Electricity Report
25 – 31 January 2015

AUSTRALIAN ENERGY REGULATOR

Introduction

The AER is required to publish the reasons for significant variations between forecast and actual price and is responsible for monitoring activity and behaviour in the National Electricity Market. The Electricity Report forms an important part of this work. The report contains information on significant price variations, movements in the contract market, together with analysis of spot market outcomes and rebidding behaviour. By monitoring activity in these markets, the AER is able to keep up to date with market conditions and identify compliance issues.

Spot market prices

Figure 1 shows the spot prices that occurred in each region during the week 25 to 31 January 2015. There were four occasions where the spot price in Queensland was above $250/MWh and greater than three times the regional weekly average price.

Figure 1 : Spot price by region ($/MWh)

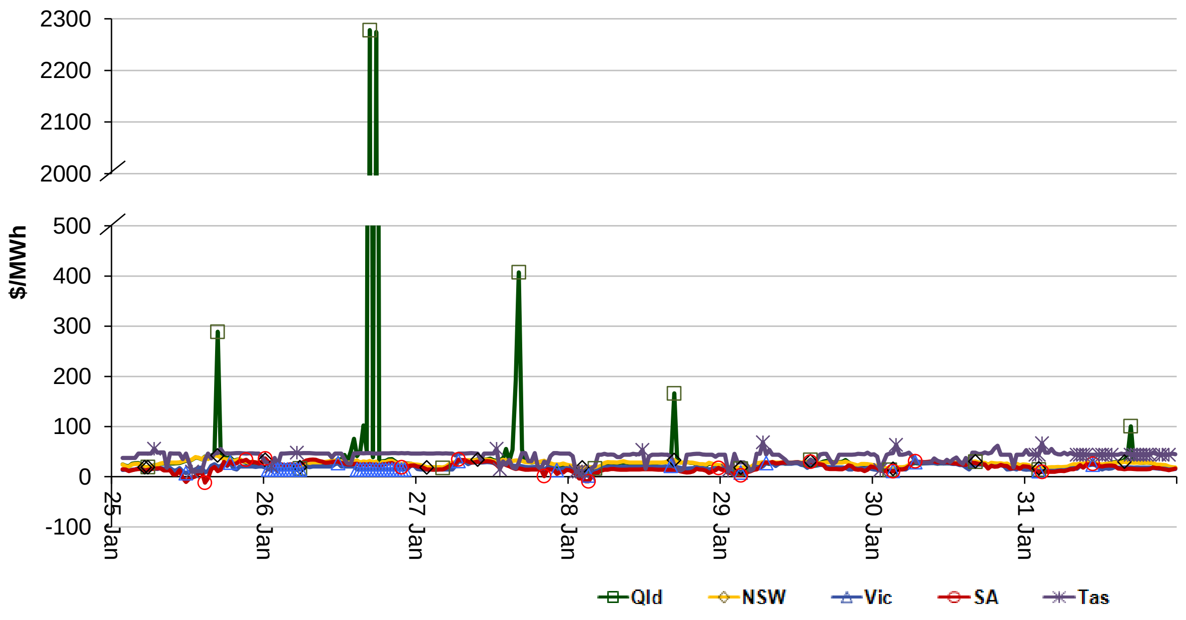


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

Figure 2 : Volume weighted average spot price by region ($/MWh)

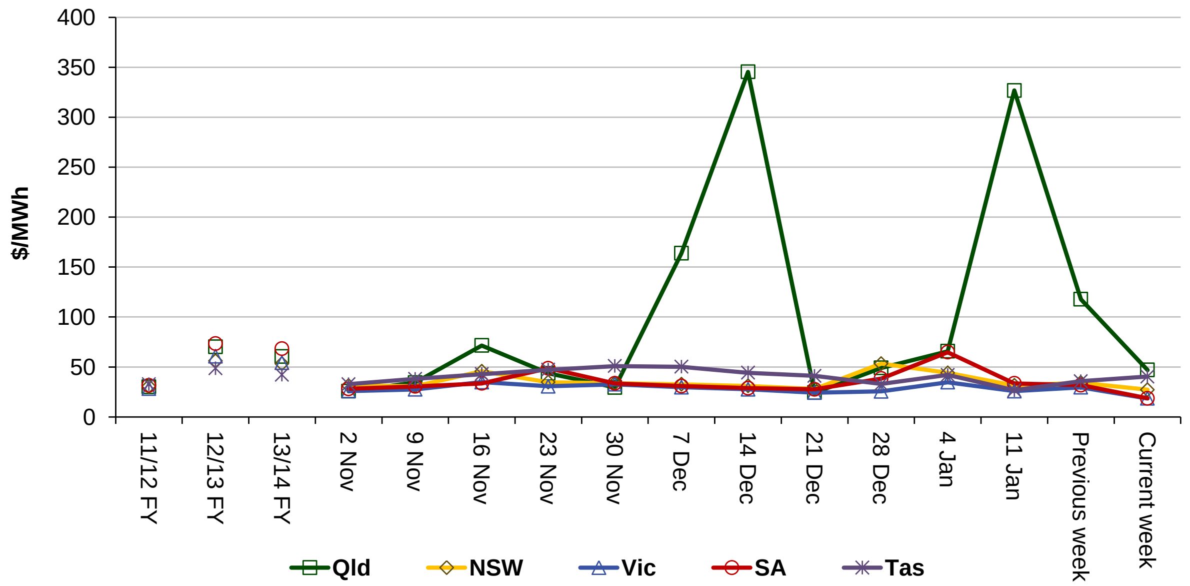


Table 1 : Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	47	27	18	19	40
13-14 financial YTD	61	53	54	68	42
14-15 financial YTD	64	37	32	40	38

Longer-term statistics tracking average spot market prices are available on the AER website.

