Electricity Report

AUSTRALIAN ENERGY REGULATOR

24 February – 2 March 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 24 February to 2 March 2019.

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

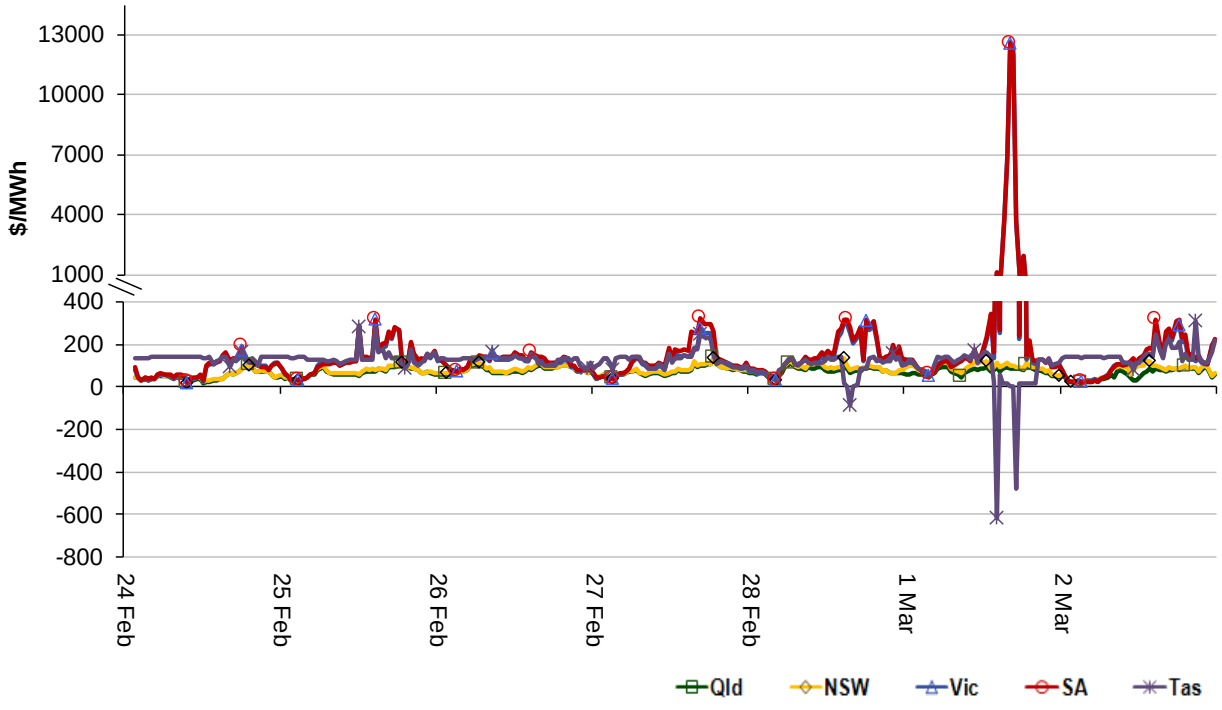


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

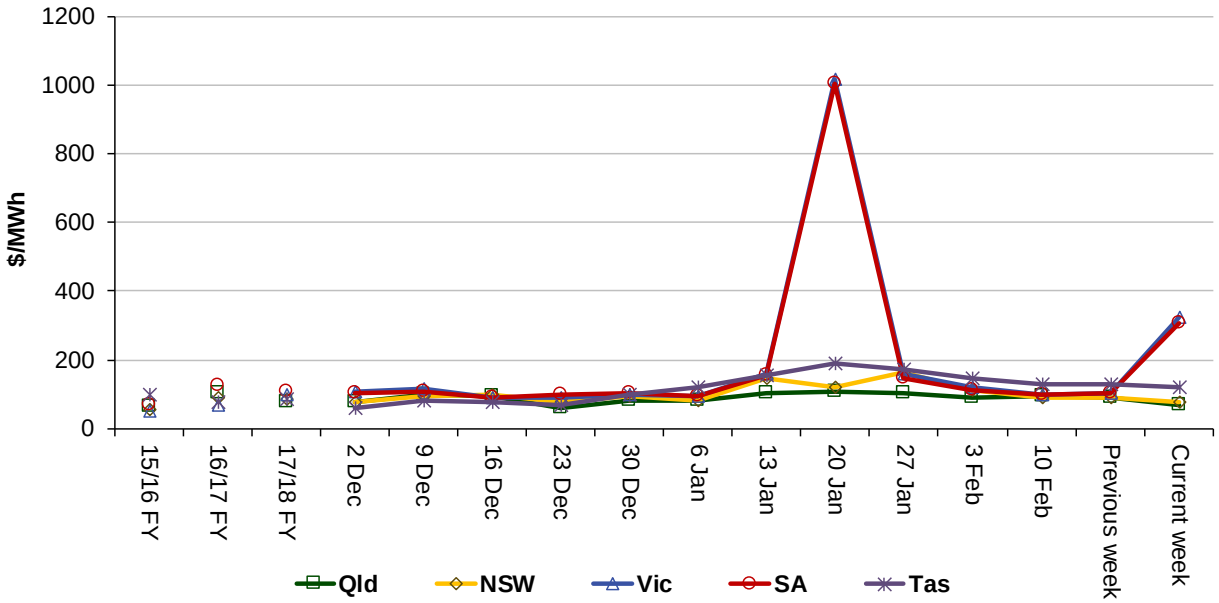


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	69	78	322	306	120
17-18 financial YTD	77	85	107	114	92
18-19 financial YTD	85	95	135	143	80

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 244 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	15	18	0	2
% of total below forecast	7	48	0	10

