Electricity Report

AUSTRALIAN ENERGY REGULATOR

7 – 13 June 2020

Weekly Summary

Weekly volume weighted average (VWA) prices for the week ranged from $38/MWh in Tasmania to $86/MWh in South Australia.

High demand throughout the week saw prices breach the AER's weekly reporting thresholds on eight occasions, most of which saw price alignment between New South Wales, Victoria and South Australia. High demand also drove high global FCAS prices on 9 June.

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 7 to 13 June 2020.

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

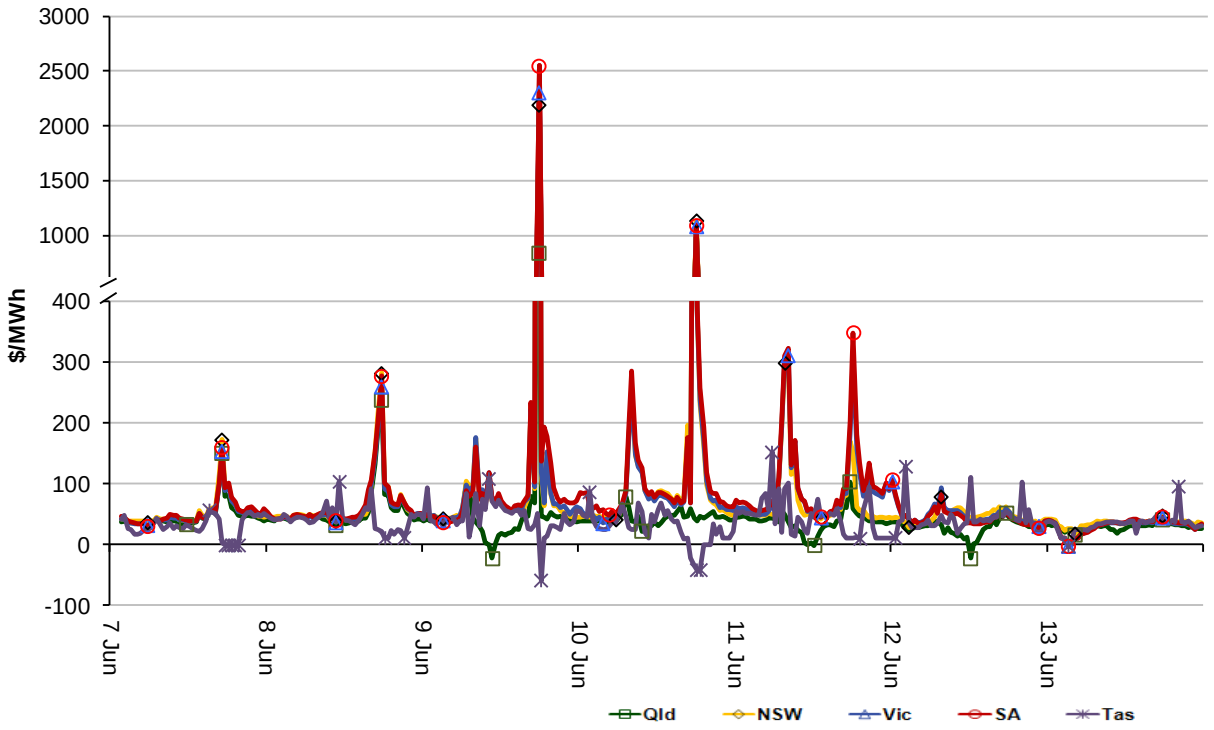


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

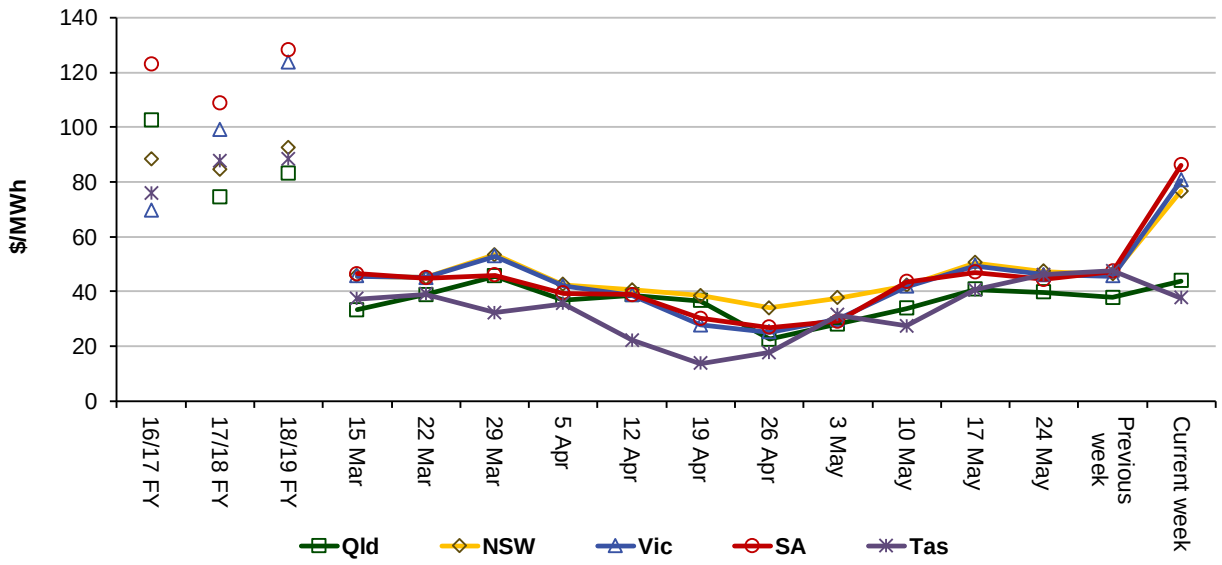


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	44	77	81	86	38
Q2 2019 (QTD)	79	87	99	93	99
Q2 2020 (QTD)	37	47	44	45	32
18-19 financial YTD	83	93	125	130	88
19-20 financial YTD	57	81	87	75	57

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 201 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	5	23	0	1
% of total below forecast	9	41	0	21