Spot market price forecast variations

The AER is required under the National Electricity Rules to determine whether there is a significant variation between the forecast spot price published by the Australian Energy Market Operator (AEMO) and the actual spot price and, if there is a variation, state why the AER considers the significant price variation occurred. It is not unusual for there to be significant variations as demand forecasts vary and participants react to changing market conditions. A key focus is whether the actual price differs significantly from the forecast price either four or 12 hours ahead. These timeframes have been chosen as indicative of the time frames within which different technology types may be able to commit (intermediate plant within four hours and slow start plant within 12 hours).

There were 181 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2014 of 71 counts and the average in 2013 of 97. Reasons for the variations for this week are summarised in Table 2. Based on AER analysis, the table summarises (as a percentage) the number of times when the actual price differs significantly from the forecast price four or 12 hours ahead and the major reason for that variation. The reasons are classified as availability (which means that there is a change in the total quantity or price offered for generation), demand forecast inaccuracy, changes to network capability or as a combination of factors (when there is not one dominant reason). An instance where both four and 12 hour ahead forecasts differ significantly from the actual price will be counted as two variations.

Table 2 : Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	4	51	0	3
% of total below forecast	23	18	0	2

Note: Due to rounding, the total may not be 100 per cent.

Generation and bidding patterns

The AER reviews generator bidding as part of its market monitoring to better understand the drivers behind price variations. Figure 3 to Figure 7 show, the total generation dispatched and the amounts of capacity offered within certain price bands for each 30 minute trading interval in each region.

