

7 – 13 February 2016

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 7 to 13 February 2016. There were three occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$48/MWh and above \$250/MWh. The spot price in Tasmania reached \$278/MWh but it was not greater than three times the weekly average price of \$376/MWh.

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

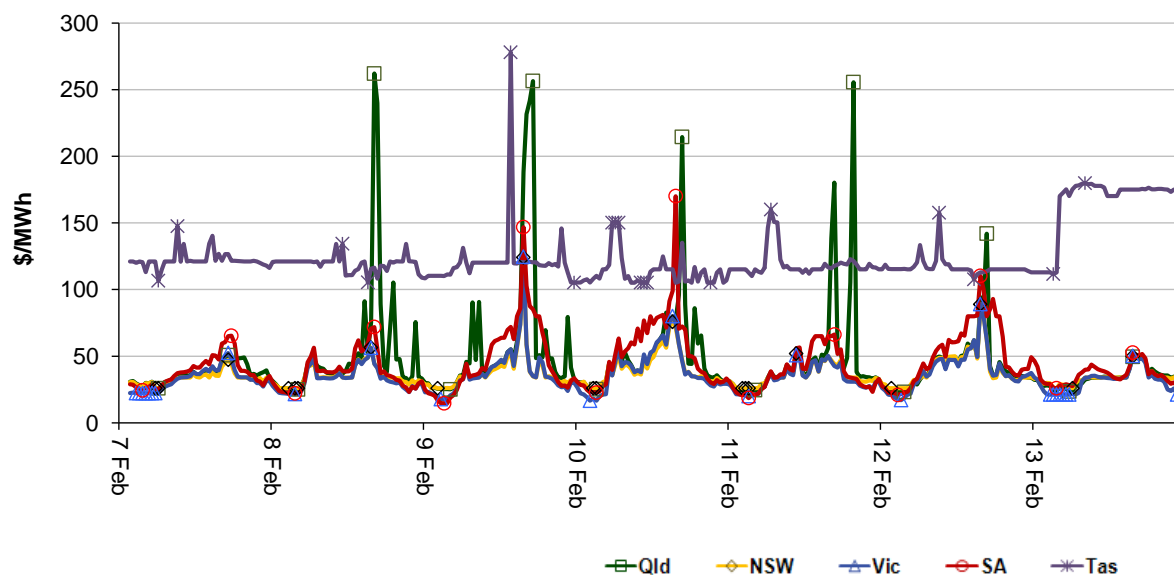


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

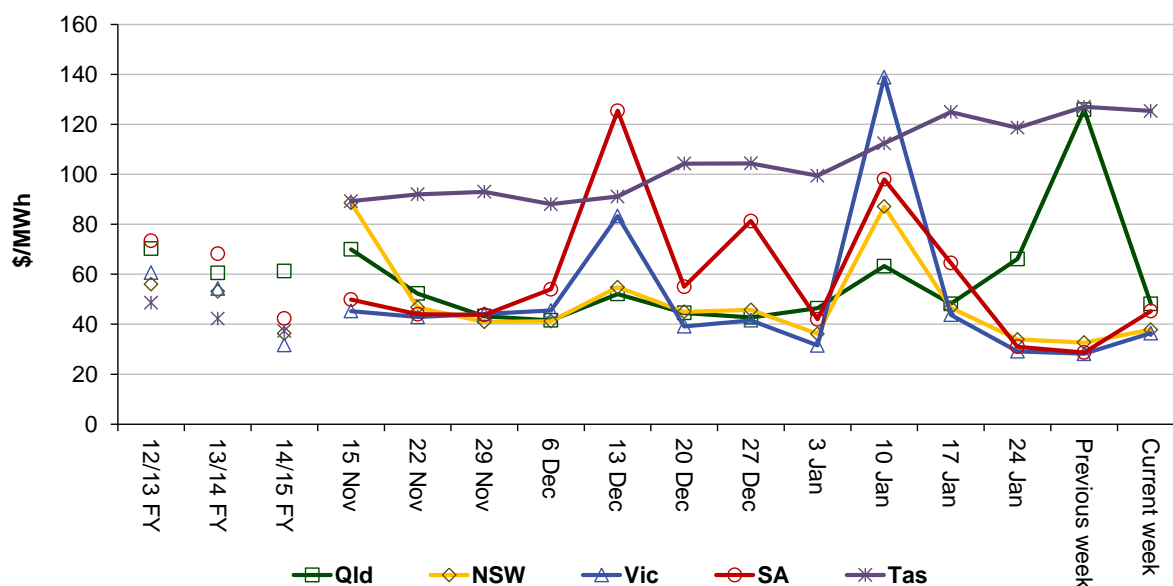


Table 1: Volume weighted average spot prices by region (\$/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	48	38	36	45	125
14-15 financial YTD	62	37	32	41	38
15-16 financial YTD	49	46	43	62	68