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

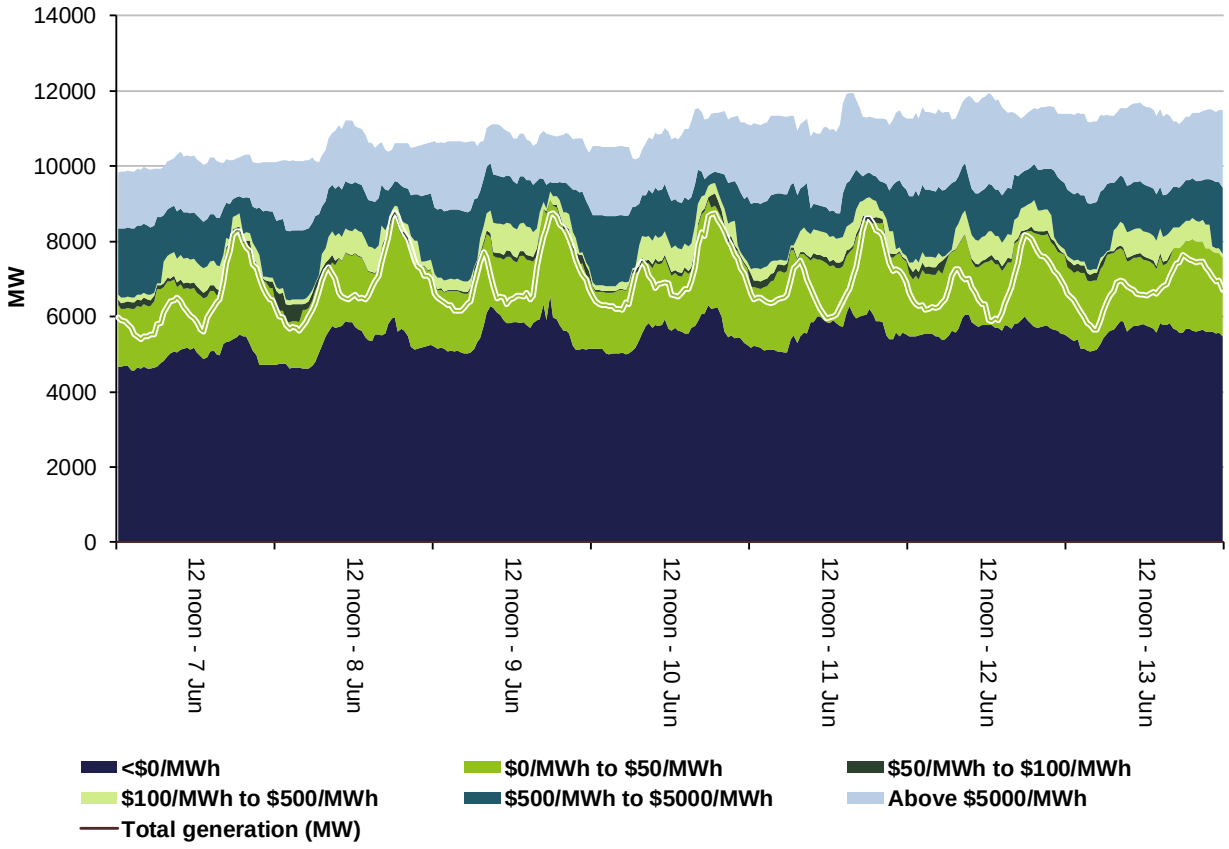


Figure 4: New South Wales generation and bidding patterns

