Electricity Report

AUSTRALIAN ENERGY REGULATOR

26 May – 1 June 2019

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 26 May to 1 June 2019.

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

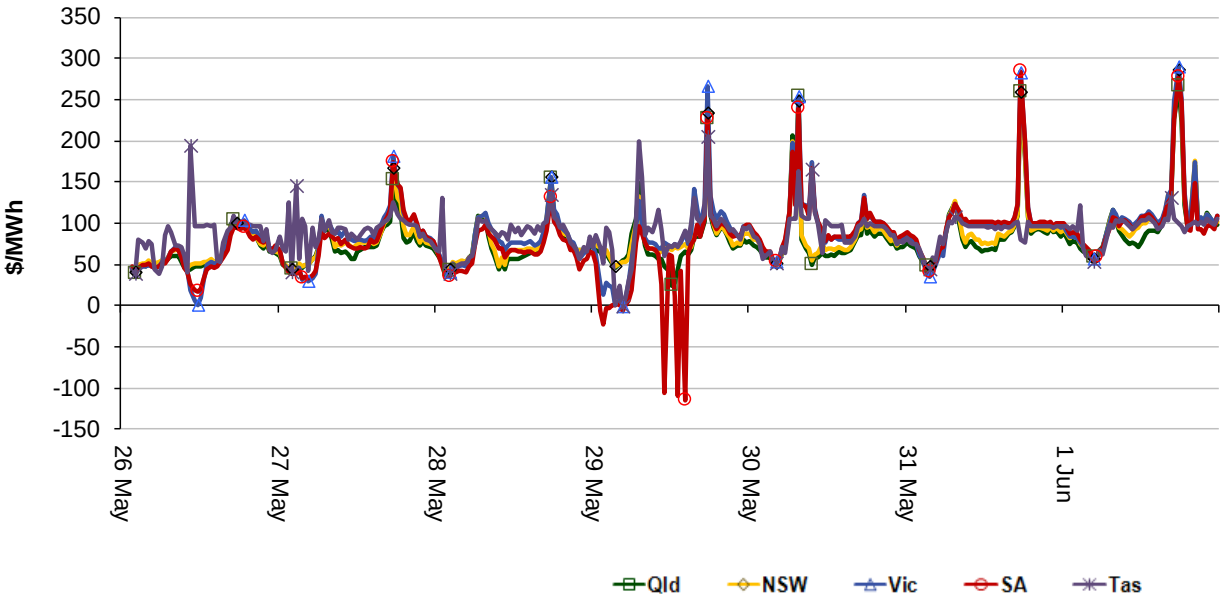


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

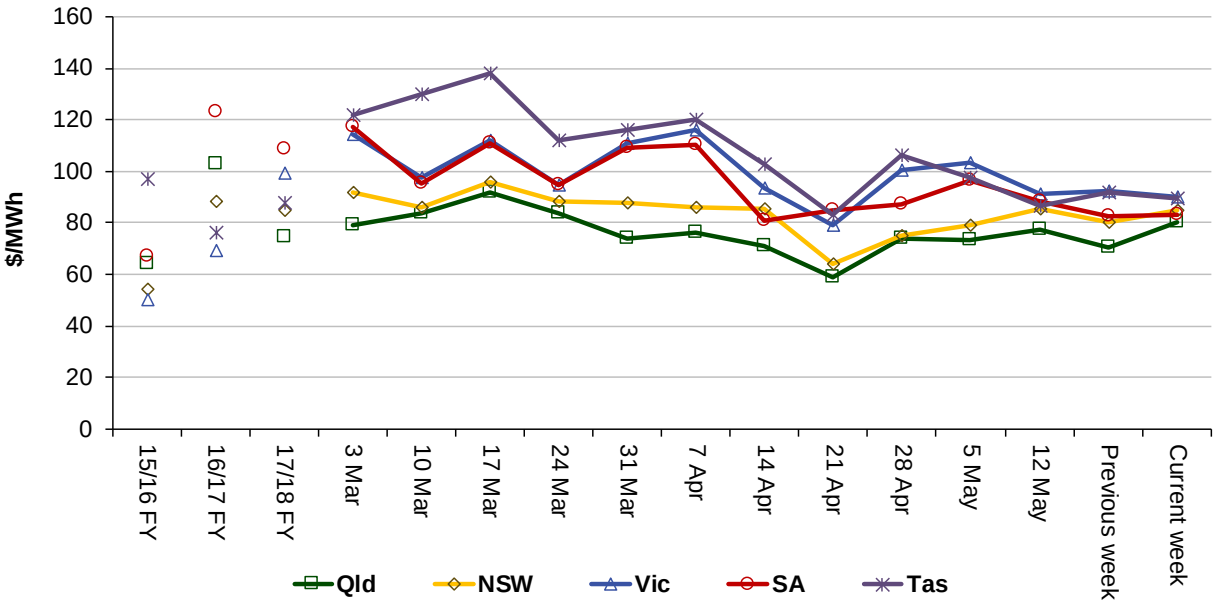


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	80	85	90	83	89
17-18 financial YTD	74	83	99	109	89
18-19 financial YTD	83	92	125	131	87

