Electricity Report

AUSTRALIAN ENERGY REGULATOR

13 – 19 September 2020

Weekly Summary

Weekly volume weighted average (VWA) prices were between $26/MWh in Queensland to $41/MWh in NSW. Q3 quarter to date VWA prices ranged from $35/MWh in Queensland up to $56/MWh in Victoria. Quarterly prices are between $28/MWh and $45/MWh lower than the same time last year for the mainland regions.

Vales Point unit 6 went offline from 13 to 15 September due to a plant failure. This unplanned outage did not significantly affect prices in NSW.

Demand fell to a record low in South Australia of 426 MW on 13 September. Lower demand along with higher levels of wind generation towards the end of the week drove lower prices in South Australia.

Purpose

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 13 to 19 September 2020.

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

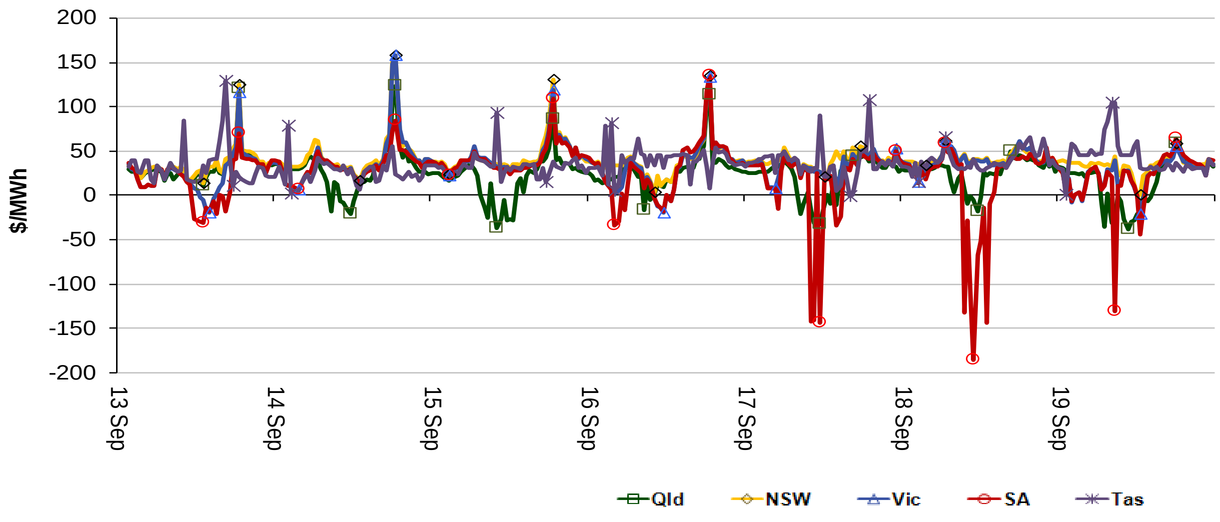


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

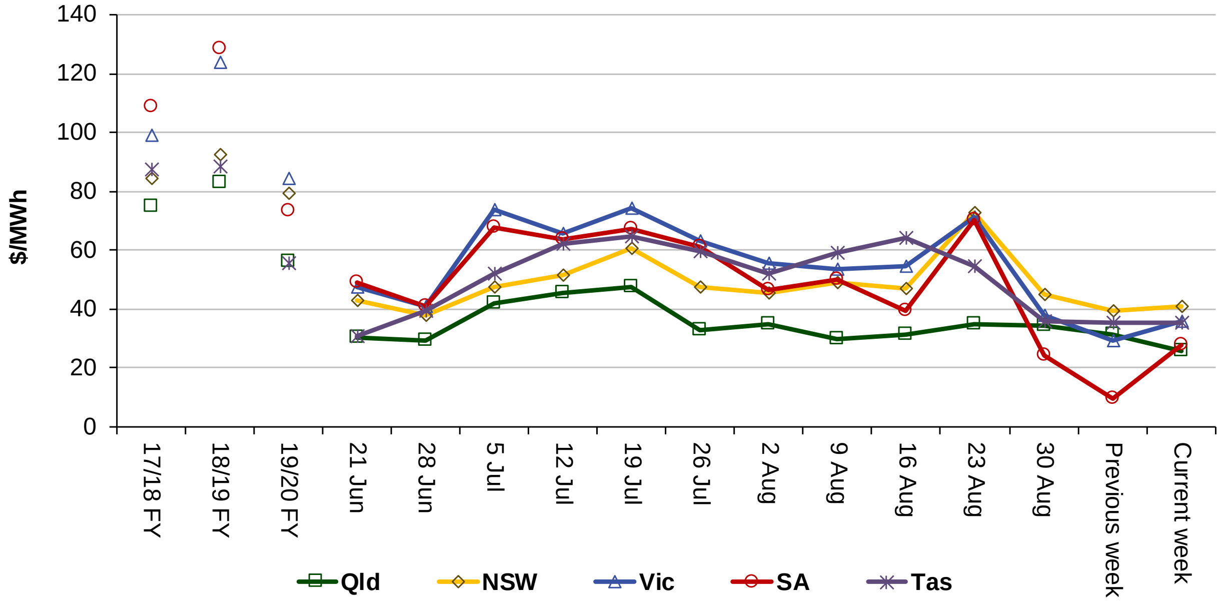


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	26	41	36	28	35
Q3 2019 QTD	63	84	101	81	68
Q3 2020 QTD	35	49	56	49	52
19-20 financial YTD	63	84	101	81	68
20-21 financial YTD	35	49	56	49	52

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 212 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2019 of 204 counts and the average in 2018 of 199. 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	3	31	0	2
% of total below forecast	11	39	0	14

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 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

