

16 – 22 May 2021

Weekly Summary

Weekly volume weighted average (VWA) prices ranged from \$32/MWh in Tasmania to \$215/MWh in NSW. High prices resulted in higher weekly VWA prices across NSW, Victoria and South Australia. This contributed to higher quarterly average prices with Q2 2021 quarter to date VWA prices up to \$40/MWh higher than levels seen a year prior.

Planned and unplanned generator outages saw more than 2,000 MW of coal capacity unavailable in NSW throughout the week. Low wind availability throughout the week saw less than 1,000 MW available on most evenings across the NEM.

The combination of low wind and other unavailable generation led to reserve issues in NSW on 19 May, 20 May and 21 May¹

Spot prices exceeded \$5,000/MWh across NSW, Victoria and South Australia on Monday and Tuesday evening, and in NSW on Friday evening. This triggered the AER's requirement to report into prices above \$5,000/MWh and is due for publication in July 2021.

FCAS prices were elevated this week in Queensland particularly for lower 60 second and lower 6 second services. Prices for lower 6 second services exceeded \$5000/MW on Friday 21 May and drivers will be analysed in the Wholesale Markets Quarterly Q2 2021 report due for publication in August 2021.

The high volume of trades in Figure 10 is the result of the conversion of base load options to base future contracts on 19 May. In Victoria, trade volumes were nearly 3 times the level seen on 19 May last year.

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.

¹ Lack of Reserve level 1 (LOR1), indicates that if the two largest credible contingencies occur, there would not be sufficient generation to meet demand in a given region. For more information refer to the following AEMO market notices: 85675, 85686, 85688, 85763 and 85768.

Spot market prices

Figure 1 shows the spot prices that occurred in each region during the week 16 to 22 May 2021.