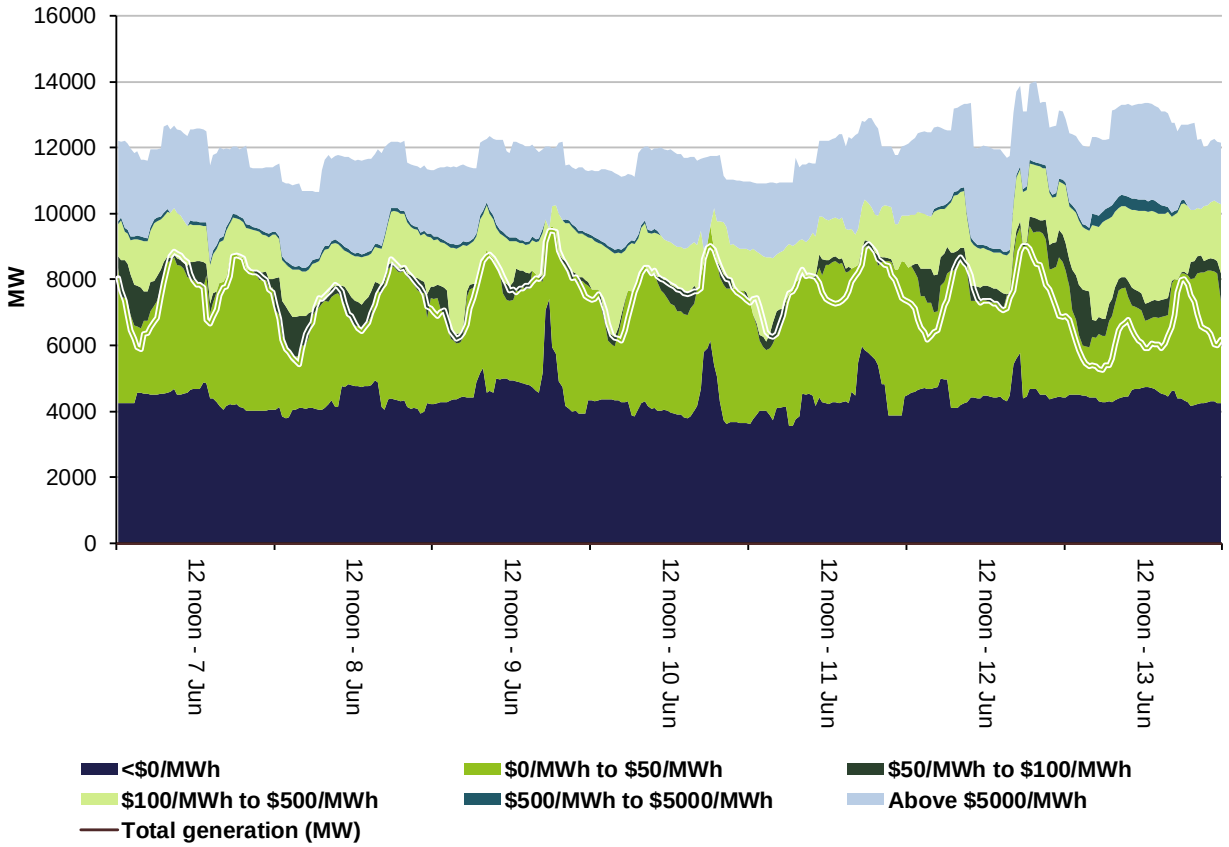


Figure 5: Victoria generation and bidding patterns

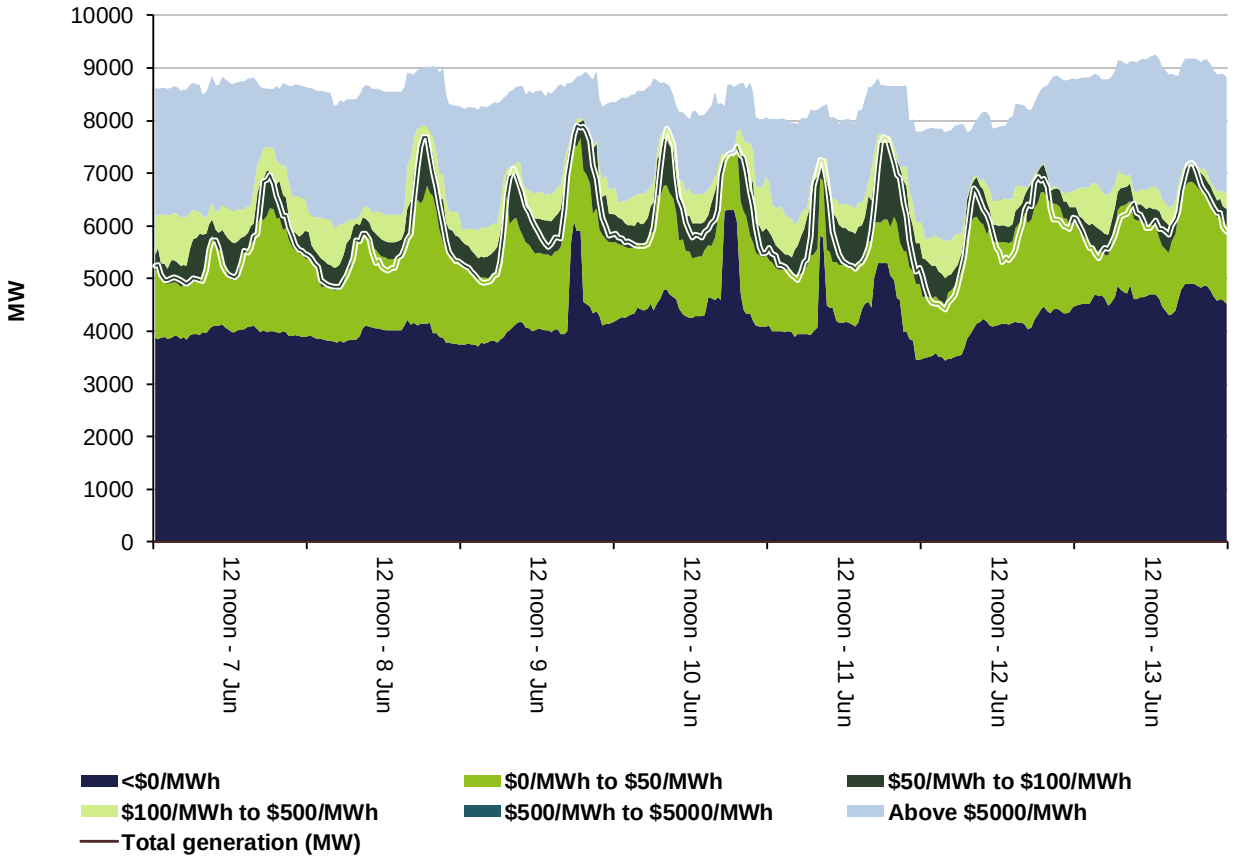