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

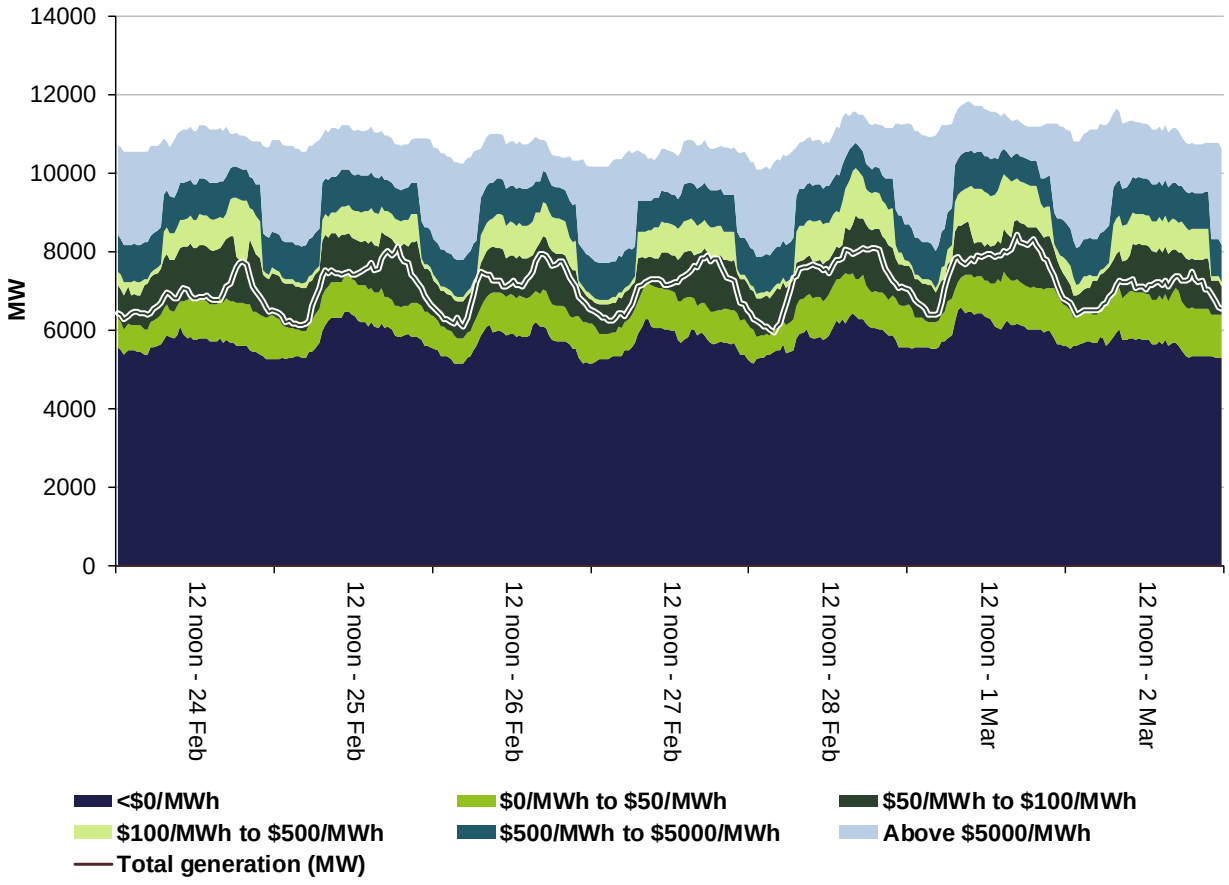


Figure 4: New South Wales generation and bidding patterns