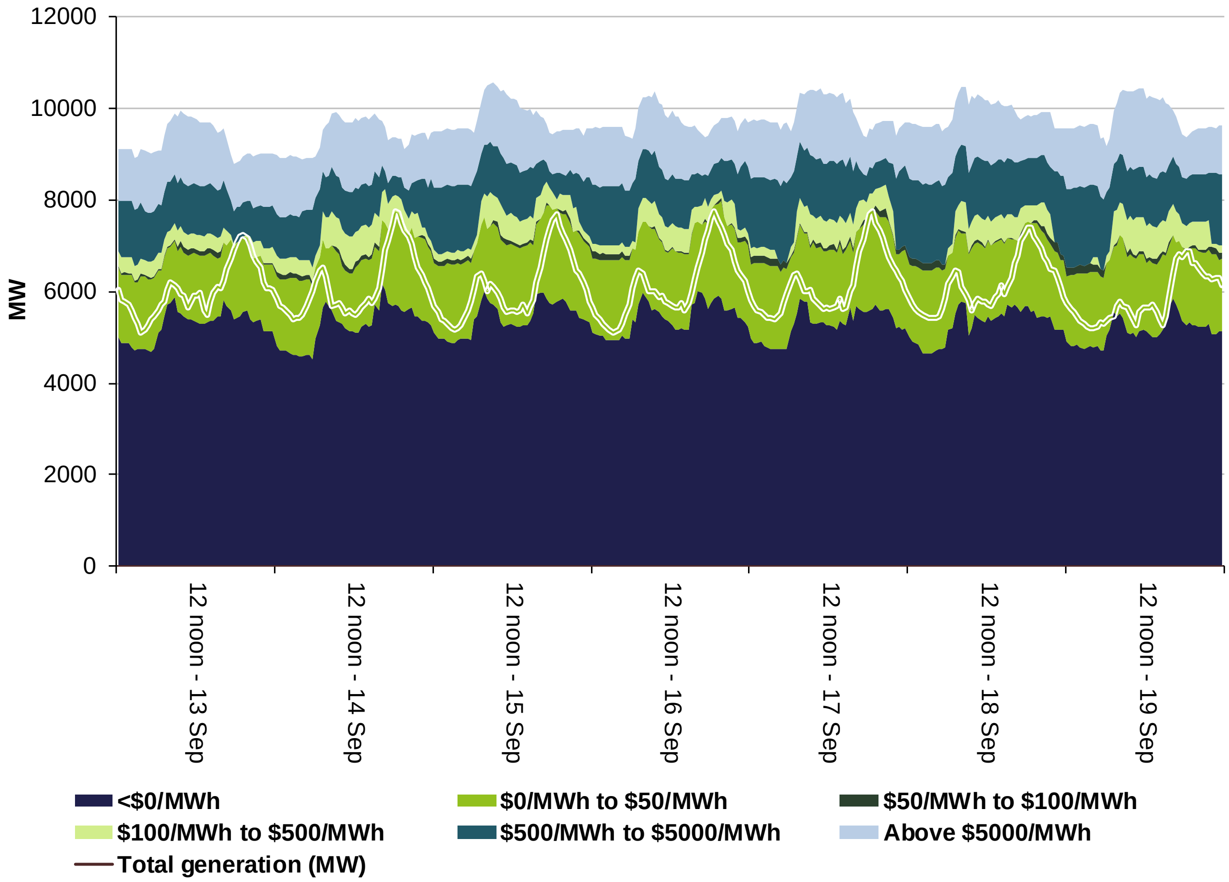


Figure 4: New South Wales generation and bidding patterns