Figure 3 : Queensland generation and bidding patterns

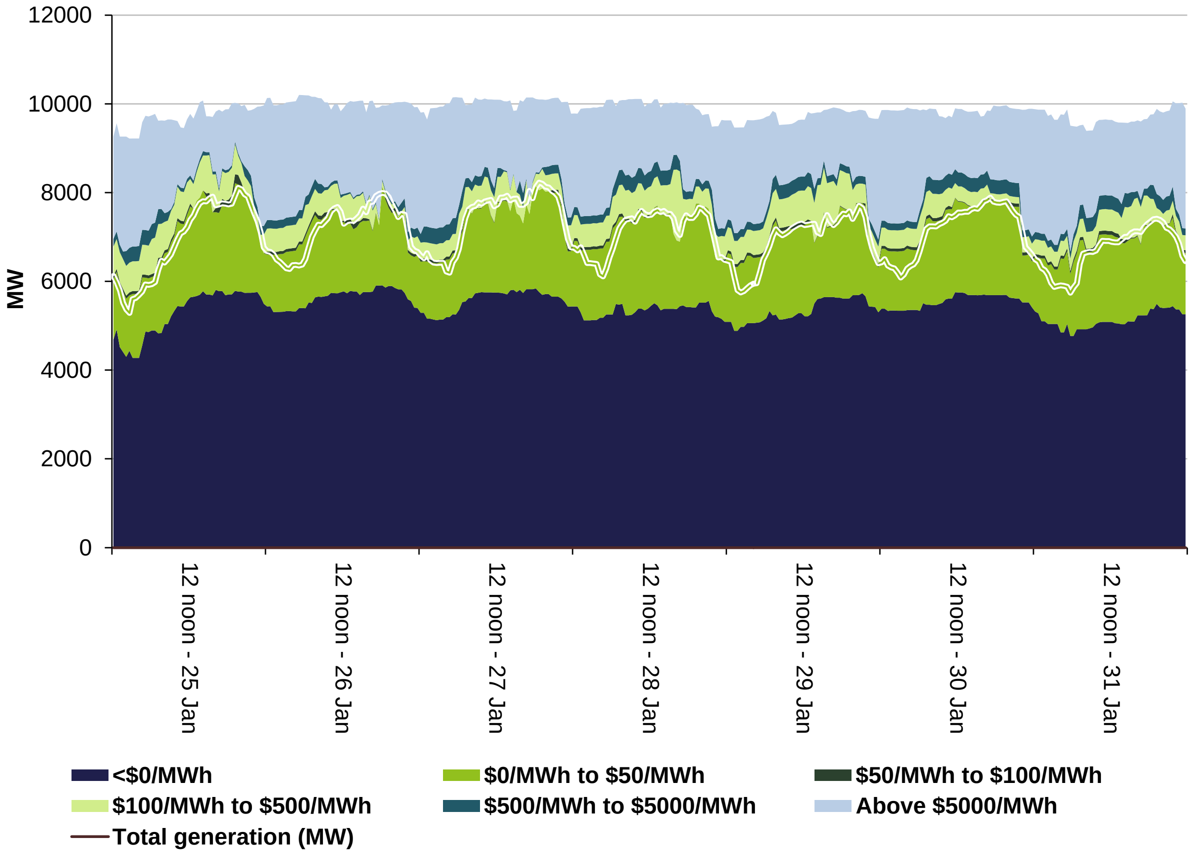


Figure 4 : New South Wales generation and bidding patterns