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 153 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2018 of 199 counts and the average in 2017 of 185. 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	27	1	0
% of total below forecast	7	43	0	18

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

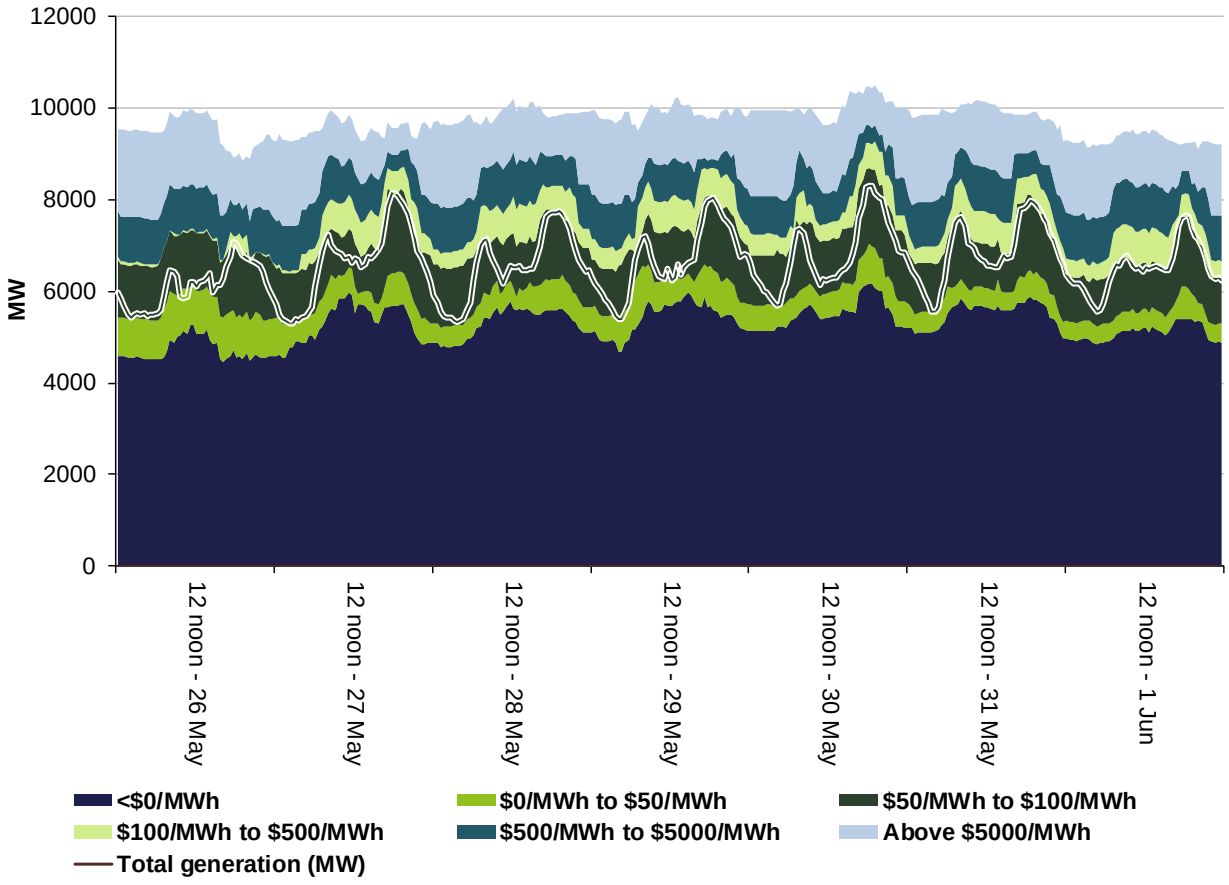


Figure 4: New South Wales generation and bidding patterns