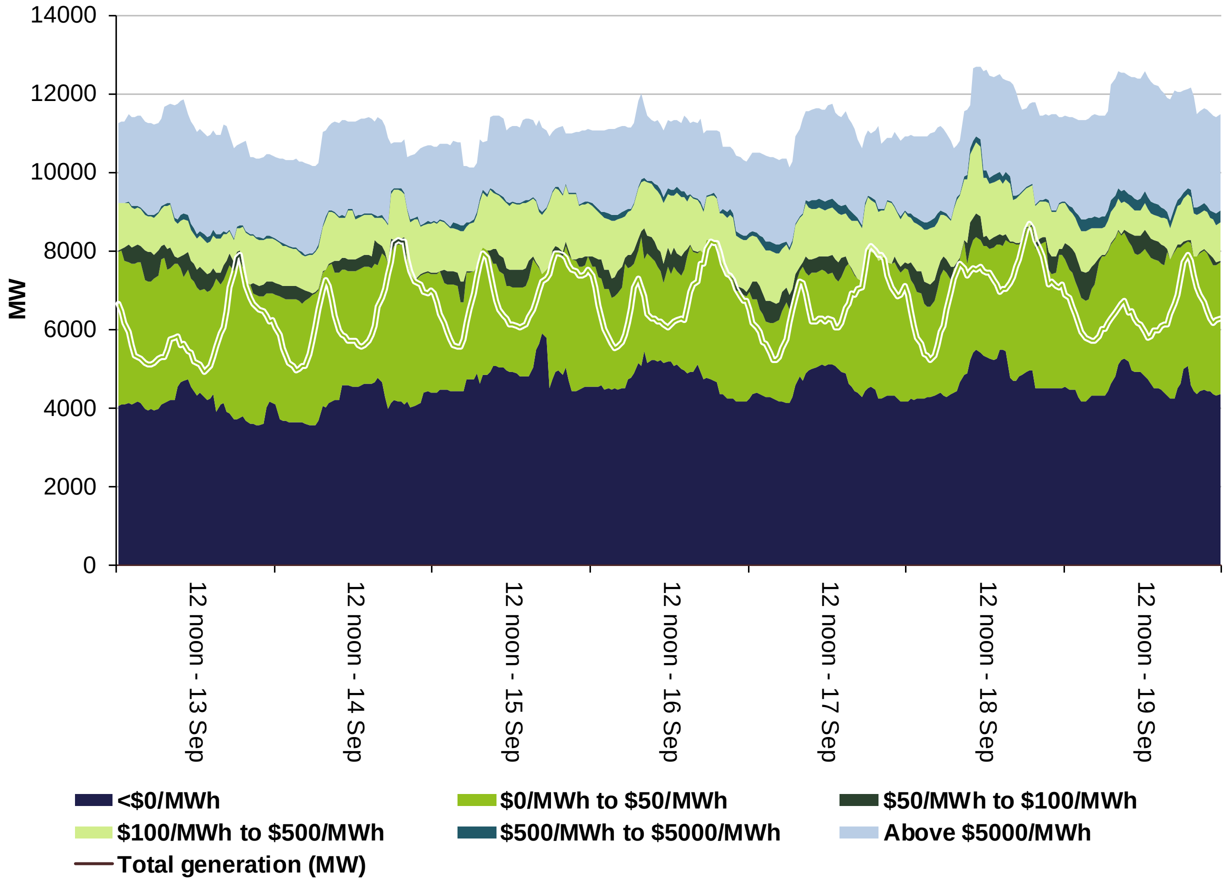


Figure 5: Victoria generation and bidding patterns

