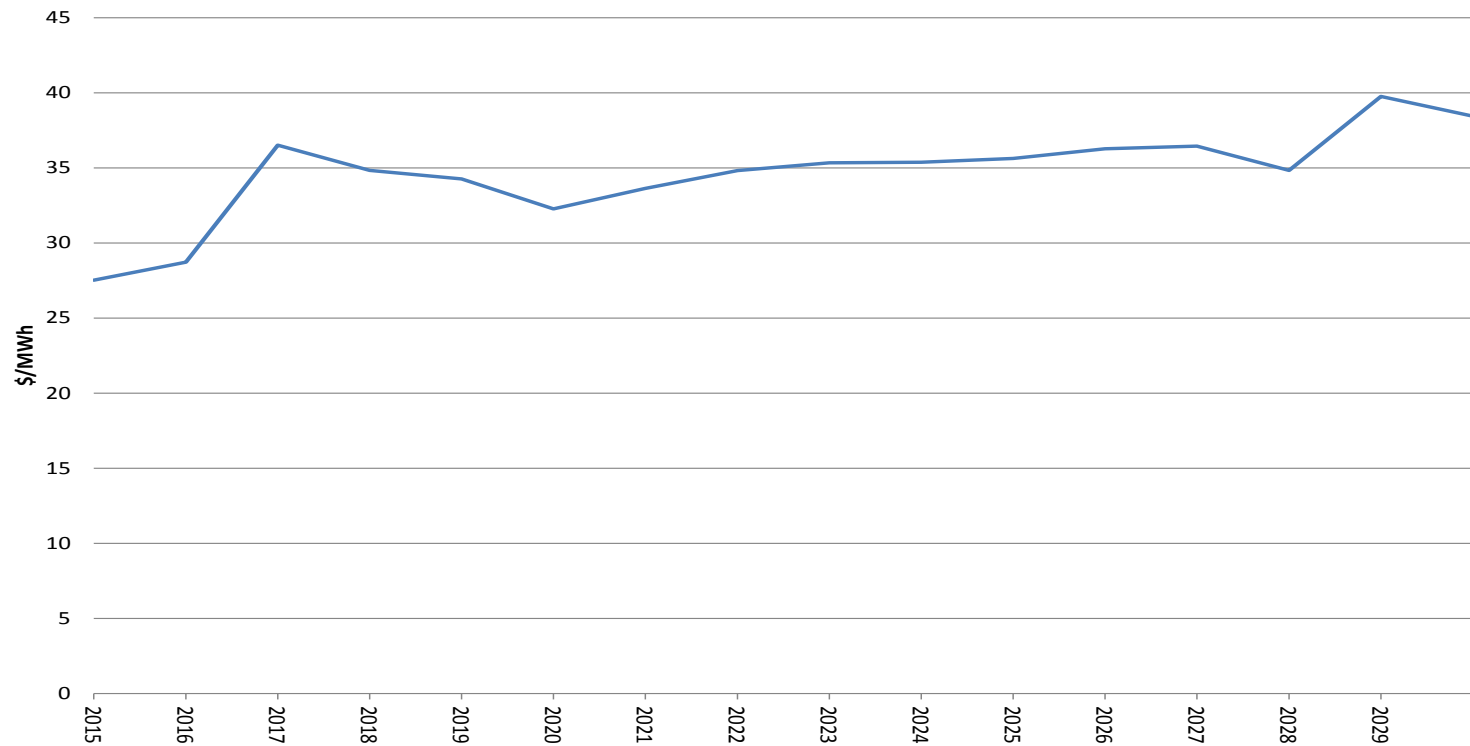
Gas turbine FOB cost, \$/kW \$2013



# Capital costs



# Strategic decisions – Vic SMP Projection – 41 TWh LRET





# Conclusions

- Outlook uncertain
- Conflicting trends
  - Main uncertainties revolve around policy developments and demand trends
- But prices should eventually rise to LRMC levels

# Trends in Wholesale Electricity Prices in Victoria

PRESENTATION TO AIE'S ENERGY PRICING IN VICTORIA: TRENDS, CAUSES AND THE  
FUTURE, 25 JUNE 2014

**JACOBS** SKM

[www.jacobsskm.com](http://www.jacobsskm.com) | worldwide