Electricity Report

AUSTRALIAN ENERGY REGULATOR

9 – 15 June 2019

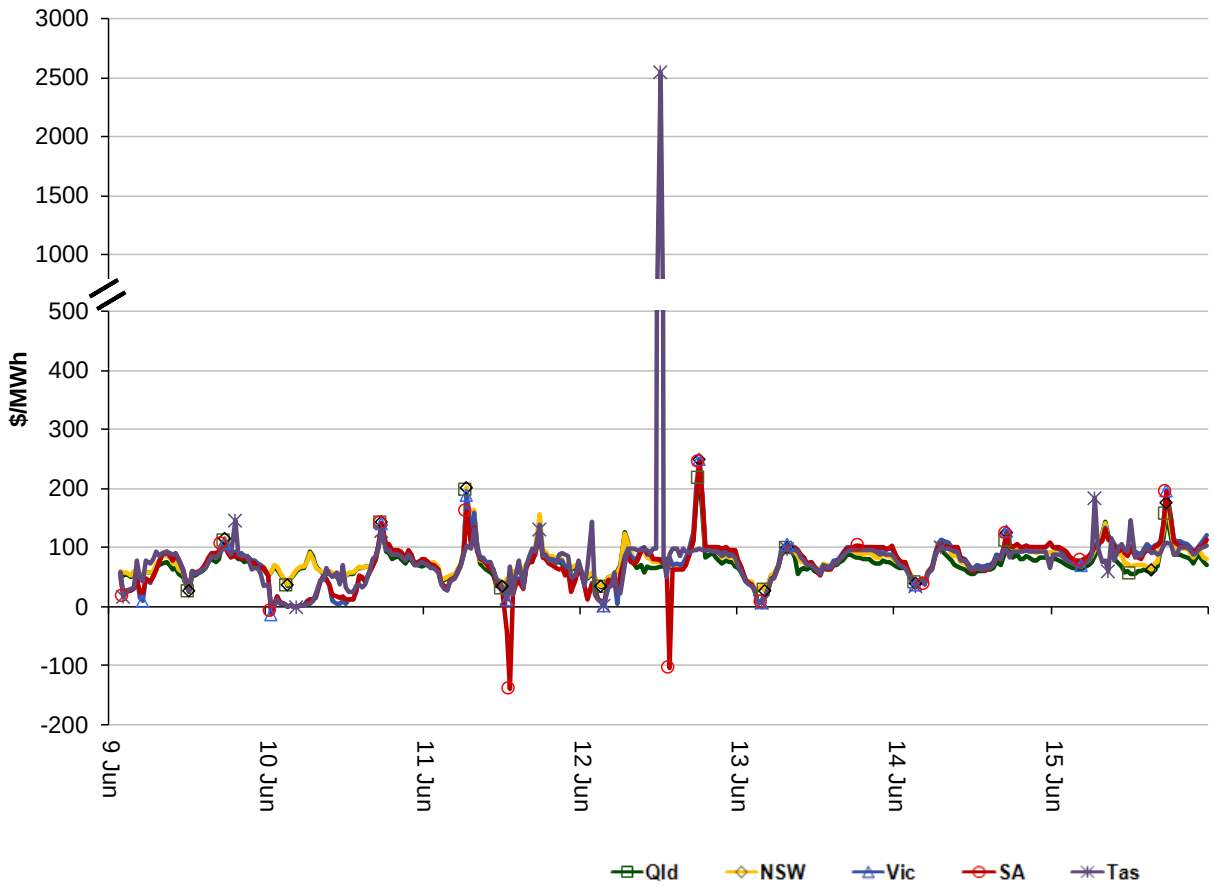
Introduction

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 9 to 15 June 2019.

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



Note: Scale change

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)