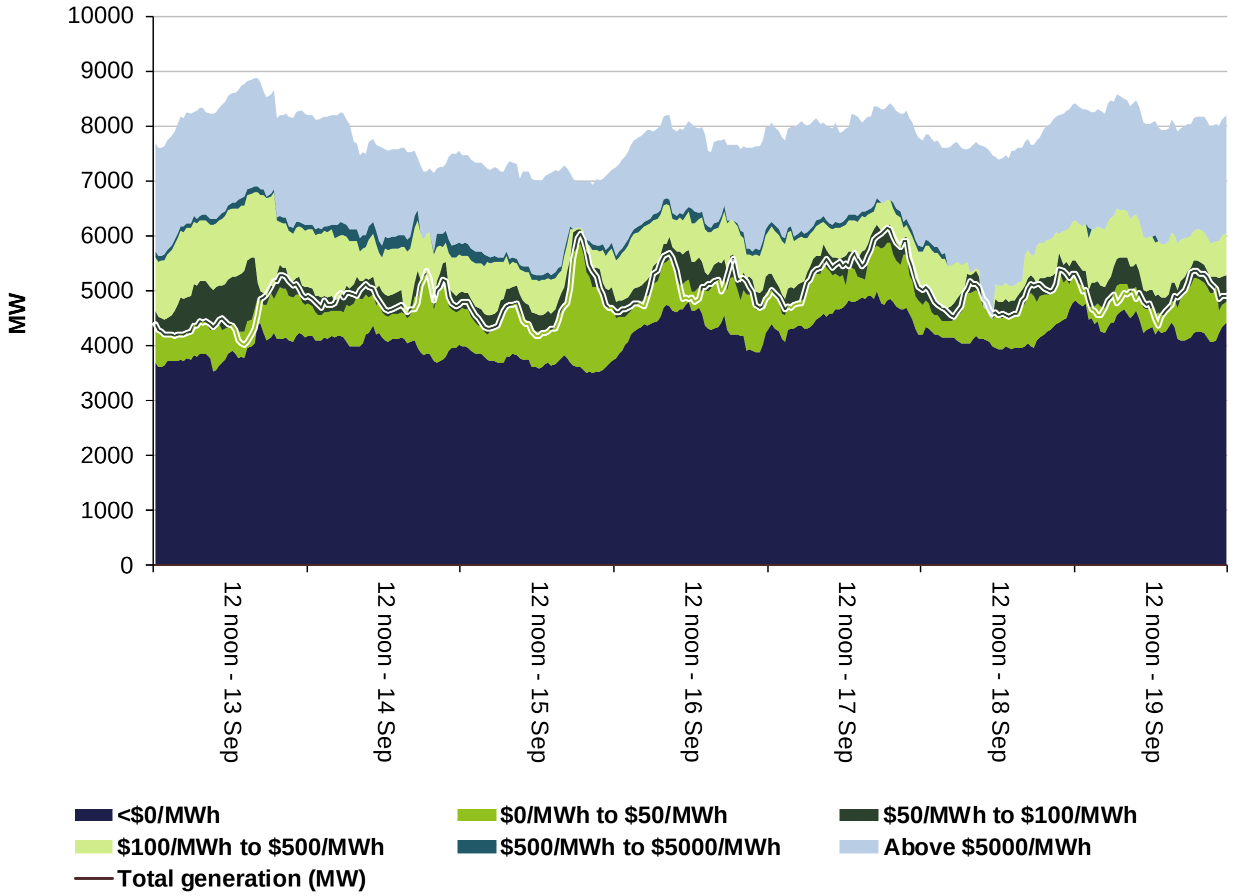


Figure 6: South Australia generation and bidding patterns

