

## 5 – 11 January 2020

### Weekly Summary

Average prices for the week ranged from \$51/MWh in New South Wales to \$63/MWh in Tasmania.

Queensland was isolated from the rest of the NEM for a short time on 7 January caused by an outage at the Liddell substation. This led to high FCAS costs of around \$3 million.

### 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 5 to 11 January 2020.

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

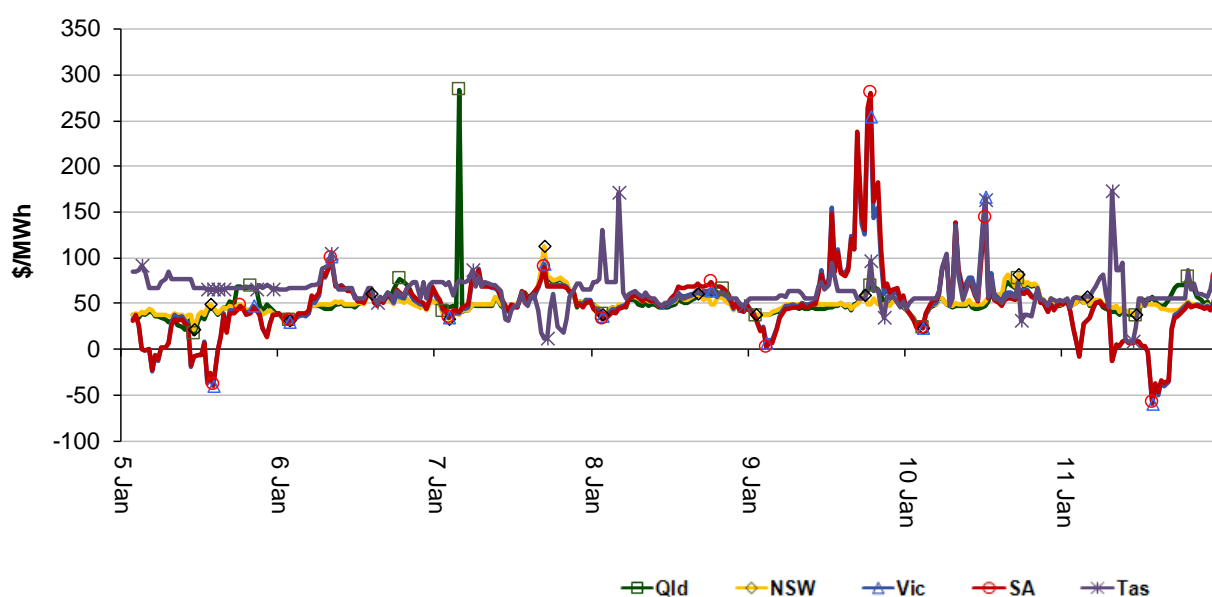
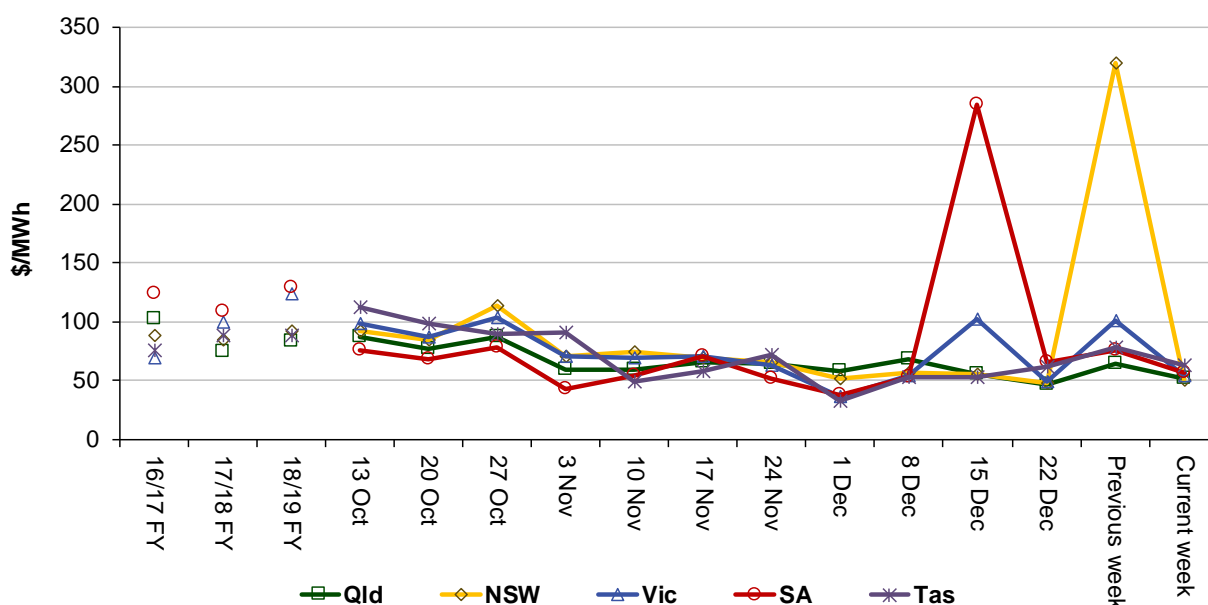