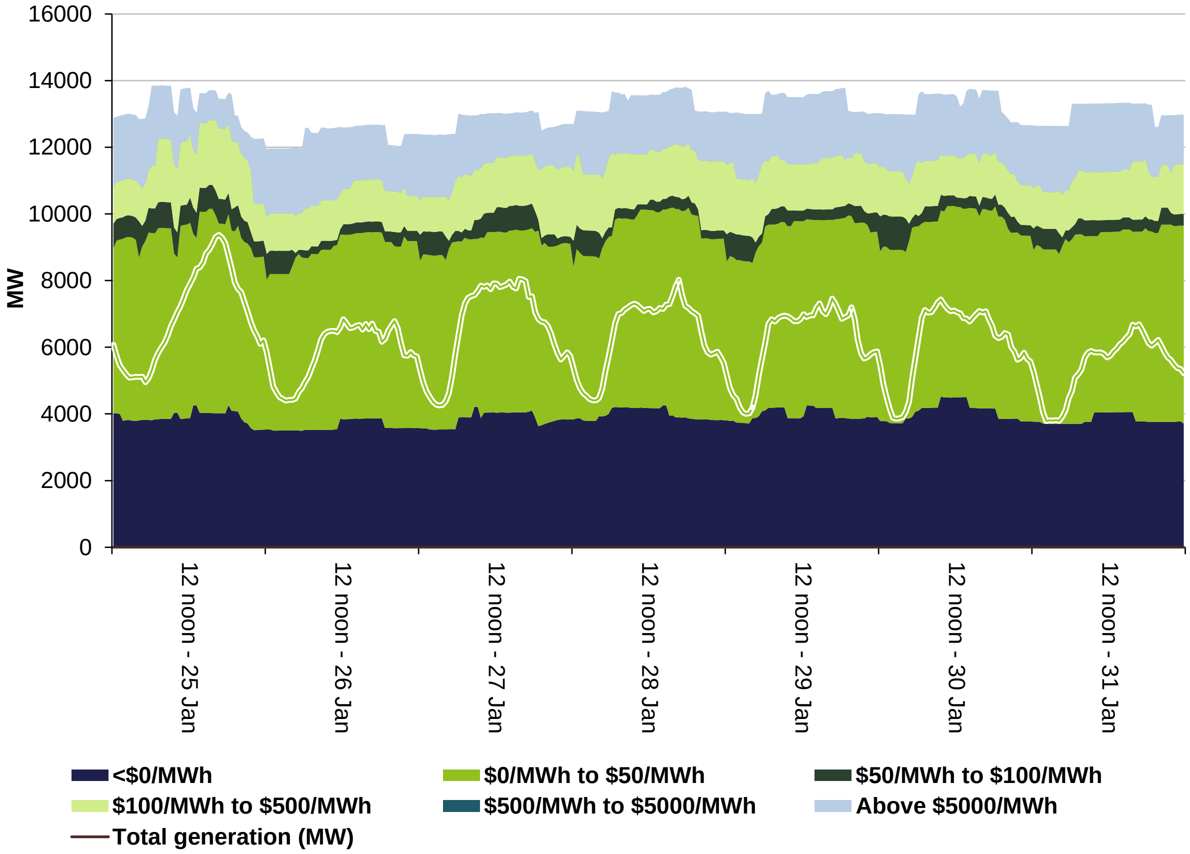


Figure 5 : Victoria generation and bidding patterns

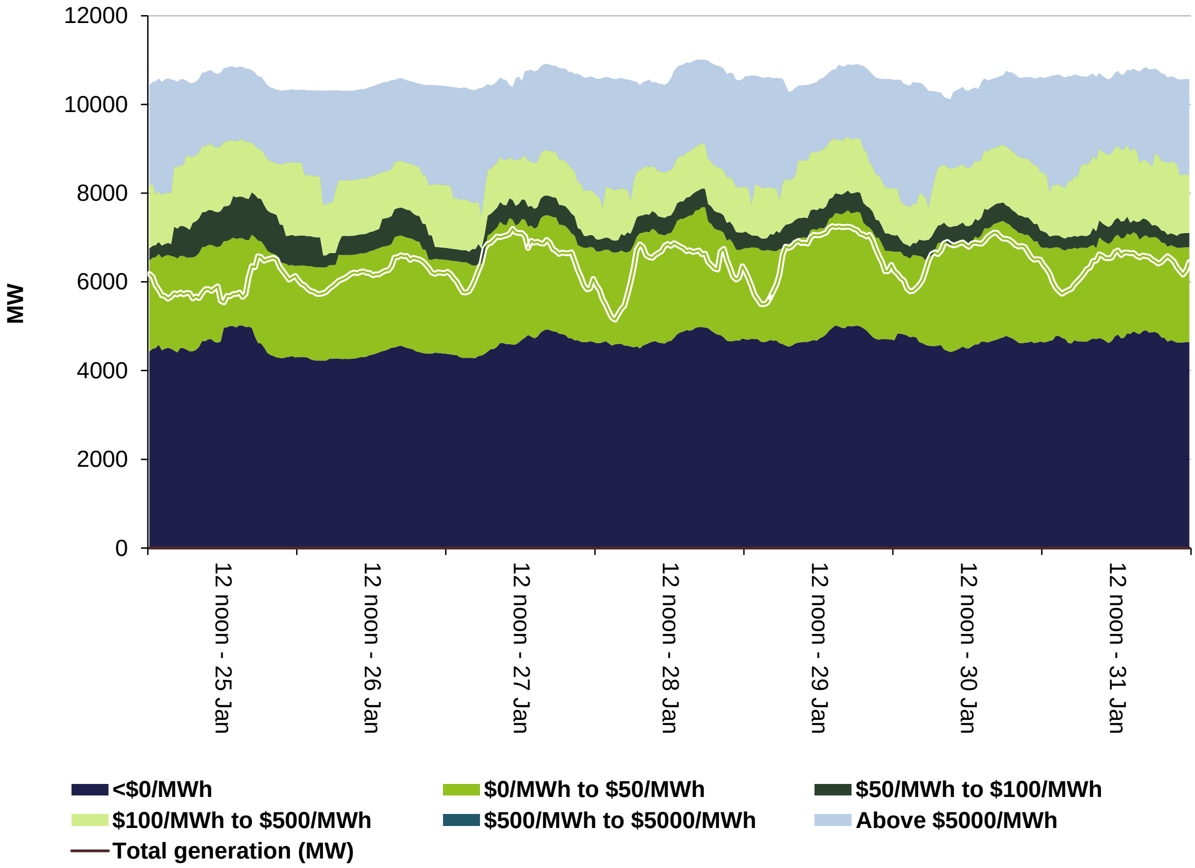