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

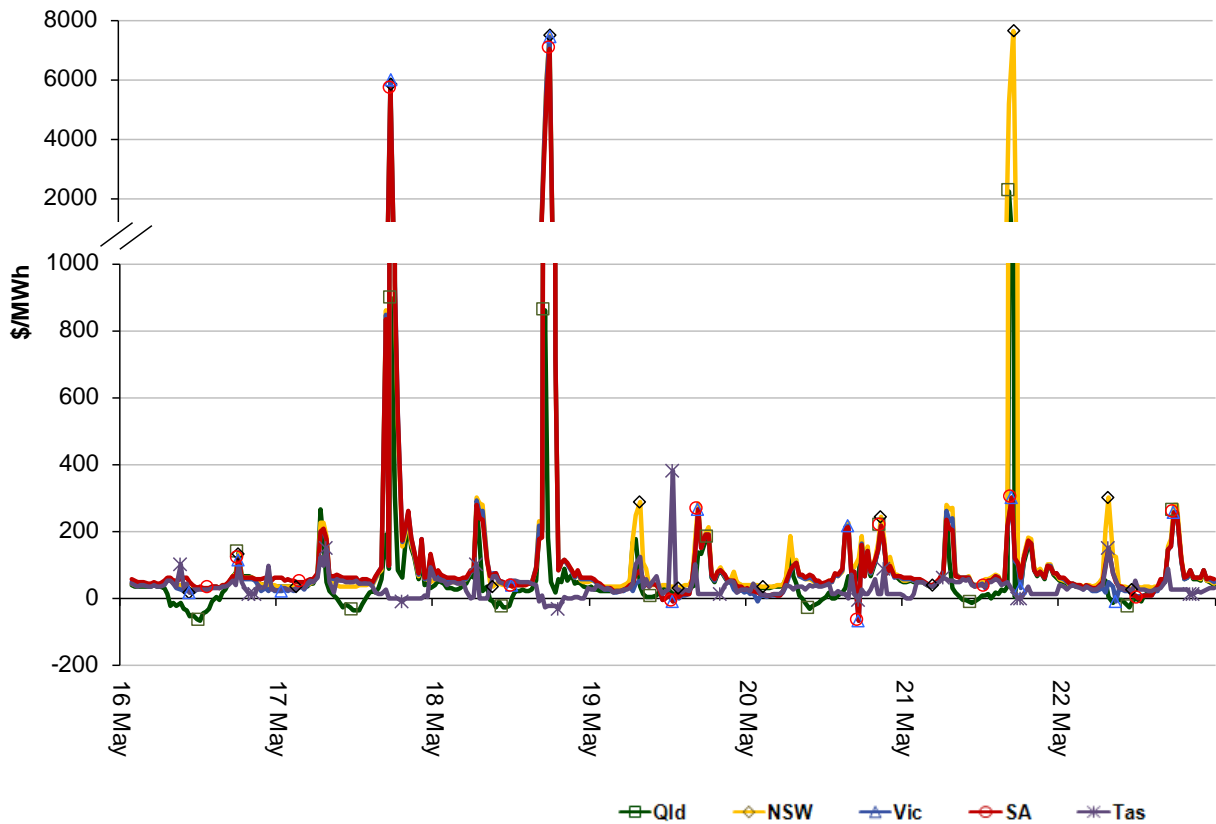


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

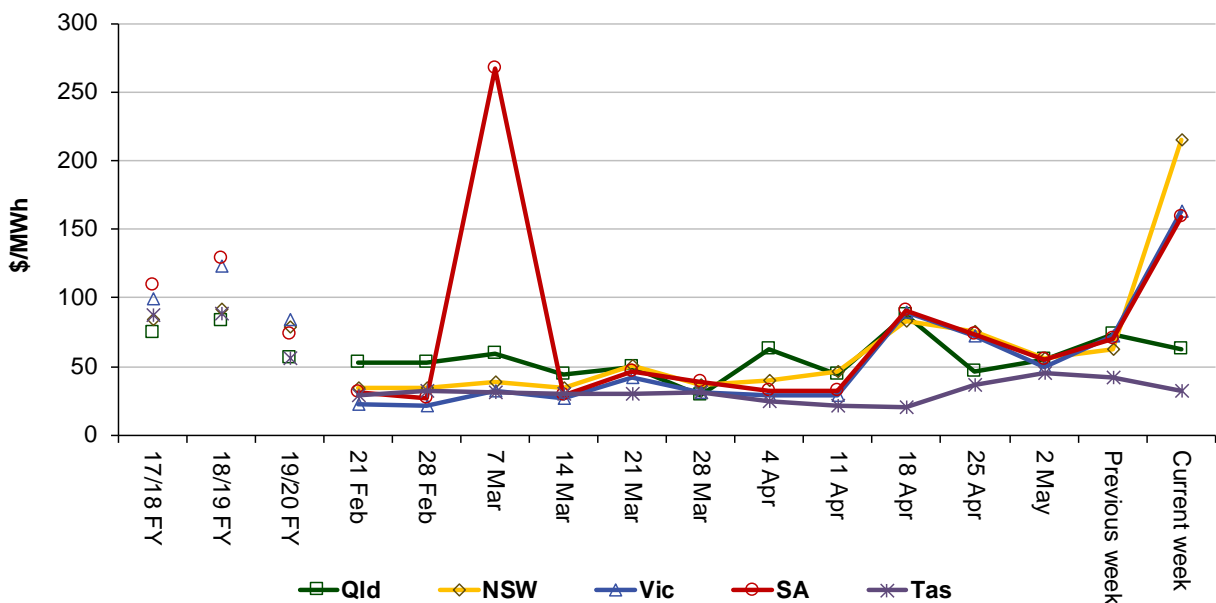


Table 1: Volume weighted average spot prices by region (\$/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	63	215	163	159	32
Q2 2020 QTD	35	42	38	37	27
Q2 2021 QTD	60	82	71	73	32
19-20 financial YTD	58	83	89	76	58
20-21 financial YTD	45	57	46	49	42

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 260 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2020 of 233 counts and the average in 2019 of 204. 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	18	0	2
% of total below forecast	13	53	0	9