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 325 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2015 of 133 counts and the average in 2014 of 71. 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	1	11	0	1
% of total below forecast	87	1	0	0

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

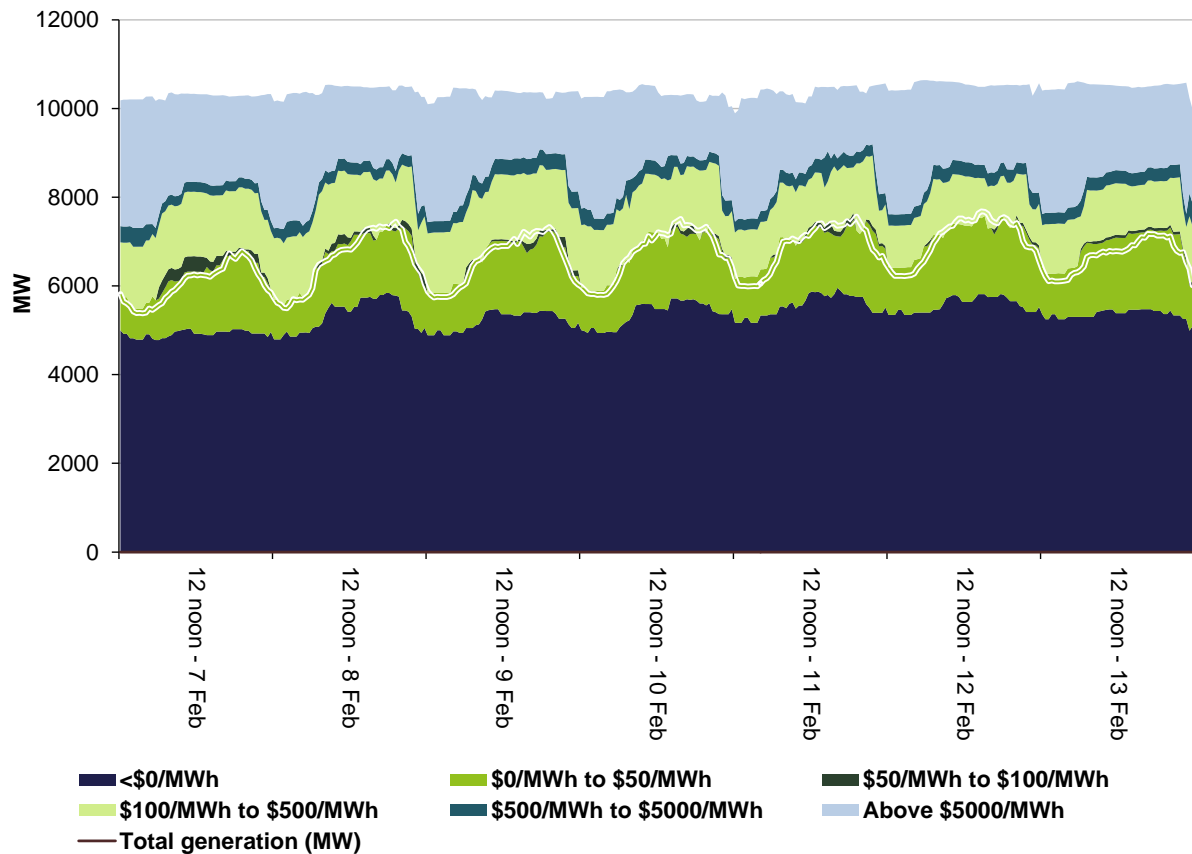


Figure 4: New South Wales generation and bidding patterns