Figure 6: South Australia generation and bidding patterns

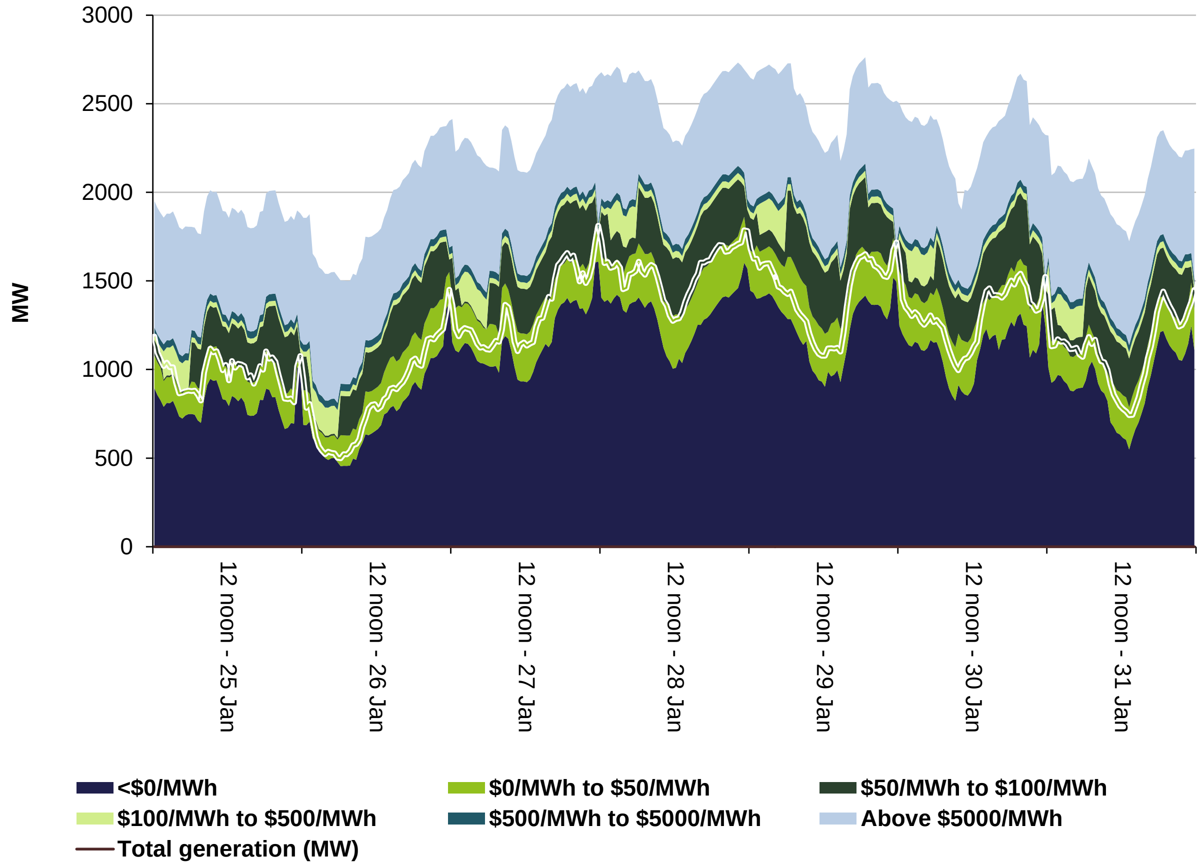
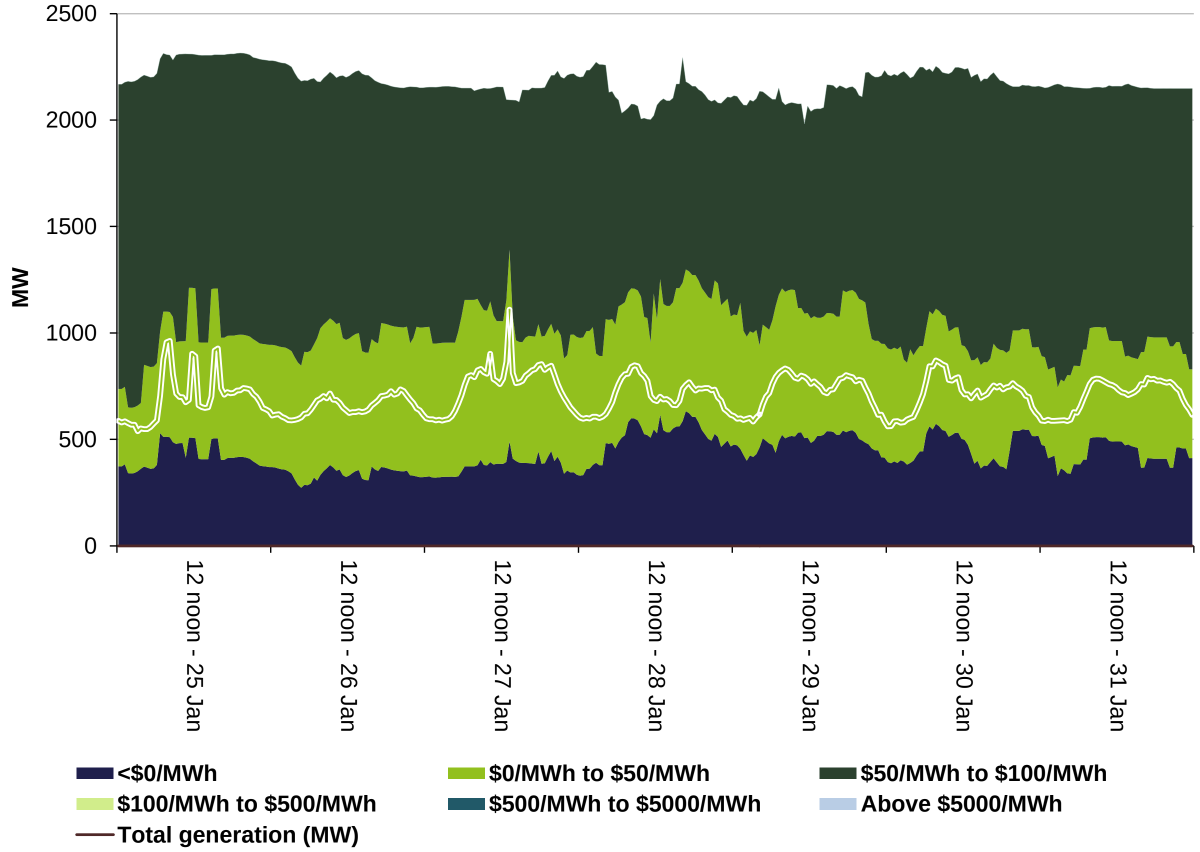