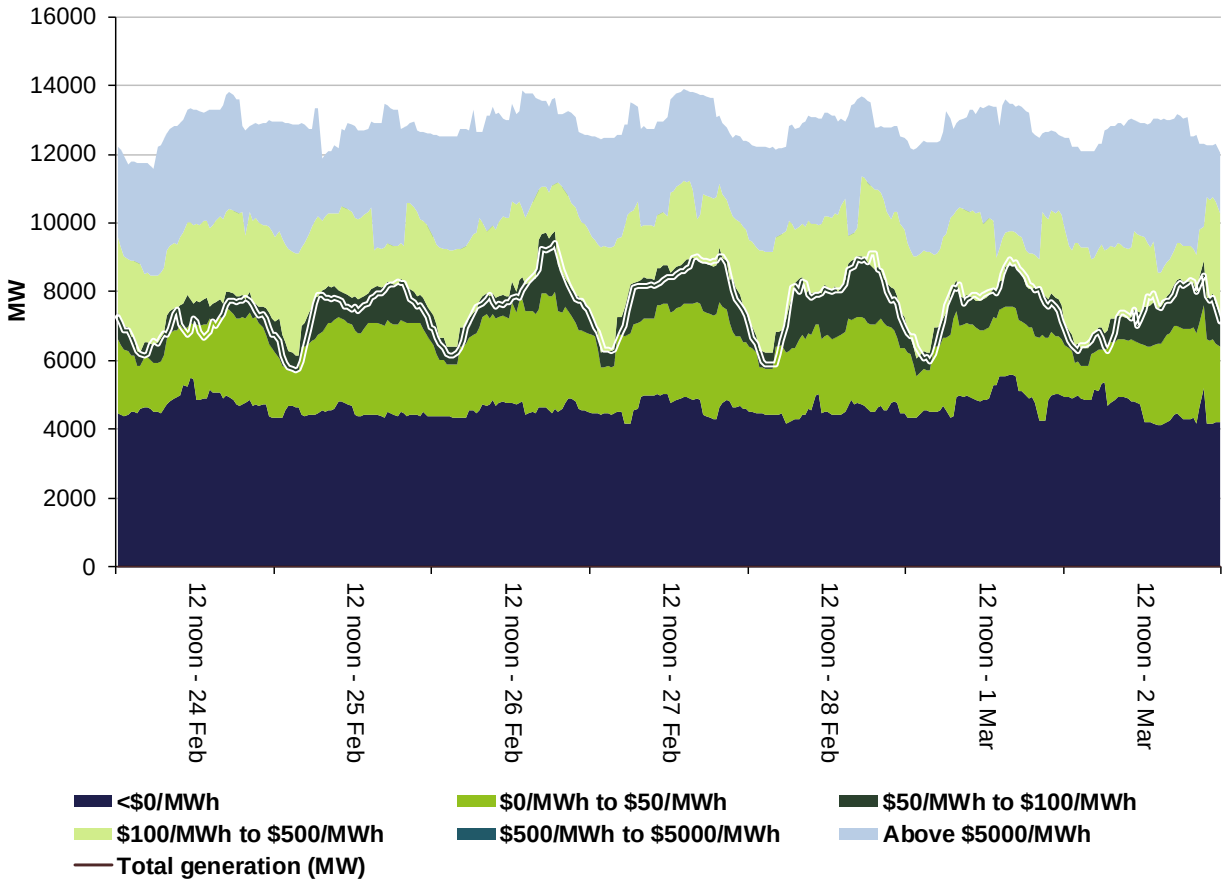


Figure 5: Victoria generation and bidding patterns

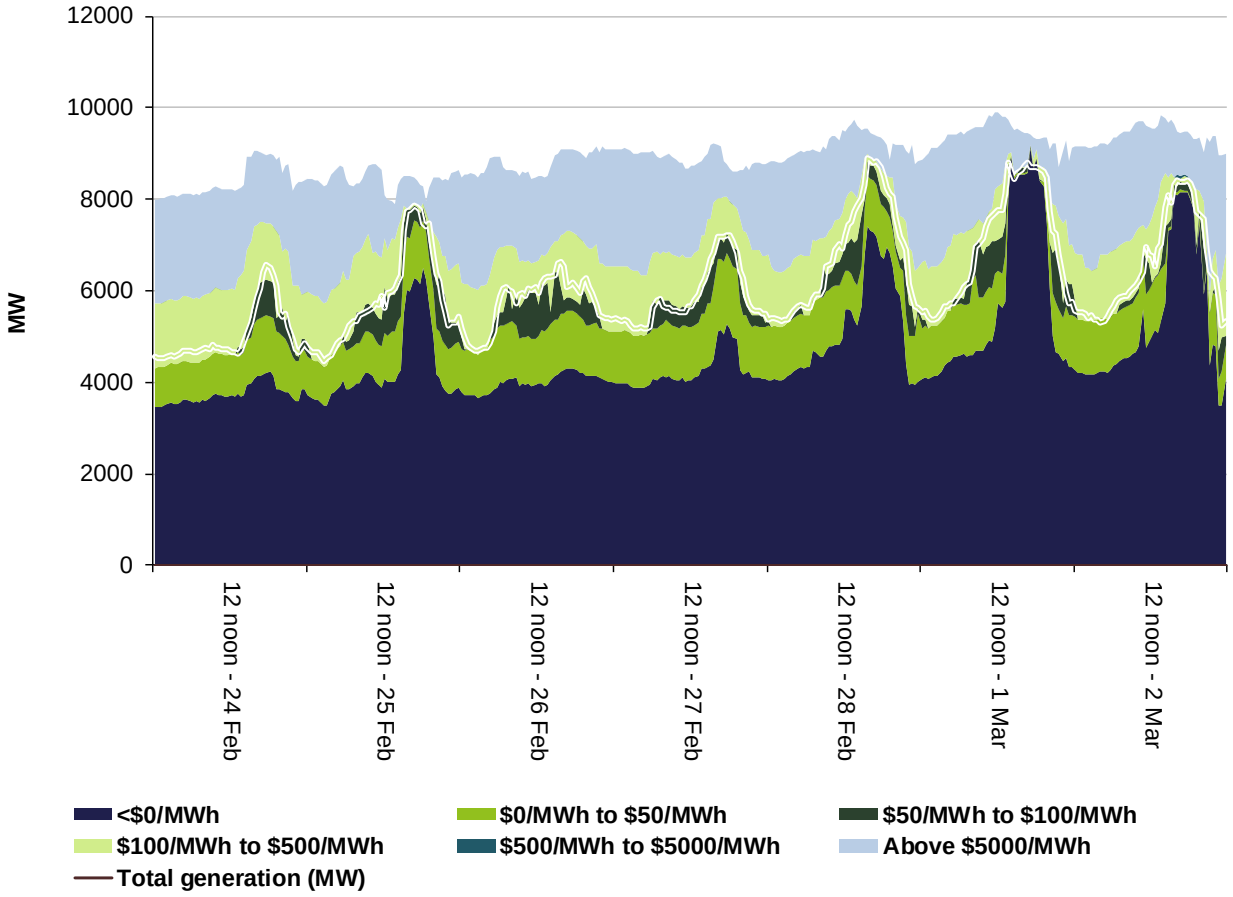


