Electricity Report

AUSTRALIAN ENERGY REGULATOR

24 - 30 June 2018

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 - 30 June 2018.

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

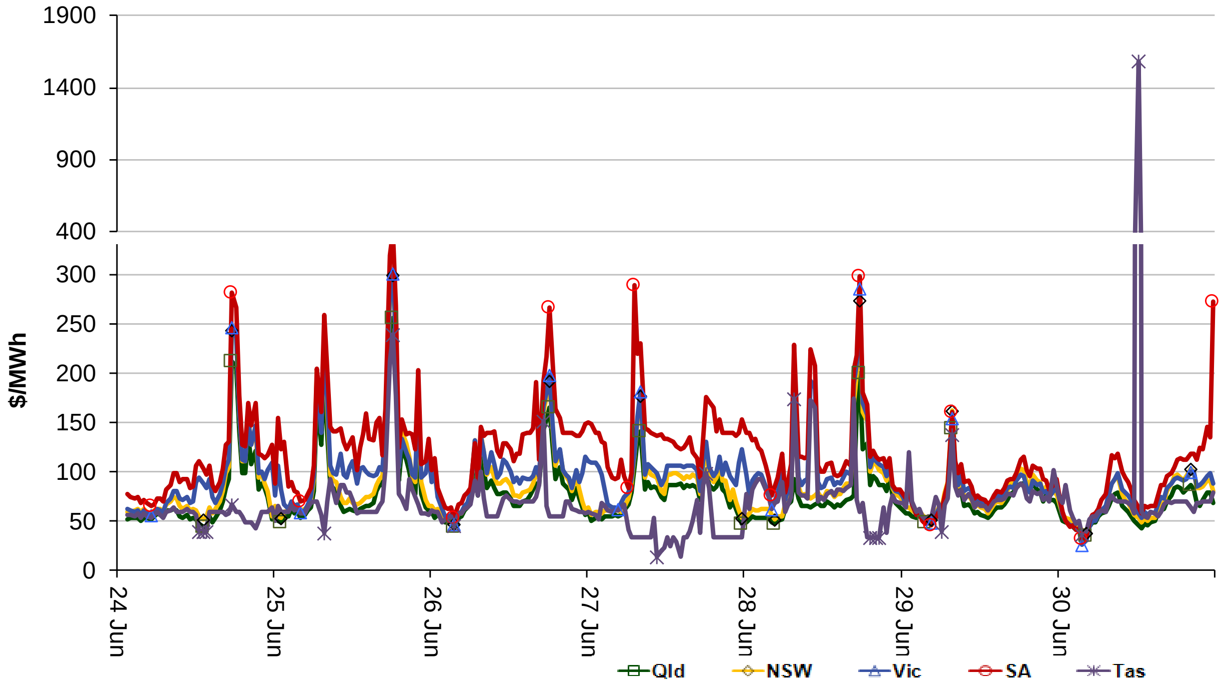


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

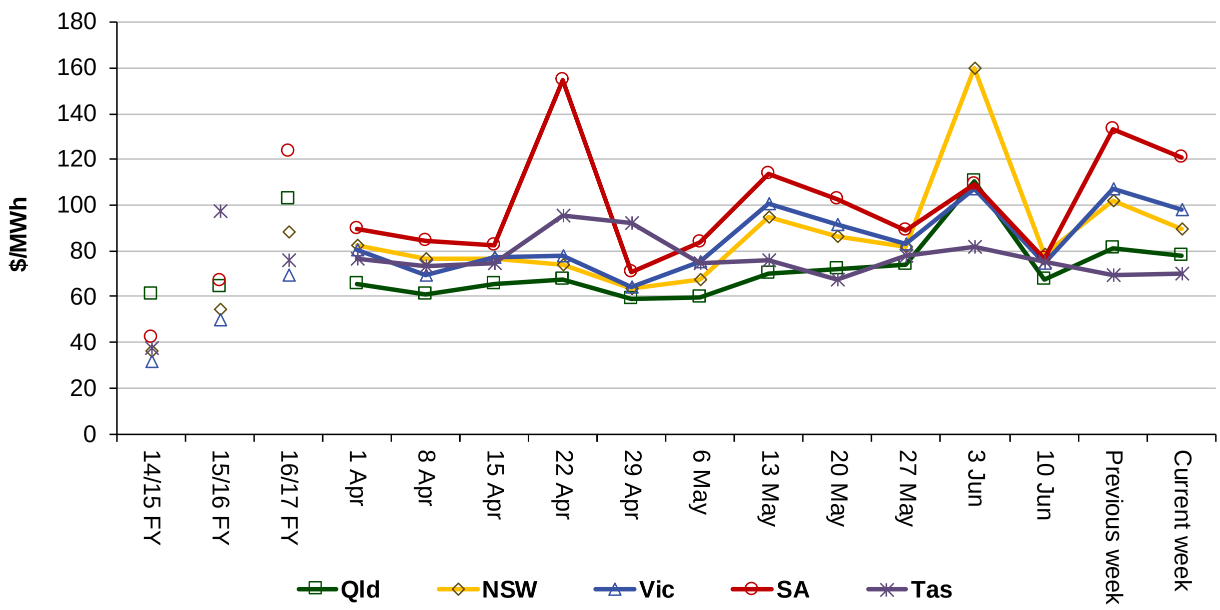


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	78	89	98	121	70
16-17 financial YTD	103	88	70	123	76
17-18 financial YTD	75	85	99	109	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 164 trading intervals throughout the week where actual prices varied significantly from forecasts. This compares to the weekly average in 2017 of 185 counts and the average in 2016 of 273. 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	16	0	2
% of total below forecast	6	49	0	22