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous three financial years.

**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	52	51	54	57	63
18-19 financial YTD	82	89	92	98	65
19-20 financial YTD	65	89	91	83	73

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 200 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**

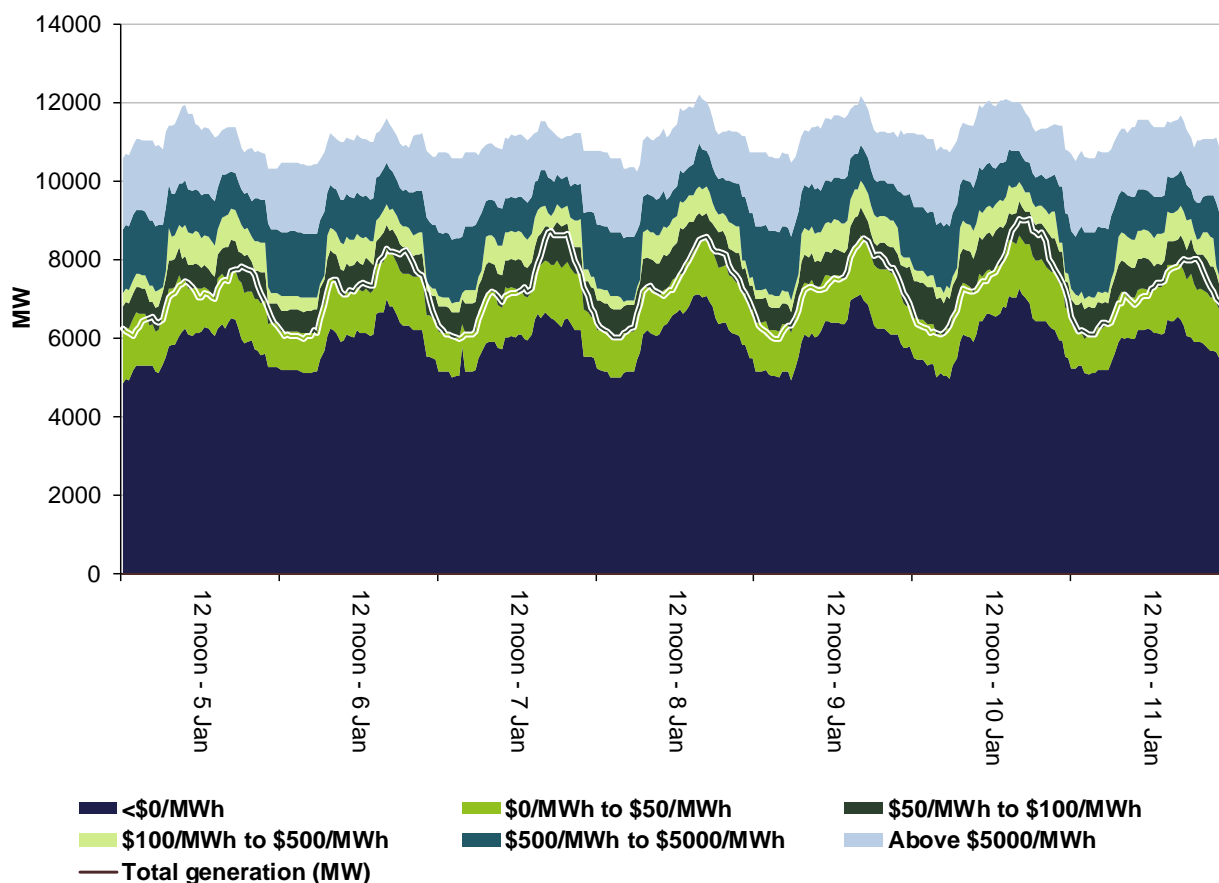
	Availability	Demand	Network	Combination
% of total above forecast	8	23	1	2
% of total below forecast	9	41	0	17

