Electricity Report

AUSTRALIAN ENERGY REGULATOR

28 July – 3 August 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 28 July to 3 August 2019.

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

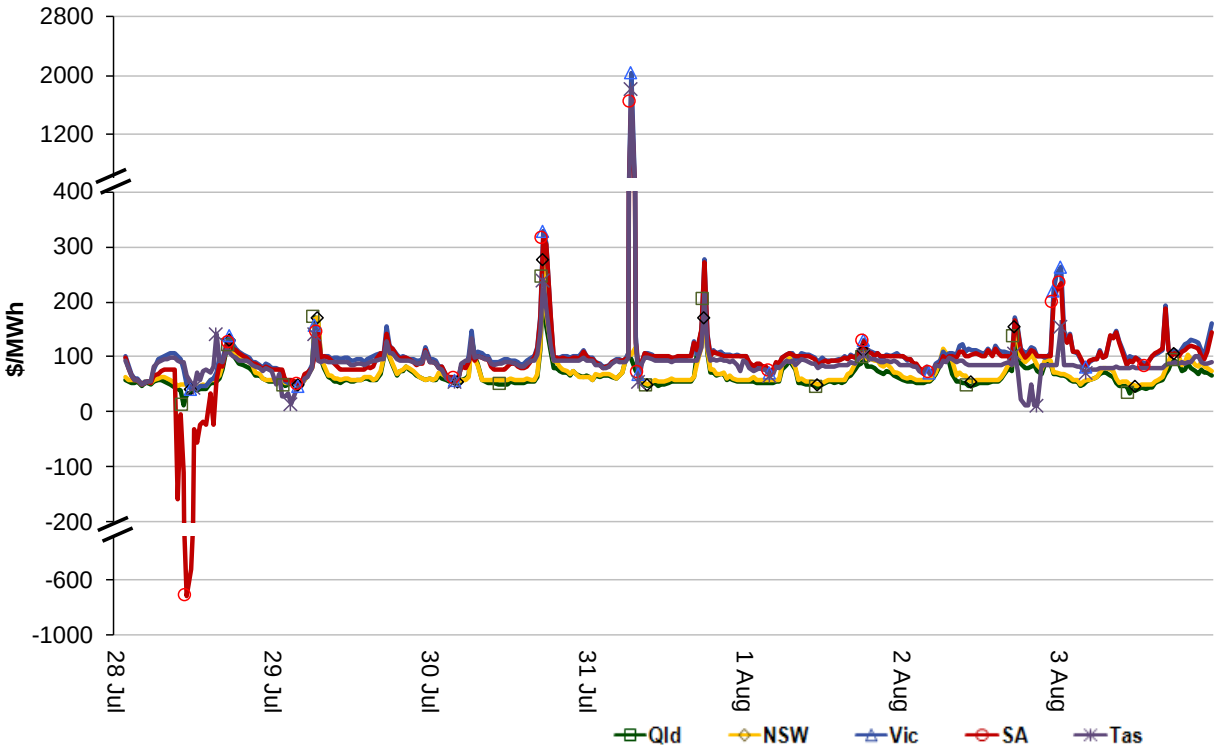


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

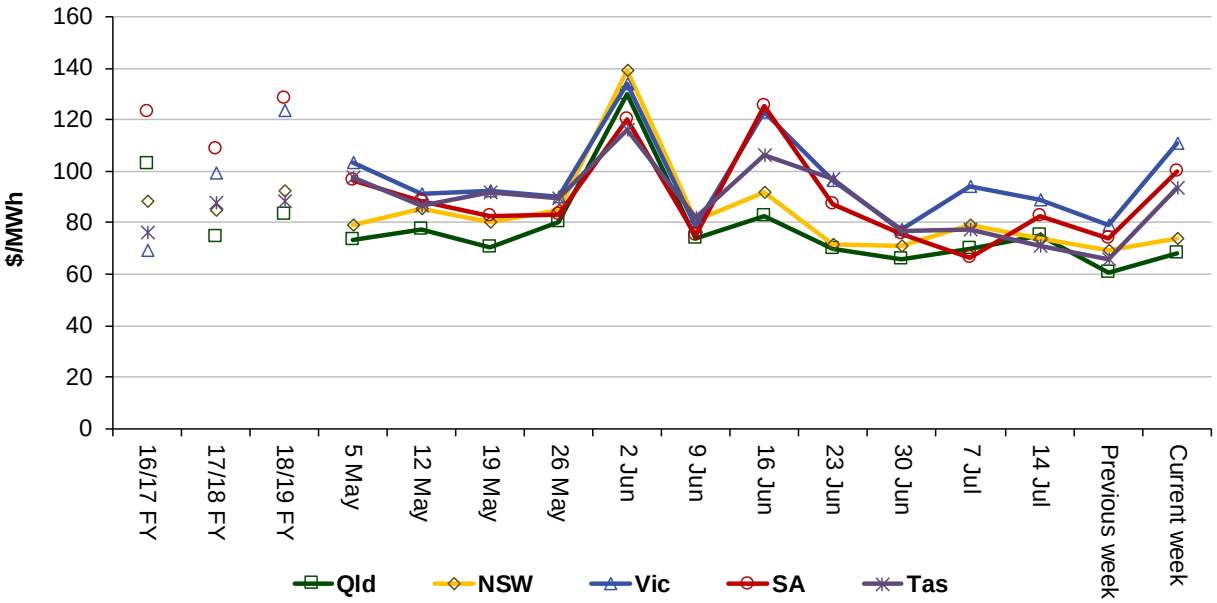


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	68	74	111	100	93
18-19 financial YTD	72	78	74	108	45
19-20 financial YTD	68	74	91	81	77

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 115 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	6	21	0	5
% of total below forecast	10	46	0	13