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

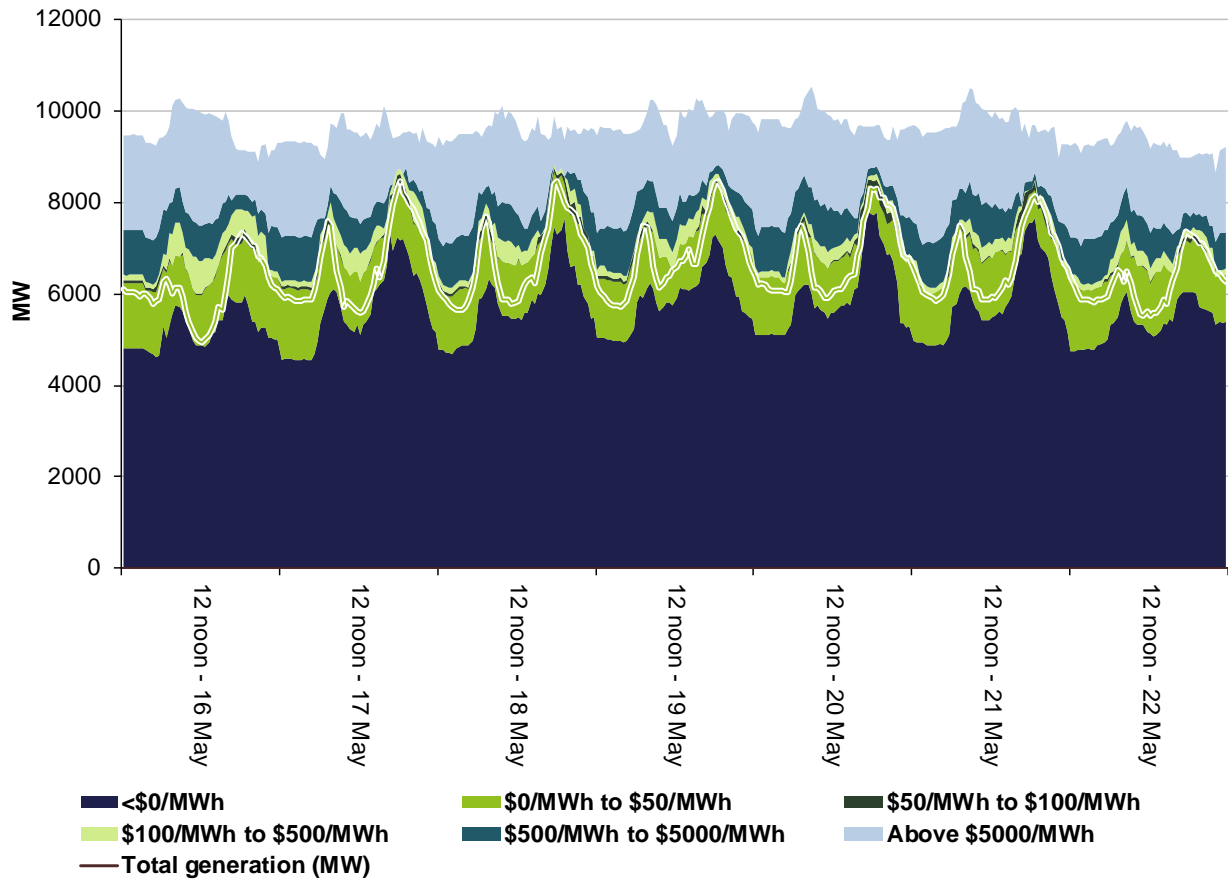


Figure 4: New South Wales generation and bidding patterns

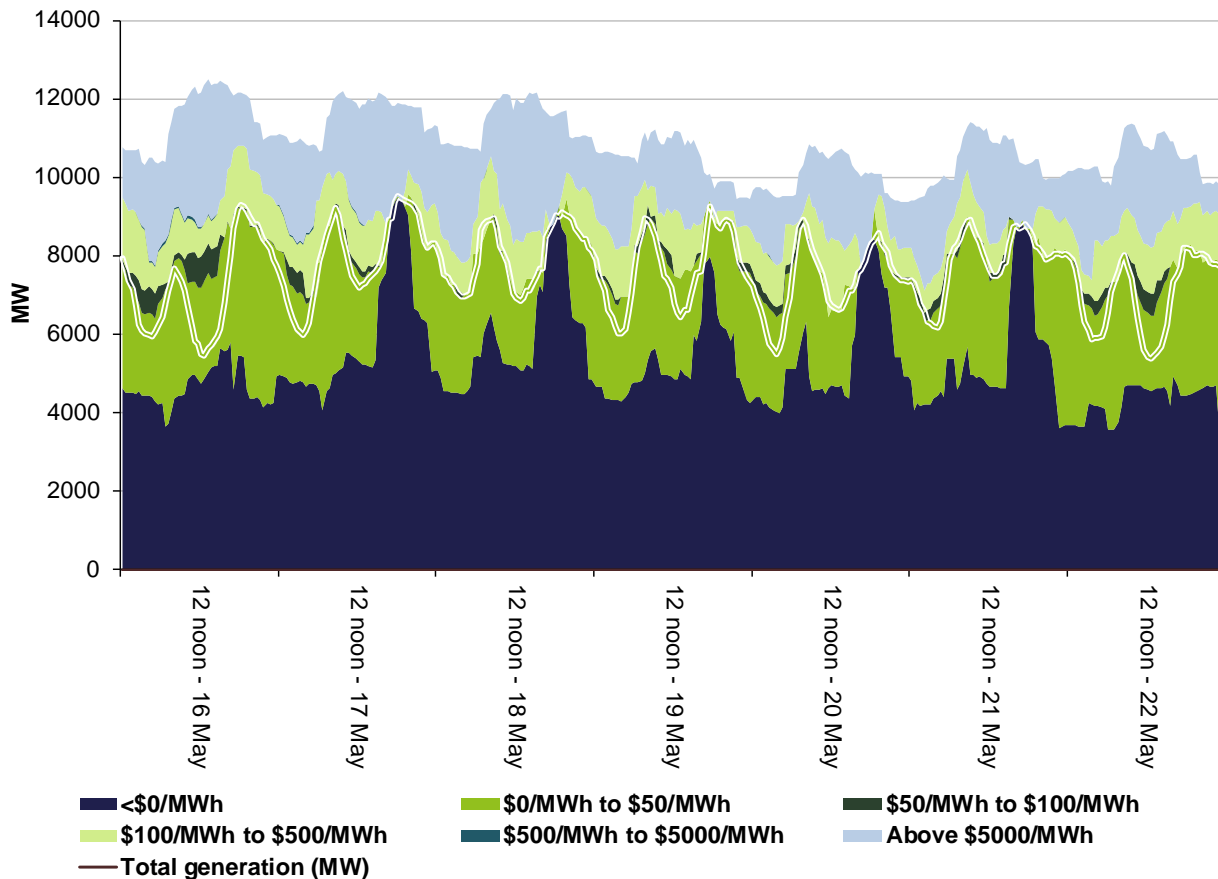