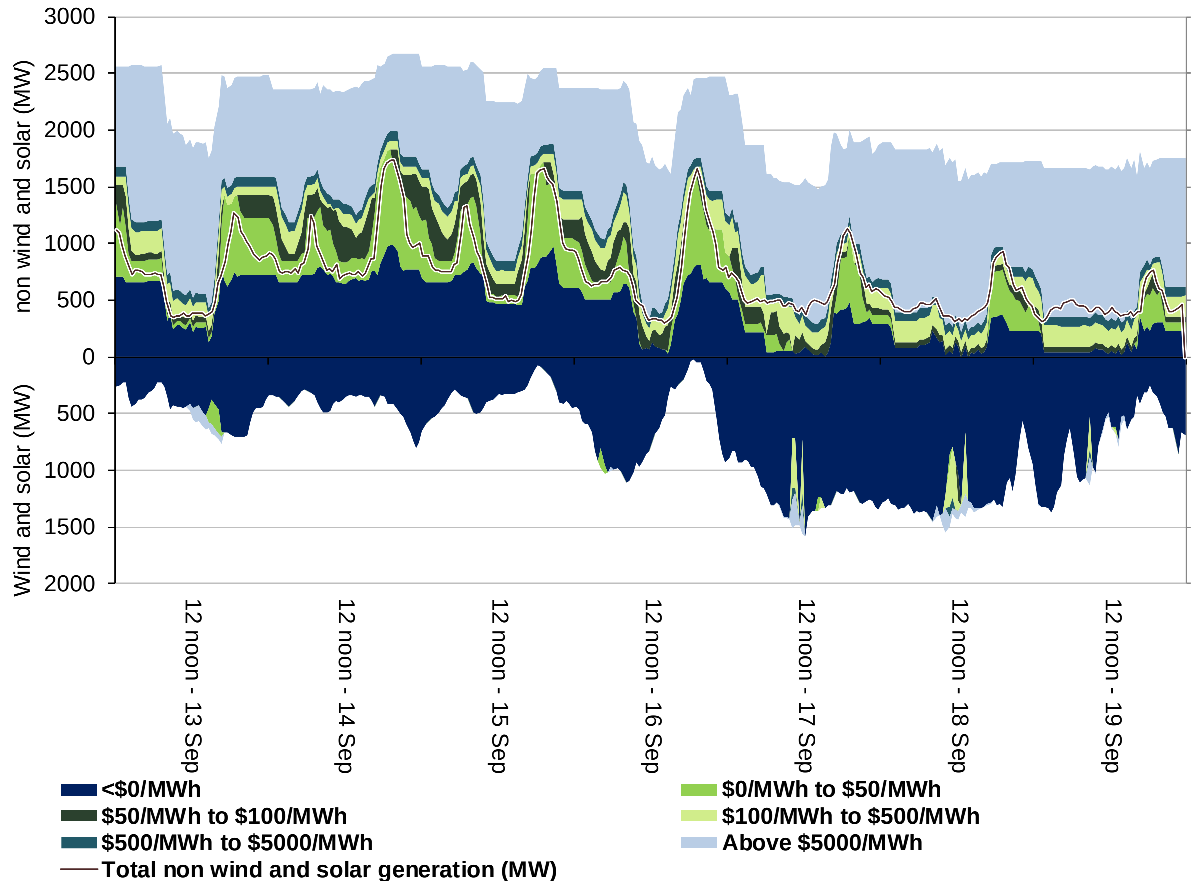
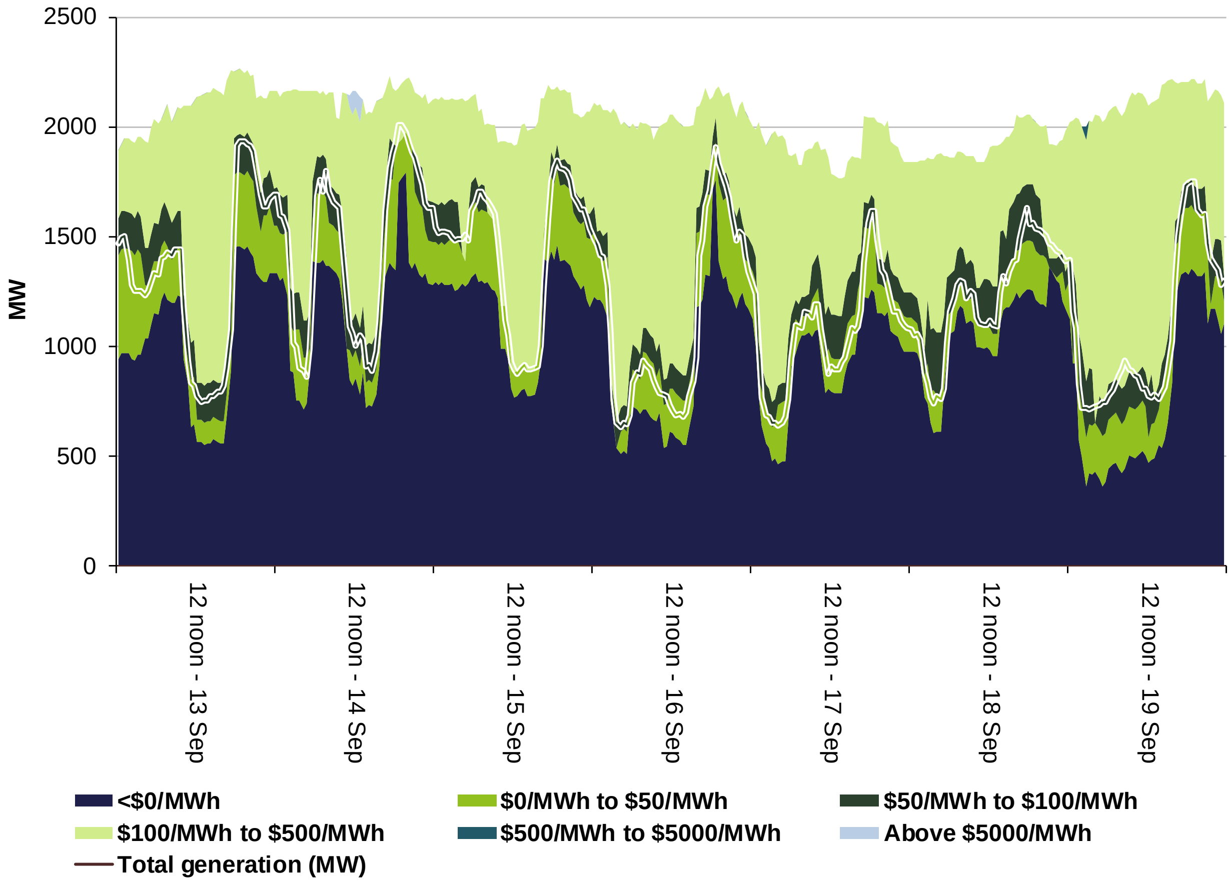