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

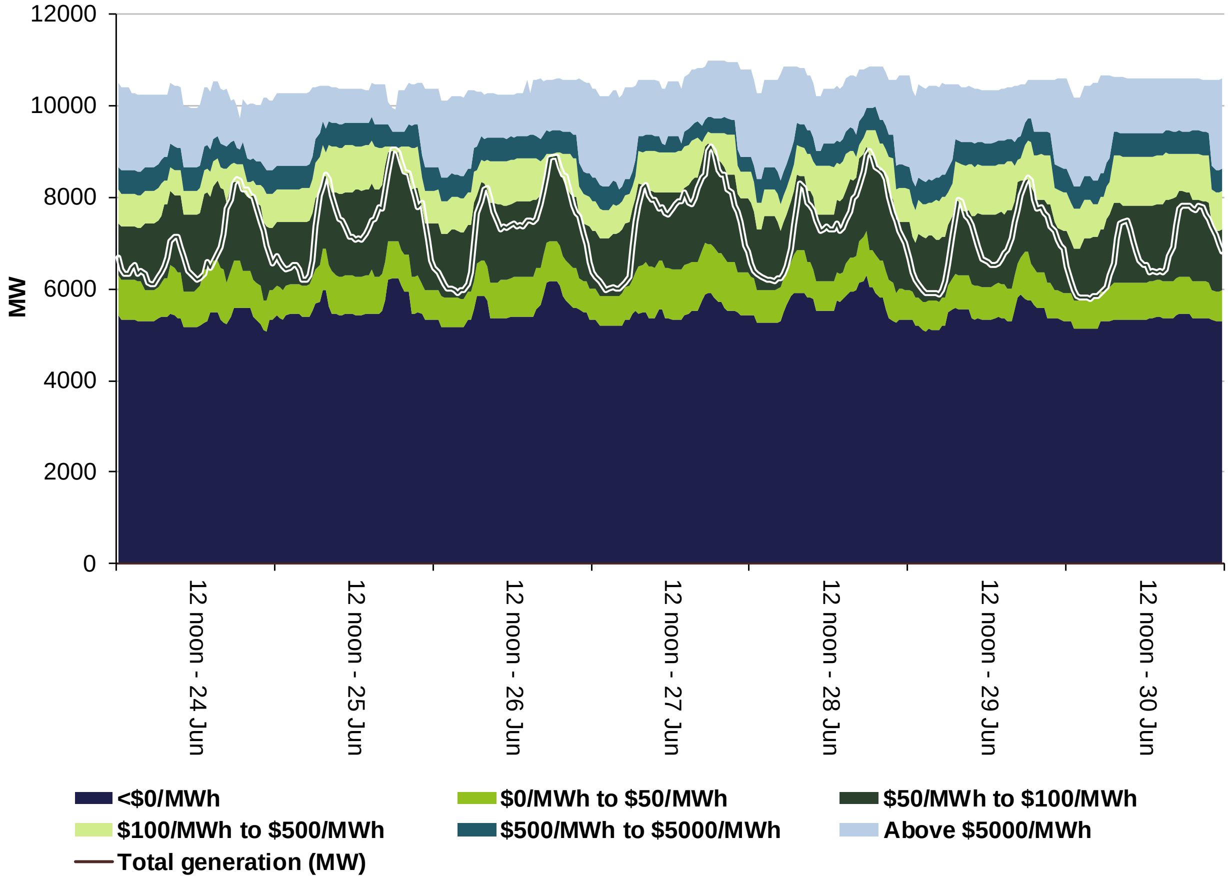


Figure 4: New South Wales generation and bidding patterns

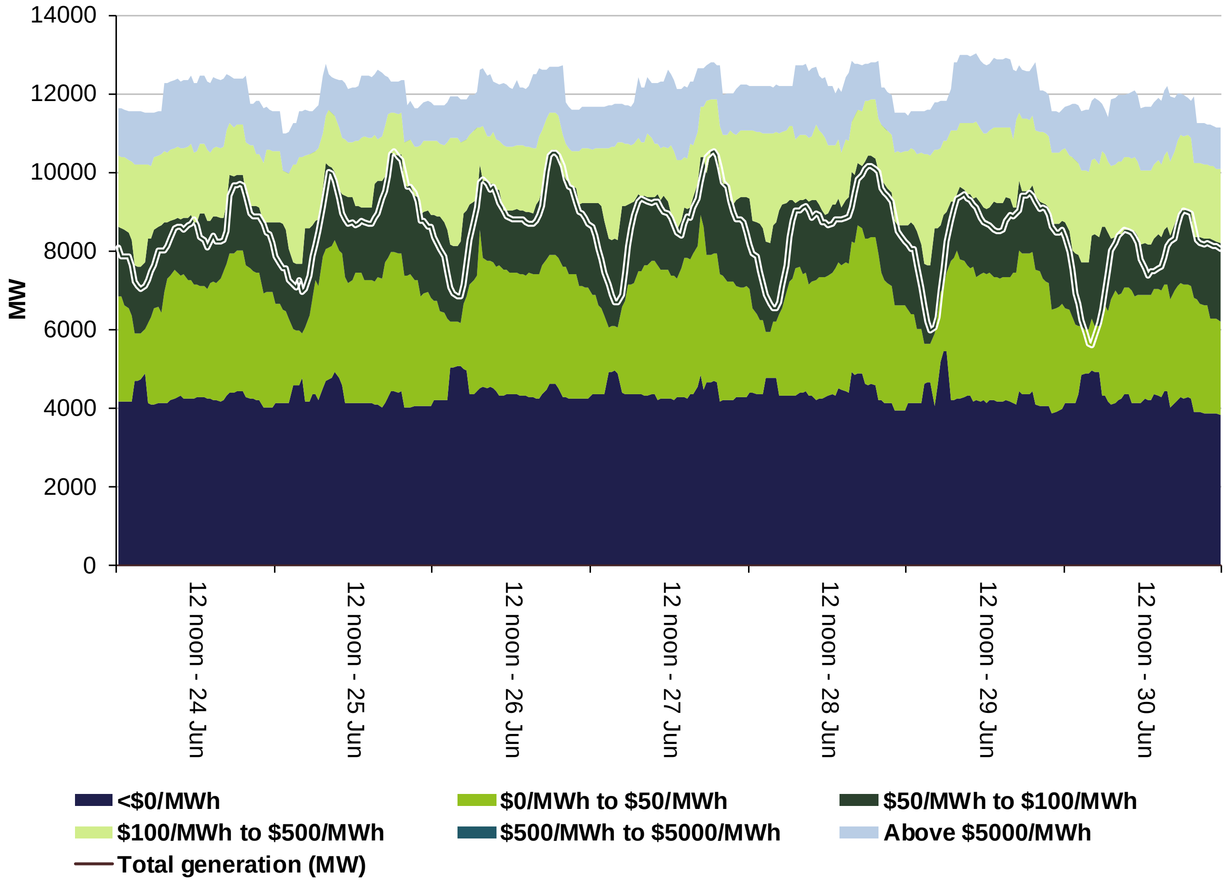