Figure 6: South Australia generation and bidding patterns

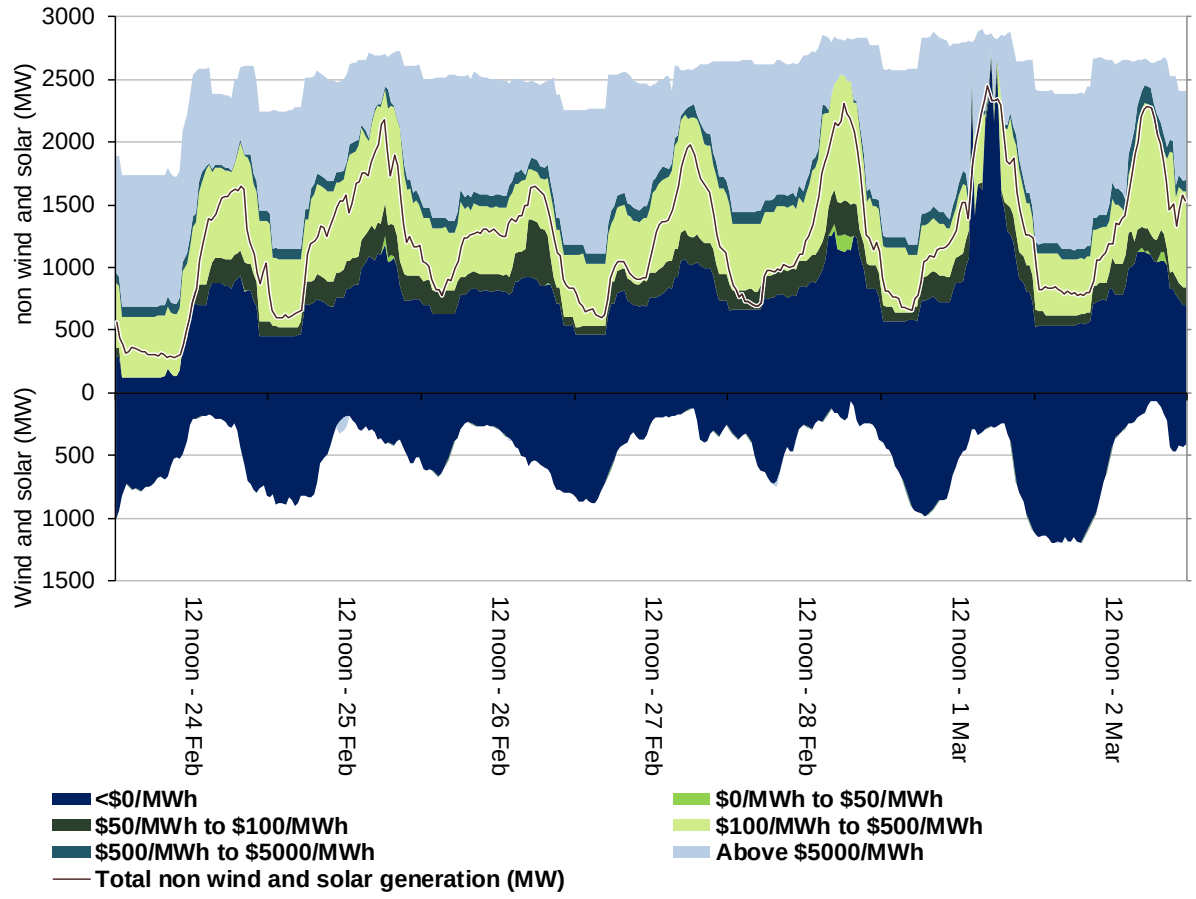