Note: Due to rounding, the total may not be 100 per cent.

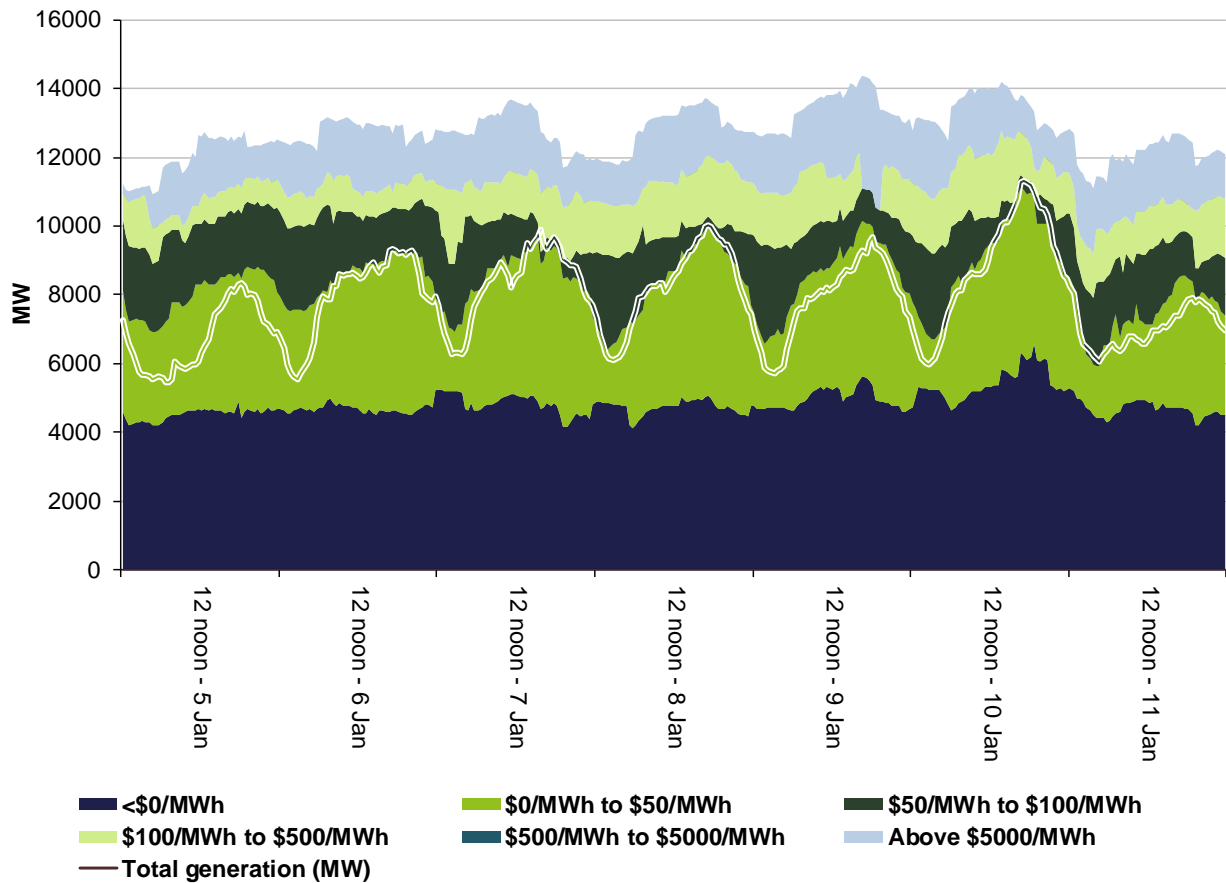
## Generation and bidding patterns

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.