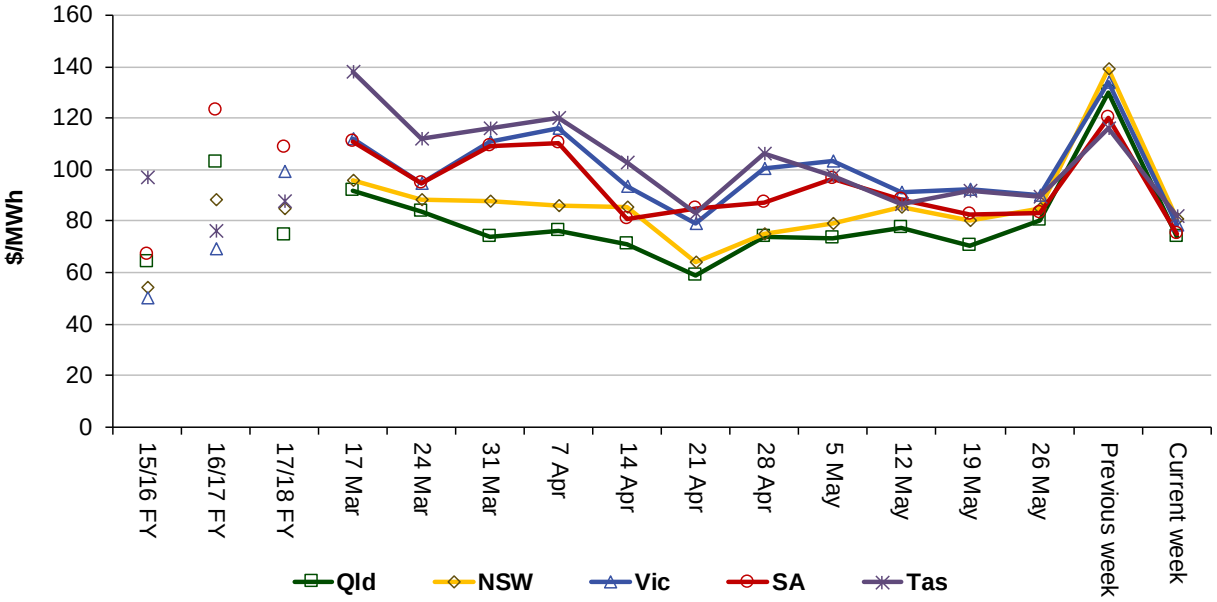


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	74	81	78	75	82
17-18 financial YTD	74	84	99	108	88
18-19 financial YTD	83	93	125	130	88

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 137 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	7	0	1
% of total below forecast	9	72	0	7