Figure 5: Victoria generation and bidding patterns

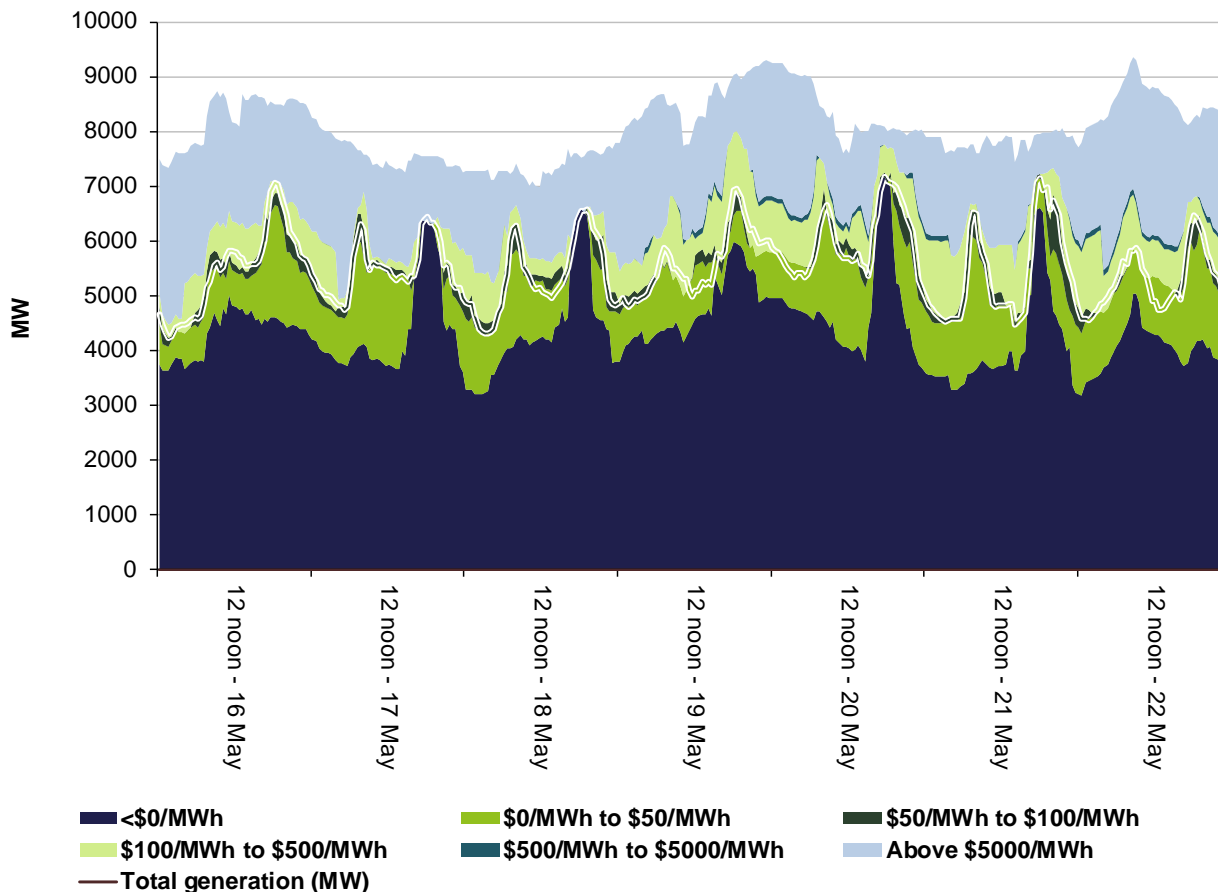


Figure 6: South Australia generation and bidding patterns

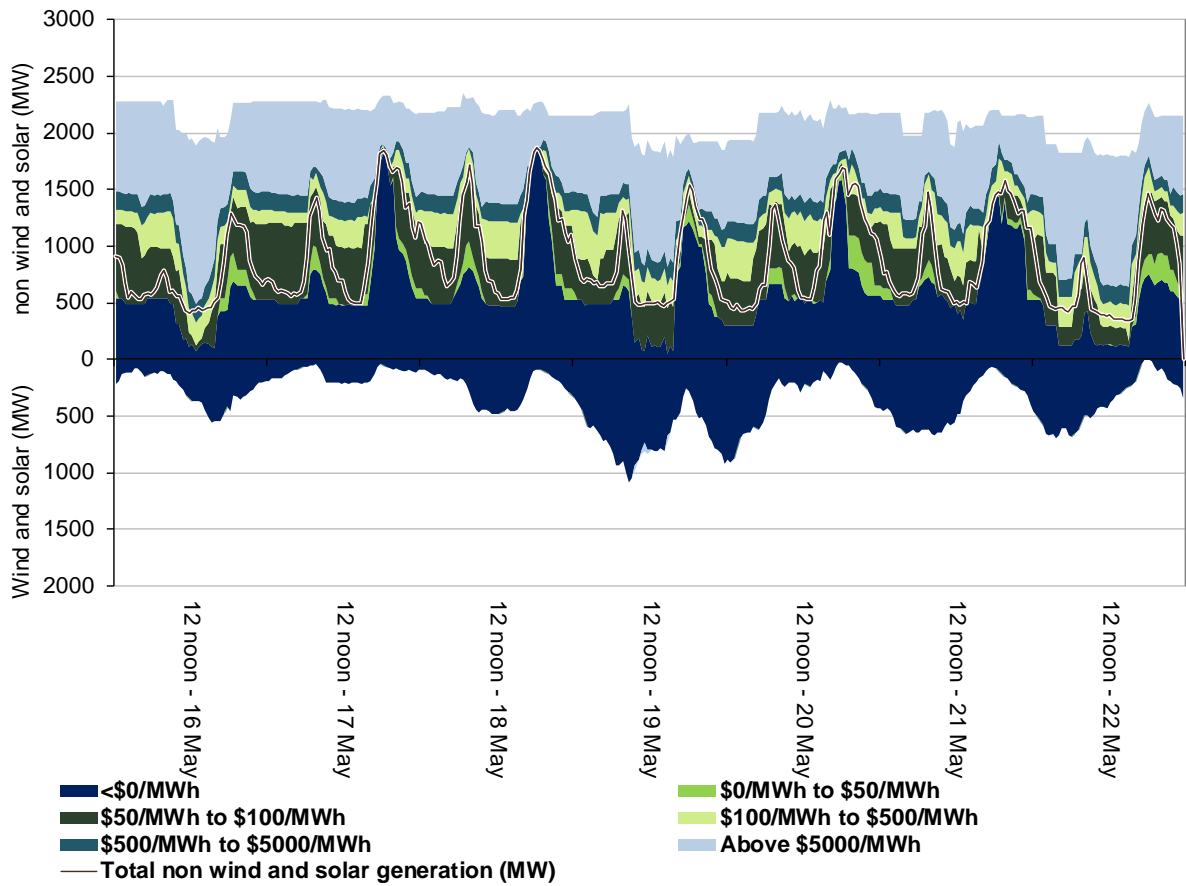
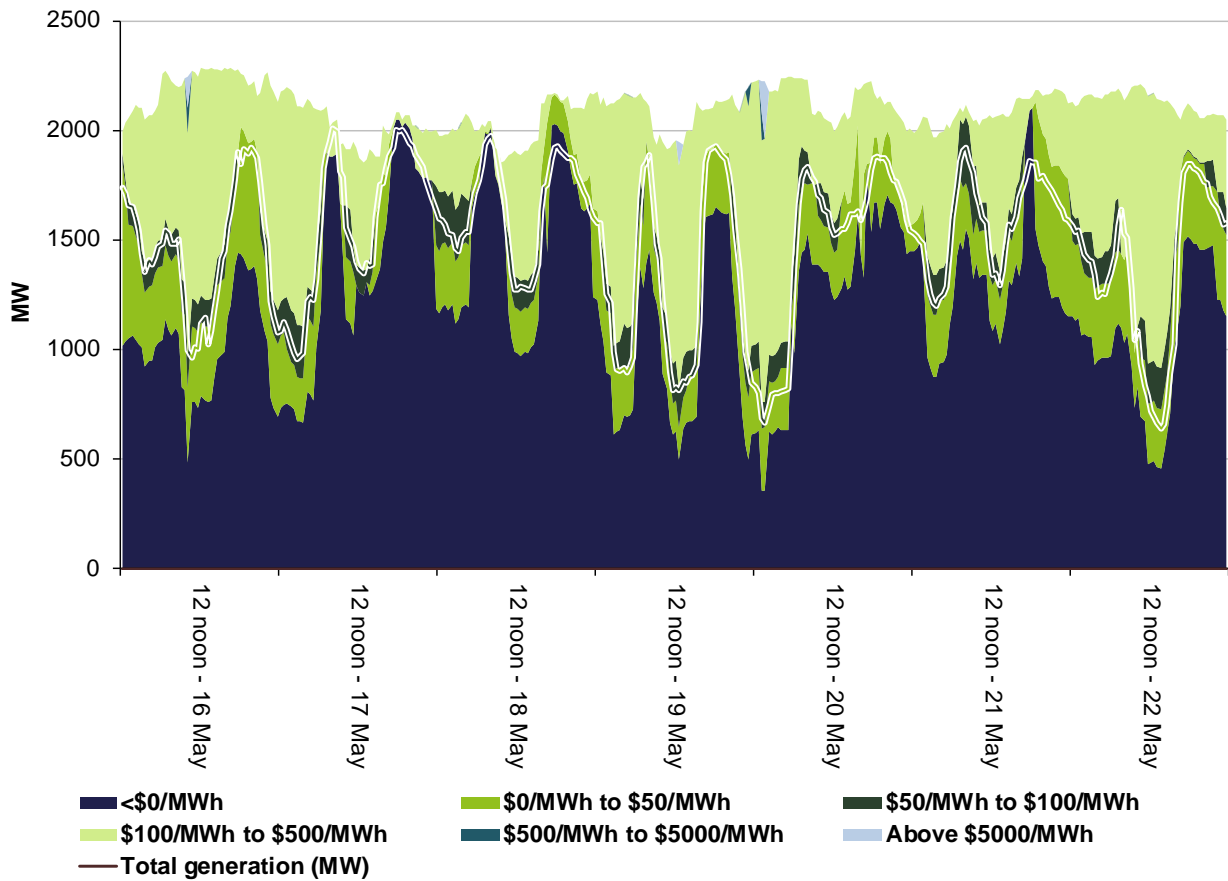