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

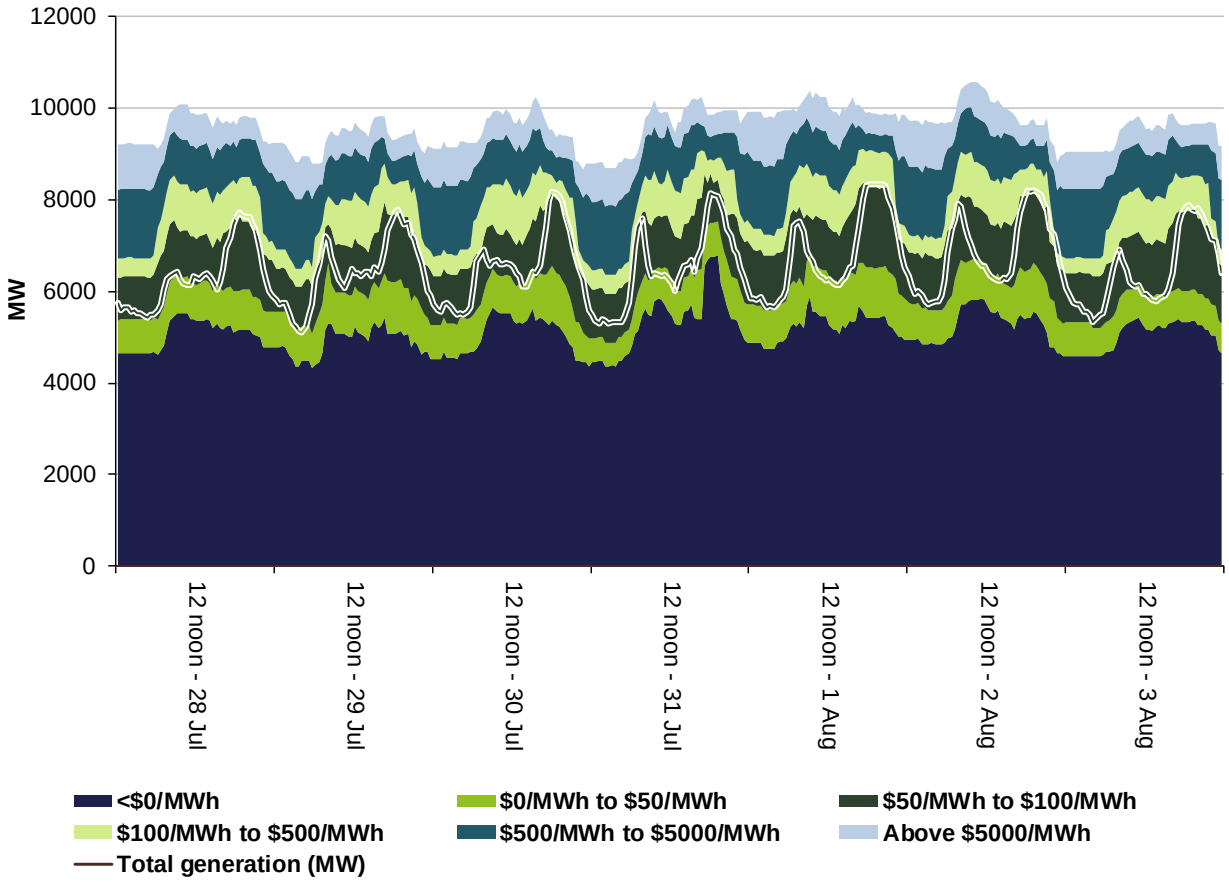


Figure 4: New South Wales generation and bidding patterns