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

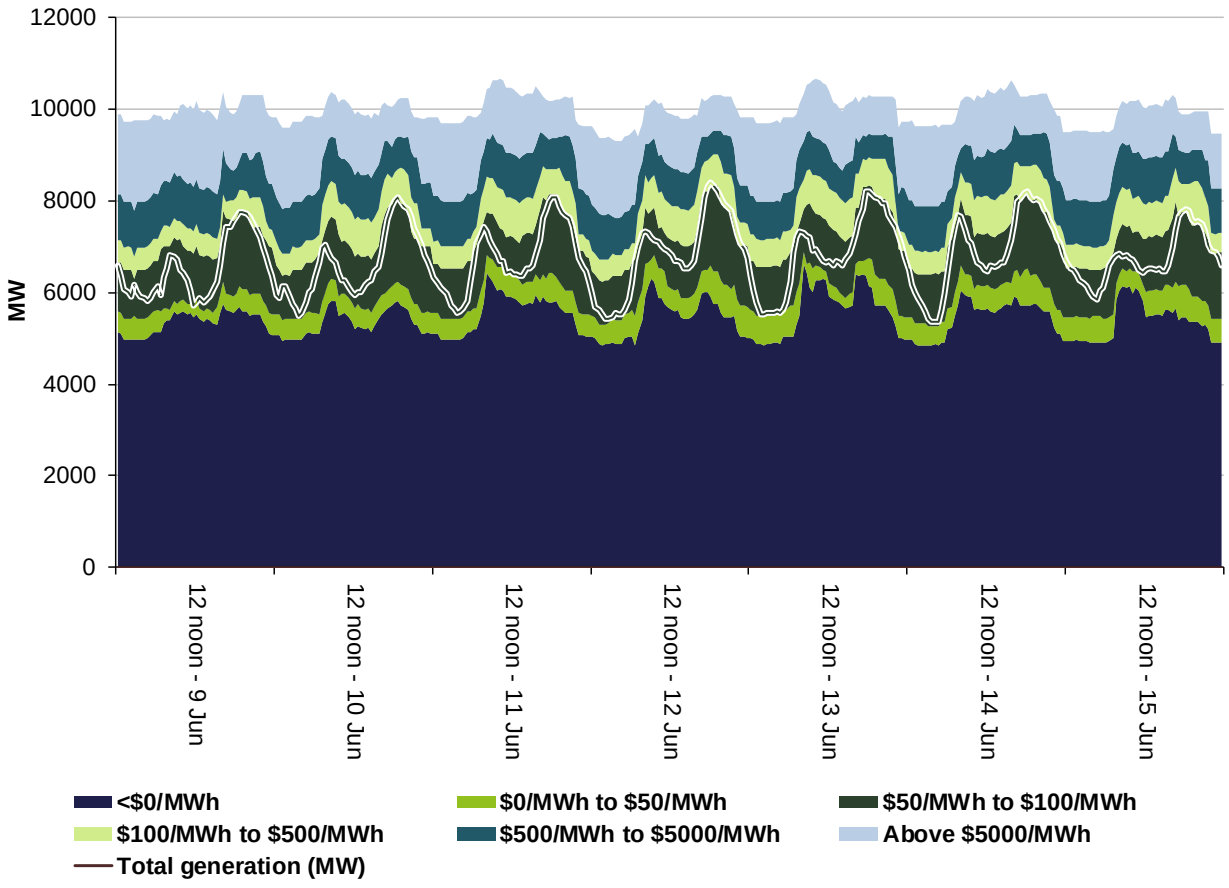


Figure 4: New South Wales generation and bidding patterns