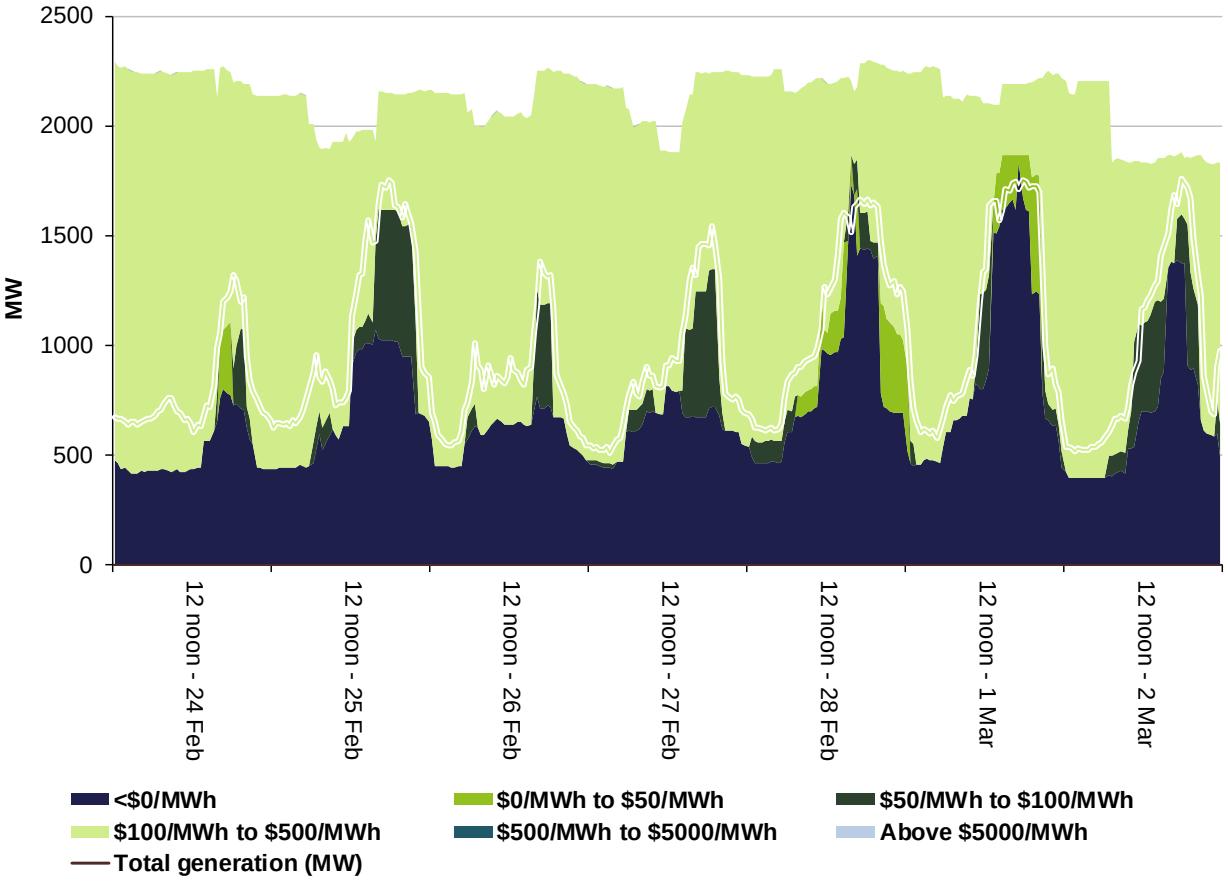


Figure 7: Tasmania generation and bidding patterns



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.