Figure 5: Victoria generation and bidding patterns

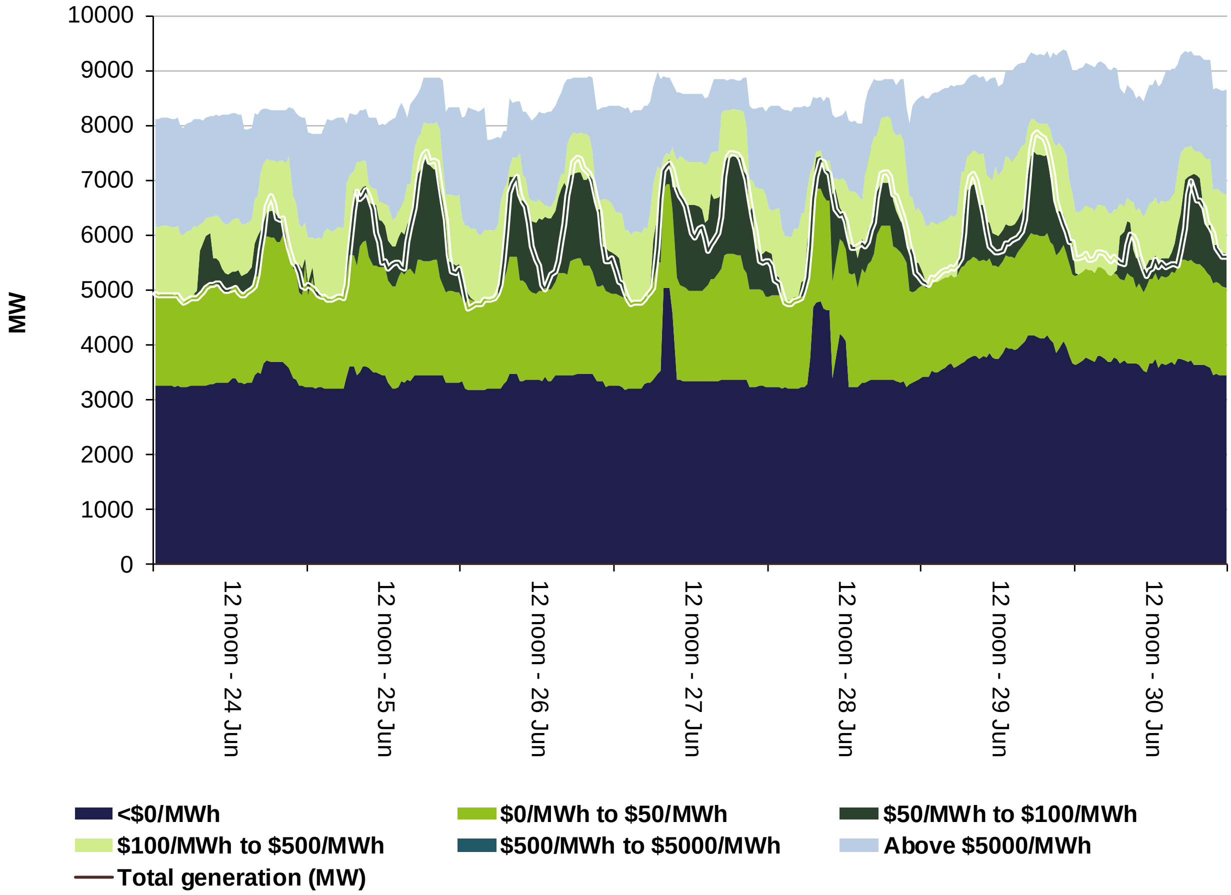


Figure 6: South Australia generation and bidding patterns