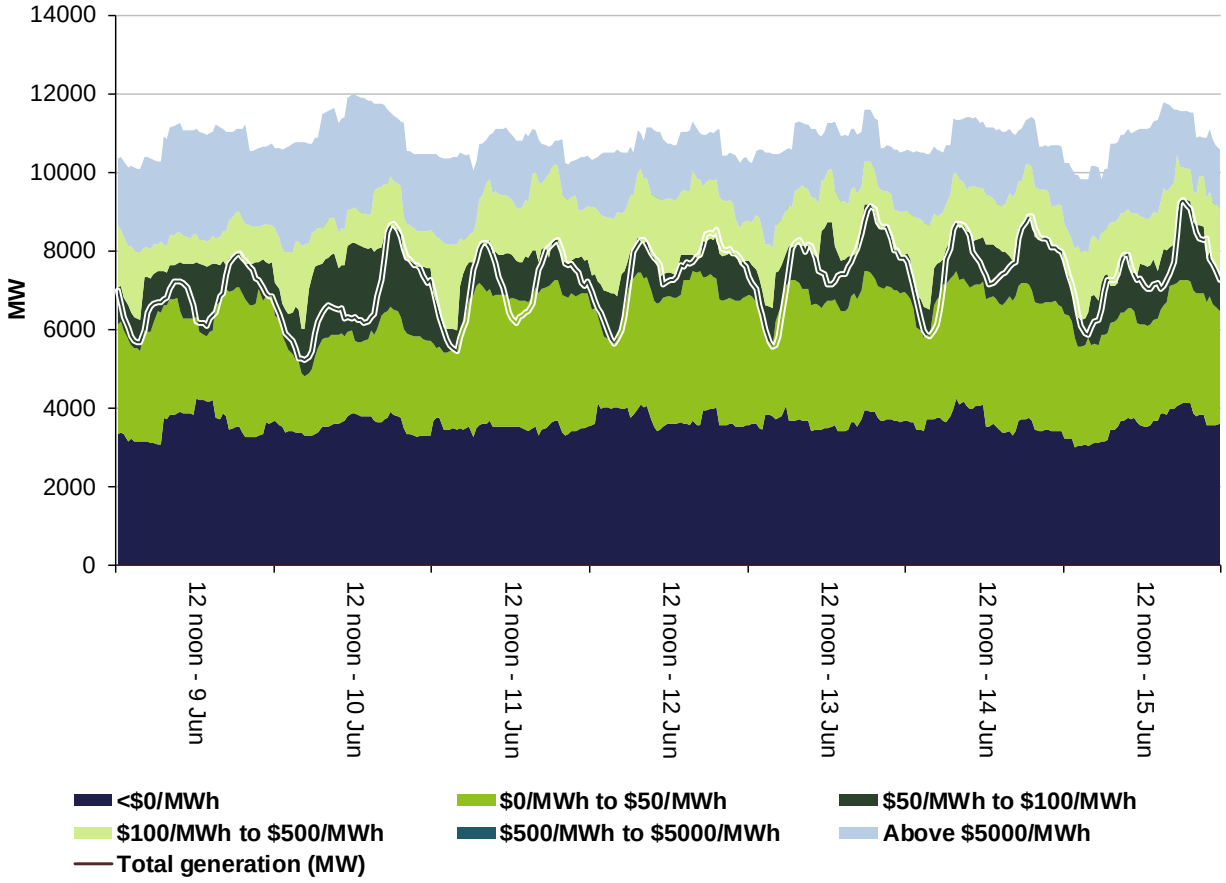


Figure 5: Victoria generation and bidding patterns

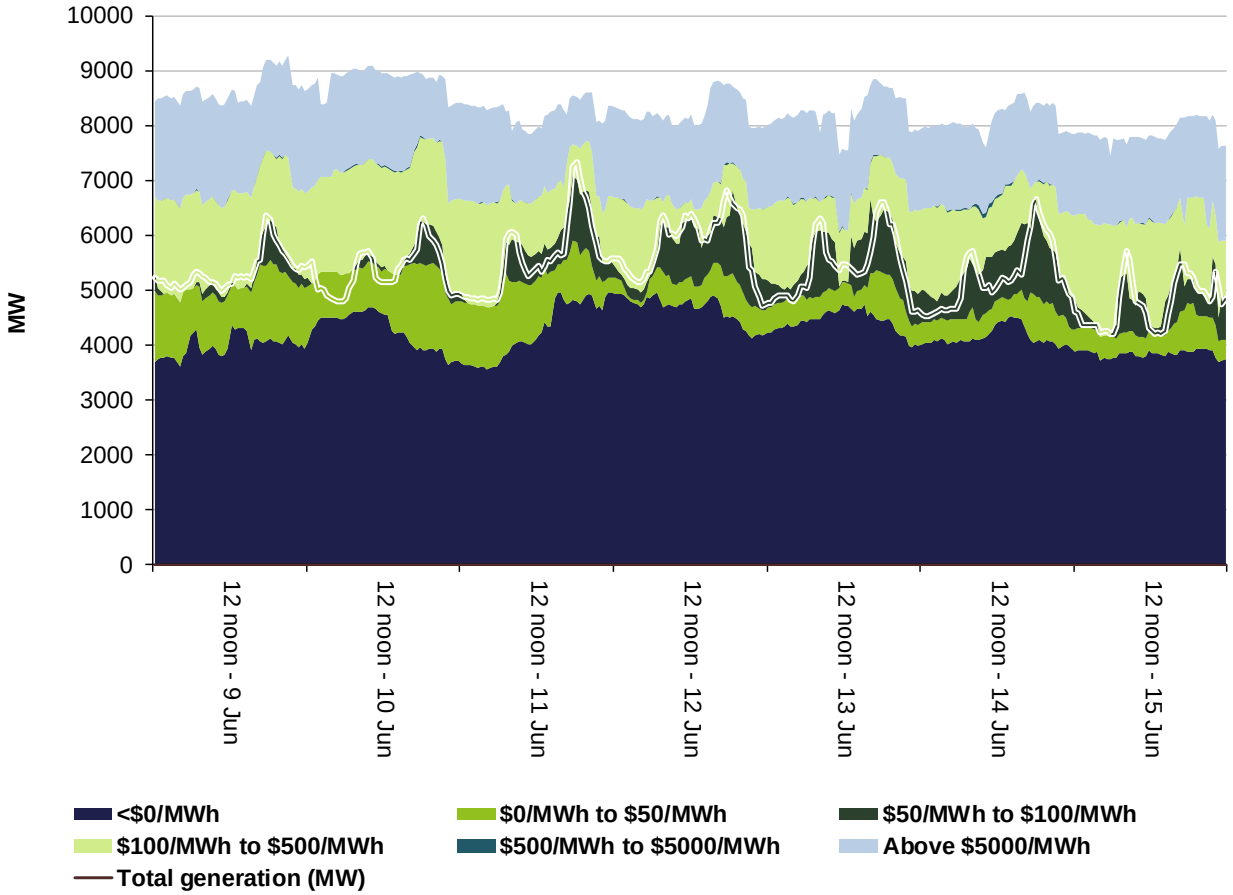


