

10 - 16 April 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 10 to 16 April 2016.

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

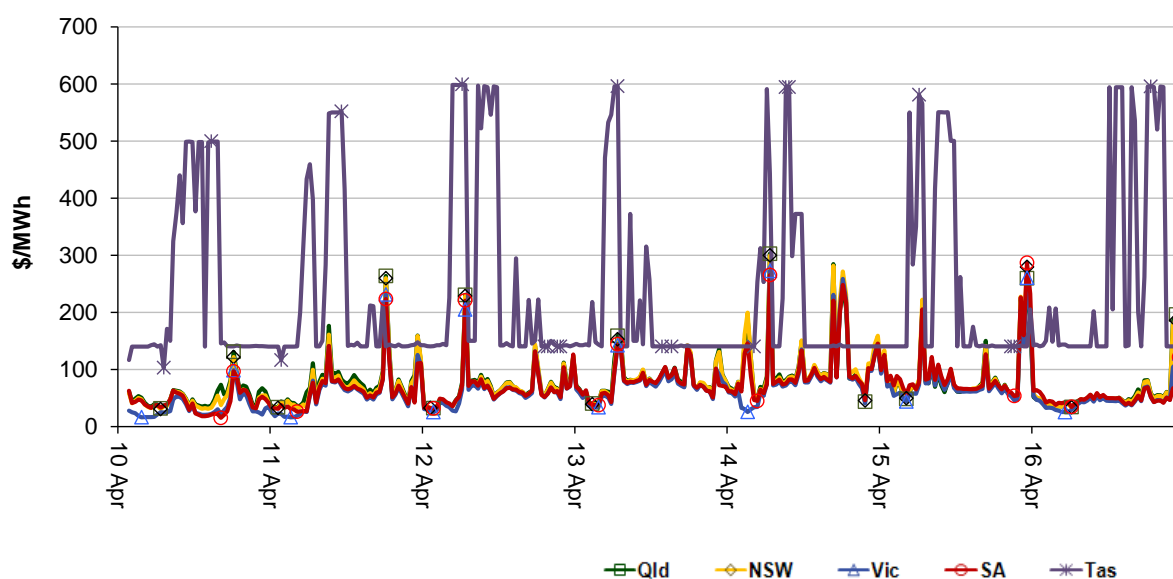


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

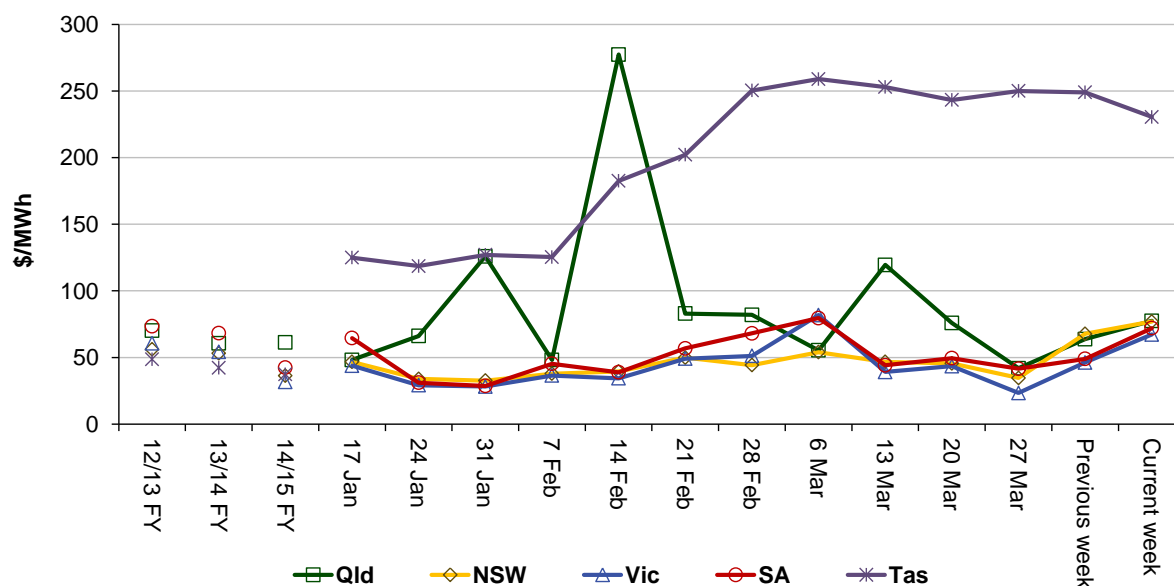


Table 1: Volume weighted average spot prices by region (\$/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	77	77	67	72	230
14-15 financial YTD	69	36	31	40	38
15-16 financial YTD	60	47	44	61	99