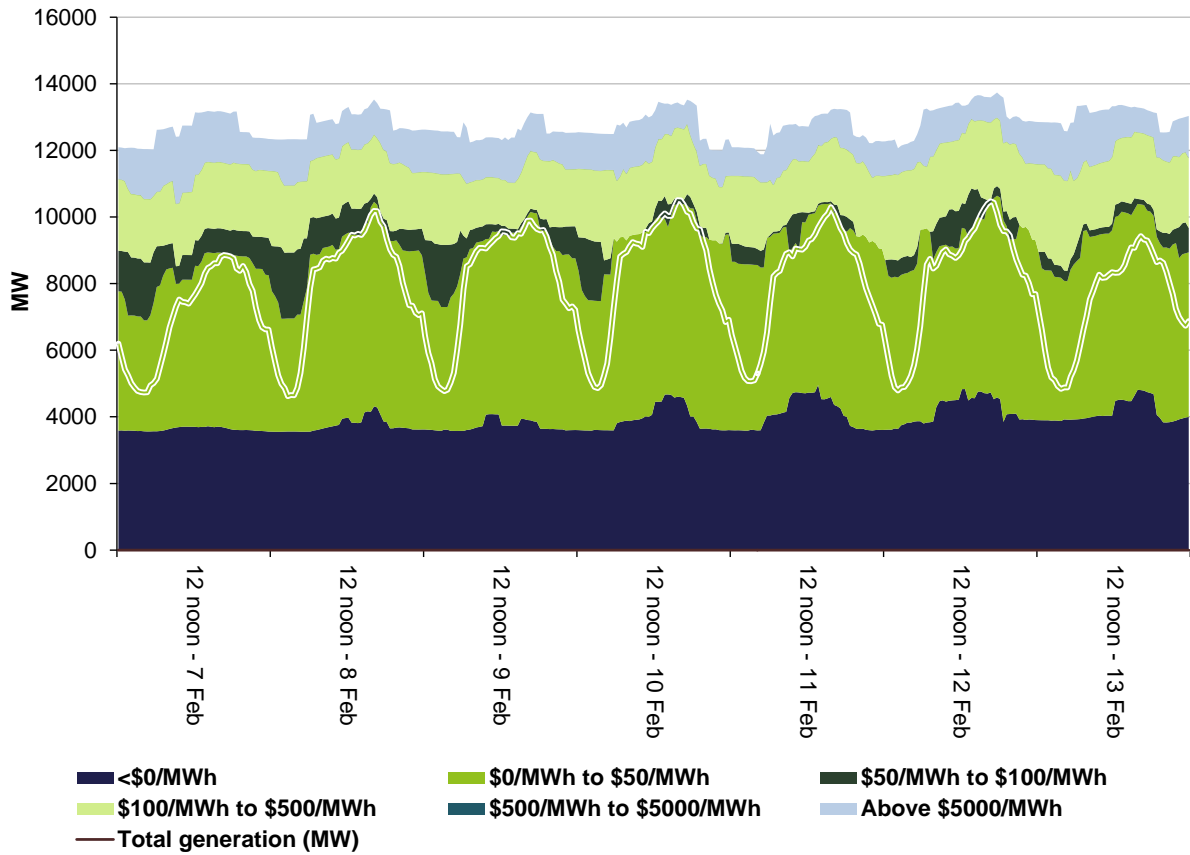


Figure 5: Victoria generation and bidding patterns

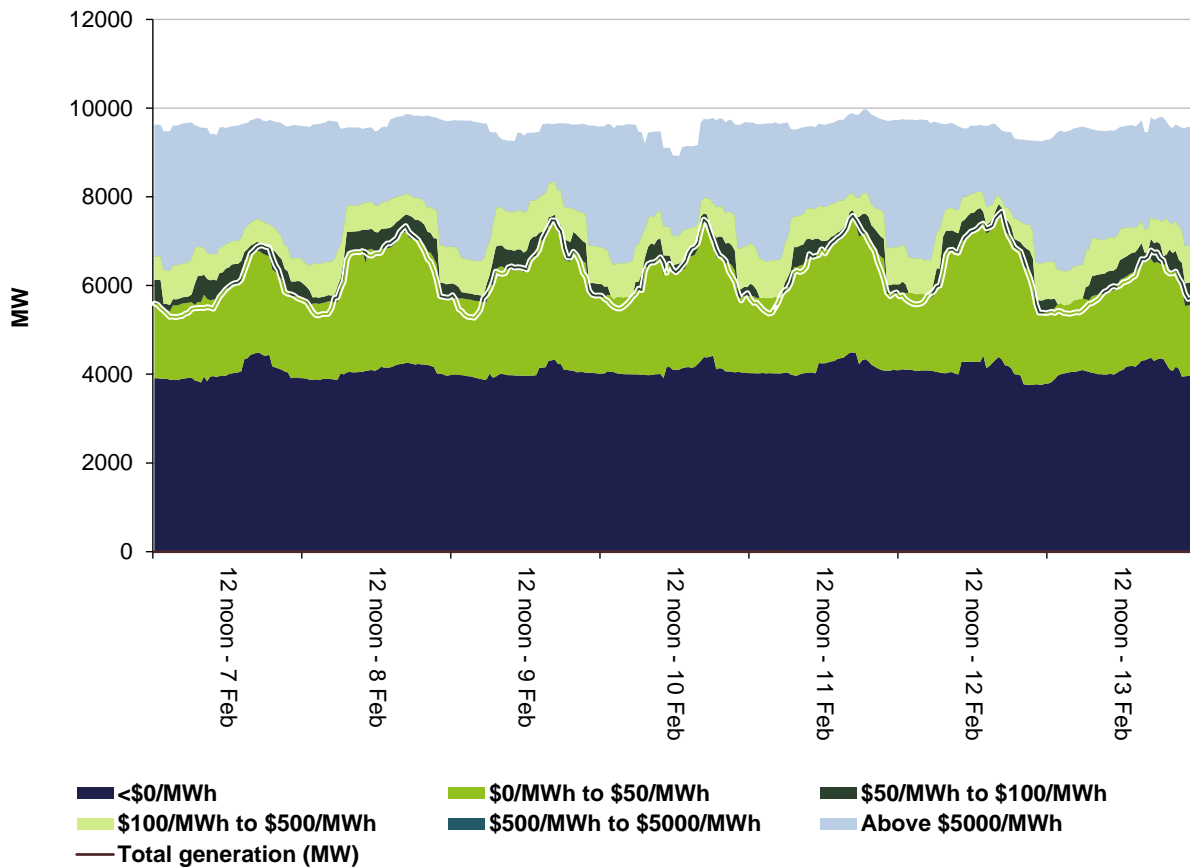


Figure 6: South Australia generation and bidding patterns