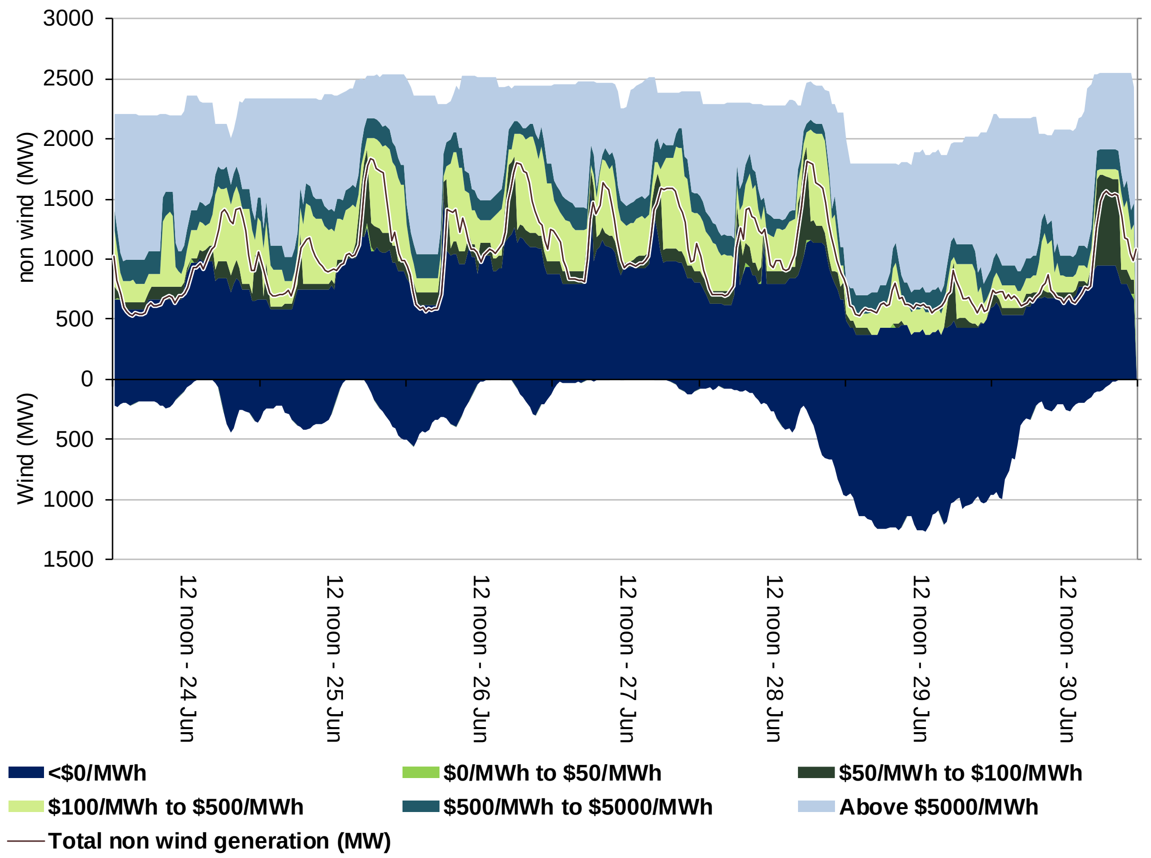
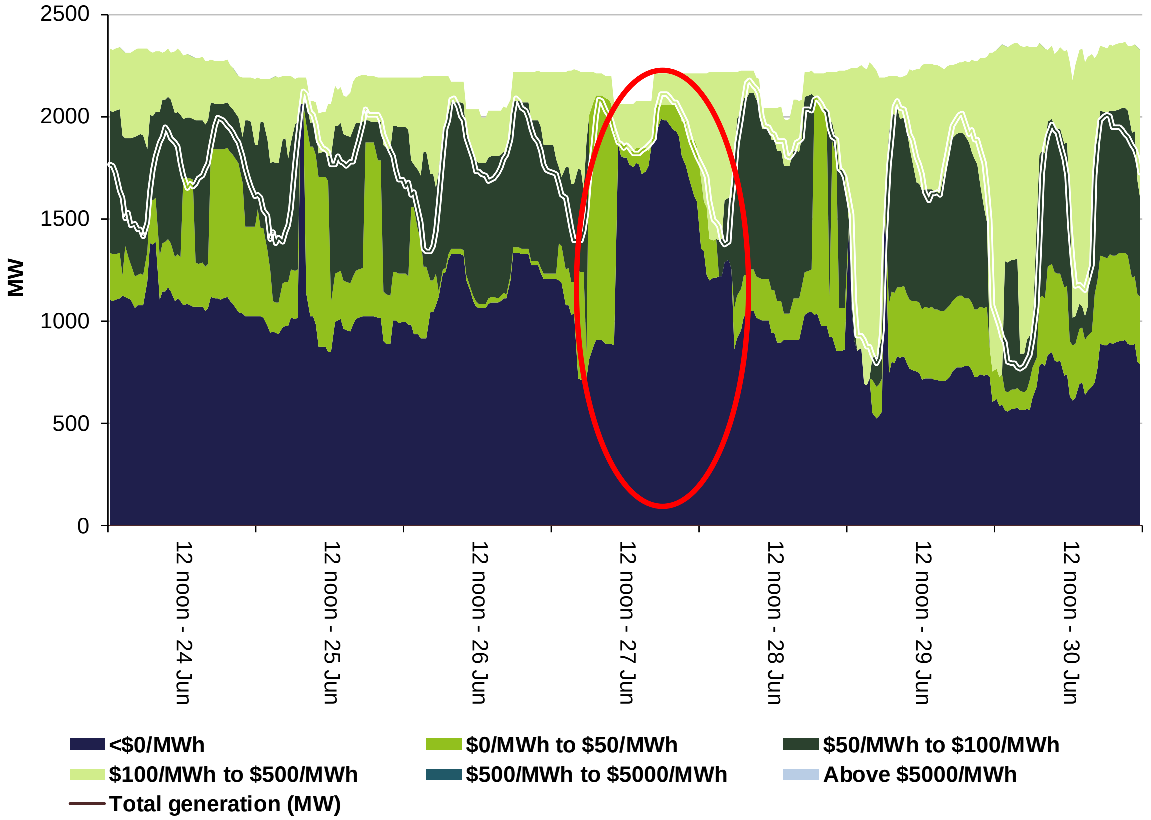


Figure 7: Tasmania generation and bidding patterns



On 27 June, Hydro Tasmania rebid significant amount of capacity from prices above $50/MWh to less than zero due to changes in forecast flows across the Basslink. Tasmania energy prices were below $40/MWh for the majority of the day.