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 297 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	6	12	0	7
% of total below forecast	32	28	0	15

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

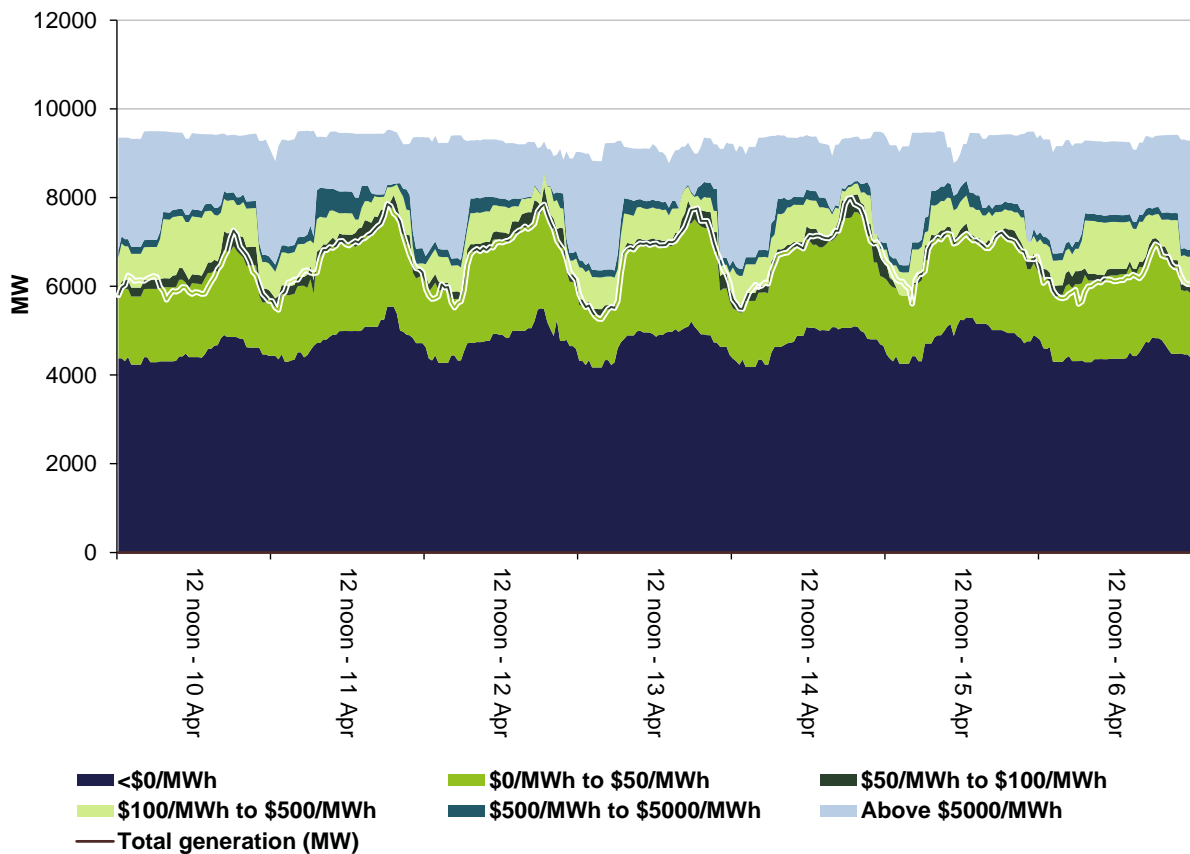


Figure 4: New South Wales generation and bidding patterns

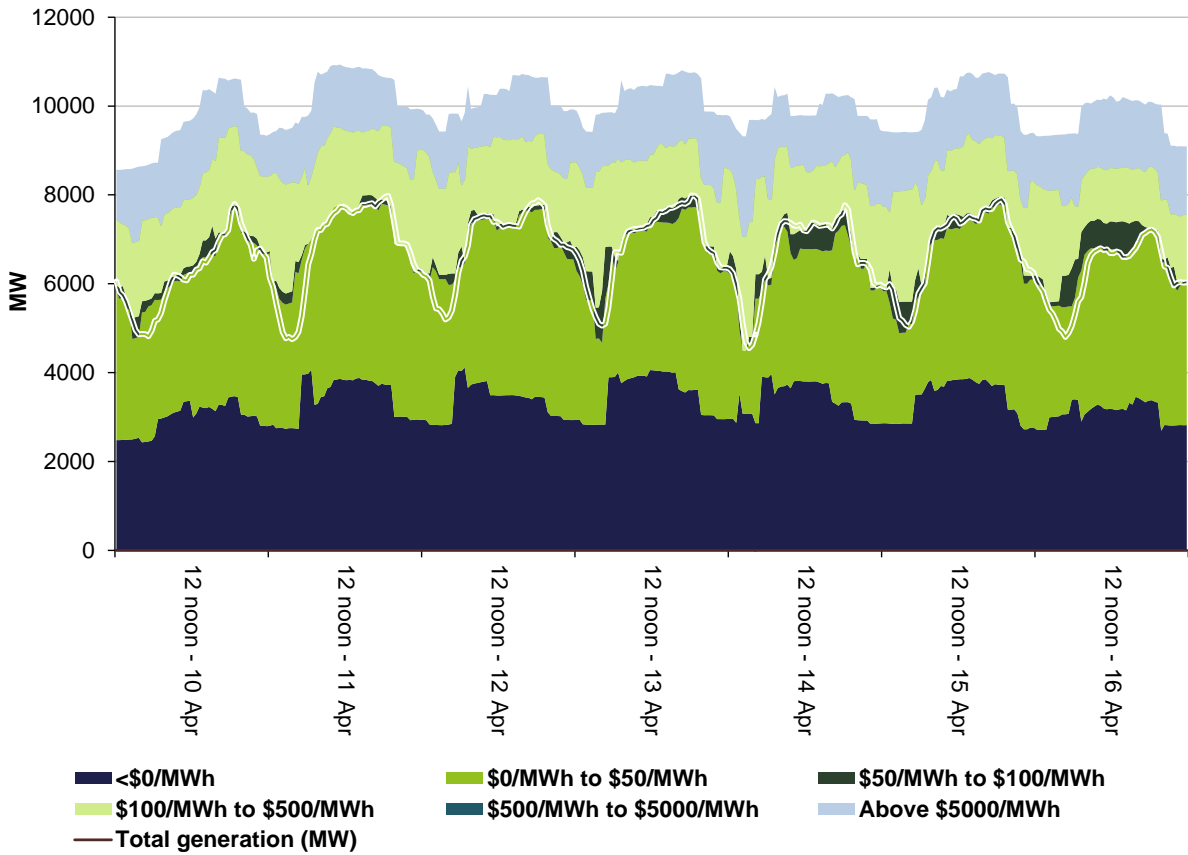