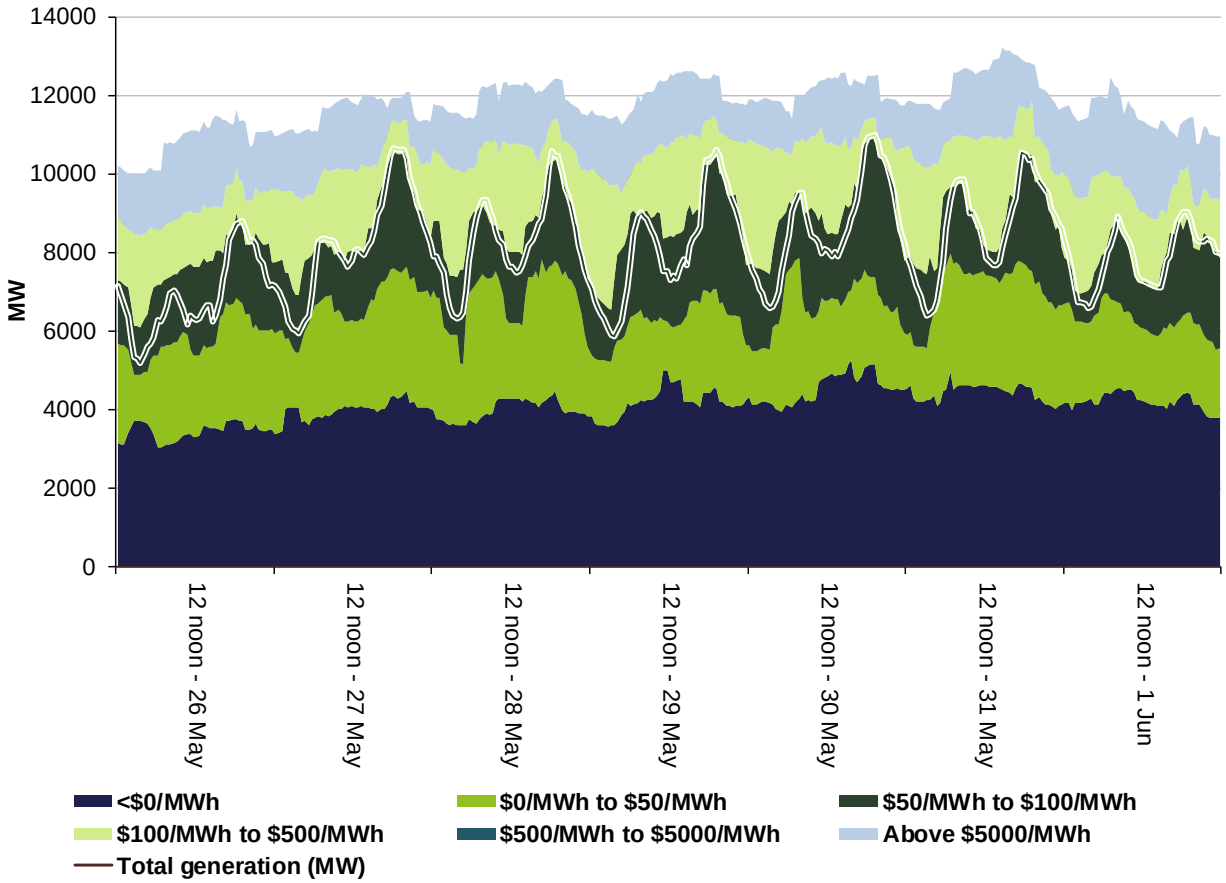


Figure 5: Victoria generation and bidding patterns

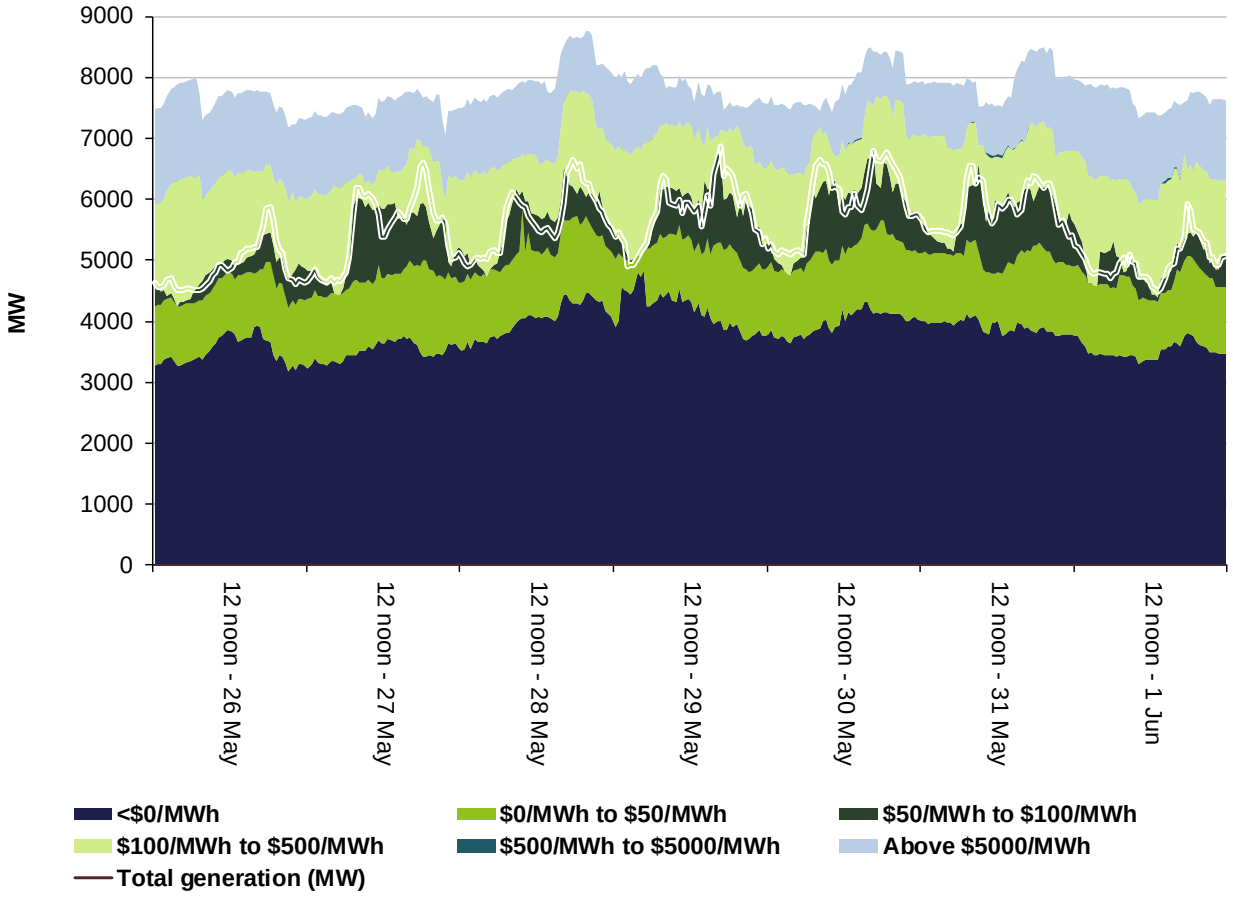


Figure 6: South Australia generation and bidding patterns