Figure 6: South Australia generation and bidding patterns

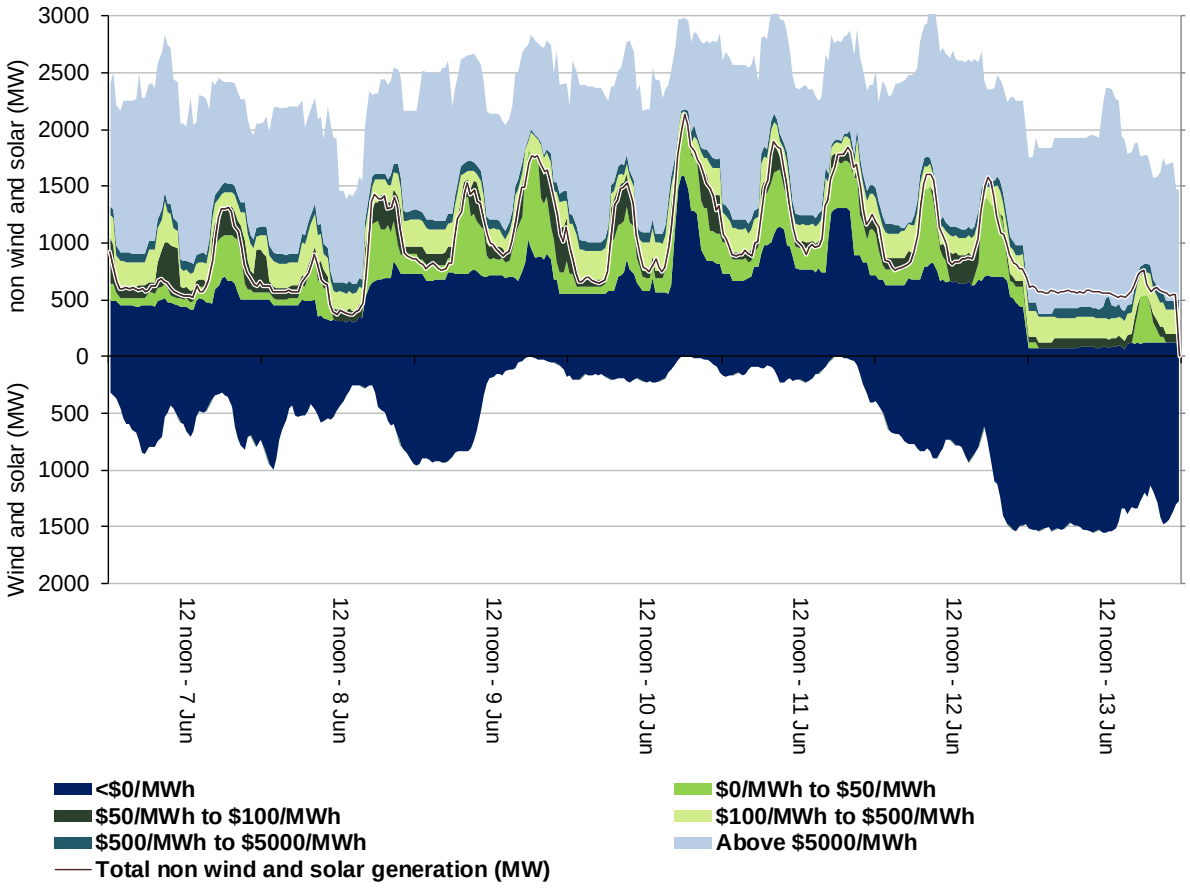
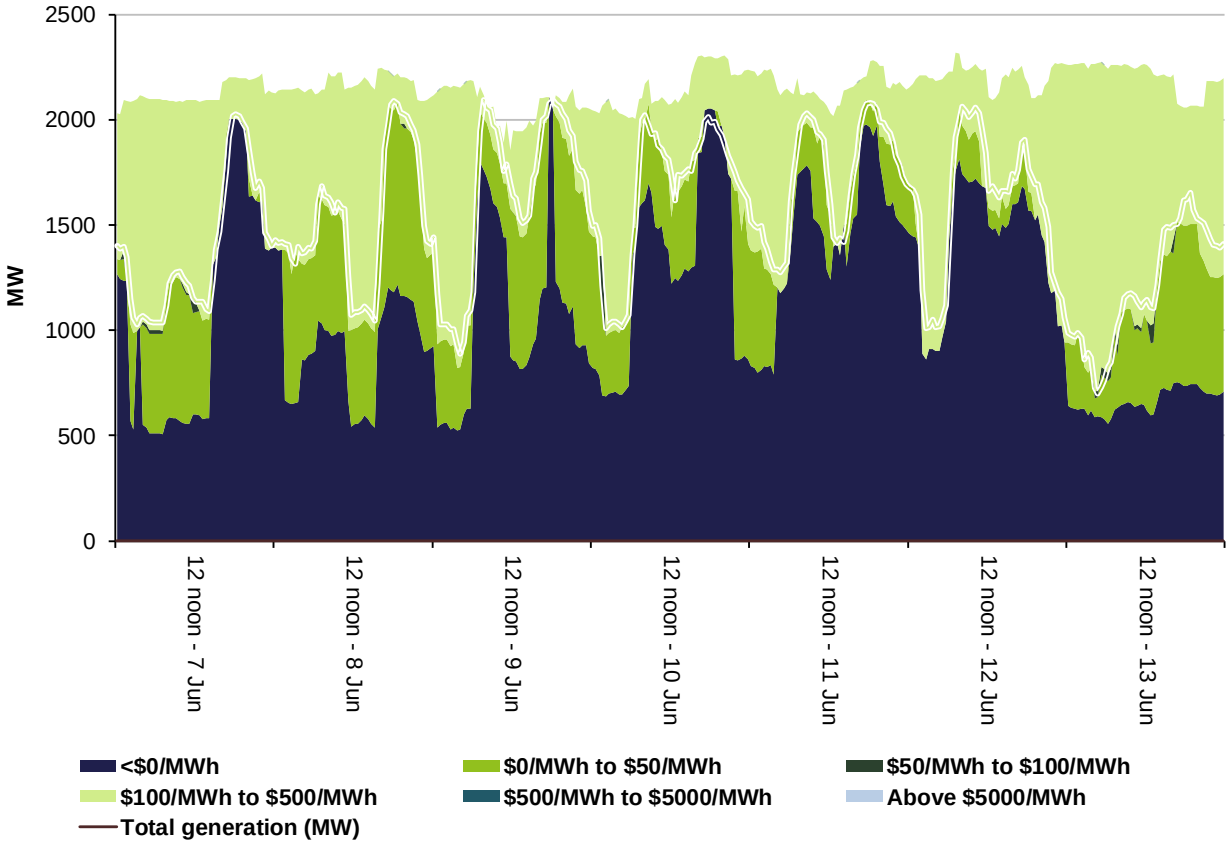