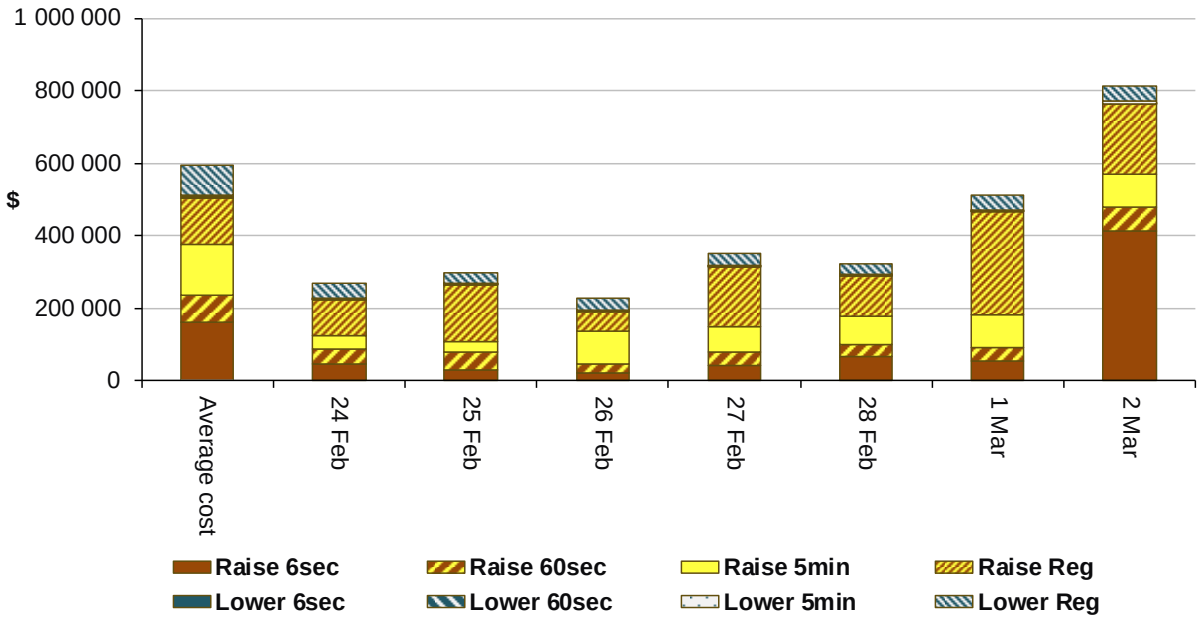
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $2 087 000 or less than 1 per cent of energy turnover on the mainland./

The total cost of FCAS in Tasmania for the week was $705 500 or less than 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



Detailed market analysis of significant price events

Victoria

There were six occasions where the spot price in Victoria was greater than three times the Victoria weekly average price of $322/MWh and above $250/MWh.

Friday, 1 March

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
3.30 pm	3846.98	14 159.89	14 499.99	8993	9104	9129	9531	9552	9429
4 pm	6914.61	14 499.99	14 500.00	9083	9249	9267	9483	9509	9408
4.30 pm	12 634.81	14 499.99	14 500.00	9144	9321	9337	9480	9513	9401
5 pm	12 471.61	14 500.00	14 500.00	9290	9337	9349	9448	9500	9450
5.30 pm	3571.65	14 500.00	14 500.00	8918	9215	9226	9412	9460	9452
6.30 pm	1910.79	14 190.49	14 499.99	8795	8929	8940	9303	9461	9350

Analysis of the prices above $5000/MWh are covered in our Prices above $5000/MWh – 1 March 2019 report.

Prices were lower than forecast as participants in Victoria rebid up to 700 MW of capacity from high to low prices during the high priced periods.

South Australia

There were seven occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of $306/MWh and above $250/MWh.

Friday, 1 March

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
2.30 pm	1121.59	13 100.02	14 500.00	2320	2283	2292	3111	3268	3327
3.30 pm	3739.66	14 317.53	14 500.00	2451	2435	2420	3207	3219	3299
4 pm	6764.70	14 500.00	14 500.00	2579	2572	2587	3205	3238	3317
4.30 pm	12 609.08	14 500.00	14 500.00	2683	2696	2710	3169	3222	3303
5 pm	12 067.04	14 500.00	14 500.00	2748	2785	2803	3142	3194	3265
5.30 pm	3713.62	14 500.00	14 500.00	2775	2864	2877	3134	3167	3205

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	1949.97	14 500.00	14 500.00	2853	2908	2922	3121	3150	3171

Analysis of prices above $5000/MWh are covered in our Prices above $5000/MWh – 1 March 2019 report.