Figure 7: Tasmania generation and bidding patterns



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.

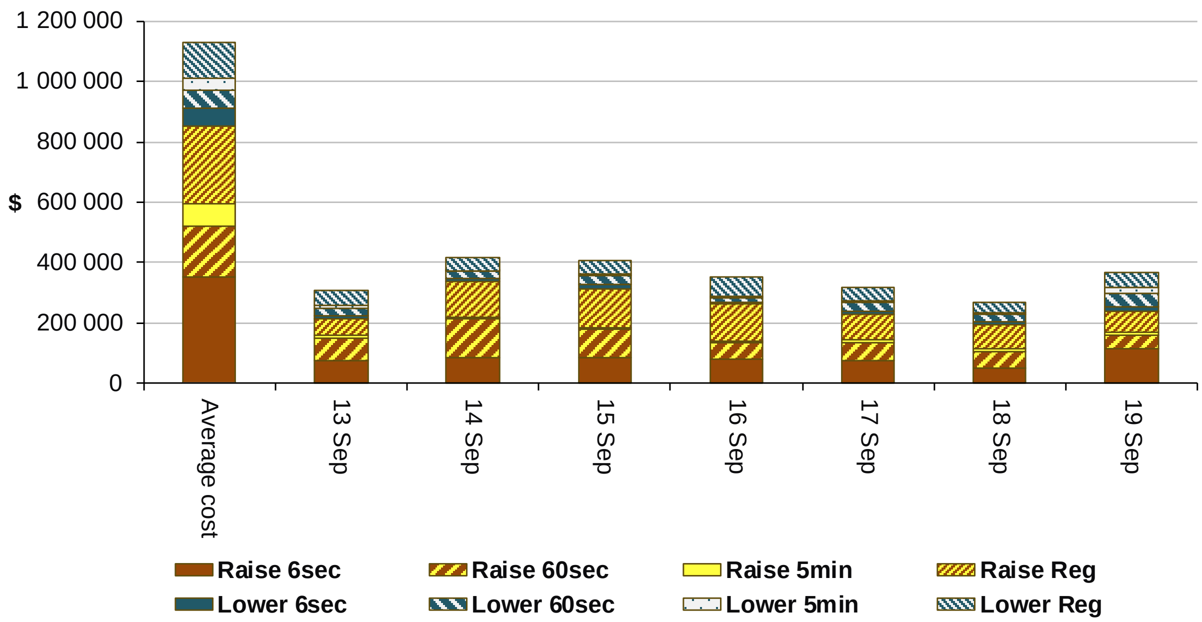
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a "causer pays" basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $2 121 500 or less than 2 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $311 000 or less than 5 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

South Australia

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

Thursday, 17 September

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
10.30 am	-142.86	29.03	28.26	1183	1056	1080	3032	2719	2708
11 am	-140.95	17.88	8.20	1186	1029	1017	3004	2749	2723
Midday	-143.70	9.01	8.06	1221	1045	981	3092	2803	2756

Demand was between 127 MW and 176 MW higher and availability was between 255 MW and 313 MW higher than forecast, four hour prior. Higher than forecast availability was due to higher than forecast wind generation, most of which was priced below $0/MWh.

A sudden increase in wind generation and decrease in demand caused the price to fall to the price floor once in each of the trading intervals before participants rebid 874 MW of capacity from the price floor to higher prices.

Friday, 18 September

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
10 am	-132.97	-1000	-1000	1066	861	828	3272	3237	3259
11 am	-110.75	-1000	-1000	901	770	770	3282	3274	3282
11.30 am	-186.53	-1000	-1000	871	753	729	3158	3267	3279
1.30 pm	-144.54	-999	-1000	1050	823	752	3022	3081	3079

Demand was between 118 MW and 227 MW higher than forecast, four hours prior. Availability was different to forecast due to lower than forecast solar generation and higher than forecast wind generation, most of which was priced below $0/MWh.