Figure 7: Tasmania generation and bidding patterns



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.

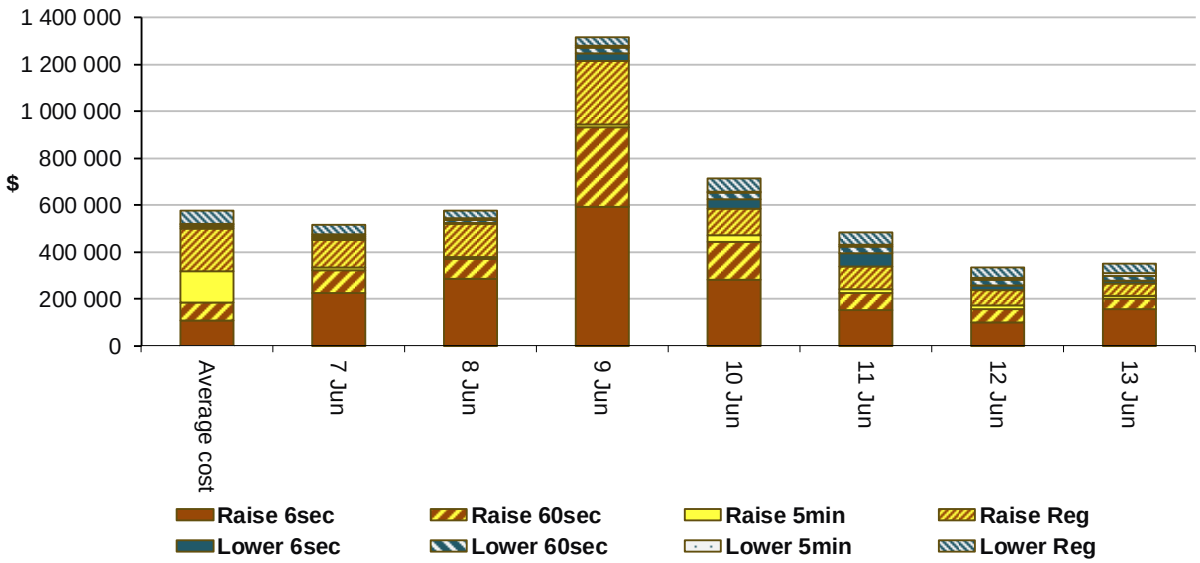
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $3 956 500 or less than 2 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $332 000 or around 4 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