Prices were lower than forecast as participants in South Australia rebid up to 1445 MW of capacity from high to low prices during the high priced periods.

Tasmania

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

Friday, 1 March

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
2.30 pm	-614.50	13.28	231.27	1126	1041	1058	2099	2108	2120
5.30 pm	-478.94	13.28	231.27	1226	1139	1117	2193	2208	2215

For the 2.30 pm trading interval, demand was 85 MW higher than forecast and availability was close to forecast, both four hours ahead.

At the start of the trading interval Tasmania was exporting to Victoria across Basslink at its limit. In Victoria, in response to high prices at 2.05 pm, participants rebid around 900 MW of capacity to the price floor. This resulted in the dispatch price falling to the floor. Consequently higher priced generation in Tasmania was backed off, exports from Tasmania to Victoria reduced and the price fell to around -$930/MWh for the rest of the trading interval.

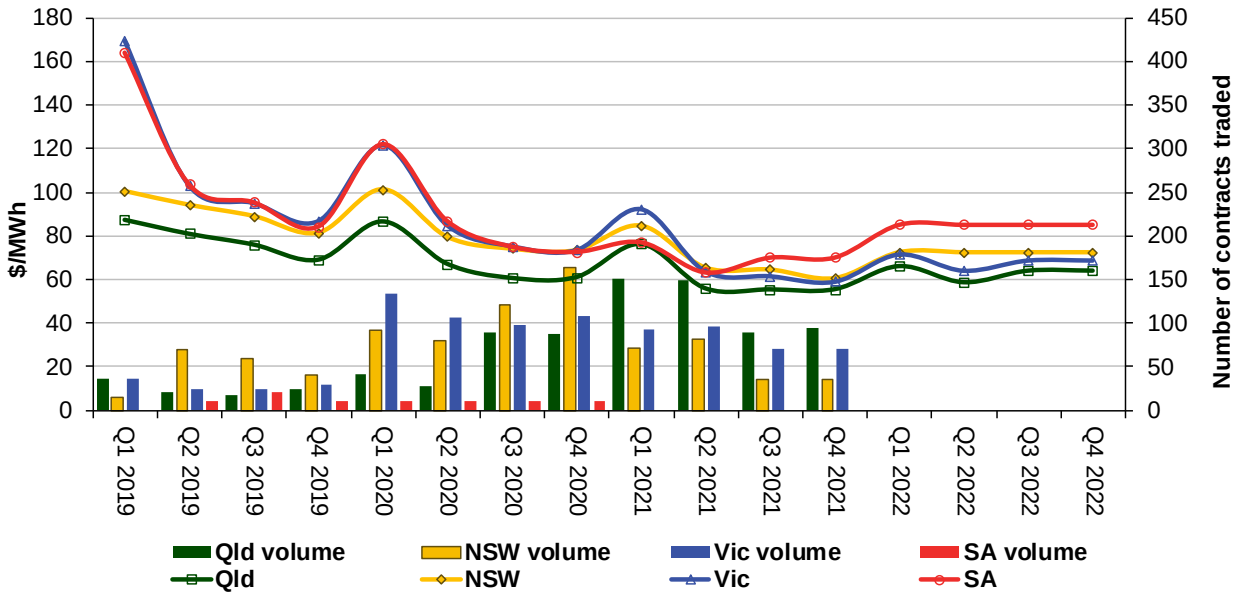
For the 5.30pm trading interval, demand was 87 MW higher than forecast and availability was close to forecast, both four hours ahead.

Only one unit in Tasmania had capacity offered between $13/MWh and the price floor. At 5.05 pm there was a 20 MW decrease in demand and that unit, which had a ramp down rate of 5 MW per 5 minutes, was down constrained and unable to set price. This saw the price fall close to the floor at 5.05 pm. At 5.10 pm there was a small increase in demand and the unit was no longer down constrained and able to set price at $13/MWh.

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.