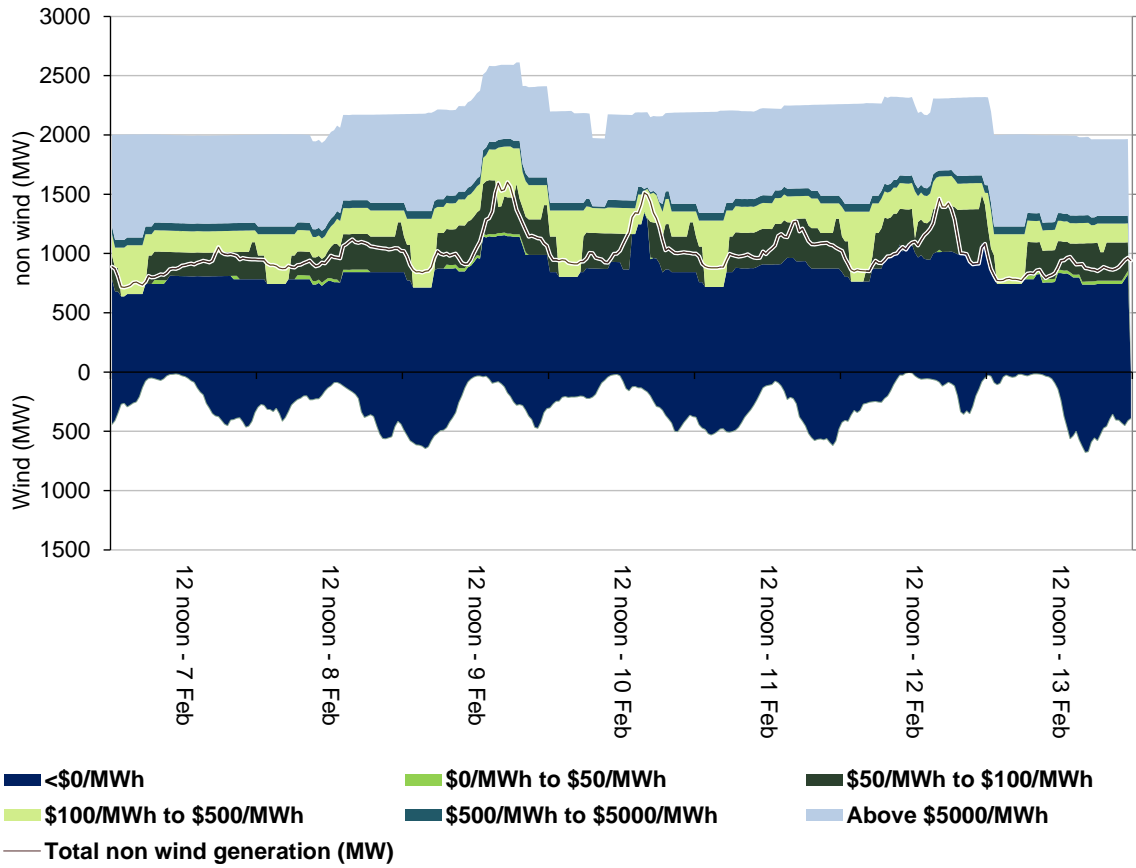
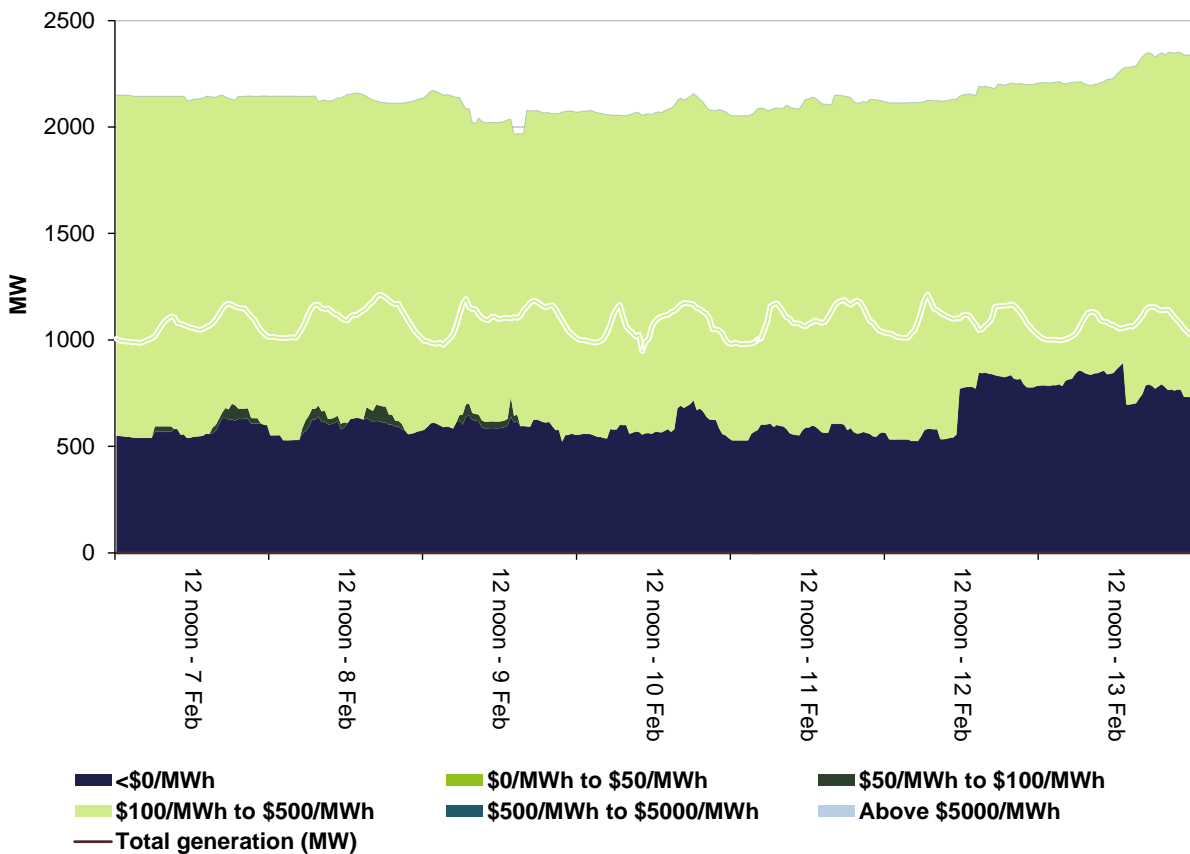


Figure 7: Tasmania generation and bidding patterns



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.