On 9 June at 5.55 pm, global raise 6 second, raise 60 second, and raise regulation services reached prices between $4400/MW and $7560/MW. This was due to a high demand in energy and outages of some thermal units resulting in low levels of effective availability in raise services.

Detailed market analysis of significant price events

Mainland

There was one occasion where the Mainland price was greater than three times the New South Wales weekly average price of $77/MWh and above $250/MWh. The New South Wales price is used as a proxy for the NEM.

Monday, 8 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 pm	282.23	299.8	299.8	26 849	25 942	25 796	34 273	34 414	35 387

Prices were aligned across mainland regions and will be treated as one region. Prices were close to forecast, four hours prior.

Queensland

There was one occasion where the spot price in Queensland was greater than three times the Queensland weekly average price of $44/MWh and above $250/MWh.

Tuesday, 9 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
6 pm	837.33	115.00	59.94	7413	7334	7337	10 833	11 134	11 117

At 6 pm, demand was 79 MW higher than forecast while availability was 301 MW less than forecast, four hours prior. Lower than forecast availability was mainly due to rebidding by Tarong North removing 443 MW due to technical reasons.

From 5.35 pm to 5.55 pm, demand increased by 112 MW. Due to increased demand and QNI and Terranora exporting capacity at limit to New South Wales, the dispatch price rose to $4606/MWh for one dispatch interval.

New South Wales

There were seven occasions where the New South Wales price was greater than three times the New South Wales weekly average price of $77/MWh and above $250/MWh. The New South Wales price is used as a proxy for the NEM.

Tuesday, 9 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	2195.55	299.8	299.8	10 836	10 632	10 660	12 025	11 896	12 241

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. Across the regions, demand was nearly 800 MW higher than forecast while availability was close to forecast, four hours prior. With higher than forecast demand and several generators at maximum availability, the dispatch price rose above $12 000/MWh for one dispatch interval.

Wednesday, 10 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
8.30 am	256.95	43.89	278.63	9576	9309	9624	11 994	11 790	11 998

At 8.30 am, demand 267 MW higher than forecast while availability was 204 MW higher than forecast, four hours prior. Higher than forecast availability was mostly due higher than forecast wind generation, most of which was priced below $0/MWh.

In the lead-up to the 8.30 am trading interval, the forecast spot price moved in-line with forecast demand fluctuations – as forecast demand decreased, so too did the forecast price. The 8.30 am spot price ultimately settled close to forecast twelve hours prior.

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	1134.29	11 999.99	11 999.99	10 755	10 682	10 535	11 720	11 827	11 728
6.30 pm	387.73	11 999.99	11 999.99	10 601	10 729	10 535	11 753	11 865	11 783

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. Queensland was not aligned due to exports from Queensland being at their physical limits and unable to transfer any more lower-priced capacity.

At 6 pm, across the regions, demand was 294 MW higher than forecast, while availability was 287 MW less than forecast, four hours prior. Less than forecast availability was mostly due to less than forecast wind generation. Between 4.30 pm and 5 pm, 870 MW of capacity was rebid to prices below $39/MWh in response changes in forecast prices. As a result, the spot price for the trading interval was lower than forecast.

At 6.30 pm, demand was close to forecast while availability was 119 MW less than forecast, four hours prior. Lower than forecast availability was mostly due to less than forecast wind generation. Leading up to the trading interval, 872 MW of capacity was rebid from prices above $10 000/MWh to prices below $591/MWh. As a result, the spot price settled below forecast.

Thursday, 11 June

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
8 am	298.23	140.15	299.8	9373	9185	9319	11 403	11 405	11 342
8.30 am	296.17	128.97	299.8	9366	9304	9377	11 493	11 474	11 450

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. Prices were close to those forecast twelve hours prior.

For the 8 am and 8.30 am trading intervals, demand was between 257 MW and 299 MW higher than forecast while availability was up to 119 MW lower than forecast, four hours prior. Lower than forecast availability was due to lower than forecast wind generation. Higher than forecast demand and lower than forecast availability resulted in the spot price settling above $278/MWh for both trading intervals.

Victoria

There were eight occasion where the spot price in Victoria was greater than three times the Victoria weekly average price of $81/MWh and above $250/MWh. Seven of these occurred when prices were aligned with New South Wales and South Australia and is detailed in the New South Wales section. The remaining one occasion is presented below.