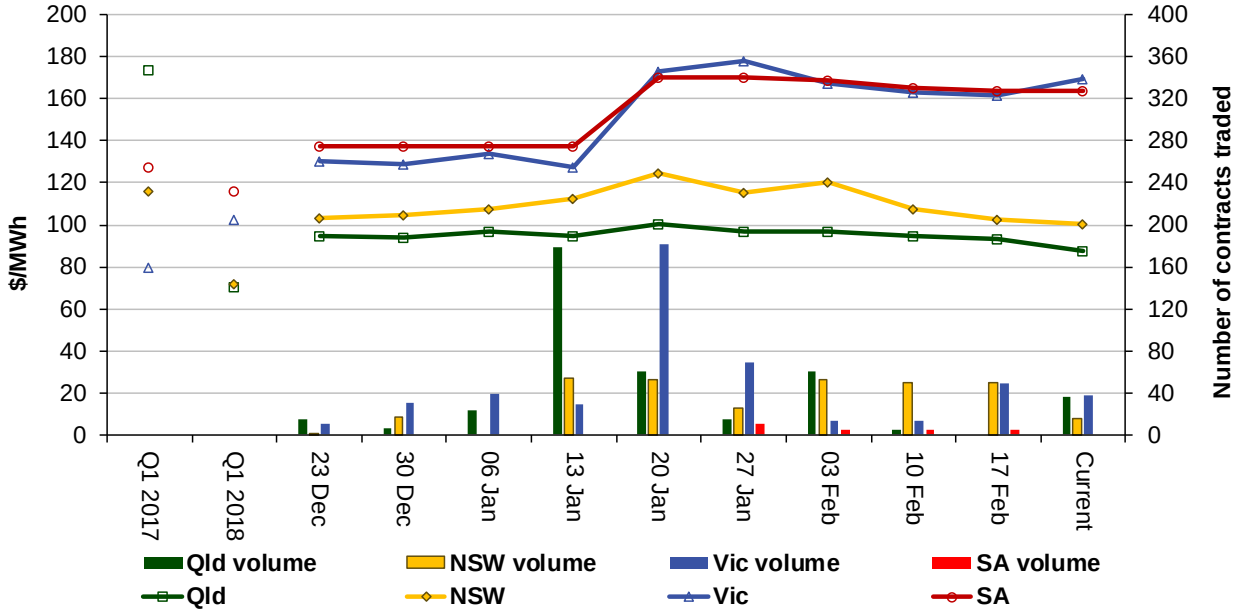
Figure 9. Quarterly base future prices Q1 2019 – Q4 2022



Source. ASXEnergy.com.au

Figure 10 shows how the price for each regional Q1 2019 base contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2017 and quarter 1 2018 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 2019 base contracts over the past 10 weeks (and the past 2 years)



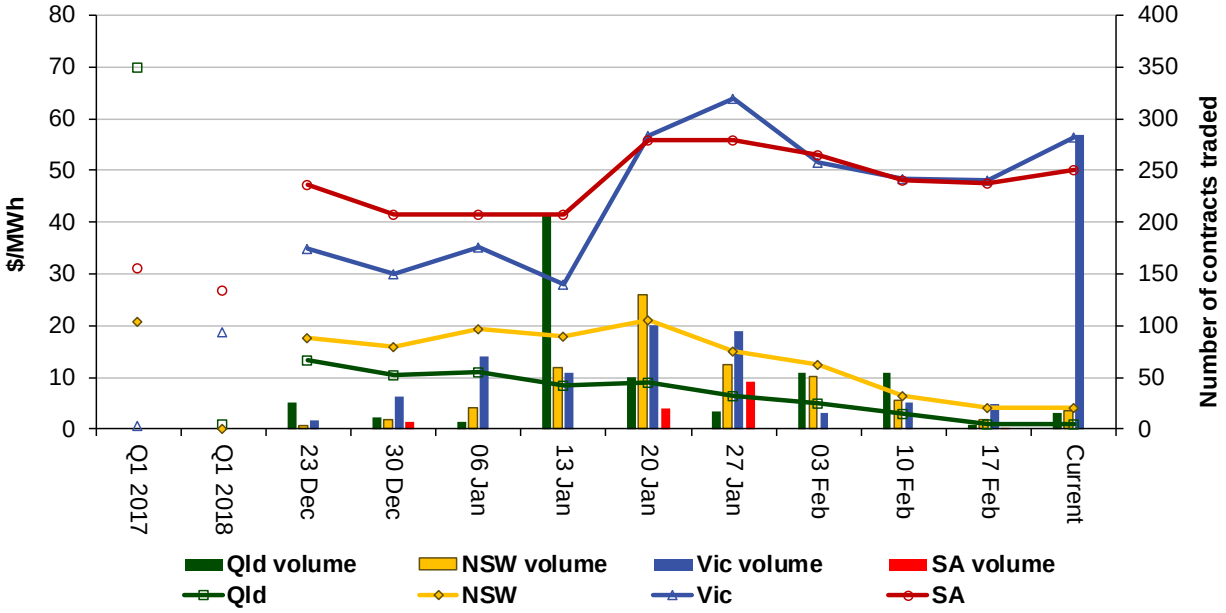
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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 2019 cap contract has changed over the last 10 weeks (as well as the total number of trades each week). The closing quarter 1 2017 and quarter 1 2018 prices are also shown.

Figure 11. Price of Q1 2019 cap contracts over the past 10 weeks (and the past 2 years)



Source. ASXEnergy.com.au