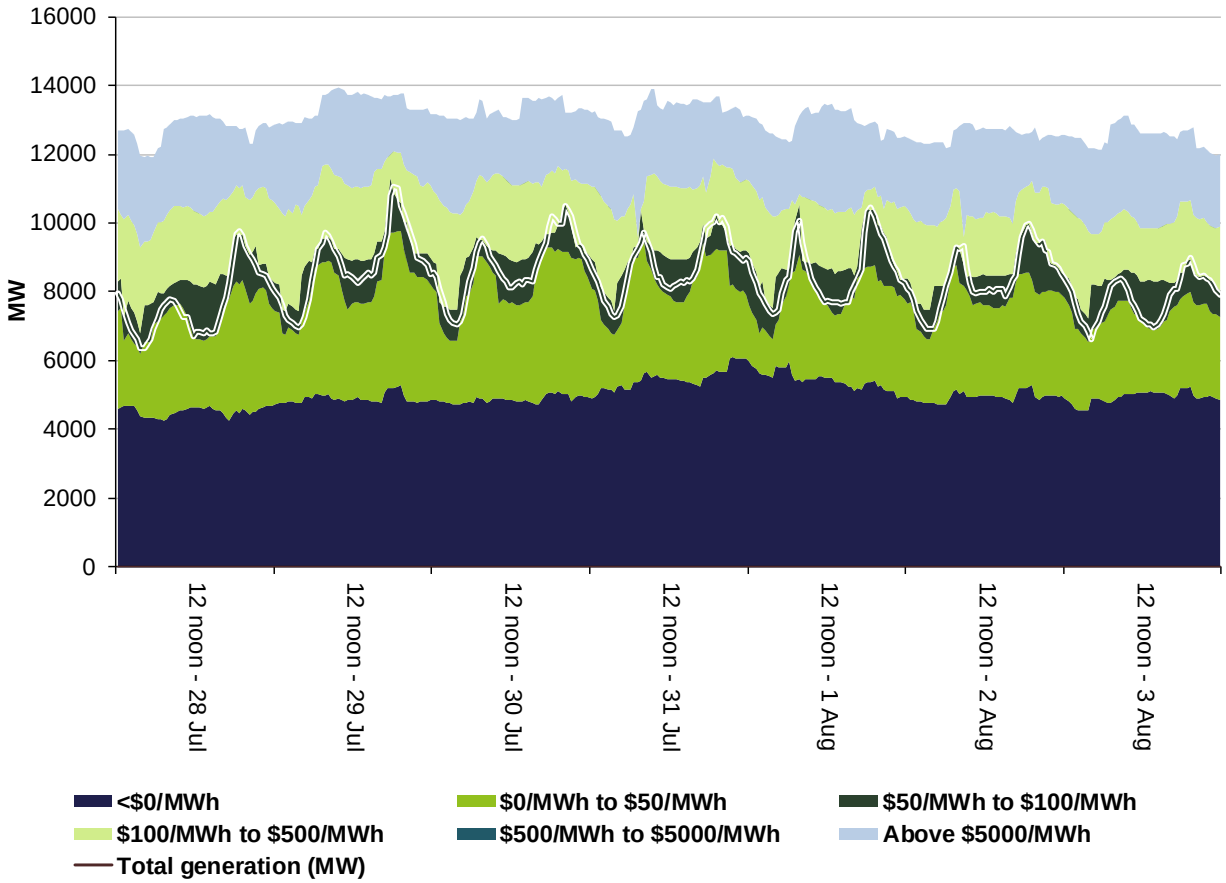


Figure 5: Victoria generation and bidding patterns

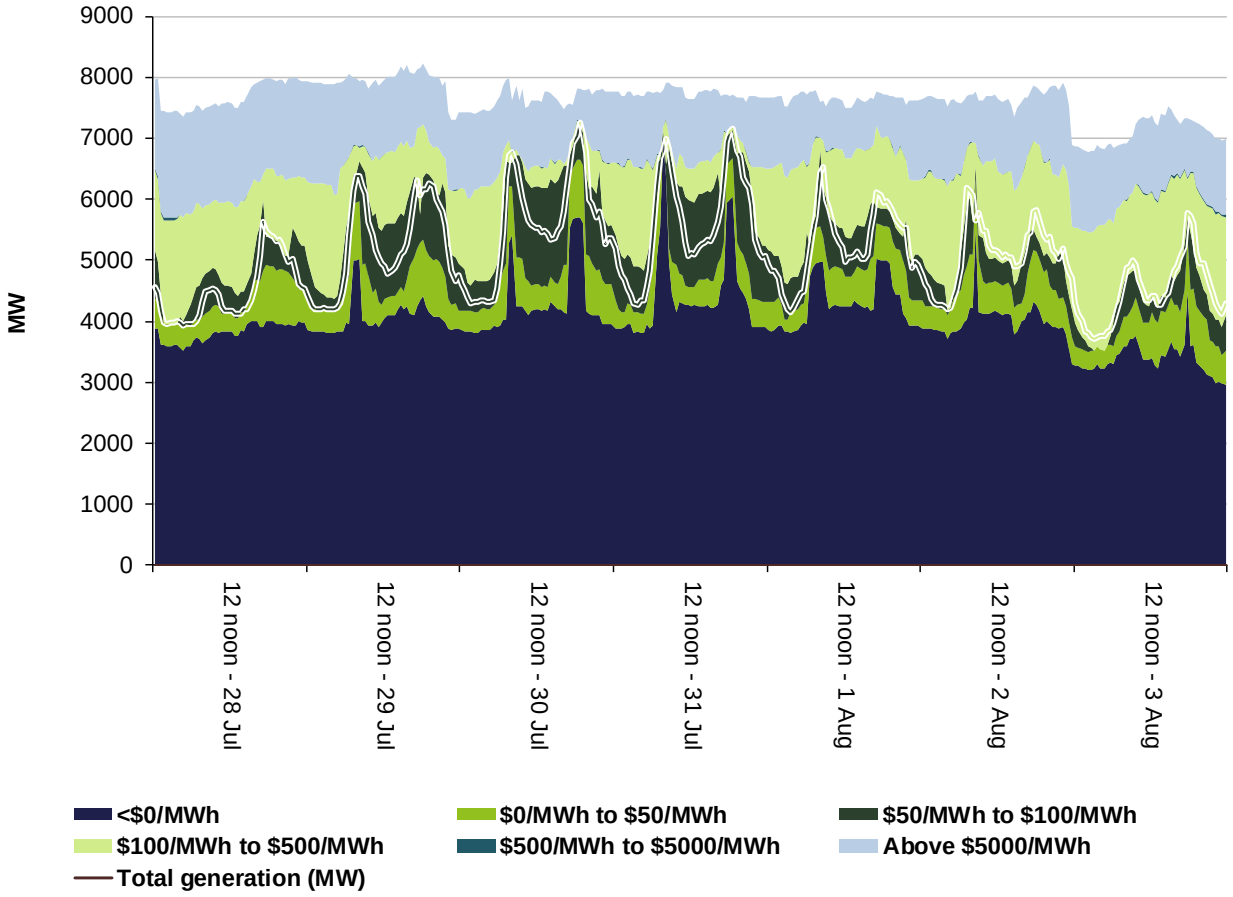