For the 10 am and 1.30 pm trading intervals, higher than forecast demand resulted in prices between -$200/MWh and $30/MWh for the majority of the time.

For the 11 am and 11.30 am trading intervals, in addition to higher than forecast demand, rebids shifted more than 120 MW of capacity from the price floor to higher prices in response to changes in forecast prices. As a result, prices were between -$200/MWh to $30/MWh for the majority of time.

Saturday, 19 September

Table 5: Price, Demand and Availability

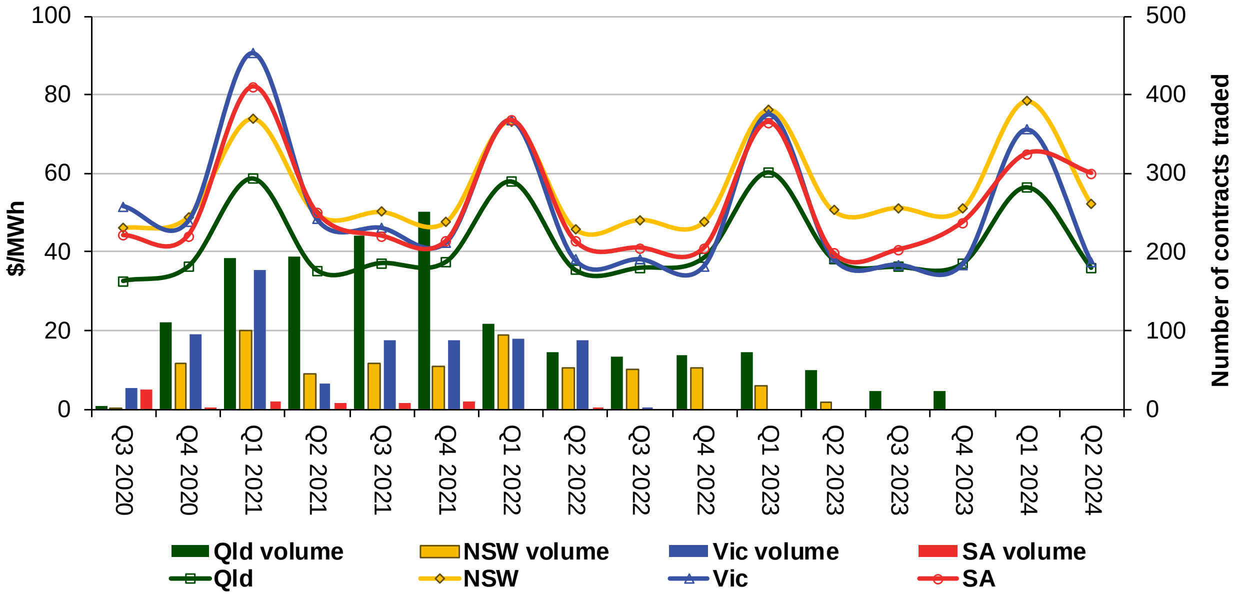
Time	Price ($/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
9 am	-131.35	-30	-12.88	1027	986	967	2786	2701	2733

Demand and availability were close to forecast, four hours prior. Effective 8.45 am, rebids by Neoen at Hornsdale Power Reserve and Infigen Energy at Lake Bonney wind farms 2 and 3 shifted 202 MW of capacity from prices greater than -$36/MWh to the price floor due to changes in forecast prices and constraint management. As a result, prices fell to -$1000/MWh for one dispatch interval. In response, generators rebid over 1000 MW of capacity from the price floor to higher prices.

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.