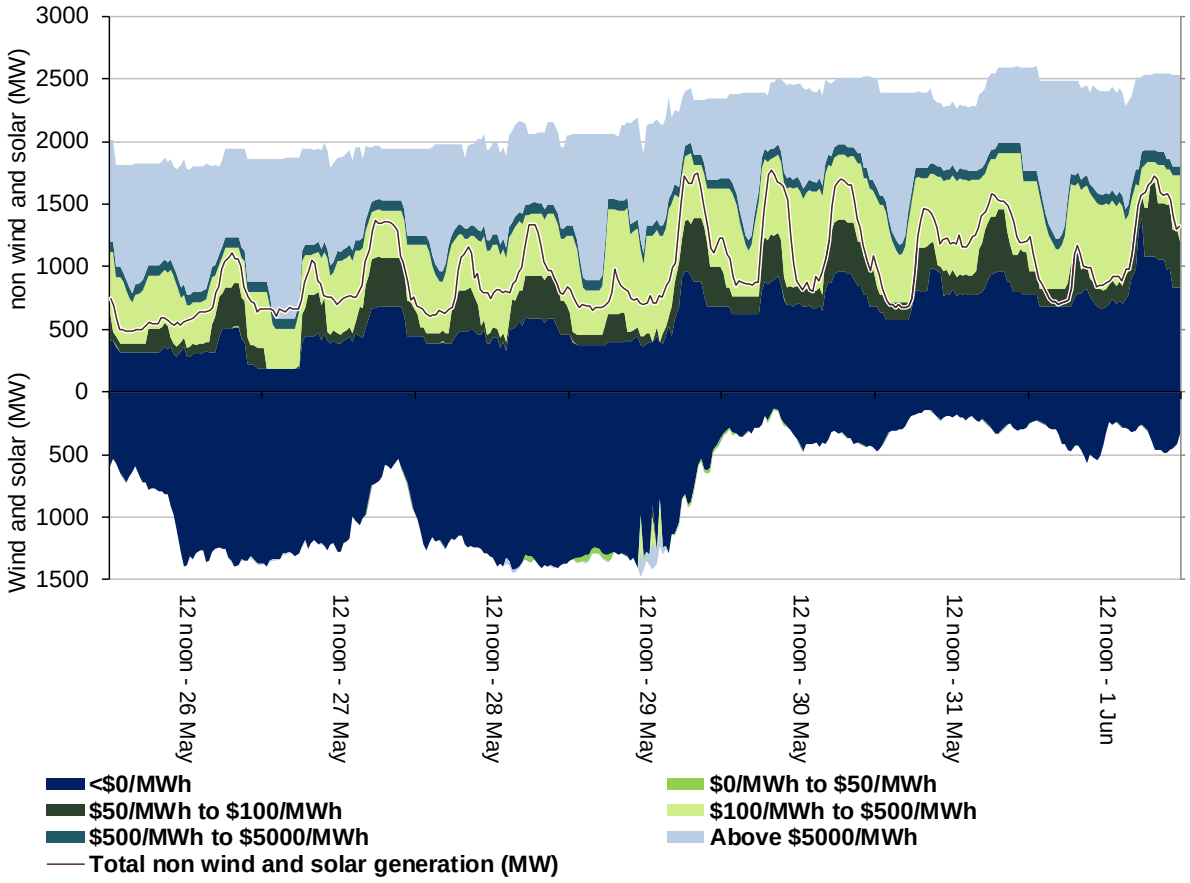
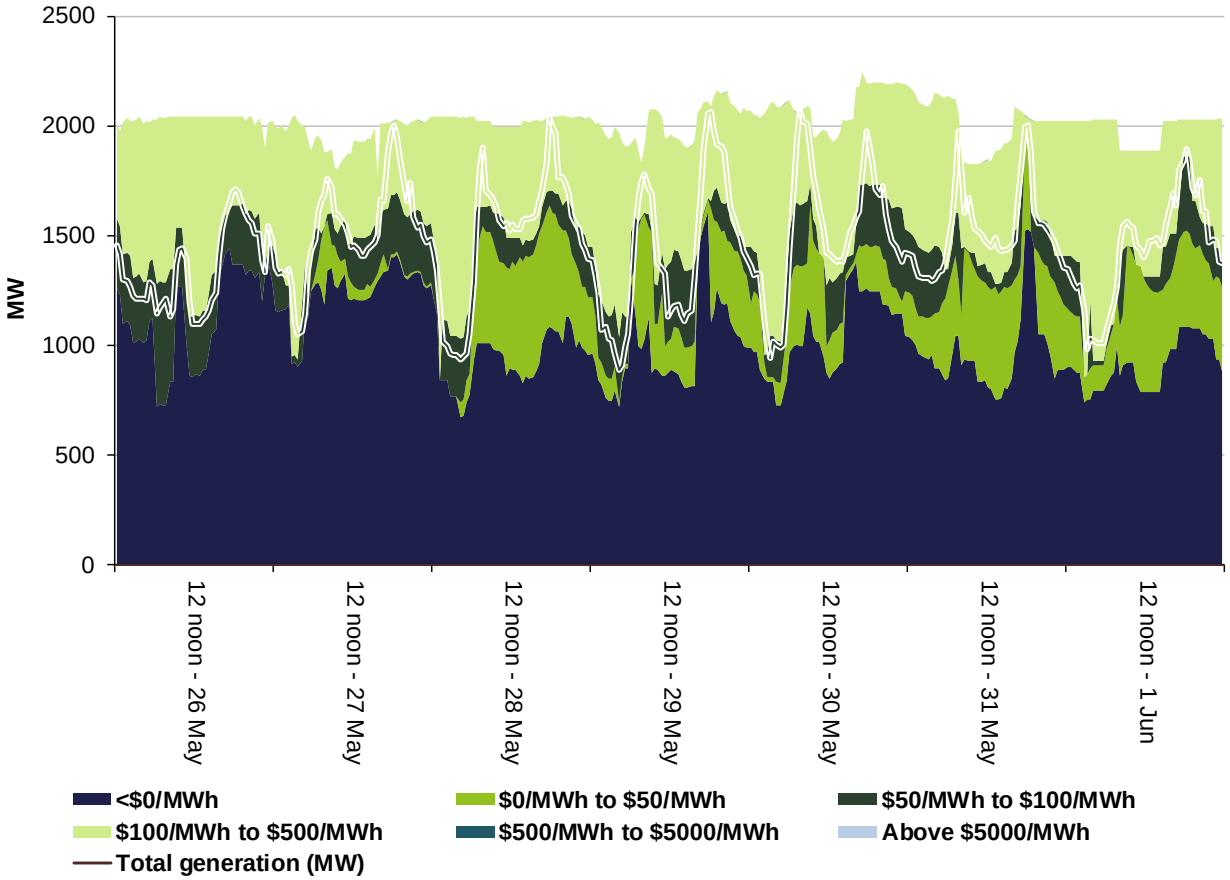


Figure 7: Tasmania generation and bidding patterns



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.