Figure 6: South Australia generation and bidding patterns

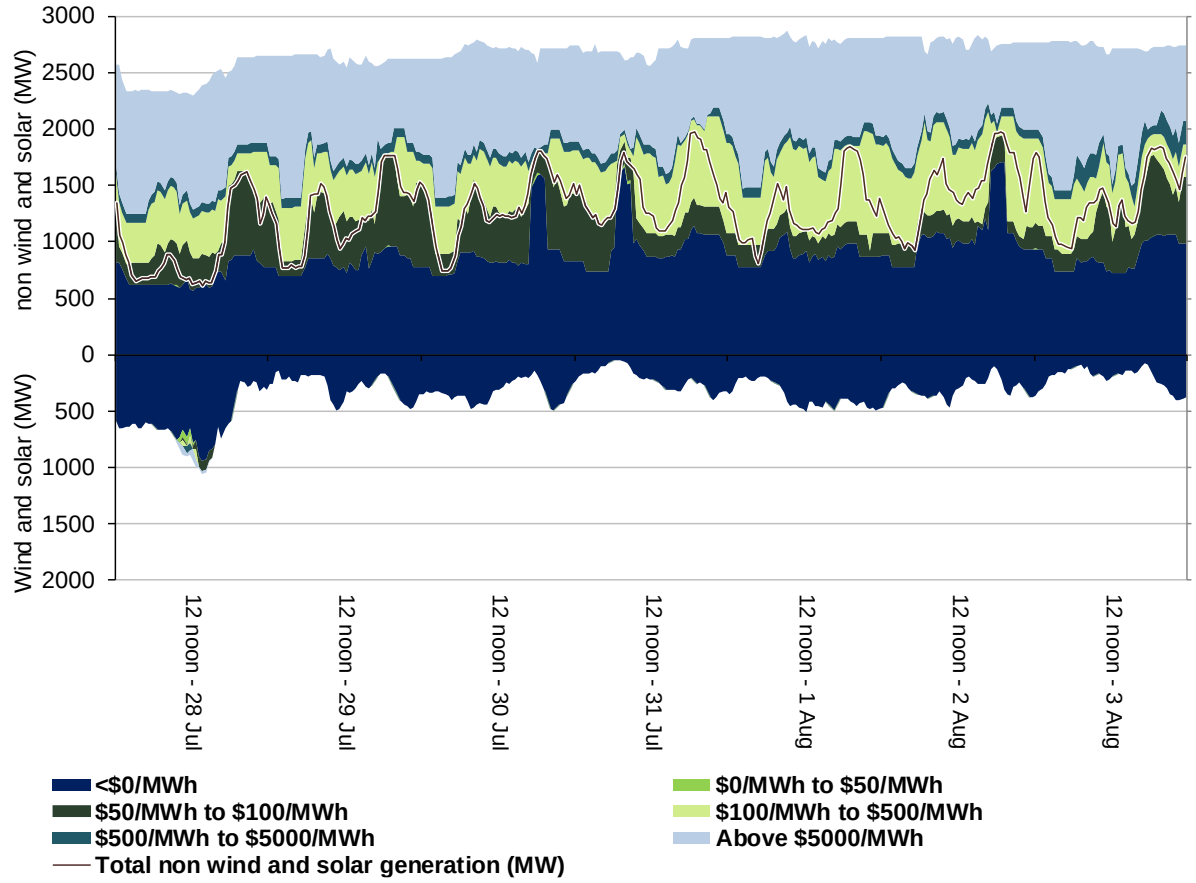