Figure 6: South Australia generation and bidding patterns

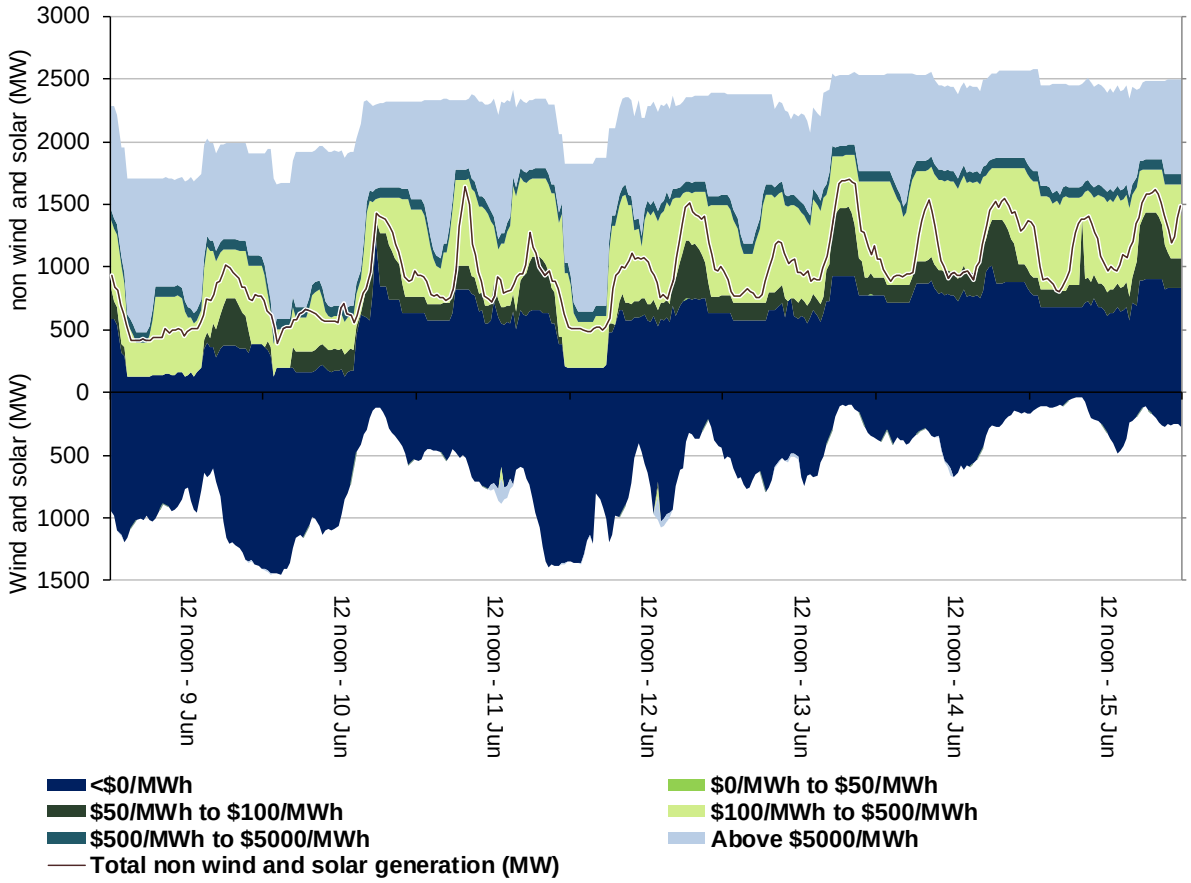
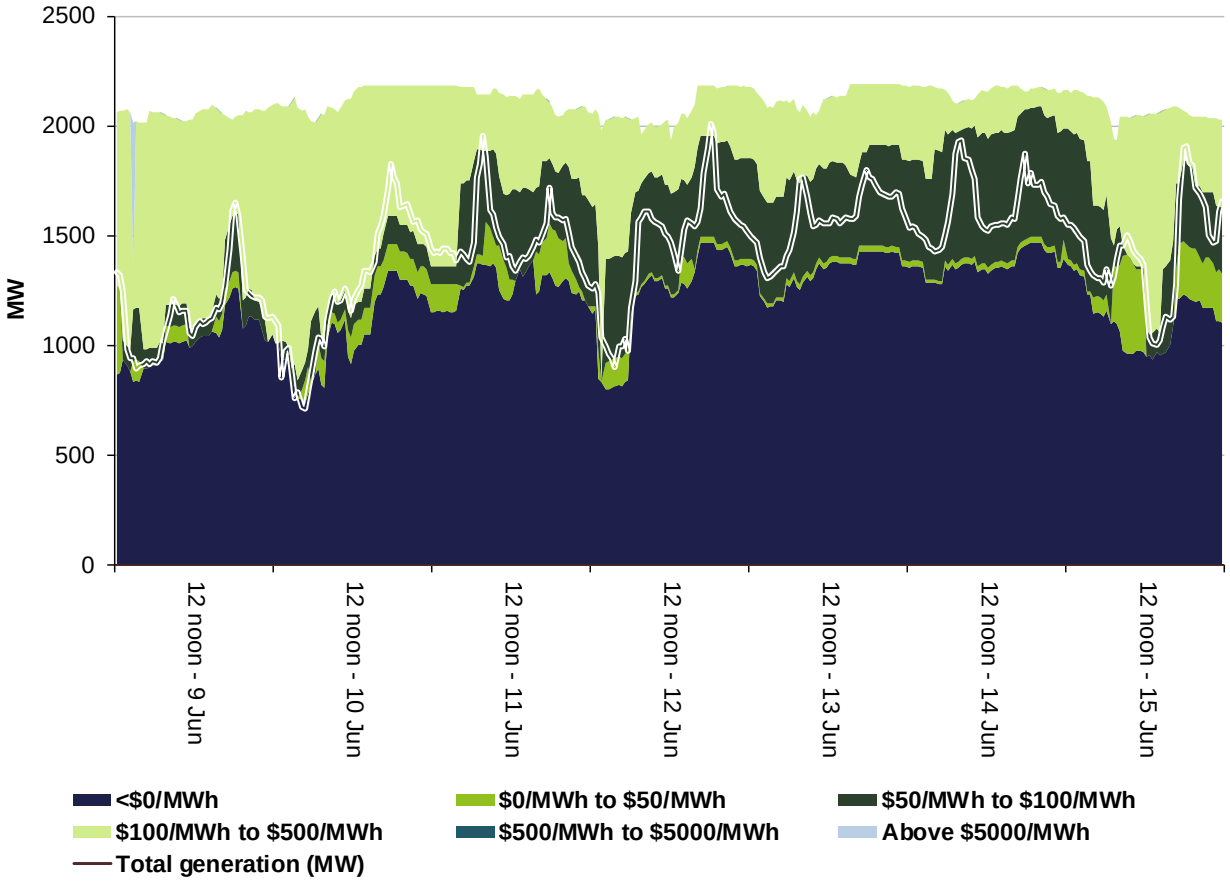