Figure 5: Victoria generation and bidding patterns

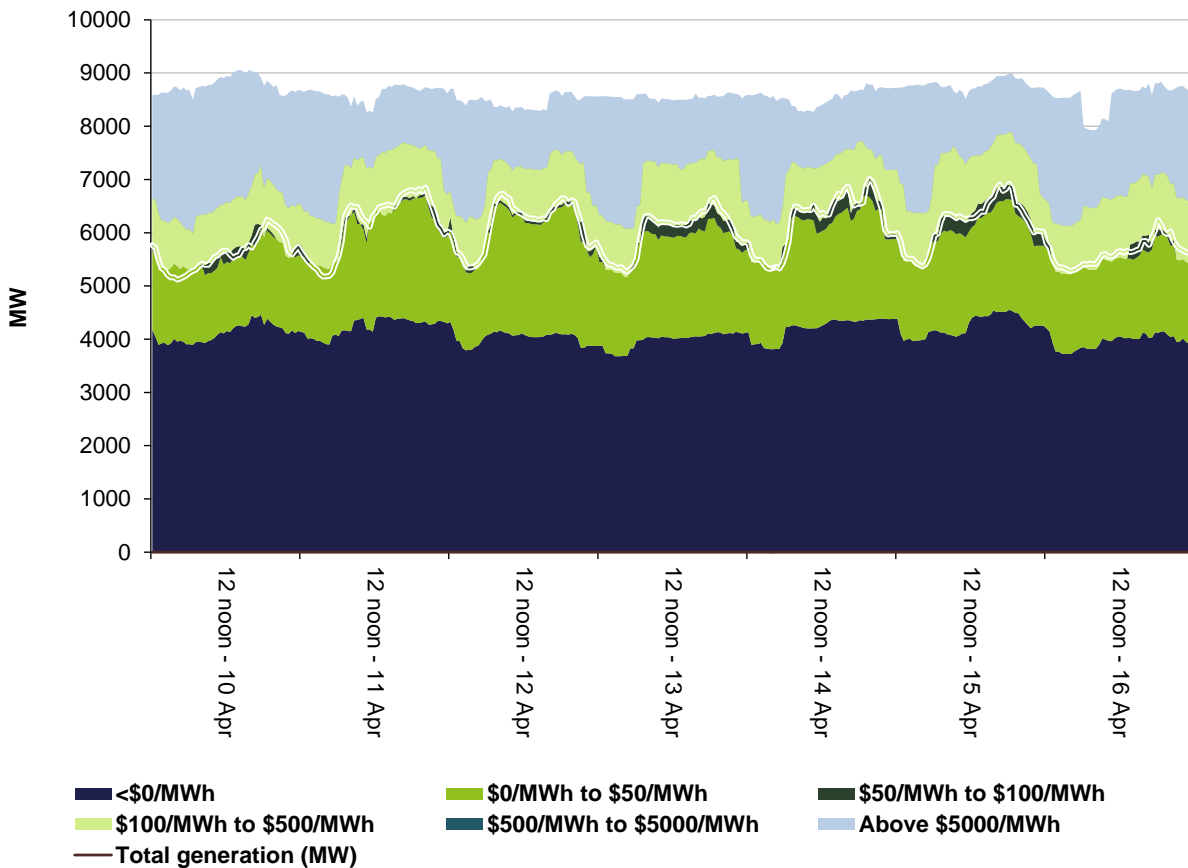


Figure 6: South Australia generation and bidding patterns