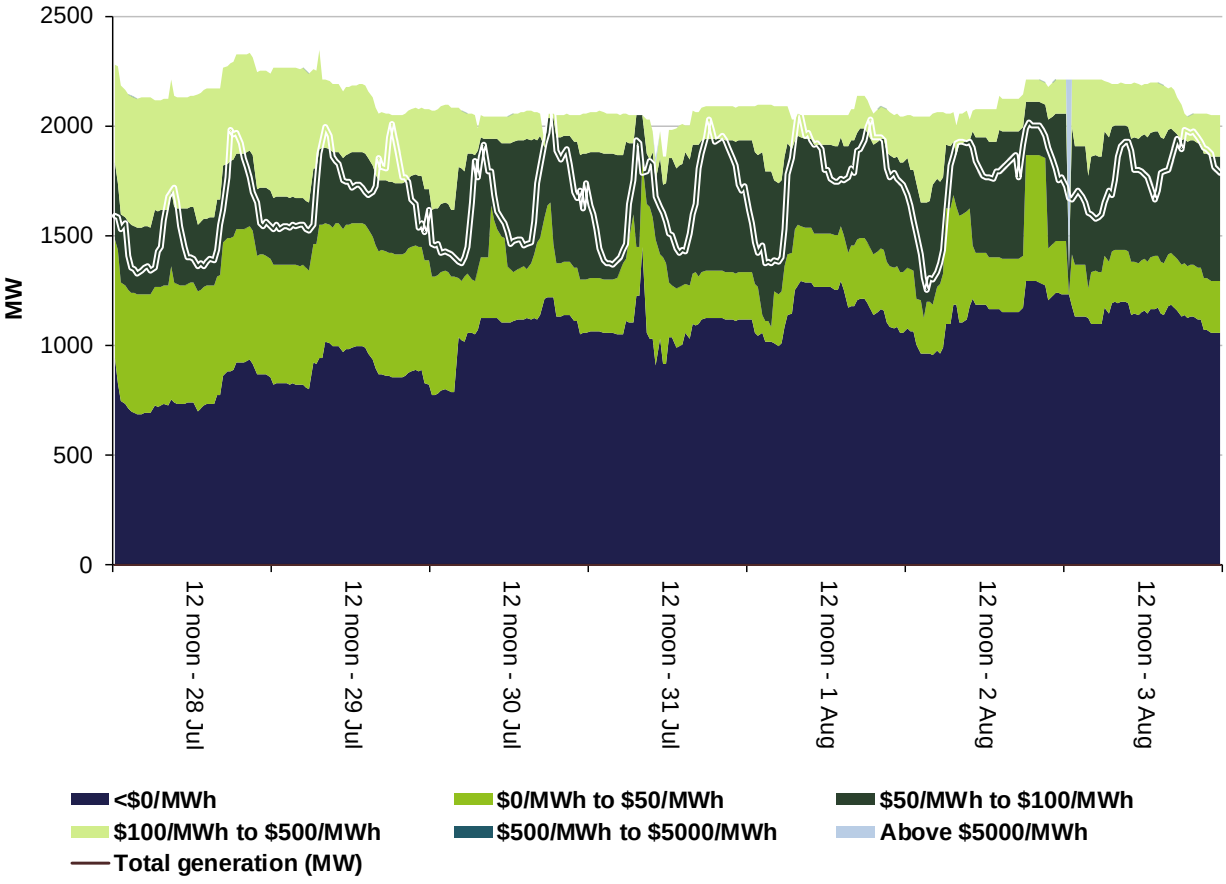


Figure 7: Tasmania generation and bidding patterns



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.