Figure 7: Tasmania generation and bidding patterns



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.

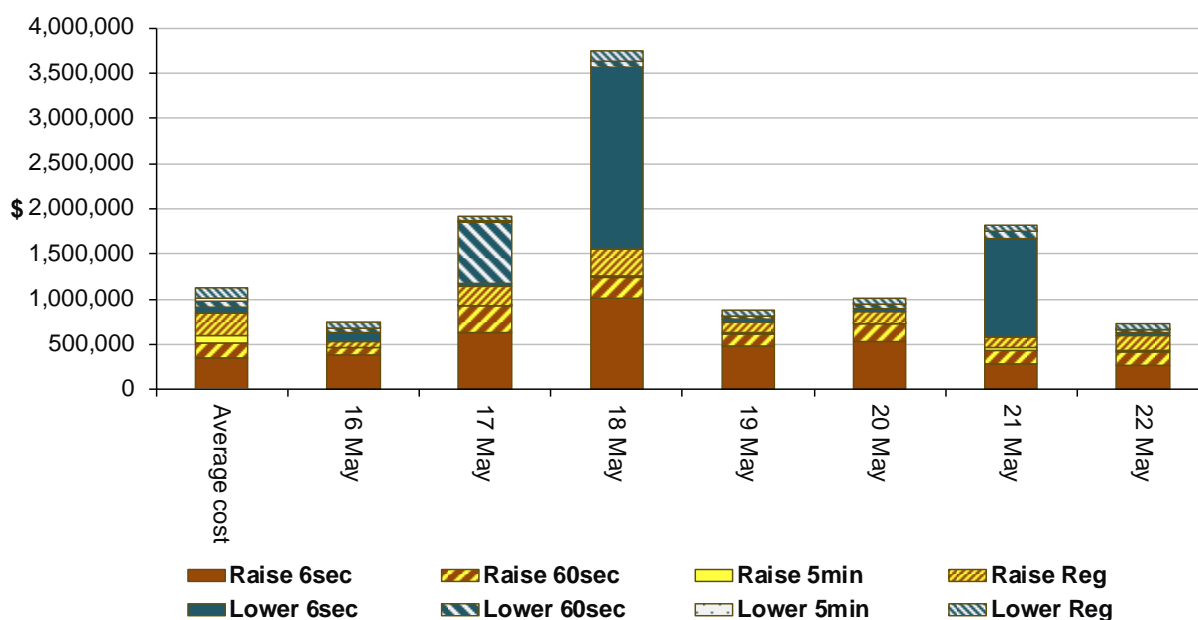
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$9,836,000 or less than 2% of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$1,000,500 or less than 16% 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



Elevated FCAS costs throughout this week were driven by several instances of high prices particularly for Queensland lower 6 second and 60 second services and Tasmania raise 6 second services.