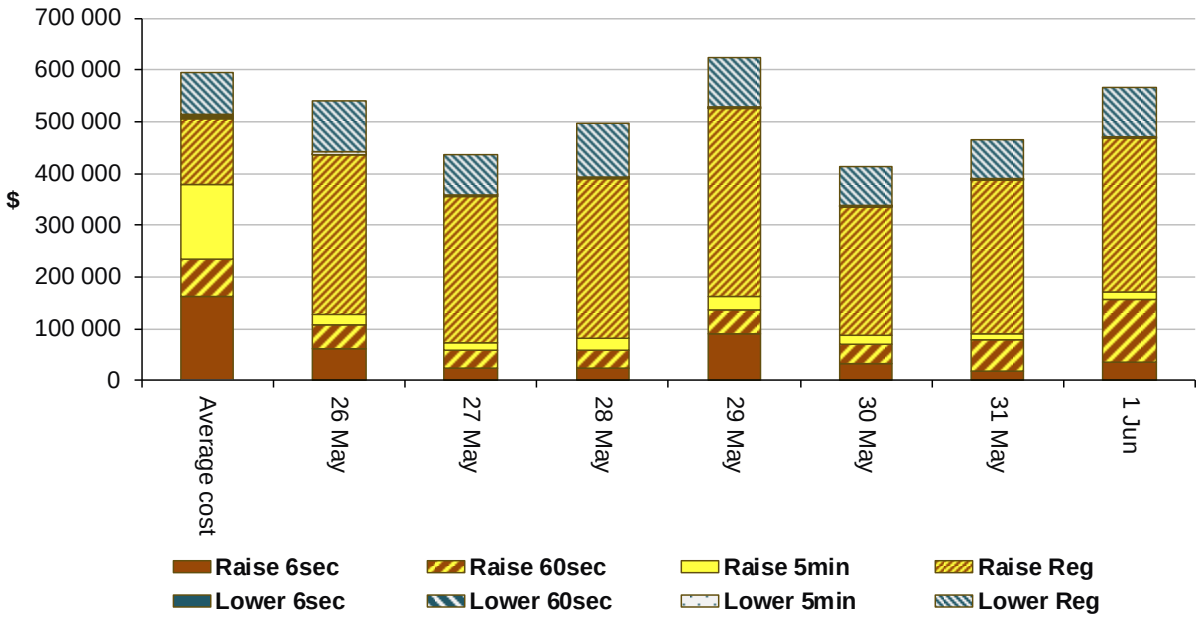
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a "causer pays" basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $3 099 500 or around 2 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $442 500 or around 3 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

Queensland

There were three occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $80/MWh and above $250/MWh.

Thursday, 30 May

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
8 am	253.59	92	83.73	6935	6888	6813	9878	9843	10 118

Conditions at the time saw demand and available capacity approximately 40 MW higher than forecast, four hours ahead.

At around 7 am a constraint managing the planned outage of the Woolooga to Palmswood line in Queensland saw flows across the QNI interconnector being forced from Queensland into New South Wales. With lower priced generation ramp down constrained, prices settled at around $300/MWh for the first four dispatch intervals.

Friday, 31 May

Table 4: 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
6 pm	258.43	244.00	244.00	7572	7467	7433	9752	9753	9816

Prices were aligned across the mainland and will be discussed as one region. Conditions at the time saw demand, generator availability and price all close to forecast, four hours prior.

Saturday, 1 June

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
6 pm	266.85	277.26	129.74	7017	6983	6933	9108	9498	9574

The price was close to forecast, four hours ahead.

New South Wales

There were two occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of $85/MWh and above $250/MWh.

Friday, 31 May

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
6 pm	258.80	250.21	256.92	10 609	10 222	10 266	12 933	12 921	12 896

The price was close to forecast, four hours ahead.

Saturday, 1 June

Table 7: 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
6 pm	285.33	287.64	134.70	9744	9561	9405	11 126	11 930	12 700

The price was close to forecast, four hours ahead.

Victoria

There were two occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of $90/MWh and above $250/MWh.

Friday, 31 May

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
6 pm	282.21	266.72	276.73	6730	6678	6608	8451	8439	8493

The price was close to forecast, four hours ahead.

Saturday, 1 June

Table 9: 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
6 pm	290	290	153.58	6009	5972	5950	7617	7795	7787

The price was as forecast, four hours ahead.

South Australia

There were two occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of $83/MWh and above $250/MWh and there were three occasions where the spot price was below -$100/MWh.