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.

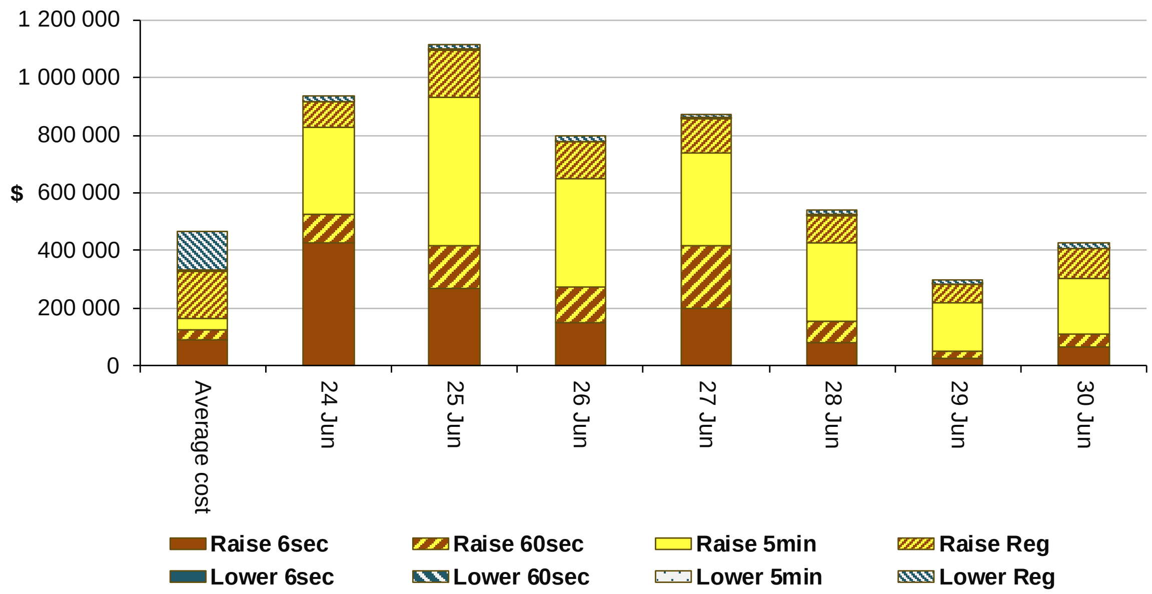
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a "causer pays" basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $4 660 500 or around one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $321 500 or around two 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 24 June, the daily raise 6 seconds (R6S) cost exceeded $400 000. At 3.39 pm, effective from 5.05 pm, CS Energy removed 120 MW of R6S services priced at less than $20/MW from Gladstone and the global 5-minute R6S service price spiked to $2000/MW at 5.05 pm. The price returned to below $50/MWh, when CS Energy increase it R6S services by 120 MW at 5.10 pm.

On 25 June, the raise 5 minute (R5M) cost exceeded $500 000, much of this cost accrued over the evening period, when there was an increase demand and a reduction in effective R5M service. The price returned to lower levels from around 7.05 pm.

Detailed market analysis of significant price events

Queensland

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

Monday, 25 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	255.54	208.68	237.58	7768	7662	7590	9868	10 472	10 472

The 6.30 pm price was close to that forecast four hours prior.

New South Wales

There were three occasions where the spot price in New South Wales was greater than three times the New South Wales weekly average price of $89/MWh and above $250/MWh.

Monday, 25 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	274.02	169.72	299.60	11 771	11 359	11 609	12 227	12 420	12 649
6.30 pm	299.60	276.53	299.60	11 878	11 454	11 690	12 122	12 447	12 668

Conditions at the time saw demand around 450 MW higher than forecast and availability up to 325 MW lower than forecast, four hours prior.

Within the 6 pm trading interval, due to mill issues, Delta removed 110 MW at its Vales Point power station and AGL removed 110 MW at its Bayswater power station, all of which was priced less than $55/MWh. This reduction in capacity combined with the higher than forecast demand led to the higher than forecast price.