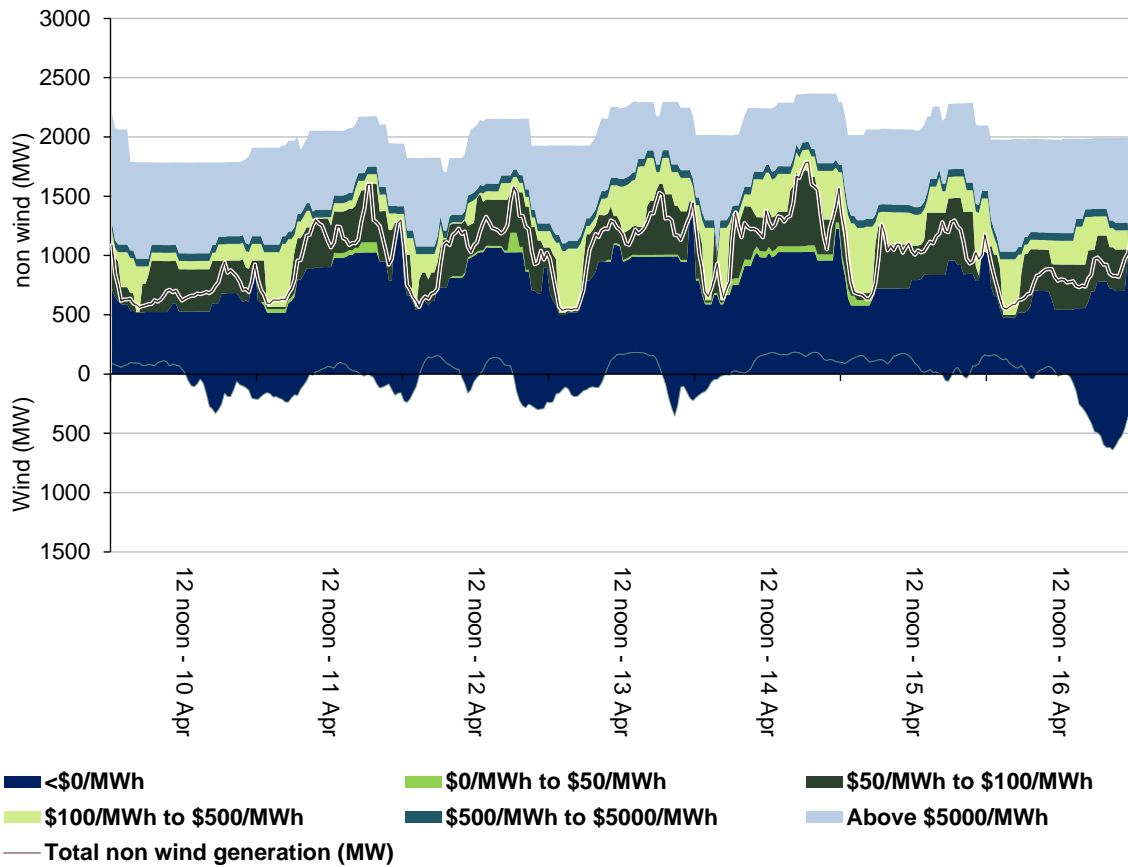
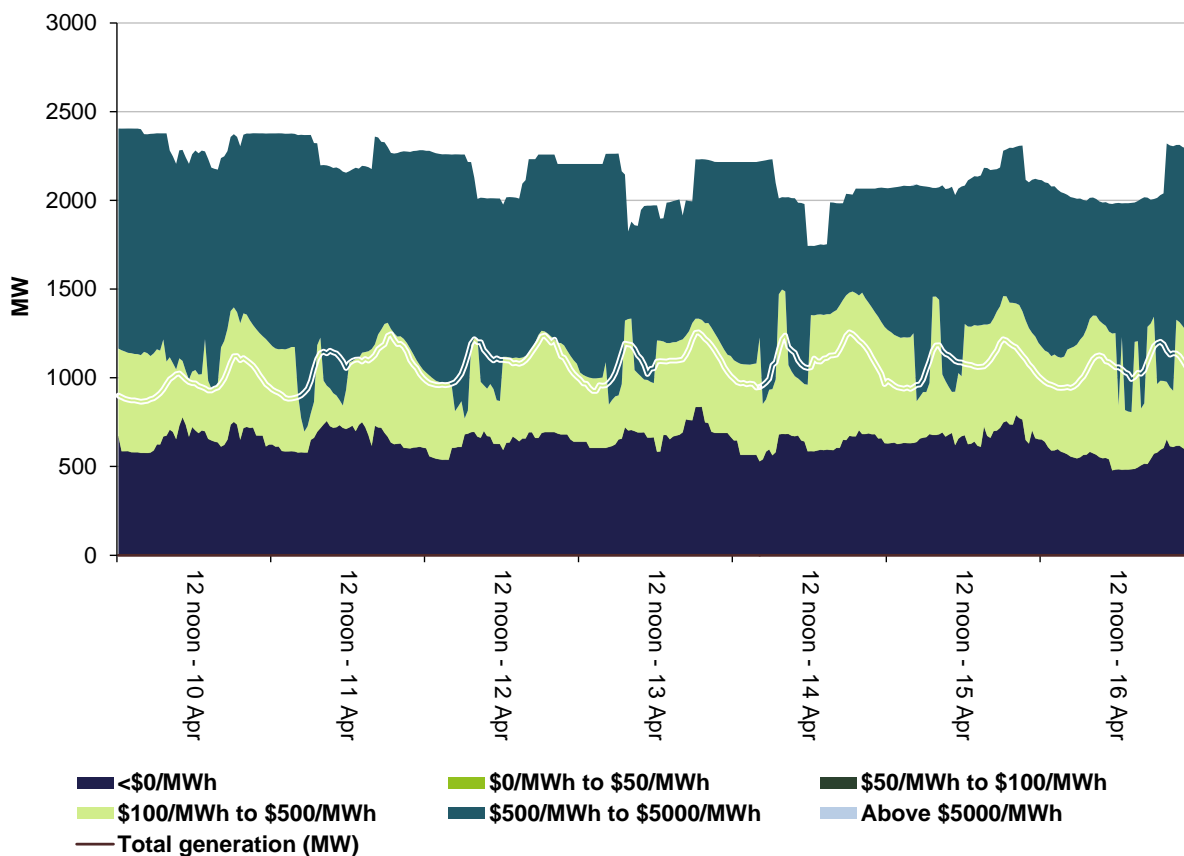


Figure 7: Tasmania generation and bidding patterns



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.