Tuesday, 9 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	2303.31	293.1	307.1	7448	6983	7057	8757	8958	9016

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. See New South Wales section for analysis.

Wednesday, 10 June

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
8:30 am	255.61	723.53	354.6	7033	6735	6712	8692	8400	8537

Prices were aligned across Victoria and South Australia and will be treated as one region. Across the regions, demand was nearly 300 MW higher than forecast, while availability was 292 MW higher than forecast, four hours prior. Higher than forecast availability was due to higher than forecast wind generation which was priced below $0/MWh.

More than 830 MW was rebid from prices higher than $13 000/MWh to prices below $0/MWh, resulting in prices being set around $250/MWh for the trading interval.

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	1086.56	11 053.06	11 655.18	7033	6899	6909	8509	8705	8948
6.30 pm	384.11	11 478.4	12 293.89	7118	7041	7013	8687	8720	8960

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. See New South Wales section for analysis.

Thursday, 11 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
8 am	303.66	339.34	293.58	6900	6907	6920	8208	8247	8267
8.30 am	312.06	576.72	311.38	7185	7076	7120	8253	8277	8283
6.30 pm	309.29	302.29	10 919.81	9797	9416	9618	11 584	11 741	11 639

For the 8 am and 8.30 am trading intervals, prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. Prices were close to those forecast twelve hours prior. See New South Wales section for analysis.

For the 6.30 pm trading interval, Victoria and South Australia were price aligned and will be treated as one region. Prices were close to forecast four hours prior.

South Australia

There were eight occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of $86/MWh and above $250/MWh.

Tuesday, 9 June

Table 13: 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	2549.63	327.64	336.31	2230	2100	2059	2547	2526	2561

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. See New South Wales section for analysis.

Wednesday, 10 June

Table 14: 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
8.30 am	285.76	768.09	379.95	2201	2111	2057	2446	2450	2671

Prices were aligned across Victoria and South Australia and will be treated as one region. See Victoria section for analysis.

Table 15: 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	1093.84	11 439.62	12 074.23	2169	2082	2011	2646	2630	2630
6.30 pm	392.71	12 426.44	13 100.02	2366	2265	2184	2647	2621	2606

Prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. See New South Wales section for analysis.

Thursday, 11 June

Table 16: 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	310.79	343.93	295.1	2084	2008	1968	2906	2984	3092
8.30 am	322.65	578.81	319.66	2228	2100	2059	2939	2950	3057

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	348.14	337.65	11 485.73	2399	2217	2226	2904	2909	2813

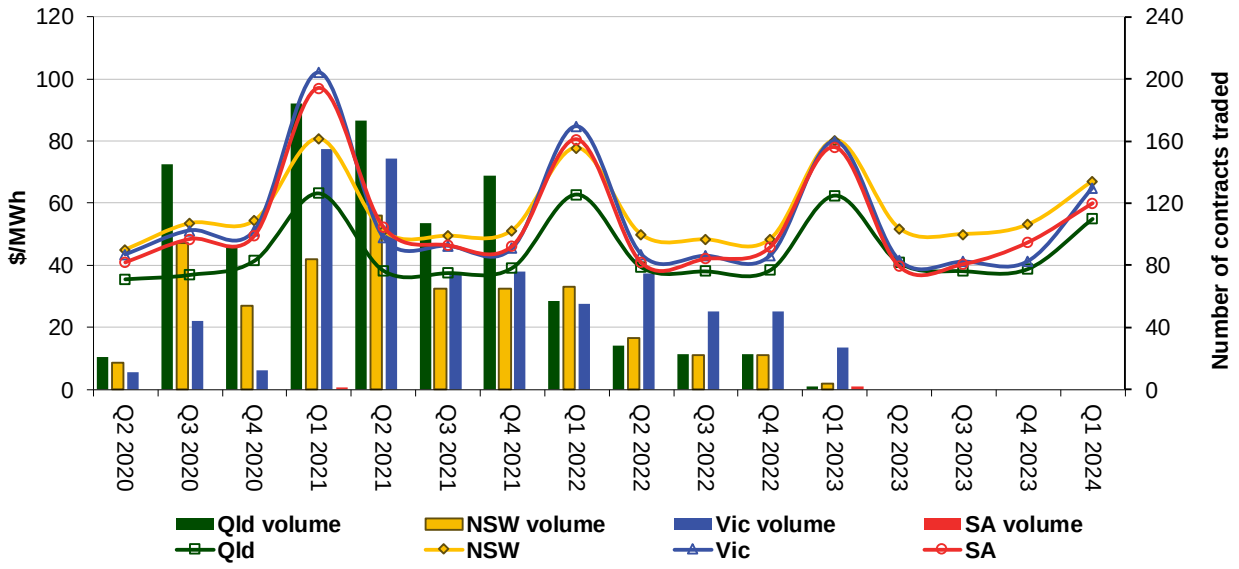
For the 8 am and 8.30 am trading intervals, prices were aligned across New South Wales, Victoria and South Australia and will be treated as one region. Prices were close to those forecast twelve hours prior.