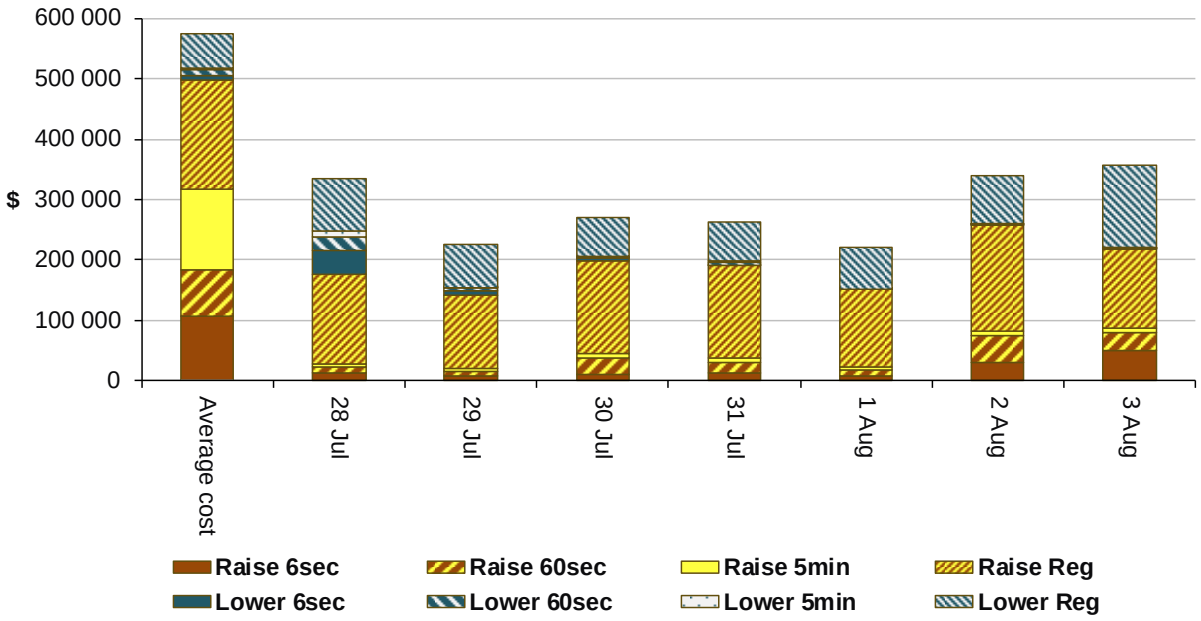
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a "causer pays" basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $1 796 500 or less than 1 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $216 500 or around 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

New South Wales

There was one occasion where the spot price in New South Wales was greater than three times the New South Wales weekly average price of $74/MWh and above $250/MWh.

Tuesday, 30 July

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
6 pm	276.61	299.60	133.02	10 940	10 988	10 940	13 636	13 665	13 676

Conditions at the time saw price close to forecast, four hours prior.

Victoria

There was one occasion where the spot price in Victoria was greater than three times the Victoria weekly average price of $111/MWh and above $250/MWh.

Wednesday, 31 July

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
7.30 am	2033.57	11 500.00	105.29	6645	6503	6472	7748	7744	7754

The prices in Victoria, South Australia and Tasmania were aligned for the 7.30 am trading interval and are discussed collectively in this section.

Across Victoria, South Australia and Tasmania, demand was 200 MW more than forecast and availability was 147 MW less than forecast, both four hours prior. The actual price was lower than forecast four hours ahead as participants rebid over 500 MW of capacity from above $11 500/MWh to below $133/MWh across the three regions. See Table 5 for rebid details. As a result, prices stayed below $300/MWh for five dispatch intervals except for the final interval when it increased to $11 500/MWh.

Table 5: Significant rebids

Submitted time	Region	Participant	Station	Capacity rebid (MW)	Price from ($/MWh)	Price to ($/MWh)	Rebid reason
3.52 am	VIC	AGL Energy	Mckay	60	14 699	99	0340~P~010 unexpected/plant limits~112 redist across portfolio - TORRA3
6.47 am	VIC	EnergyAustralia	Jeeralang A	108	14 500	<133	0640~A~adj bands, mat xhnag ein vicrrp @HHE(0830), -$200

6.47 am	VIC	EnergyAustralia	Jeeralang B	84	11 501	-1000	0640~A~adj bands, mat xhnag ein vicrrp @HHE(0830), -$200
5.12 am	SA	Origin Energy	Ladbroke Grove	84	14 700	-1000	0512A inc vic dem 5PD 4970MW > 30PD 4817MW @HHE0530
5.12 am	SA	Origin Energy	Quarantine	29	14 700	-1000	0512A inc vic dem 5PD 4970MW > 30PD 4817MW @HHE0530
6.44 am	SA	Engie	Dry Creek	145	13 100	<0	0640~A~respond to 5 pd prices ~