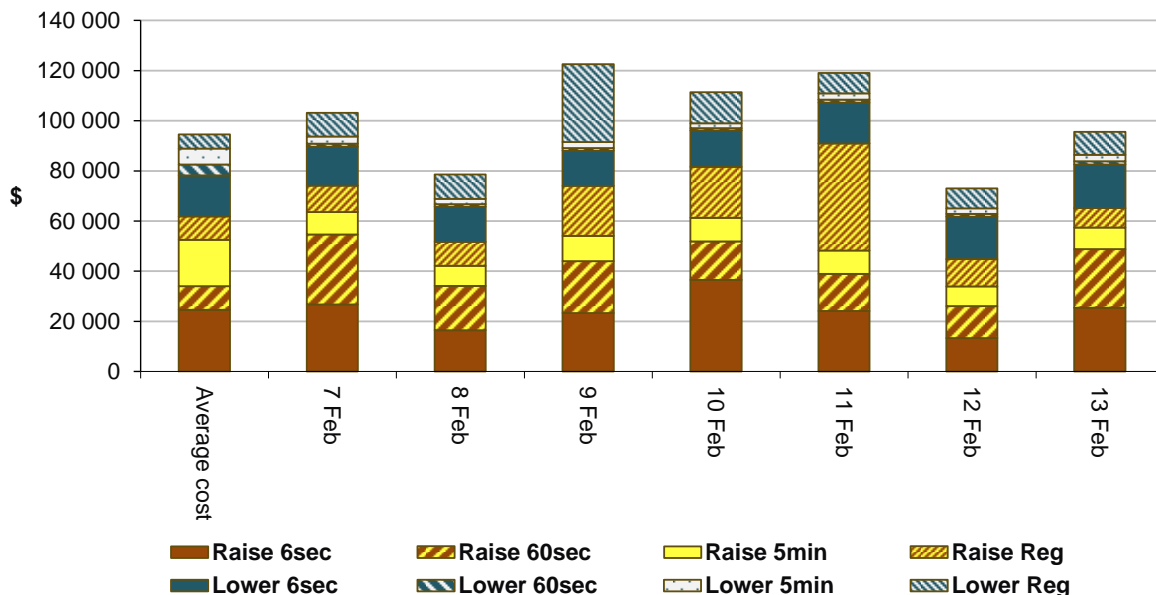
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$386 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$316 500 or around 2 per cent of energy turnover in Tasmania.

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.

Figure 8: Daily frequency control ancillary service cost



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 three occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of \$48/MWh and above \$250/MWh.

Monday, 8 February

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
4.30 PM	262.11	99.00	200.15	7378	7490	7507	10 471	10 489	10 489

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

Table 4: Rebids for the 4.30 pm trading interval

Submitted time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
3.29 pm		Millmerran Energy Trader	Millmerran	130	7	13 800	15:27 A: CHANGE IN 5MIN PD RRP - SL
3.30 pm		Callide Power Trading	Callide C	46	-1000	13 800	1529A CHANGE IN 5MIN PD RRP - SL
3.49 pm		CS Energy	Gladstone	40	99	13 800	1549A REVIEWED SENSITIVITIES-SL
4.02 pm	4.10 pm	Stanwell	Tarong	75	85	298	1601A CHANGE IN QLD PD PRICE 1530 HRS TO 1600 HRS

The above rebidding created a steep supply curve resulting in the dispatch price increasing from \$85/MWh to \$298/MWh at 4.10 pm when Stanwell's rebid became effective. Demand also increased by 53 MW at the 4.10 pm dispatch interval. The spot price remained at \$298/MWh for the remainder of the trading interval.