For the 6.30 pm trading interval, Victoria and South Australia were price aligned and will be treated as one region. See the Victoria 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 Q2 2020 – Q2 2020

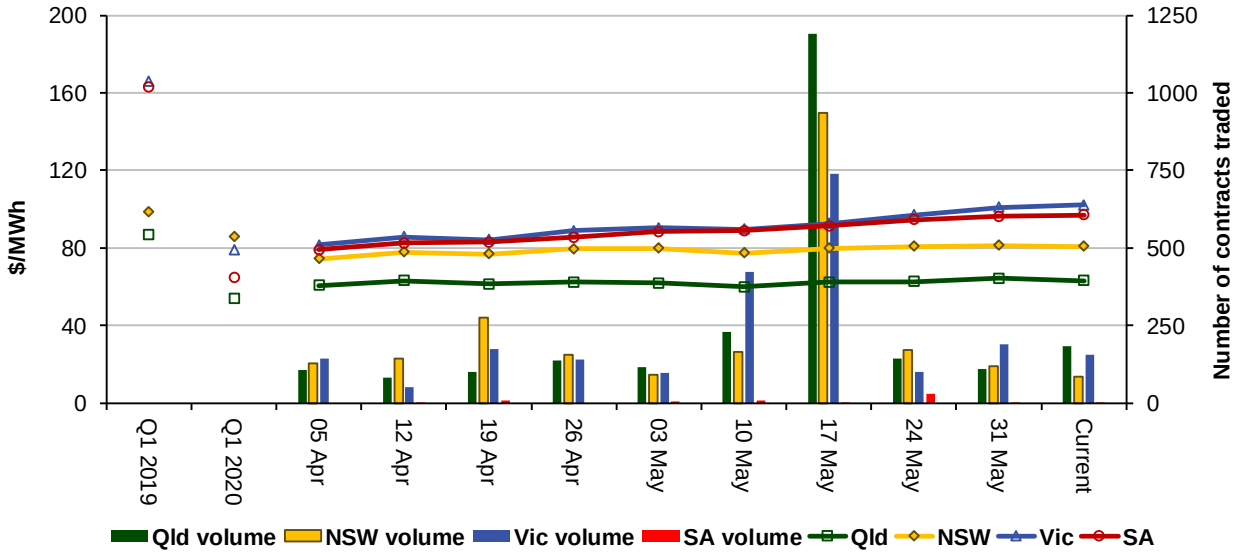


Source. ASXEnergy.com.au

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 2020 and Q1 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 19 May 2020.

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

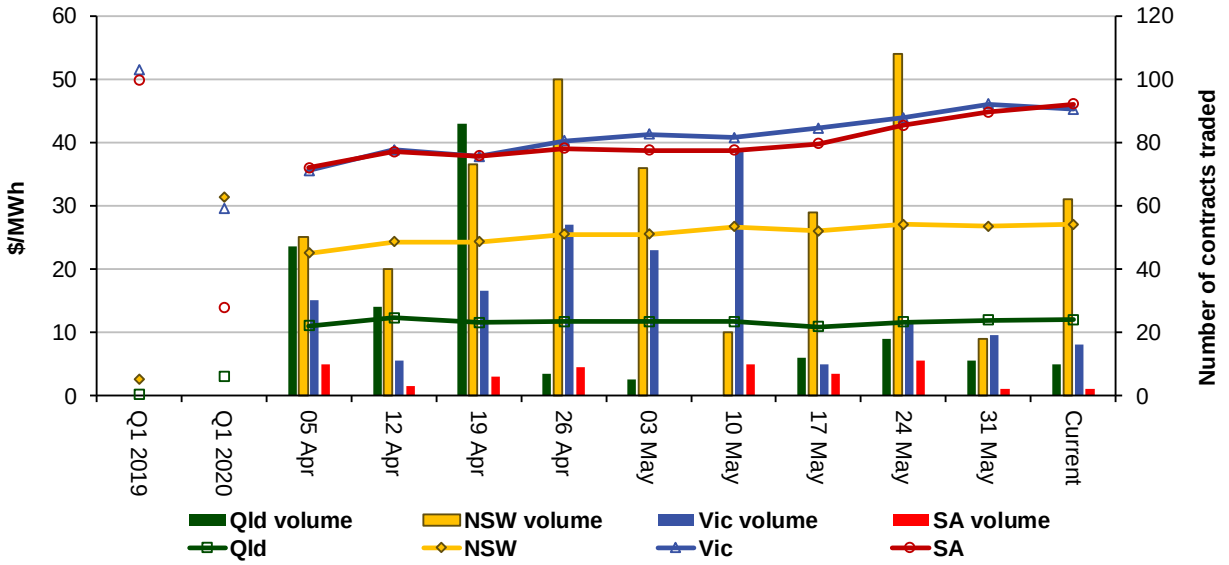


Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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 2020 and Q1 2019 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
June 2020