South Australia

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

Sunday, 28 July

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
10 am	-159.27	84.98	84.98	1187	1277	1274	3110	2755	2581
11 am	-110.83	77.50	66.97	1088	1148	1148	3204	2879	2882
11.30 am	-716.67	59.72	42.82	1019	1102	1086	3210	2860	2855
Midday	-521.25	48.52	38.49	998	1130	1059	3198	2870	2867

For these four trading intervals, demand in South Australia was between 60 to 130 MW less than forecast while availability was between 325 to 355 MW more than forecast, four hours prior. The increased availability was due to higher than forecast wind generation, mostly priced below -$100/MWh. As a result, dispatch price dropped to either the price floor or -$150/MWh multiple times during these trading intervals.

Tuesday, 30 July

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	314.79	302.31	379.98	1880	1897	1853	2871	2882	2939
6.30 pm	303.86	312.24	379.95	2030	2044	2008	2795	2939	3003

Conditions at the time saw prices close to forecast, four hours prior.

Wednesday, 31 July

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
7.30 am	1633.62	10 178.66	108.67	1691	1709	1748	2733	2877	2898

The price was aligned with the Victorian and Tasmanian price. See the Victorian section for analysis.

Tasmania

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $93/MWh and above $250/MWh.

Wednesday, 31 July

Table 9: Price, Demand and Availability

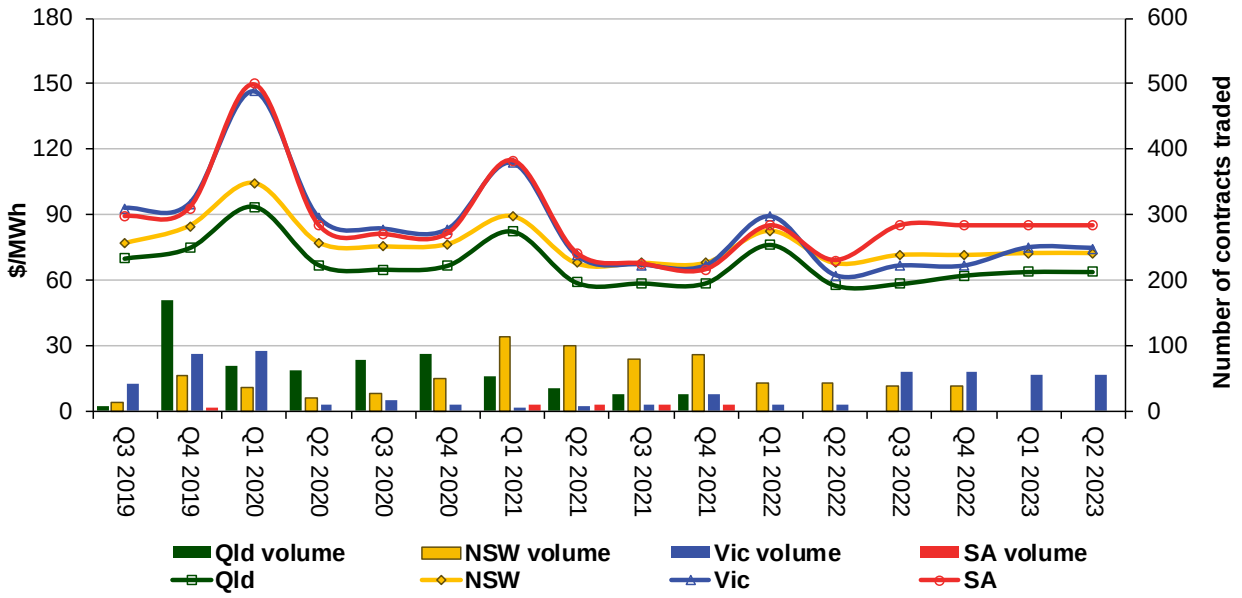
Time	Price ($/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
7.30 am	1820.24	1180.79	97.14	1603	1526	1523	2047	2054	2055

The price was aligned with the Victorian and South Australian price. See the Victorian section for analysis.

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.