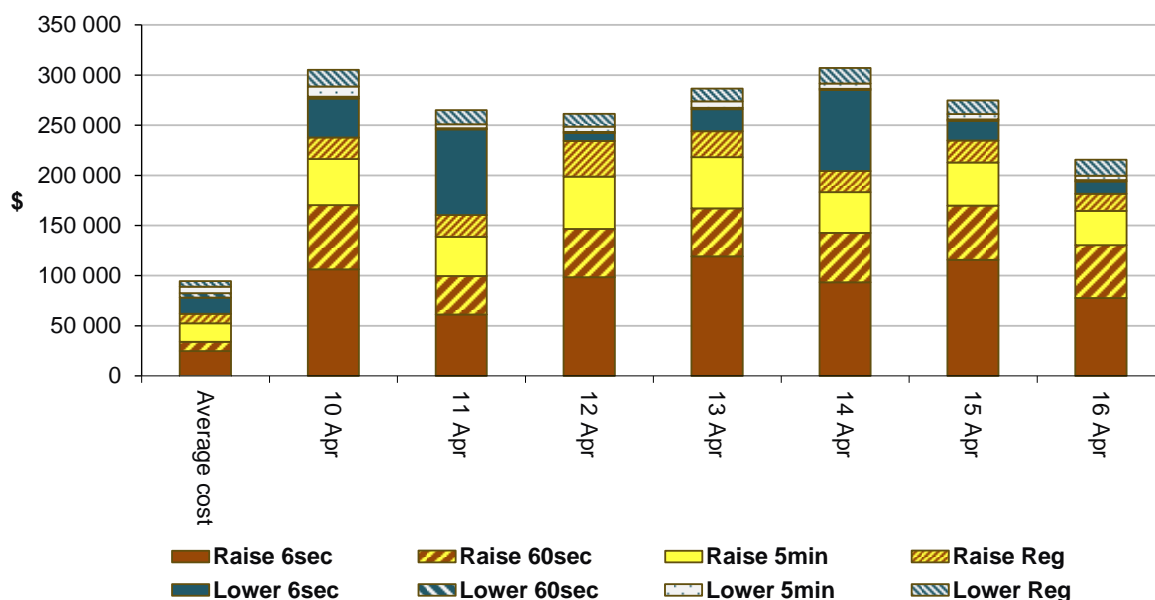
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$1 570 000 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$345 500 or less than 1 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 & NSW

There were two occasions where the spot price in Queensland and NSW were aligned and greater than three times their respective weekly average price and above \$250/MWh.

Monday, 11 April

Table 3: Price, Demand and Availability; 6.30 pm

Region	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
QLD	263.65	190.00	1400.69	7536	7595	7785	9506	9488	9476
NSW	271.46	299.80	299.80	9130	8840	8950	10 239	10 223	10 450

Conditions at the time saw demand around 300 MW greater than that forecast in NSW and close to forecast in Queensland four hours ahead. Availability was close to forecast in both regions, four hours ahead.

Prices were close to forecast four hours ahead.

Thursday, 14 April

Table 4: Price, Demand and Availability, 5 pm

Region	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
QLD	284.51	86.69	297.29	6917	6997	7040	9191	9356	9466
NSW	281.52	89.00	289.81	8581	8464	8534	10 248	10 220	10 456

Conditions at the time saw demand and availability close to forecast in both regions. Actual prices were aligned between both regions.

Table 5: Rebids for the 5 pm trading interval in NSW

Submitted time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
2.05 pm		Origin Energy	Eraring	240	<26	13 450	1402P PLANT CONDITIONS - ASH HOPPER MANAGEMENT SL
3.47 pm		Energy Australia	Tallawarra	110	<82	290	15:47 A BAND ADJ NSW PRICE ABOVE 30PD
4.33 pm	4.40 pm	Snowy Hydro	Tumut	30	300	13 799	16:31 A NSW: ACT PRICE \$210.08 HGR THN 30MPD 16:35@16:02

Table 6: Rebids for the 5 pm trading interval in QLD

Submitted time	Time effective	Participant	Station	Capacity rebid (MW)	Price from (\$/MWh)	Price to (\$/MWh)	Rebid reason
4.07 pm		Stanwell Corporation	Stanwell	100	<86	13 800	1607A QLD PRICE P5MIN VS 30MIN FORECAST FOR T11700 SL
4.07 pm		Stanwell Corporation	Tarong	75	<86	13 800	1607A QLD PRICE P5MIN VS 30MIN FORECAST FOR T11700 SL
4.30 pm	4.40 pm	Millmerran Energy Trader	Millmerran	85	7	13 800	16:28 A 70MW CHANGE Q P5M DEMAND DI 1640 RUN 1630/1625

As a result of the above rebids the dispatch price increased from \$90/MWh at 4.30 pm to around \$300/MWh at 4.35 pm in both regions. The price remained at this level for the majority of the trading interval.

Victoria & NSW

There was one occasion where the spot price in Victoria and NSW were greater than three times their respective weekly average price and above \$250/MWh.

Thursday, 14 April

Table 7: Price, Demand and Availability, 6.30 pm

Region	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
NSW	271.46	299.80	299.80	9130	8840	8950	10 239	10 223	10 450
VIC	258.57	277.30	278.61	6128	6318	6156	8688	8851	8770

Prices were close to forecast and aligned between the two regions.