Tuesday, 9 February

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
5.30 PM	256.40	200.15	200.15	7333	7483	7444	10 359	10 393	10 392

Conditions at the time saw demand and available capacity close to forecast. Price was slightly higher than forecast during the afternoon peak period.

Thursday, 11 February

Table 6: 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
8.00 PM	255.54	49.50	36.00	7494	7426	7270	10 501	10 517	10 547

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

Table 7: Rebids for the 8 pm trading interval

Submitted time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
7.08 pm		CS Energy	Gladstone	120	<99	>300	1907A DISPATCH PRICE HIGHER THAN 30MIN FORECAST-SL
7.12 pm		Stanwell Corporation	Tarong	165	<49	>298	1911A QLD RRP 1910 HIGHER 5 MIN PD AND 30 MIN PD PRICE-SL
7.27 pm	7.35 pm	CS Energy	Gladstone	80	<36	>300	1925A DISPATCH PRICE LOWER THAN 30MIN FORECAST-SL

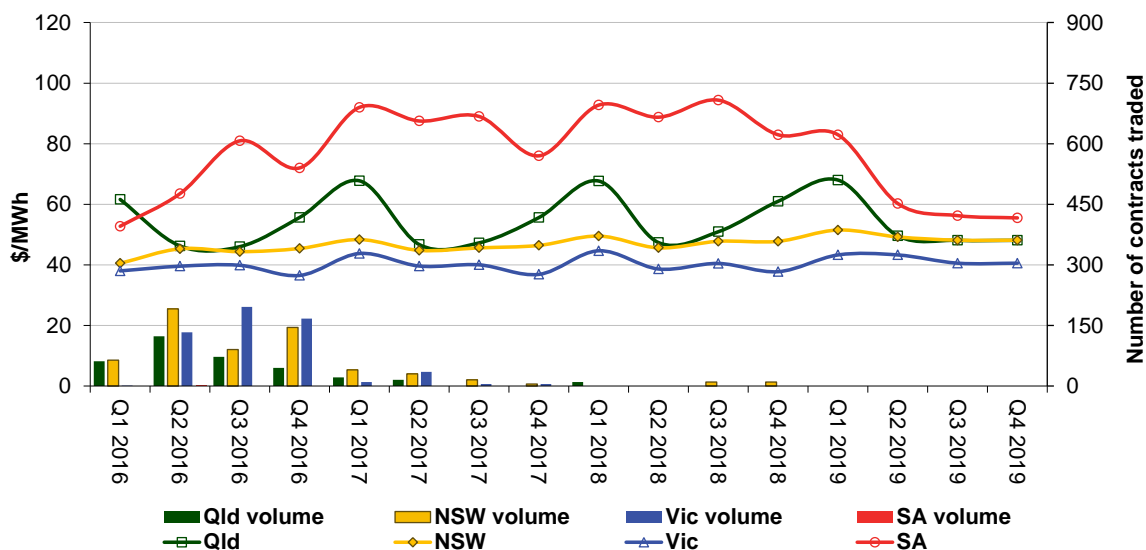
The above rebids, combined with a demand increase of 85 MW at 7.35 pm, saw the dispatch price rise to \$298/MWh from \$85/MWh. The price remained at \$298/MWh for the next four dispatch intervals.

At 8 pm demand decreased by 122 MW and the dispatch price fell to \$45/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.