Figure 7: Tasmania generation and bidding patterns



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.

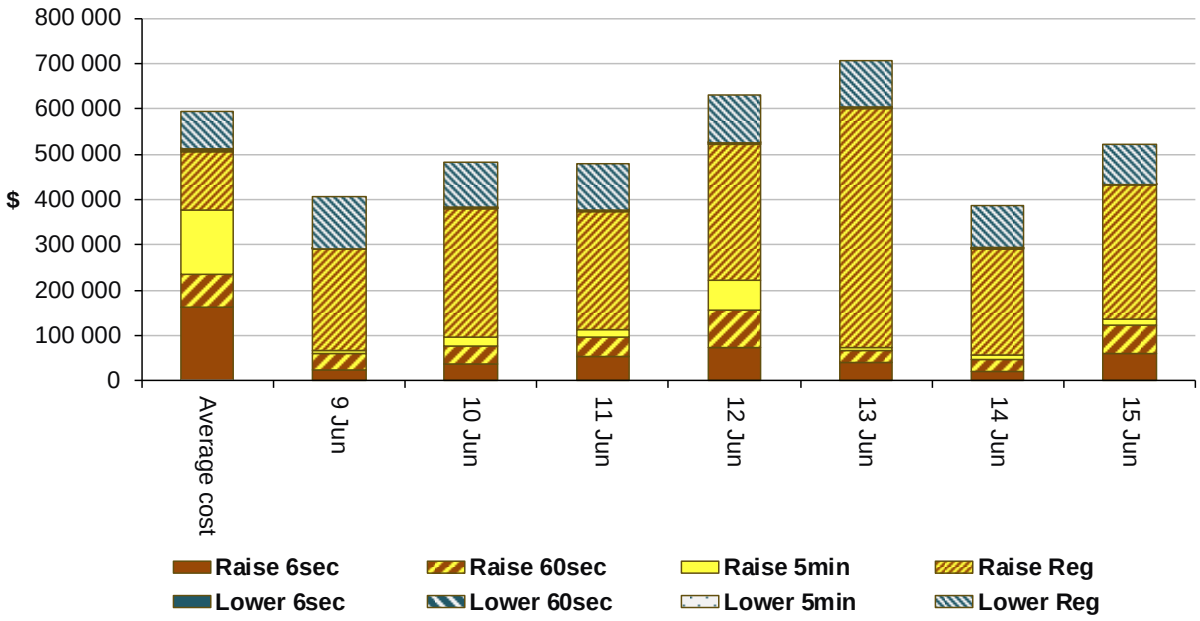
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a "causer pays" basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $3 230 000 or less than 2 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $385 500 or less than 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

Victoria

There was one occasion where the spot price in Victoria was greater than three times the Victoria weekly average price of $78/MWh and above $250/MWh.

Wednesday, 12 June

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
6.30 pm	251.07	149.87	195.18	6420	6431	6326	8754	8789	8725

Prices in Queensland, New South Wales, Victoria and South Australia were aligned for the 6.30 pm trading interval, but only Victoria triggered our reporting thresholds. Conditions in all four regions contributed to this price event and are discussed collectively in this section.

Across Queensland, New South Wales, Victoria and South Australia, demand was around 300 MW less than forecast but availability was around 500 MW less than forecast, four hours prior (most of which was priced below the actual price). With only around 100 MW of capacity across the four regions priced between $100/MWh and $300/MWh, the price was set at $290/MWh for four dispatch intervals.

South Australia

There were two occasions where the spot price in South Australia was below -$100/MWh.