Mainland

There were two occasions where the spot price on the mainland was aligned and above \$250/MWh.

Thursday, 14 April

Table 8: Price, Demand and Availability, 7 am

Region	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
QLD	302.71	286.43	74.75	6306	6212	6188	9387	9474	9529
NSW	299.60	289.81	76.21	7403	7259	7265	9822	9853	9841
VIC	272.37	273.68	70.61	5240	5376	5212	8510	8529	8533
SA	265.24	265.62	72.39	1364	1369	1372	2159	2176	2174

Prices were close to forecast that forecast four hours ahead.

Friday, 15 April

Table 9: Price, Demand and Availability, 11.30 pm

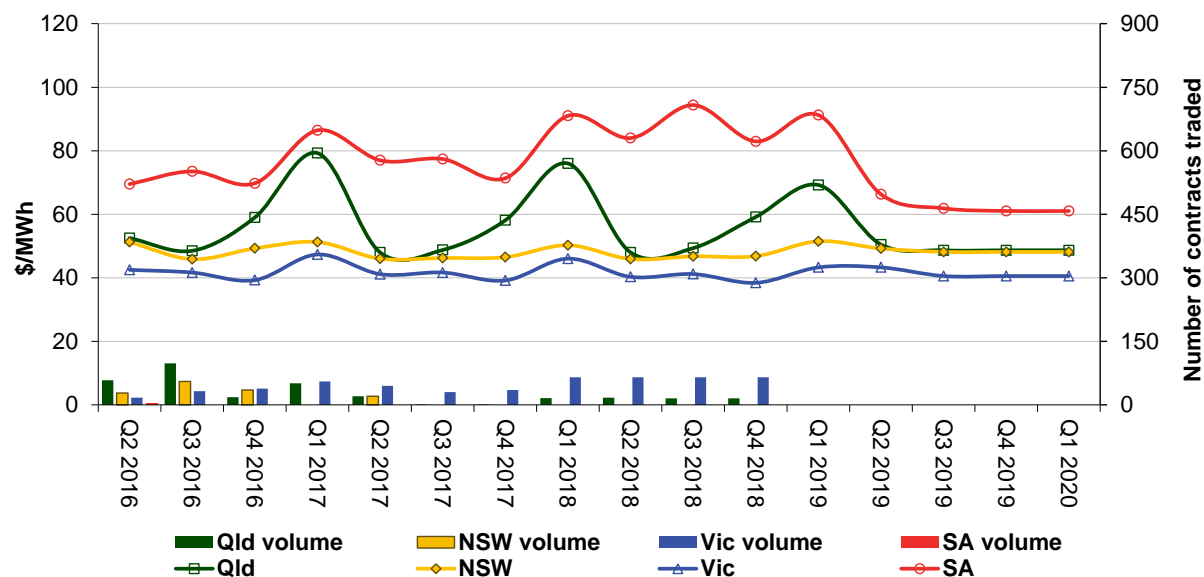
Region	Price (\$/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
Qld	259.64	197.12	74.75	5961	5941	5941	9486	9442	9490
NSW	279.53	205.76	72.06	7454	7503	7462	9390	9322	9742
Vic	260.45	178.14	61.84	5137	5058	5017	8731	8729	9035
SA	286.55	178.34	64.99	1322	1355	1364	2137	2224	2245

Overall, demand and availability were close to forecast on the mainland four hours ahead. Prices were aligned across these regions for much of the trading interval. Prices were slightly higher than forecast four hours ahead as a result of rebidding by Queensland participants at around 9.15 pm.

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.