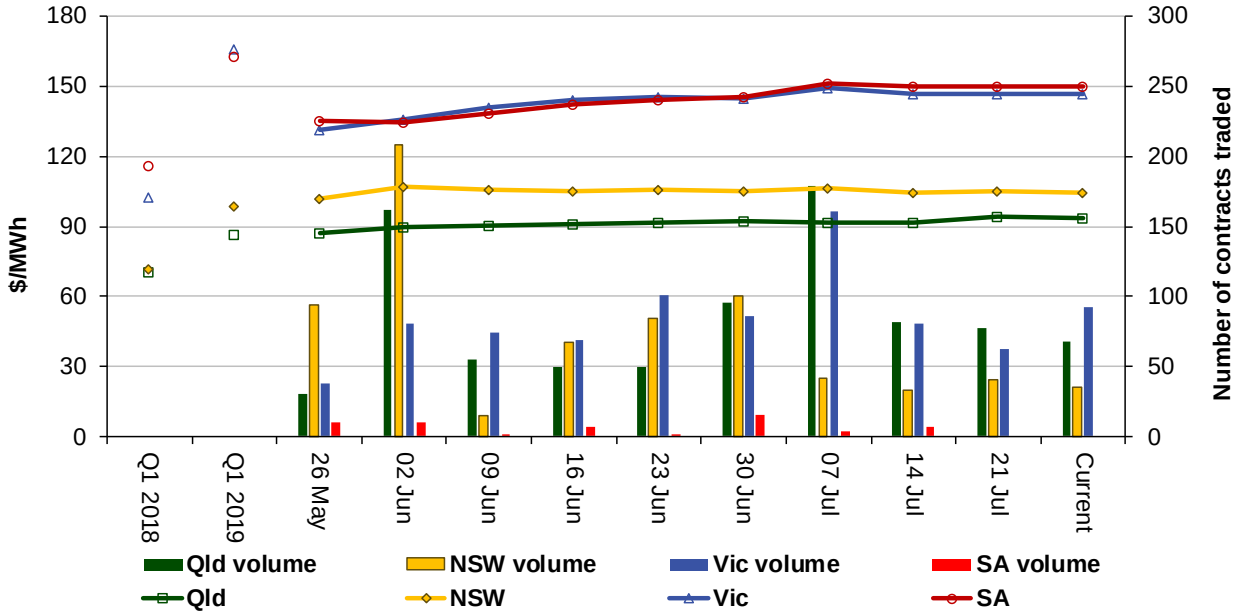
Figure 9: Quarterly base future prices Q3 2019 – Q2 2023



Source. ASXEnergy.com.au

Figure 10 shows how the price for each regional quarter 1 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)



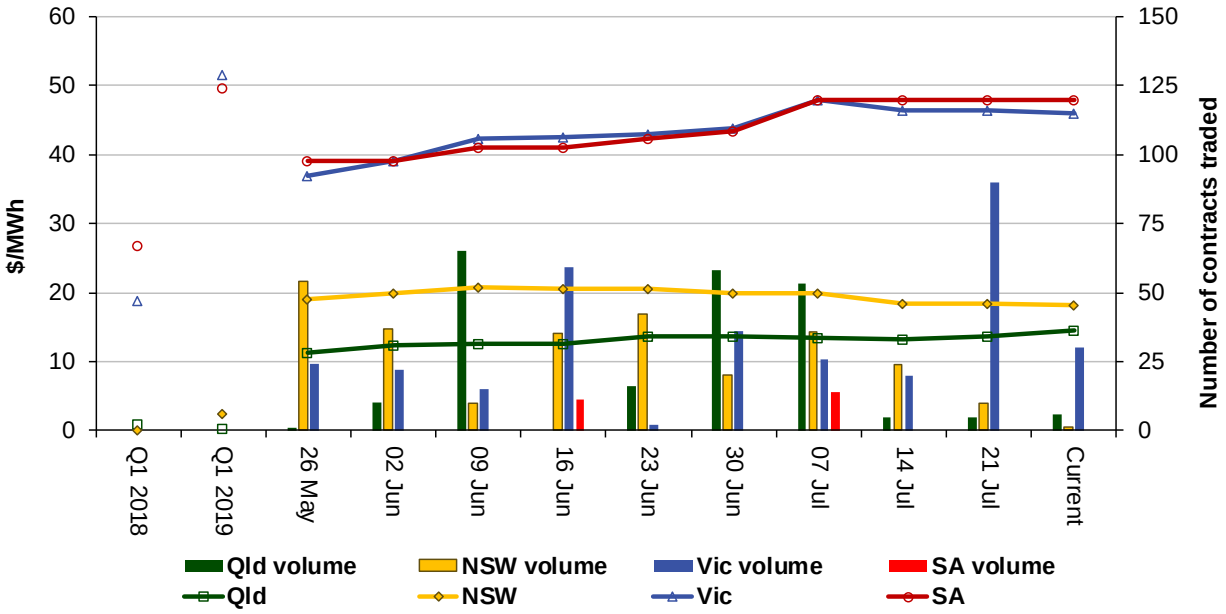
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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