Wednesday, 29 May

Table 10: 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
11.30 am	-106.76	73.07	73.39	1258	1243	1292	3513	3467	3454
1.30 pm	-110.43	61.77	72.49	1114	1197	1261	3574	3489	3434
2.30 pm	-115.06	52.83	67.32	1106	1214	1271	3409	3581	3393

For the 11.30 am trading interval, conditions at the time saw demand close to forecast and availability slightly higher than forecast, four hours prior. There was no capacity offered between $78/MWh and the price floor so small changes in demand, availability or interconnector flows could lead to large changes in price.

At 11.10 am, 1.05 pm and 2.10 pm there was a drop in demand and the dispatch price fell to the price floor for those dispatch intervals. In response, participants in South Australia rebid above 300 MW of renewable capacity in each of the trading intervals from the price floor to prices above $0/MWh and the dispatch price increased close to that forecast, four hours prior.

Friday, 31 May

Table 11: 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
6 pm	283.89	253	282.25	1818	1803	1807	2763	2791	2786

The price was close to forecast, four hours ahead.

Saturday, 1 June

Table 12: Price, Demand and Availability

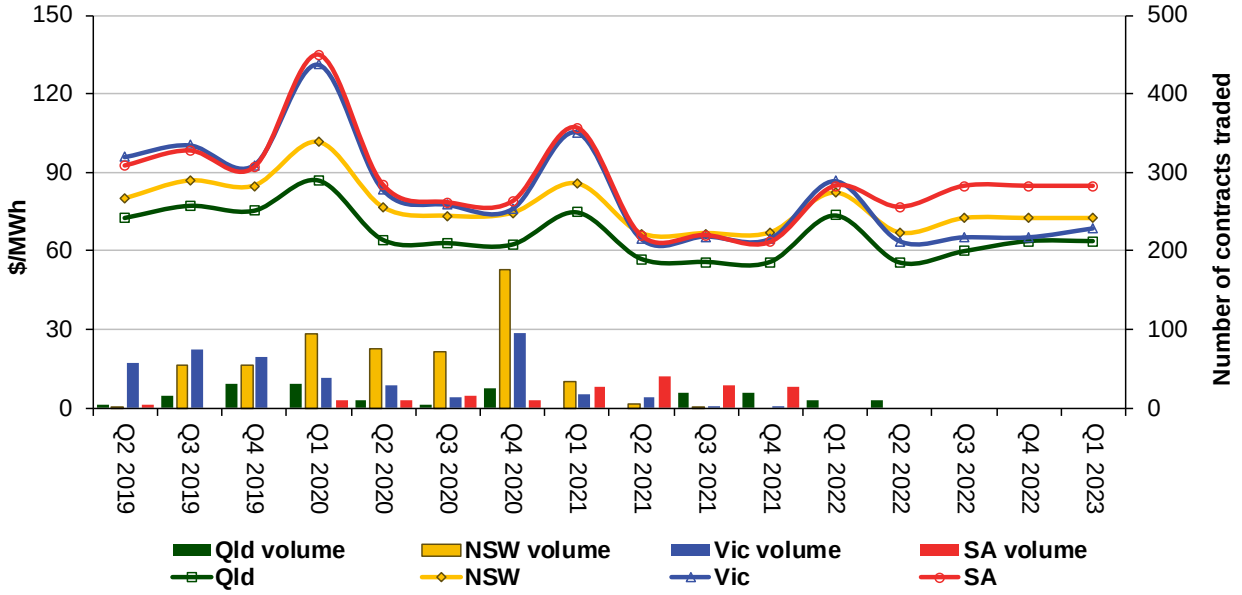
Time	Price ($/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
6 pm	276.74	276.12	147.50	1686	1637	1654	2792	2784	2818

The price was close to forecast, four hours ahead.

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.