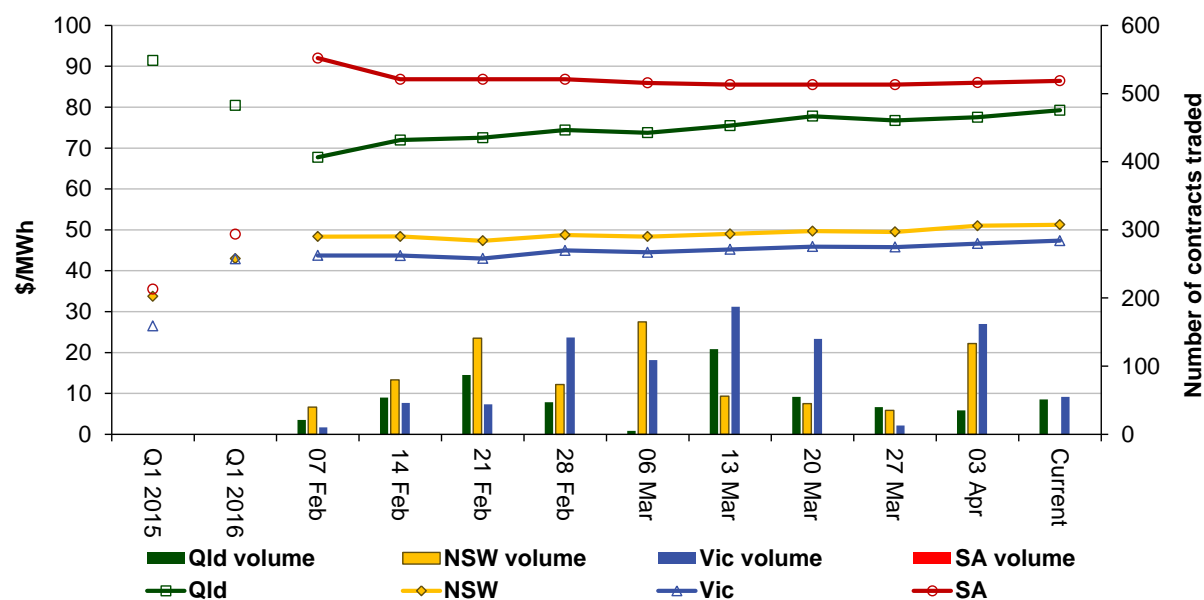
Figure 9: Quarterly base future prices Q2 2016 – Q1 2020



Source: ASXEnergy.com.au

Figure 10 shows how the price for each regional Quarter 1 2017 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2015 and quarter 1 2016 prices are also shown. The AER notes that data for South Australia is less reliable due to very low numbers of trades.

Figure 10: Price of Q1 2017 base contracts over the past 10 weeks (and the past 2 years)



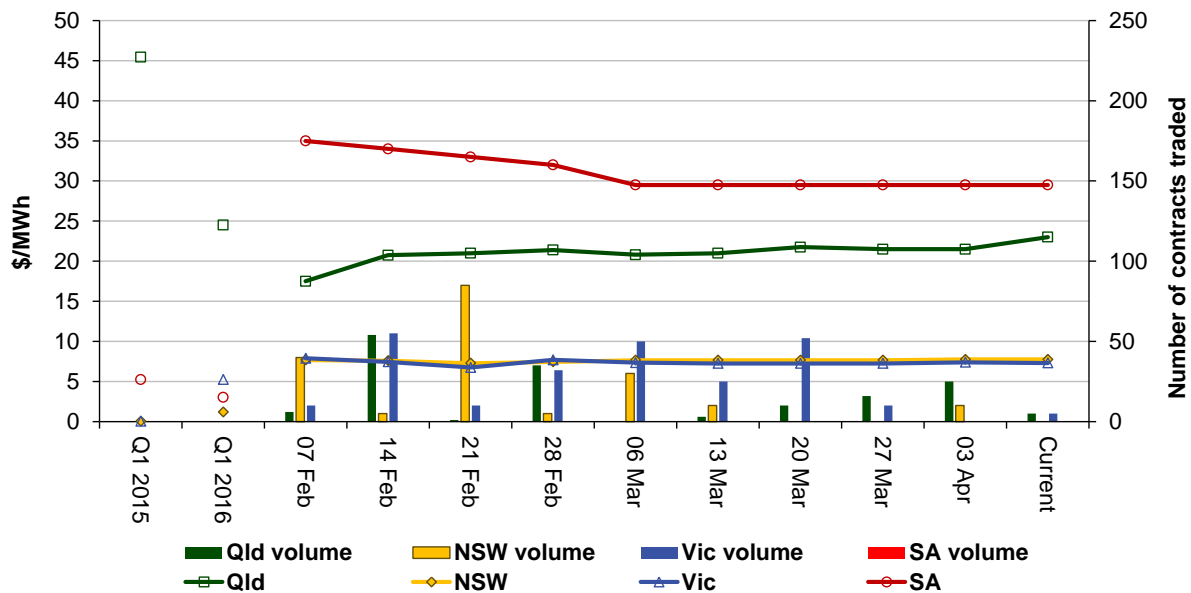
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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 2017 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2015 and quarter 1 2016 prices are also shown.

Figure 11: Price of Q1 2017 cap contracts over the past 10 weeks (and the past 2 years)



Source. ASXEnergy.com.au

Australian Energy Regulator
May 2016