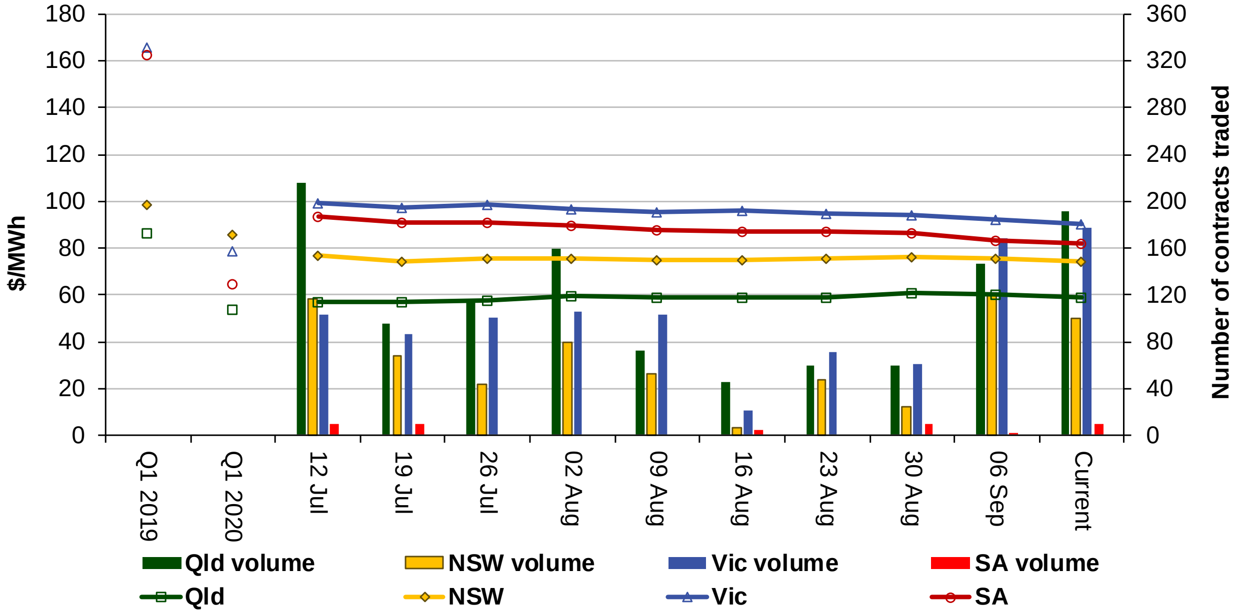
Figure 9: Quarterly base future prices Q3 2020 – Q2 2024



Source. ASXEnergy.com.au

Figure 10 shows how the price for each regional Q1 2021 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing Q1 2019 and Q 1 2020 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 2021 base contracts over the past 10 weeks (and the past 2 years)

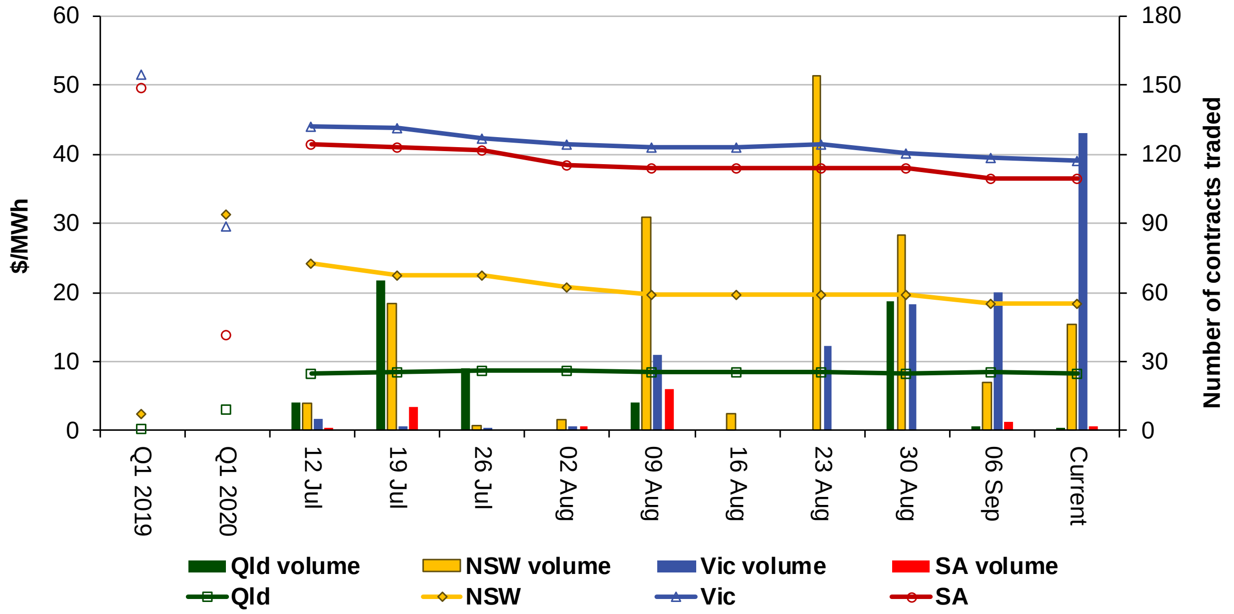


Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

Source. ASXEnergy.com.au

Figure 11 shows how the price for each regional Q1 2021 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing Q1 2019 and Q1 2020 prices are also shown.

Figure 11: Price of Q1 2021 cap contracts over the past 10 weeks (and the past 2 years)



Source. ASXEnergy.com.au

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

Australian Energy Regulator
October 2020