On 18 May, Queensland lower 6 second prices reached up to \$13,942/MW with elevated prices between 5.20 pm and 6.35 pm. This triggered the AER’s obligation to report into FCAS prices above \$5000/MW. Drivers will be analysed in the Wholesale Markets Quarterly Q2 2021 report due for publication in August.

Detailed market analysis of significant price events

Queensland

There were 9 occasions where the spot price in Queensland was greater than 3 times the Queensland weekly average price of \$63/MWh and above \$250/MWh.

Monday, 17 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
7 am	263.56	61.85	70.73	6,907	6,632	6,605	9,047	9,363	9,340
6 pm	894.69	8,830.61	360.12	7,513	7,565	7,530	9,452	9,517	9,443
6.30 pm	307.10	1,088.38	2,634.09	7,536	7,603	7,586	9,488	9,554	9,469

For the 7 am trading interval, demand was 275 MW higher than forecast and availability was 316 MW lower than forecast, 4 hours prior. Lower than forecast availability was mostly due to the removal of 165 MW of capacity at Stanwell unit 3 and 173 MW of capacity at Braemar unit 5 for plant reasons. The combination of higher than forecast demand and lower than forecast availability resulted in prices above \$235/MWh for most of the trading interval.

For the 6 pm and 6.30 pm trading interval, demand and availability were close to forecast, 4 hours prior. Rebids in the four hours prior to the start of the trading interval shifted more than 520 MW of capacity from above \$14,700/MWh to below \$290/MWh resulting in lower prices during each trading interval.

Tuesday, 18 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
7 am	280.26	298.69	269.57	7,010	6,651	6,696	9,440	9,426	9,533
5.30 pm	860.90	61.85	360.12	7,254	7,216	7,290	9,425	9,870	9,847

The 7 am price was close to forecast.

For the 5.30 pm trading interval, demand was close to forecast and availability was 445 MW lower than forecast, 4 hours prior. Lower than forecast availability was due to CleanCo that removing 285 MW of capacity at Swanbank E and Wivenhoe for plant reasons and lower than forecast wind generation mostly offered at low prices. At 5.30 pm, demand increased by 115 MW and the requirement for lower 6 second, 60 second and regulation FCAS each increased by more than 60 MW. As a result, energy and FCAS markets co-optimised and with generators either ramp constrained or trapped/stranded in FCAS, the price increased to \$4,998/MWh for 5 minutes.

Friday, 21 May

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
7 am	262	300.42	302.89	6,733	6,563	6,651	9,683	9,707	9,685
5 pm	2238.28	45.70	70.73	6,840	6,780	6,908	9,659	9,705	9,808

For the 7 am trading interval, demand was 170 MW higher than forecast and availability was close to forecast, 4 hours prior. Rebids by CS Energy in the lead up to the start of the trading interval shifted nearly 462 MW of capacity from above \$595/MWh to below \$51/MWh in response to changes in forecast prices. As a result, prices were between \$166/MWh and \$295/MWh throughout the trading interval.

For the 5 pm trading interval, demand and availability were close to forecast, 4 hours prior. At 4.55 pm, solar generation fell by more than 100 MW and the requirement for lower 6 second, 60 second and regulation FCAS each increased by more than 25 MW. As a result, energy and FCAS was co-optimised and with generators either ramp constrained or trapped/stranded in FCAS, the price increased to \$13,125/MWh for 5 minutes.

Saturday, 22 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	261.53	292.76	292.81	6,800	6,882	6,903	8,985	8,968	9,015
6.30 pm	256.92	290.65	292.87	6,740	6,887	6,904	8,991	8,990	9,045

Prices were close to forecast.

New South Wales

There were 9 occasions where the spot price in New South Wales was greater than 3 times the New South Wales weekly average price of \$215/MWh and above \$250/MWh.

Monday, 17 May

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
5 pm	858.86	441.63	14,998.89	9,493	9,392	9,545	11,877	11,654	11,073
6 pm	5,844.37	14,999.98	15,000	10,267	10,640	10,663	11,841	11,621	11,025
6.30 pm	900.46	14,999.98	15,000	10,318	10,642	10,708	11,886	11,631	11,045

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW, Victoria and South Australia. This report is due for publication in July.

Tuesday, 18 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
5.30 pm	3,366.72	14,998.89	14,998.89	9,750	9,824	9,950	11,551	11,588	11,680
6 pm	6,042.78	14,999.97	14,999.50	10,093	10,399	10,491	11,558	11,608	11,712
6.30 pm	7,491.91	14,999.97	14,999.97	10,205	10,476	10,651	11,590	11,648	11,760
7 pm	721.48	14,999.50	14,999.97	10,002	10,401	10,580	11,639	11,685	11,794

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW, Victoria and South Australia. This report is due for publication in July.

Friday, 21 May

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
5 pm	5,211.85	14,999.97	221.32	9,751	9,517	9,293	10,394	10,558	10,873
5.30 pm	7,651.80	1,190.46	299.99	10,059	10,080	9,714	10,337	10,636	10,832

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW. This report is due for publication in July.

Victoria

There were 8 occasions where the spot price in Victoria was greater than 3 times the Victoria weekly average price of \$163/MWh and above \$250/MWh.