Figure 7: Tasmania generation and bidding patterns



Frequency control ancillary services markets

Frequency control ancillary services (FCAS) are required to maintain the frequency of the power system within the frequency operating standards. Raise and lower regulation services are used to address small fluctuations in frequency, while raise and lower contingency services are used to address larger frequency deviations. There are six contingency services:

- fast services, which arrest a frequency deviation within the first 6 seconds of a contingent event (raise and lower 6 second)
- slow services, which stabilise frequency deviations within 60 seconds of the event (raise and lower 60 second)
- delayed services, which return the frequency to the normal operating band within 5 minutes (raise and lower 5 minute) at which time the five minute dispatch process will take effect.

The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $402 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $186 000 or less than 3 per cent of energy turnover in Tasmania. The high FCAS cost in Tasmania was mainly driven by the raise 6 second service.

Figure 8 : Daily frequency control ancillary service cost

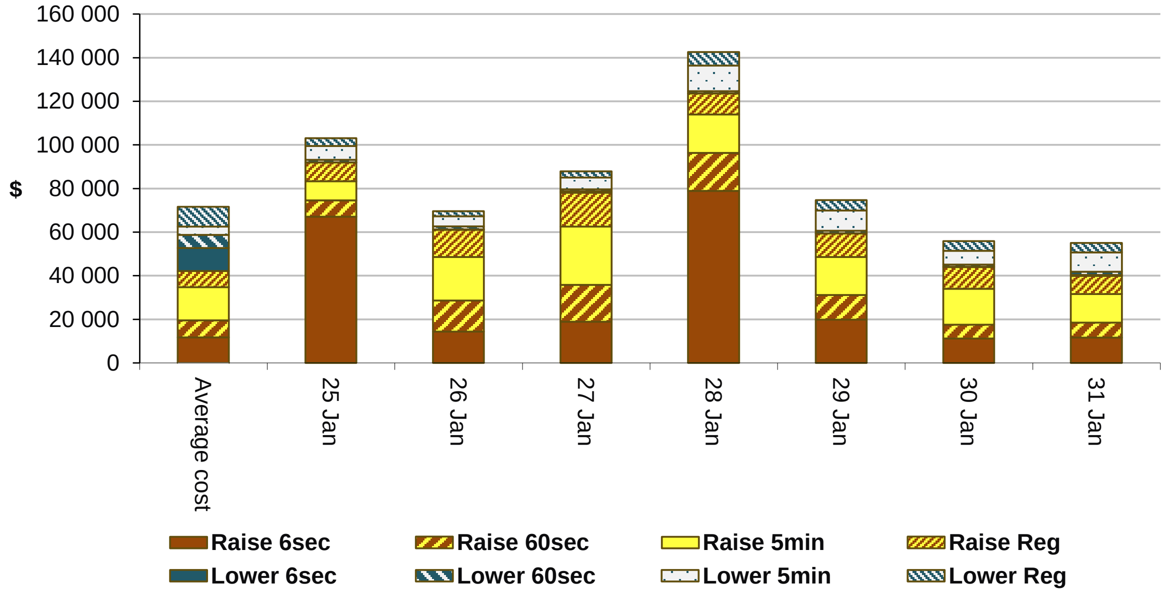


Figure 8 shows the daily breakdown of cost for each FCAS for the NEM, as well as the average cost since the beginning of the previous financial year. During the week a system normal constraint was binding which manages the raise 6 second FCAS requirement in Tasmania for the loss of a Smithton to Woolnorth 110 kV line, or Norwood to Scotsdale to Derby 110 kV lines. While the constraint was binding Basslink was unable to transfer FCAS and the region had to source the service locally. Increased raise 6 second requirements saw the price spike to $4508/MW at 7.05 am on 25 January, and $1692/MW at 12.45 pm and $1662/MW at 12.55 pm on 28 January. These factors led to the higher costs illustrated in figure 8 above.

Detailed market analysis of significant price events

We provide more detailed analysis of events where the spot price was greater than three times the weekly average price in a region and above $250/MWh or was below -$100/MWh.

Queensland

There were four occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $47/MWh and above $250/MWh.

During the high prices on 25, 26 and 27 January flow across both QNI and the Terranora interconnectors into Queensland were generally being limit to a total of between 70 MW and 220 MW. There was an occasion when flows were being forced out of Queensland into New South Wales counter-price by around 70 MW.

Queensland - Sunday, 25 January

Table 3 : Price, Demand and Availability

Time	Price ($/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
5:00 PM	288.85	34.32	37.21	7745	7649	7802	9859	10 136	9891

Conditions at the time saw demand close to forecast and availability 277 MW below that forecast four hours ahead.

Table 4 : Rebids for 5 pm

Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
3.43 pm	4.35 pm	Stanwell	Stanwell and Tarong	420	<30	13 499	1542A change in QLD demand PD 1300 VS 1600
4.05 pm	4.35 pm	CS Energy	Kogan Creek	-250	<15	N/A	1604P unit ramping rebid to match-mill issue resolved-SL
4.48 pm	4.55 pm	CS Energy	Gladstone and Wivenhoe	525	<300	Price cap	1647A interconnector constraint –QNI close to binding-SL
4.54 pm	5 pm	Callide Power Trading	Callide C	30	Price floor	Price cap	1653A chang in QNI PD - SL
Total capacity rebid from low to high prices				**975**			

With demand increasing by 62 MW and low-priced capacity fully dispatched, the dispatch price increased from $47/MWh at 4.55 pm to $1501/MWh at 5 pm.

Queensland - Monday, 26 January

Table 5: Price, Demand and Availability

Time	Price ($/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
5:00 PM	2278.01	38.86	38.39	7766	7865	7864	10 068	10 093	10 269
6:00 PM	2274.37	36.13	36.45	7754	7769	7840	9912	10 062	10 254

Conditions at the time saw demand and available capacity slightly lower than that forecast four hours ahead.

Table 6 : Rebids for 5 pm

Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
1.41 pm	1.50 pm	Stanwell	Stanwell and Tarong	200	<30	13 499	1341A N^^Q_NIL_B1 constraint binding
4.41 pm	4.50 pm	Stanwell	Stanwell and Tarong	340	<30	13 499	1638A increase QLD generation – Wivenhoe
4.47 pm	4.55 pm	Callide Power Trading	Callide C	80	Price floor	Price cap	1644A price above PD – SL
4.52 pm	5 pm	CS Energy	Callide, Gladstone, Kogan Creek and Wivenhoe	515	<290	Price cap	1650A interconnector constraint-QNI potential to bind north-SL
Total capacity rebid from low to high prices				**935**			

With low-priced capacity either ramp rate limited, fully dispatched or trapped in FCAS, the dispatch price ranged from $40/MWh at 4.55 pm to $13 499/MWh at 5 pm, set by Stanwell, Kareeya and Tarong units.