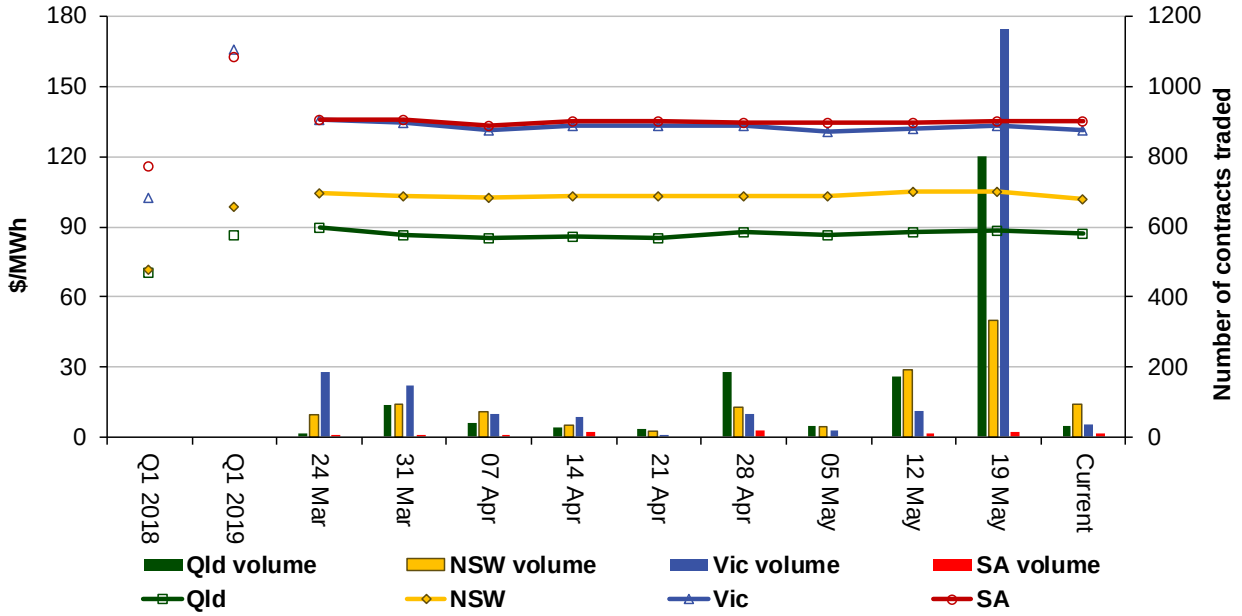
Figure 9: Quarterly base future prices Q2 2019 – Q1 2023



Source. ASXEnergy.com.au

Figure 10 shows how the price for each regional Q1 2020 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2018 and quarter 1 2019 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 2020 base contracts over the past 10 weeks (and the past 2 years)



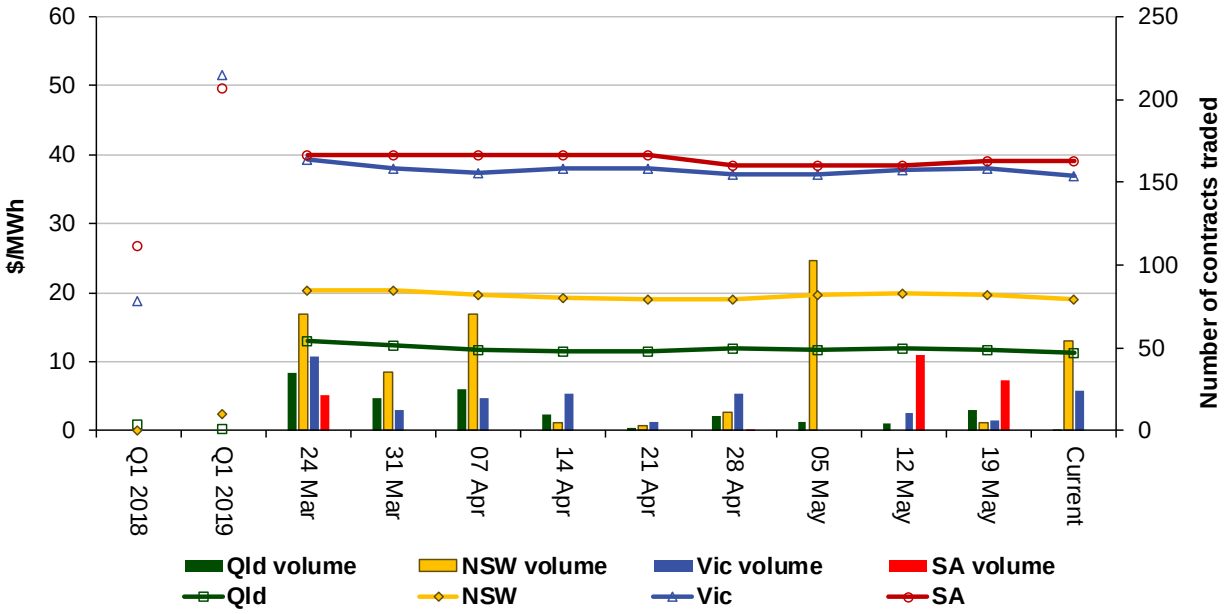
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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 2020 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2018 and quarter 1 2019 prices are also shown.

Figure 11: Price of Q1 2020 cap contracts over the past 10 weeks (and the past 2 years)



Source. ASXEnergy.com.au