Monday, 17 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
5 pm	848.39	447.56	14,153.80	6,115	6,180	6,160	7,527	7,572	7,533
6 pm	6,014.49	14,999.98	14,999.98	6,832	6,808	6,832	7,537	7,503	7,464
6.30 pm	948.95	14,999.96	14,999.99	6,856	6,839	6,851	7,541	7,593	7,436
7 pm	548.04	14,999.95	14,999.97	6,728	6,715	6,715	7,548	7,589	7,428

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW, Victoria and South Australia. This report is due for publication in July.

Tuesday, 18 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
5.30 pm	3,278.92	13,920.01	13,734.11	6,422	6,312	6,280	7,561	7,692	7,552
6 pm	5,953.27	14,459.64	14,122.36	6,771	6,645	6,551	7,608	7,698	7,558
6.30 pm	7,443.23	14,894.64	14,667.69	6,810	6,706	6,615	7,561	7,707	7,574
7 pm	726.53	14,928.30	14,432.05	6,650	6,569	6,473	7,538	7,749	7,758

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW, Victoria and South Australia. This report is due for publication in July.

South Australia

There were 8 occasions where the spot price in South Australia was greater than 3 times the South Australia weekly average price of \$159/MWh and above \$250/MWh.

Monday, 17 May

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
5 pm	833.34	445.26	13,331.05	1,505	1,620	1,582	2,367	2,460	2,479
6 pm	5,673.27	15,000	15,000	1,751	1,876	1,858	2,368	2,361	2,415
6.30 pm	931.31	15,000	15,000	1,880	1,994	1,989	2,378	2,401	2,455
7 pm	545.08	15,000	15,000	1,919	2,013	2,013	2,399	2,481	2,522

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW, Victoria and South Australia. This report is due for publication in July.

Tuesday, 18 May

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
5.30 pm	2,898.82	12,691.75	12,668.97	1,519	1,489	1,473	2,451	2,526	2,495
6 pm	5,419.93	13,448.30	13,361.65	1,680	1,673	1,655	2,393	2,508	2,507
6.30 pm	7,038.75	14,131.15	14,549.14	1,831	1,837	1,820	2,364	2,507	2,491
7 pm	712.13	14,789.18	14,615.00	1,879	1,902	1,888	2,368	2,481	2,479

Prices will be assessed as part of the prices above \$5,000/MWh report triggered for NSW, Victoria and South Australia. This report is due for publication in July.

Tasmania

There was one occasion where the spot price in Tasmania was greater than 3 times the Tasmania weekly average price of \$32/MWh and above \$250/MWh.

Wednesday, 19 May

Table 14: Price, Demand and Availability

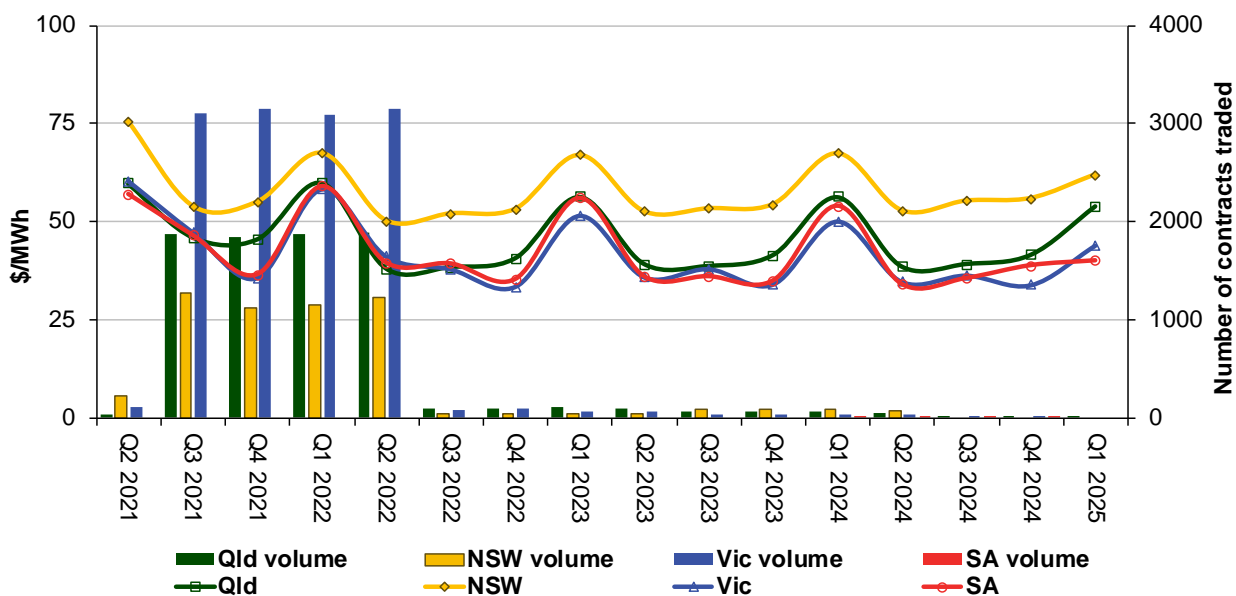
Time	Price (\$/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
1 pm	379.54	17.79	18.98	1,202	1,167	1,116	1,946	2,008	2,017

Demand was 35 MW higher than forecast and availability was 62 MW lower than forecast, 4 hours prior. Effective 12.50 pm, rebids by Hydro Tasmania at Musselroe Wind Farm shifted 168 MW of capacity from -\$277/MWh to the price cap in response to higher than forecast FCAS prices. With lower priced capacity either ramp up-constrained or trapped/stranded in FCAS, the price increased to \$2,000/MWh for one dispatch interval.