Table 7 : Rebids for 6 pm

Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
5.18 pm	5.25 pm	AGL	Oakey	-171	<300	N/A	1718F material change in market conditions:: change MW distrib (

Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
5.40 pm	5.50 pm	Stanwell	Stanwell and Tarong	340	<30	13 499	1738A change in QLD generation: w/hoe#1, mstuart1&2,oakey1 SL
5.44 pm	5.55 pm	Callide Power Trading	Callide C	47	Price floor	Price cap	1743A QNI potential to bind
5.46 pm	5.55 pm	Callide Power Trading	Callide C	80	Price floor	Price cap	1744A change in QNI PD – SL
5.50 pm	6 pm	CS Energy	Callide, Gladstone and Wivenhoe	470	<35	>12 800	1747A interconnector constraint-QNI unbound-SL
Total capacity rebid from low to high prices				**937**			

With low-priced capacity either ramp rate limited, fully dispatched or trapped in FCAS, the dispatch price ranged from $31/MWh at 5.55 pm to $13 499/MWh at 6 pm, set by Stanwell, Kareeya and Tarong units.

Queensland - Tuesday, 27 January

Table 8 : Price, Demand and Availability

Time	Price ($/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
4:30 PM	407.34	31.96	32.74	7781	7671	7711	10 047	10 079	10 114

Conditions at the time saw demand and available capacity close to that forecast.

Table 9 : Rebids for 4.30 pm

Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
3.03 pm	4.05 pm	Stanwell	Stanwell and Tarong	360	<30	13 499	1503A change in QLD generation Millmerran
3.53 pm	4.05 pm	CS Energy	Wivenhoe	250	15	296	1552F avoid uneconomic dispatch-SL
4.08 pm	4.15 pm	Millmerran Energy Trader	Millmerran	50	<10	>12 800	16:08 A RRP above PD
4.20 pm	4.30 pm	Callide Power Trading	Callide C	33	-952	12 859	1618A change in 5min PD RRP – SL

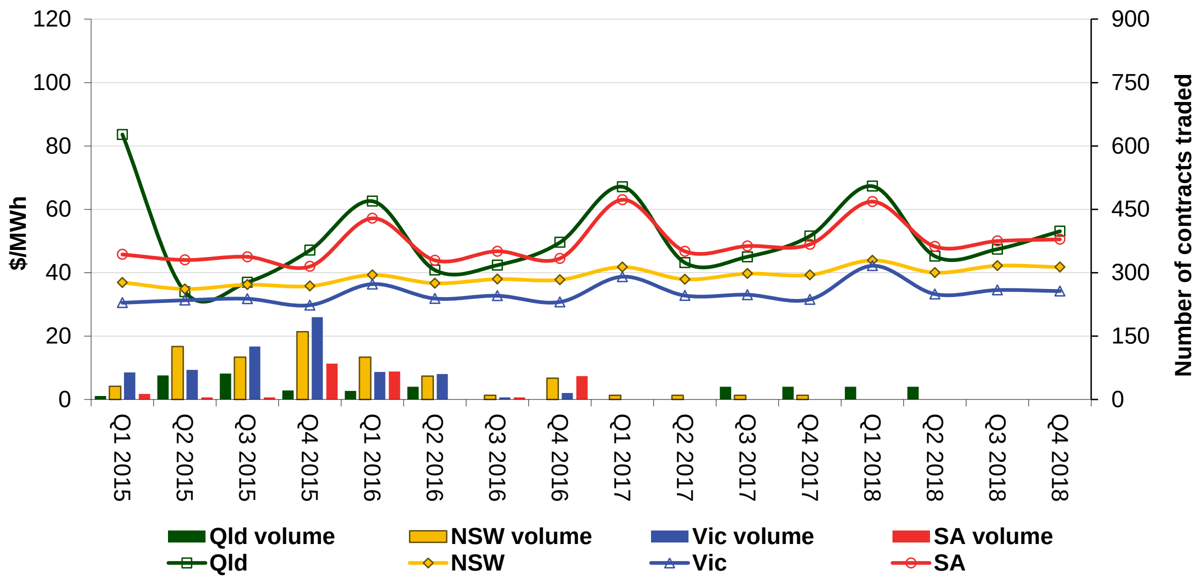
Time in	Time effective	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
4.23 pm	4.30 pm	CS Energy	Callide, Gladstone, Wivenhoe	520	<300	>1330	1620A interconnector constraint-QNI binding north-SL
Total capacity rebid from low to high prices				**1213**			

The dispatch price was around $200/MWh throughout the trading interval until 4.30 pm when CS Energy's rebid became effective and the dispatch price reached $1400/MWh.

Financial markets

Figure 9 shows for all mainland regions the prices for base contracts (and total traded quantities for the week) for each quarter for the next four financial years.