Tuesday, 11 June

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
1.30 pm	-138.43	38.08	24.97	940	970	958	3216	3236	3287

Demand was and availability were close to forecast, four hours prior.

At 1.10 pm, total generation in South Australia dropped by 40 MW as a result of the Hornsdale power reserve reducing consumption for the battery by 40 MW. There were only two generation units in South Australia with offers between -$1000/MWh and $77/MWh at the time. With these units being ramp-down constrained and unable to set price, the dispatch price fell to the price floor for one dispatch interval.

Wednesday, 12 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
2 pm	-102.77	65.39	64.10	1126	1316	1335	3303	3219	3267

Demand was 190 MW less than forecast while availability was 84 MW higher than forecast, four hours prior. The Murraylink interconnector was export constrained due to the Monash to North West Bend line being taken out of service the day prior.

At 1.35 pm, a system normal constraint decreased exports to Victoria on the Heywood interconnector by 25 MW and generation in South Australia decreased by 19 MW. With no generation priced between $68/MWh and the price floor in South Australia, the price fell to the price floor for the 1.35 pm dispatch period.

Tasmania

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $82/MWh and above $250/MWh.

Wednesday, 12 June

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
12.30 pm	2549.49	69.24	68.12	1305	1230	1209	1981	1972	1973

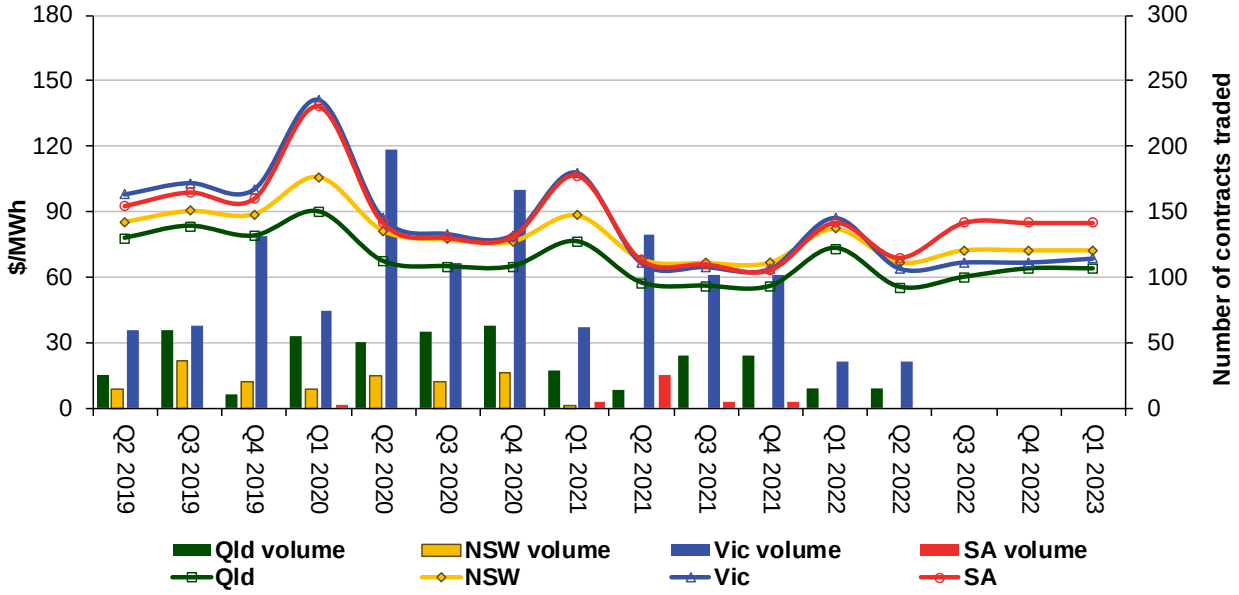
Demand was 75 MW more than forecast while availability was close to forecast, four hours prior.

At 12.25 pm a constraint managing raise 5 minutes services in Tasmania violated. The energy and FCAS markets were co-optimised causing the dispatch price for energy to increase to the price cap of $14 500/MWh at 12.25 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 2019 – Q1 2023