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.

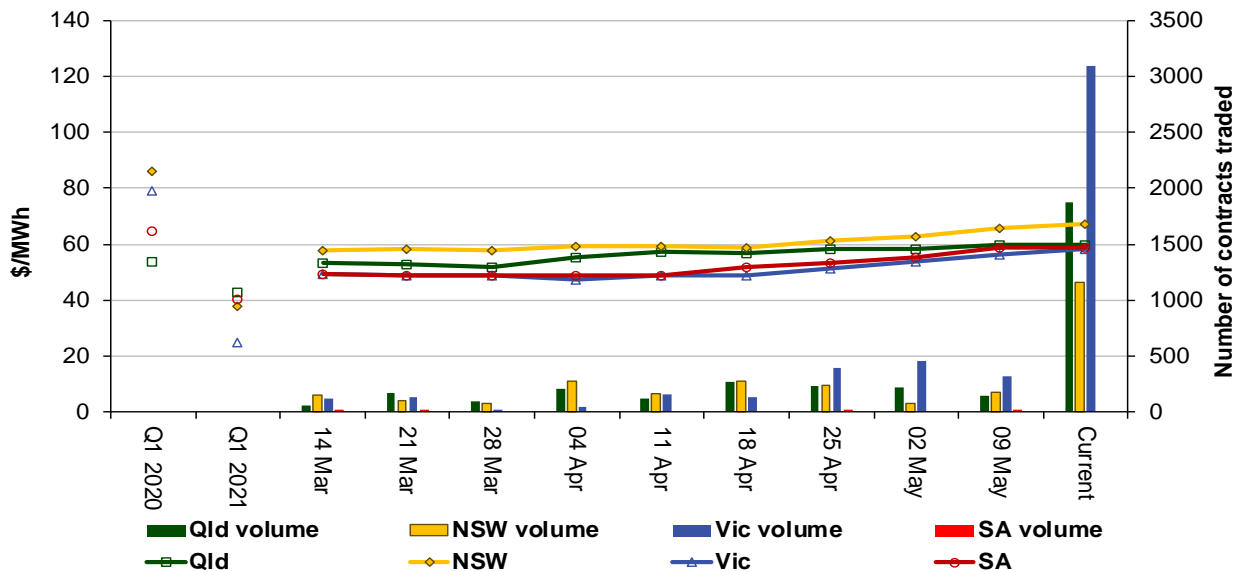
Figure 9: Quarterly base future prices Q2 2021 – Q1 2025



Source: ASXEnergy.com.au

Figure 10 shows how the price for each regional Q1 2022 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing Q1 2021 and Q1 2020 prices are also shown. The high volume of trades in Figure 10 is the result of the conversion of base load options to base future contracts on 19 May. The AER notes that data for South Australia is less reliable due to very low numbers of trades.

Figure 10: Price of Q1 2022 base contracts over the past 10 weeks (and the past 2 years)



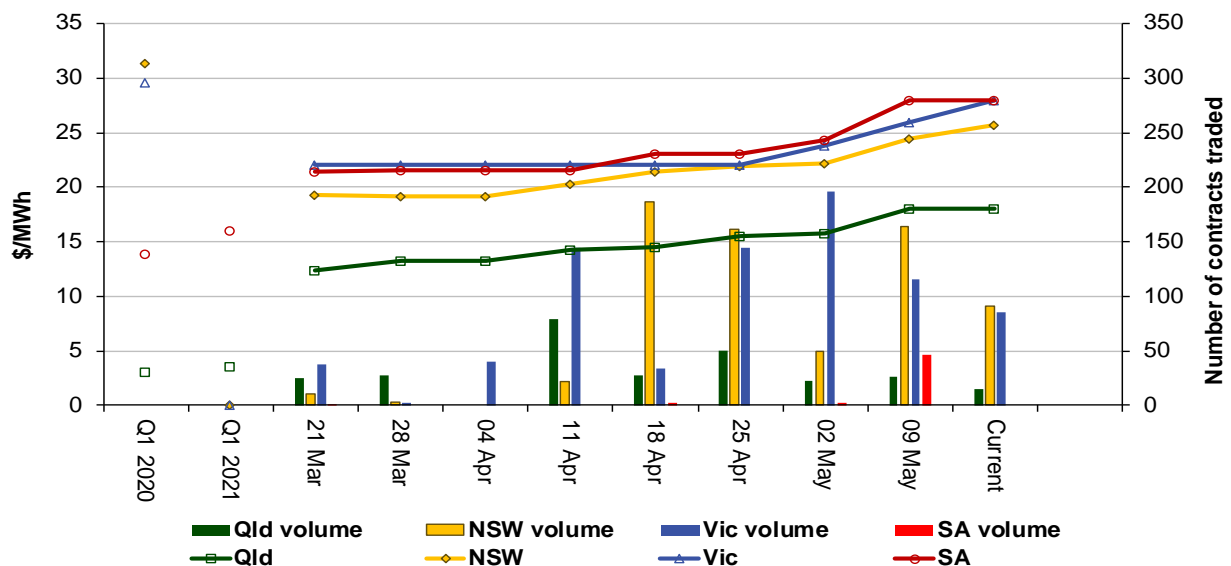
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

Source. ASXEnergy.com.au

Figure 11 shows how the price for each regional Q1 2022 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing Q1 2021 and Q1 2020 prices are also shown.

Cap contracts for 5 minute settlement (due to commence from Q4 2021) were listed on 22 March 2021. As a result, there’s only been 9 weeks of Q1 2022 cap contract trading so far.

Figure 11: Price of Q1 2022 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.