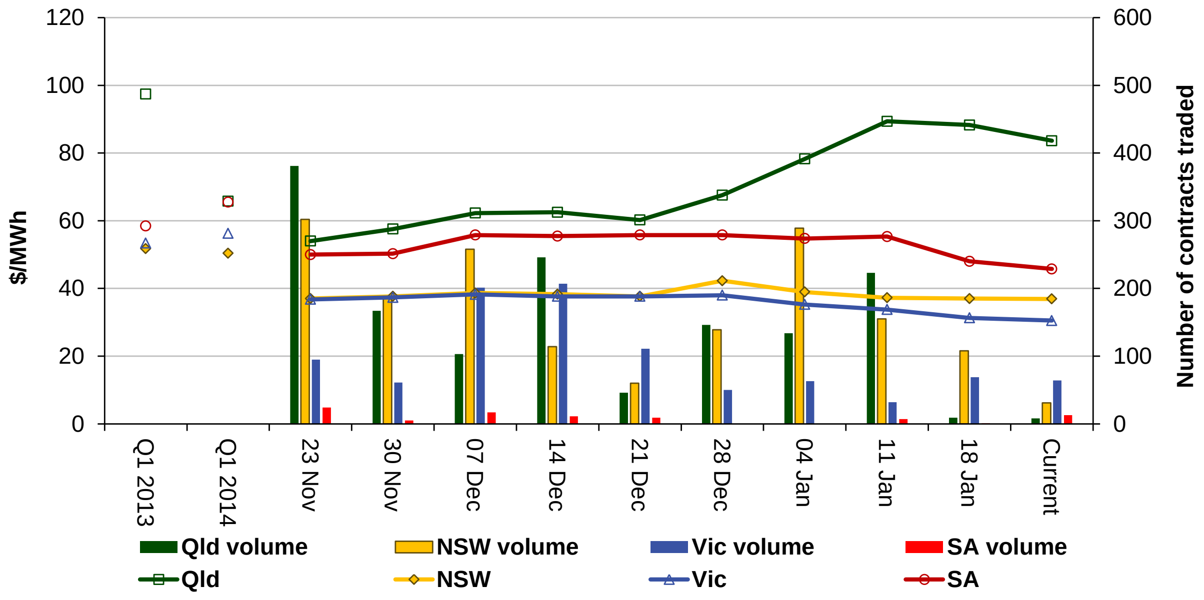
Figure 9 : Quarterly base future prices Q1 2015 – Q4 2018



Source: ASXEnergy.com.au

Figure 10 shows how the price for each regional Quarter 1 2015 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2013 and quarter 1 2014 prices are also shown. The AER notes that data for South Australia is less reliable due to very low numbers of trades. The high volume of trades in Figure 10 is due to options on calendar year base load expiring on Wednesday 19 November.

Figure 10 : Price of Q1 2015 base contracts over the past 10 weeks (and the past 2 years)



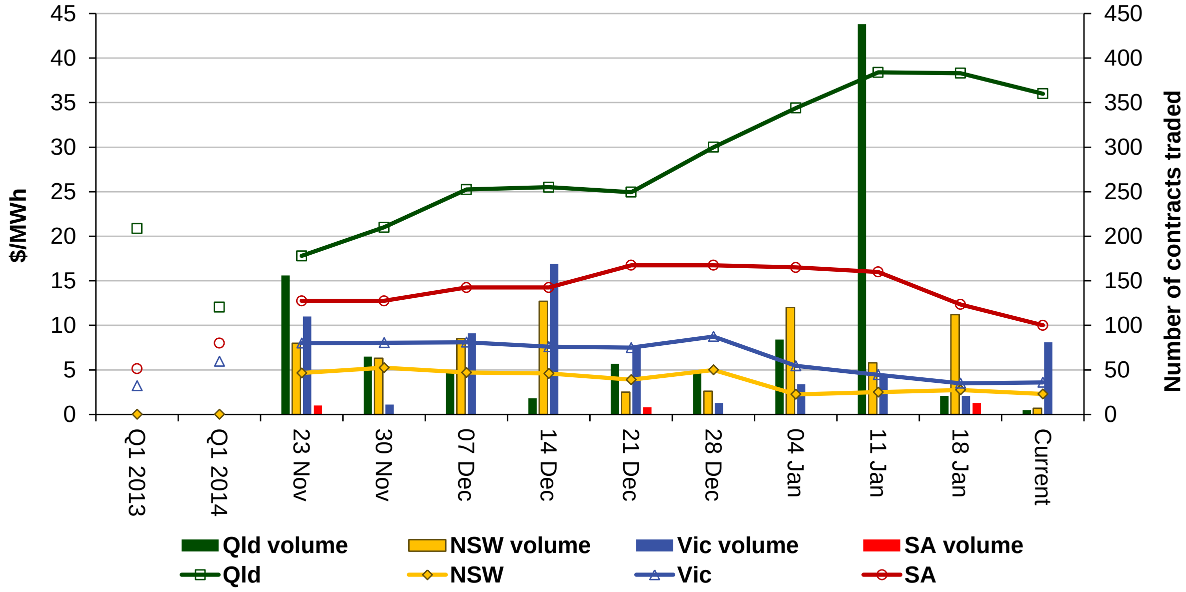
Note: Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for yearly periods 1 and 2 years prior to the current year.

Source: ASXEnergy.com.au

Prices of other financial products (including longer-term price trends) are available in the Performance of the Energy Sector section of our website.

Figure 11 : Price of Q1 2015 cap contracts over the past 10 weeks (and the past 2 years) shows how the price for each regional Quarter 1 2015 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2013 and quarter 1 2014 prices are also shown. The Queensland Q1 2015 cap contract price has now reached levels that were experienced in Q1 2013 when network capacity in central Queensland was providing opportunities for generation portfolios to raise prices.

Figure 11 : Price of Q1 2015 cap contracts over the past 10 weeks (and the past 2 years)



Source: ASXEnergy.com.au

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