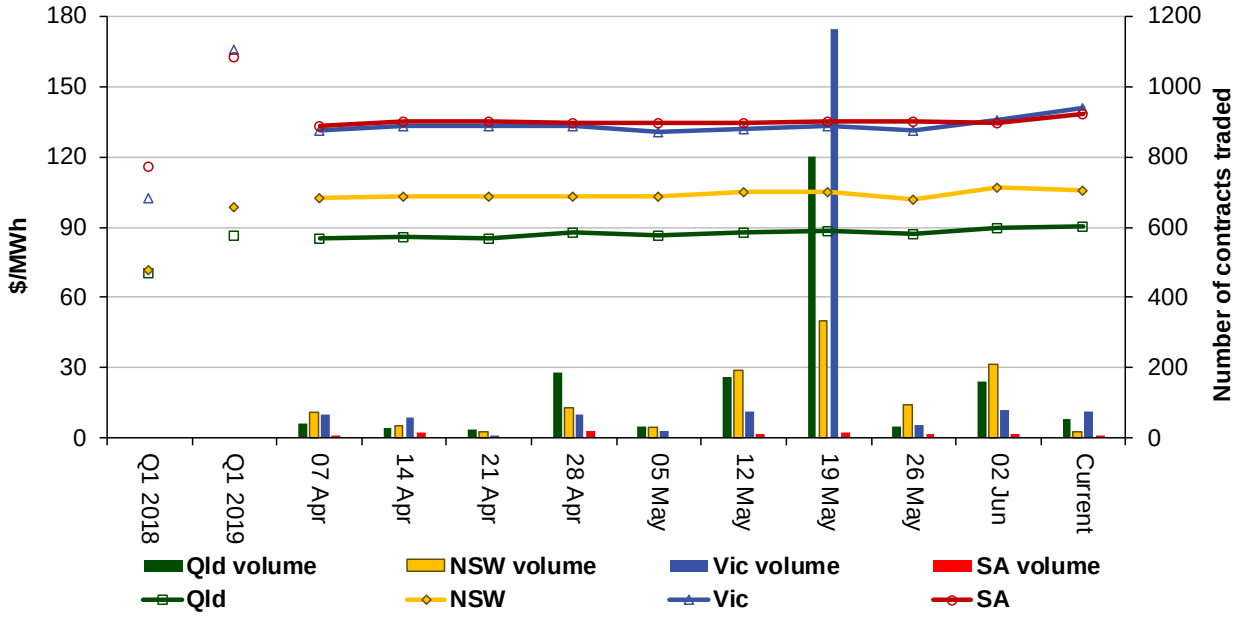


Source. ASXEnergy.com.au

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.

The high volume of trades in Figure 10 is a result of the conversion of base load options to base future contracts on Monday 20 May 2019.

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



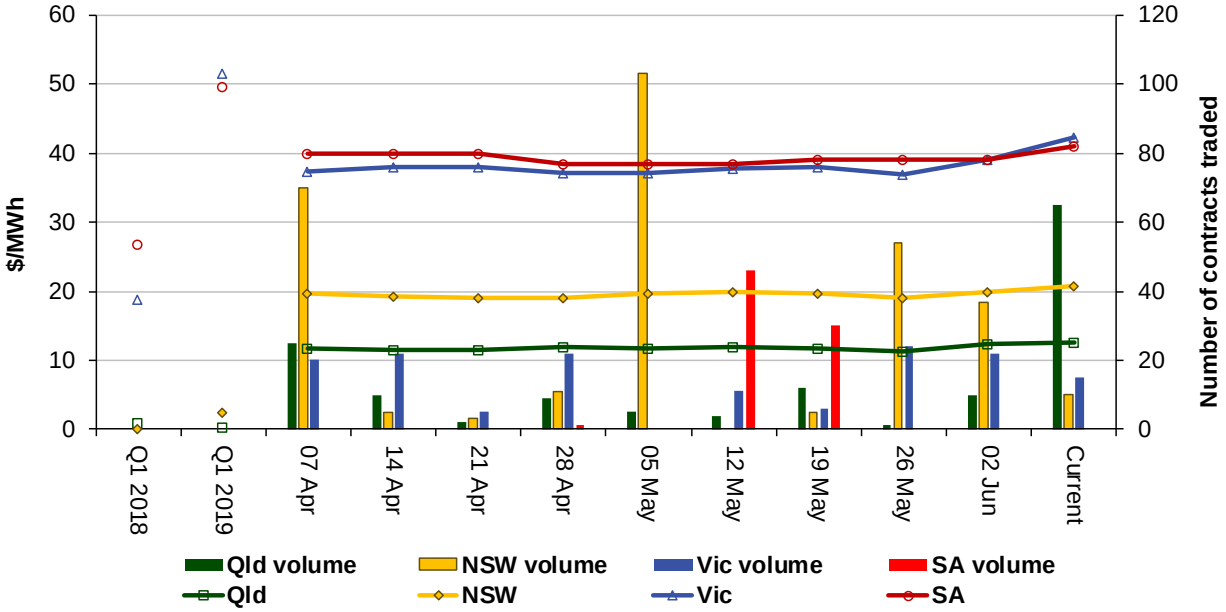
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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

Australian Energy Regulator
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