The 6.30 pm trading interval price was close to that forecast four hours prior.

Thursday, 28 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	274.48	255.30	145.65	11 418	11 035	11 099	12 547	12 701	13 022

The 6 pm price was close to that forecast four hours prior.

Victoria

There was one occasion where the spot price in Victoria was greater than three times the Victoria weekly average price of $98/MWh and above $250/MWh.

Monday, 25 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
6.30 pm	301.51	278.86	307.92	7247	7196	7224	8732	8935	8948

The 6.30 pm price was close to that forecast four hours prior.

Tasmania

There was one occasion where the spot price in Tasmania was greater than three times the Tasmania weekly average price of $70/MWh and above $250/MWh.

Saturday, 30 June

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
12.30 pm	1579.15	61.98	55.19	1167	1178	1149	2264	2354	2348

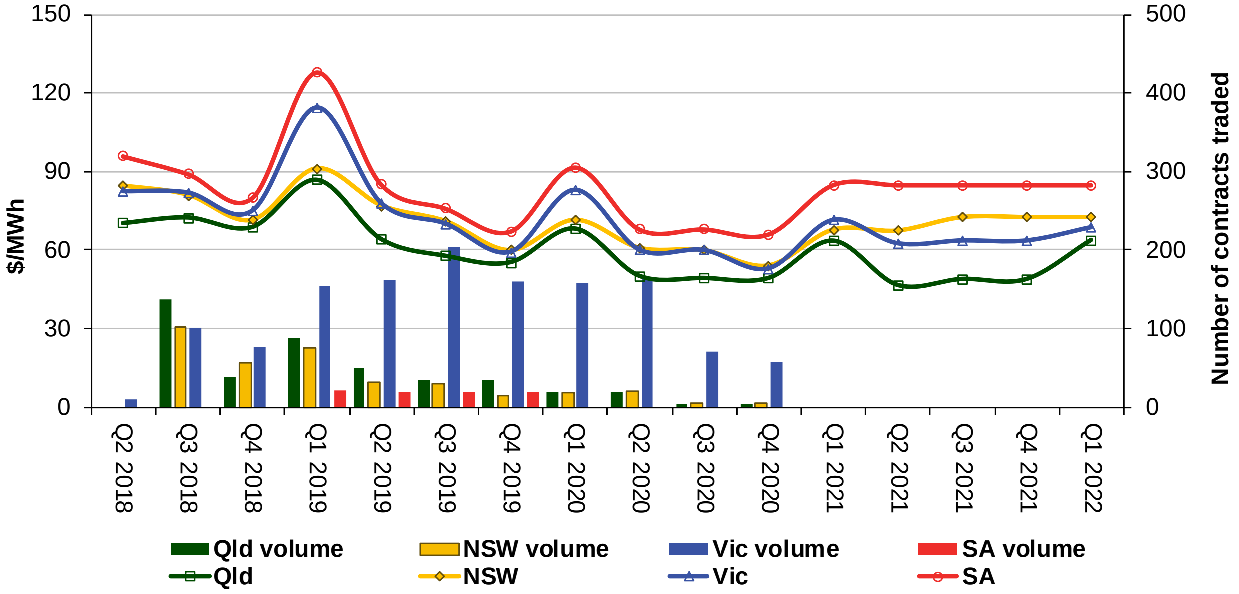
Conditions at the time saw demand close to forecast while availability was 90 MW lower than forecast.

At 12.30 pm local FCAS requirements in Tasmania (across a number of services) increased by a total of 110 MW due to system normal constraints violating. At 12.30 pm, due to the increase in FCAS requirements, the energy and FCAS markets co-optimised and the energy price increased to $9167/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. Of note is the lack of trades in the later years. Anecdotally, most participants don't trade beyond 2 and one half years and hence the prices shown here for those periods are unreliable as the may be the average of the buy and sell prices or, if there have been no offers for that period, the last valid offer.