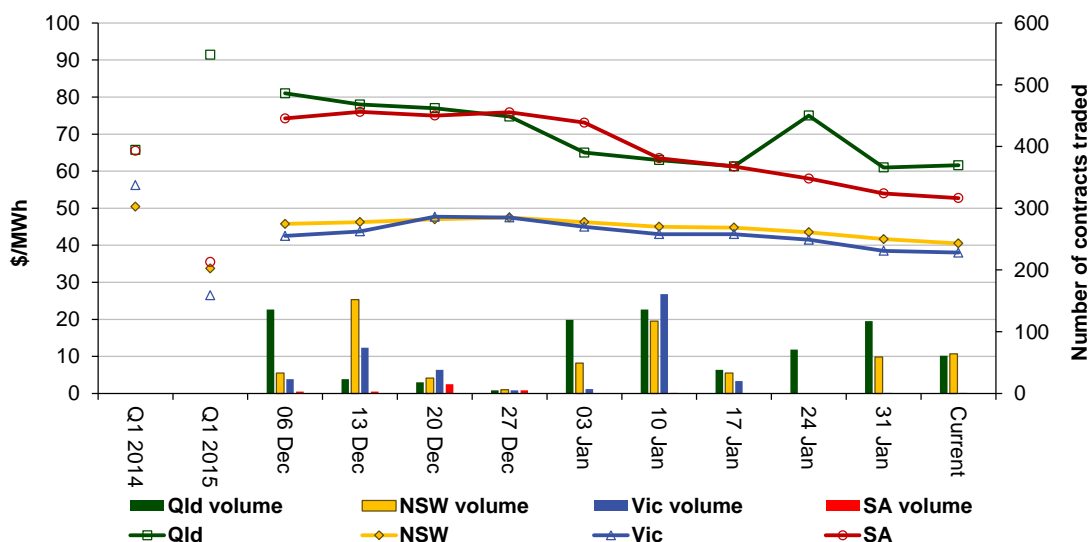
Figure 9: Quarterly base future prices Q1 2016 – Q4 2019



Source: ASXEnergy.com.au

Figure 10 shows how the price for each regional Quarter 1 2016 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 prices are also shown. The AER notes that data for South Australia is less reliable due to very low numbers of trades. The price of Q1 contracts in South Australia continues to fall roughly in parallel with prices in Victoria and New South Wales. Queensland Q1 contract prices are maintaining a level slightly above \$60/MWh as has been the case for about six weeks. Similar trends are also evident in price of Q1 cap contracts.

Figure 10: Price of Q1 2016 base contracts over the past 10 weeks (and the past 2 years)



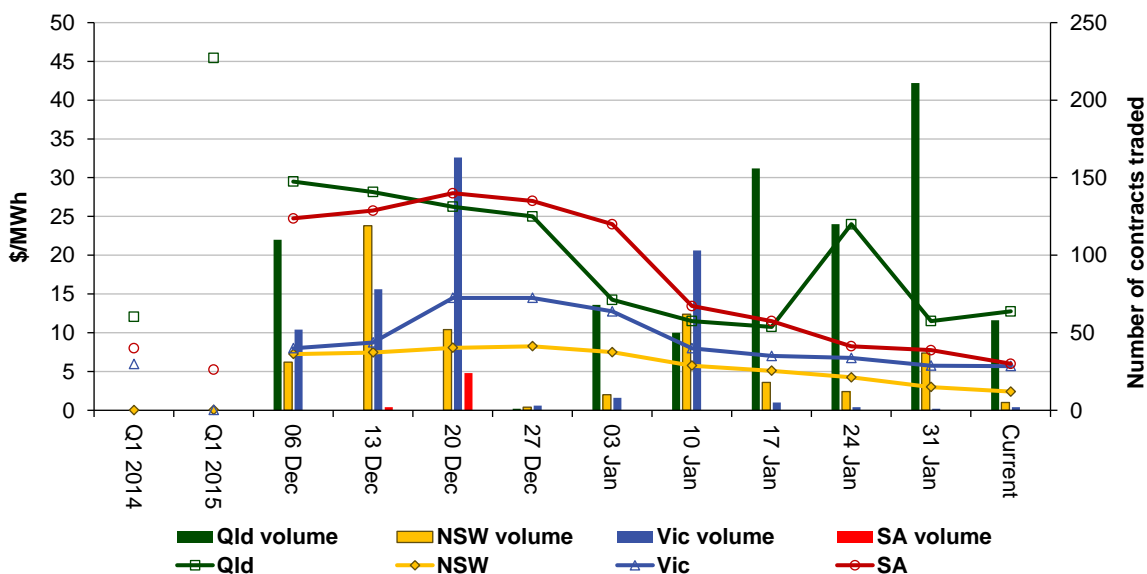
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

Source: ASXEnergy.com.au

Prices of other financial products (including longer-term price trends) are available in the [Industry Statistics](#) section of our website.

Figure 11 shows how the price for each regional Quarter 1 2016 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2014 and quarter 1 2015 prices are also shown.

Figure 11: Price of Q1 2016 cap contracts over the past 10 weeks (and the past 2 years)



Source: ASXEnergy.com.au

Australian Energy Regulator
March 2016