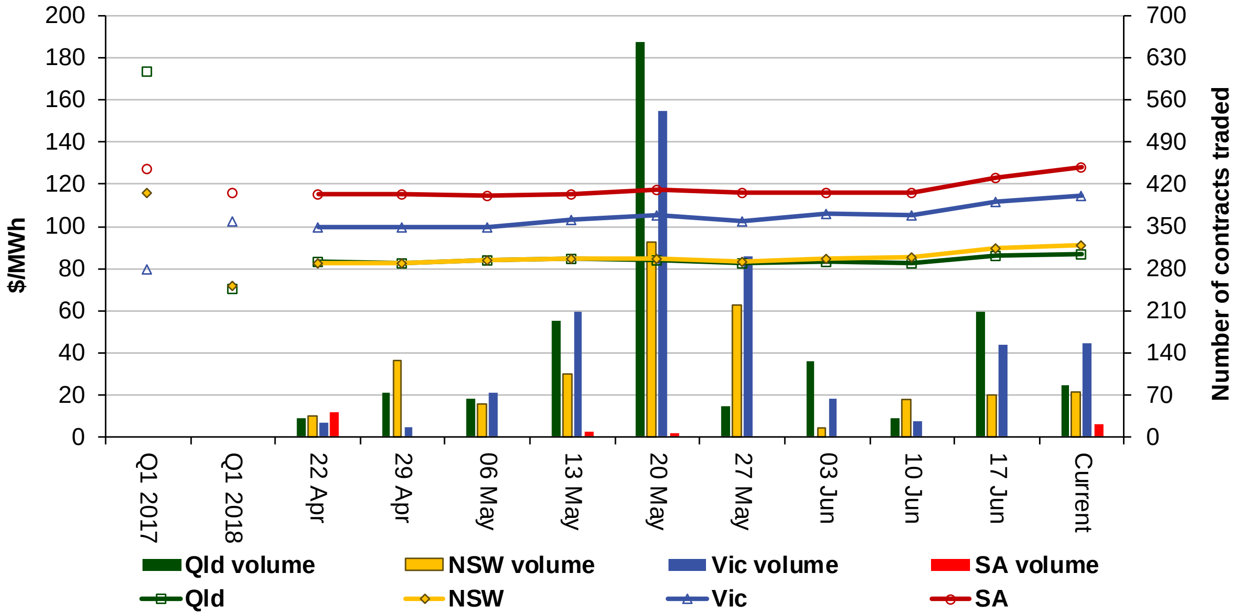
Figure 9: Quarterly base future prices Q2 2018 – Q1 2022



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)



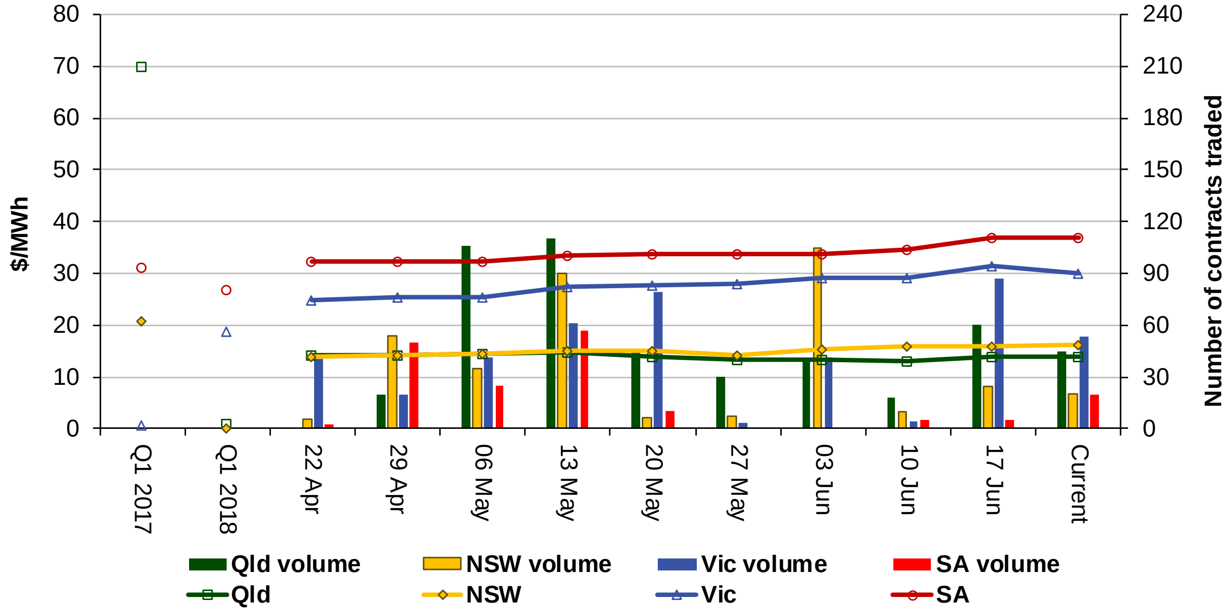
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

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

Australian Energy Regulator
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