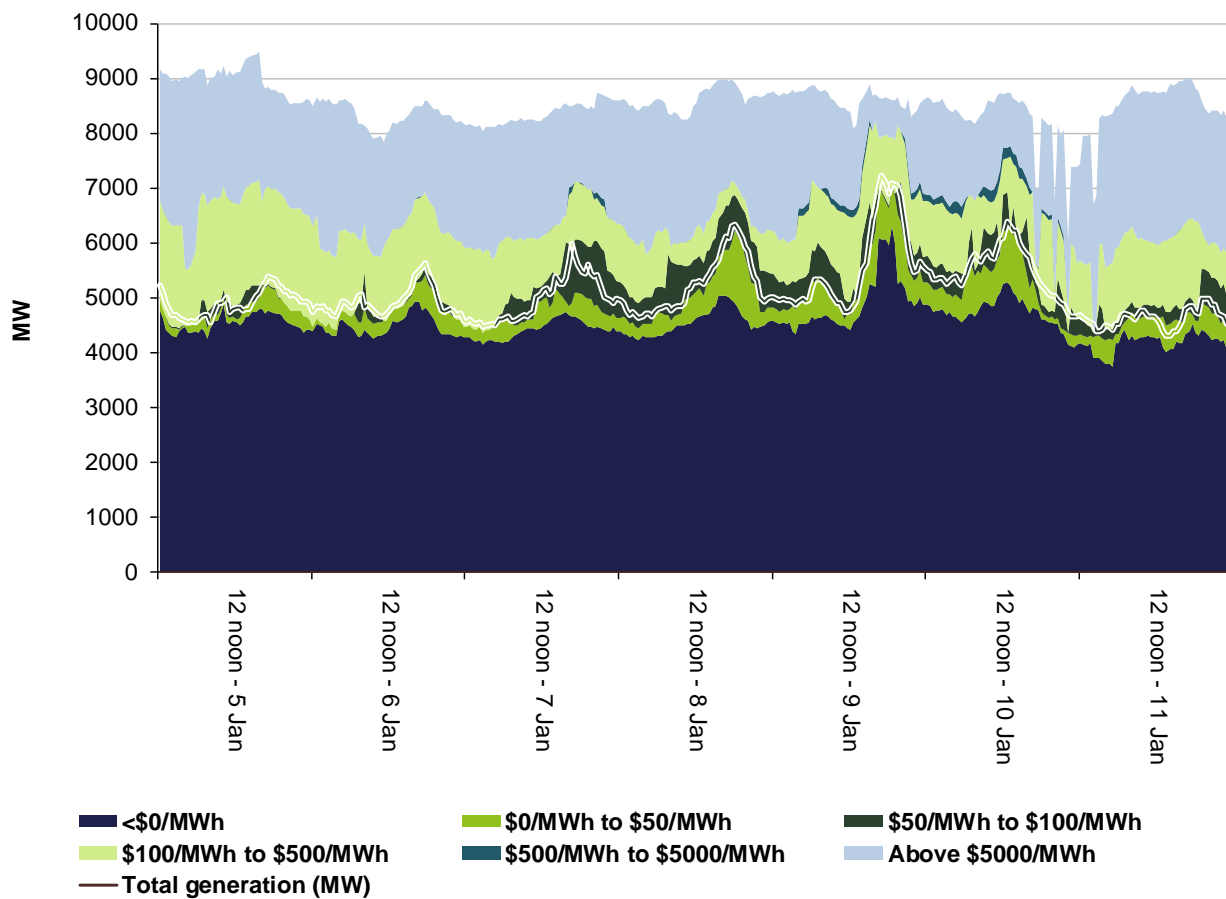
**Figure 3: Queensland generation and bidding patterns**



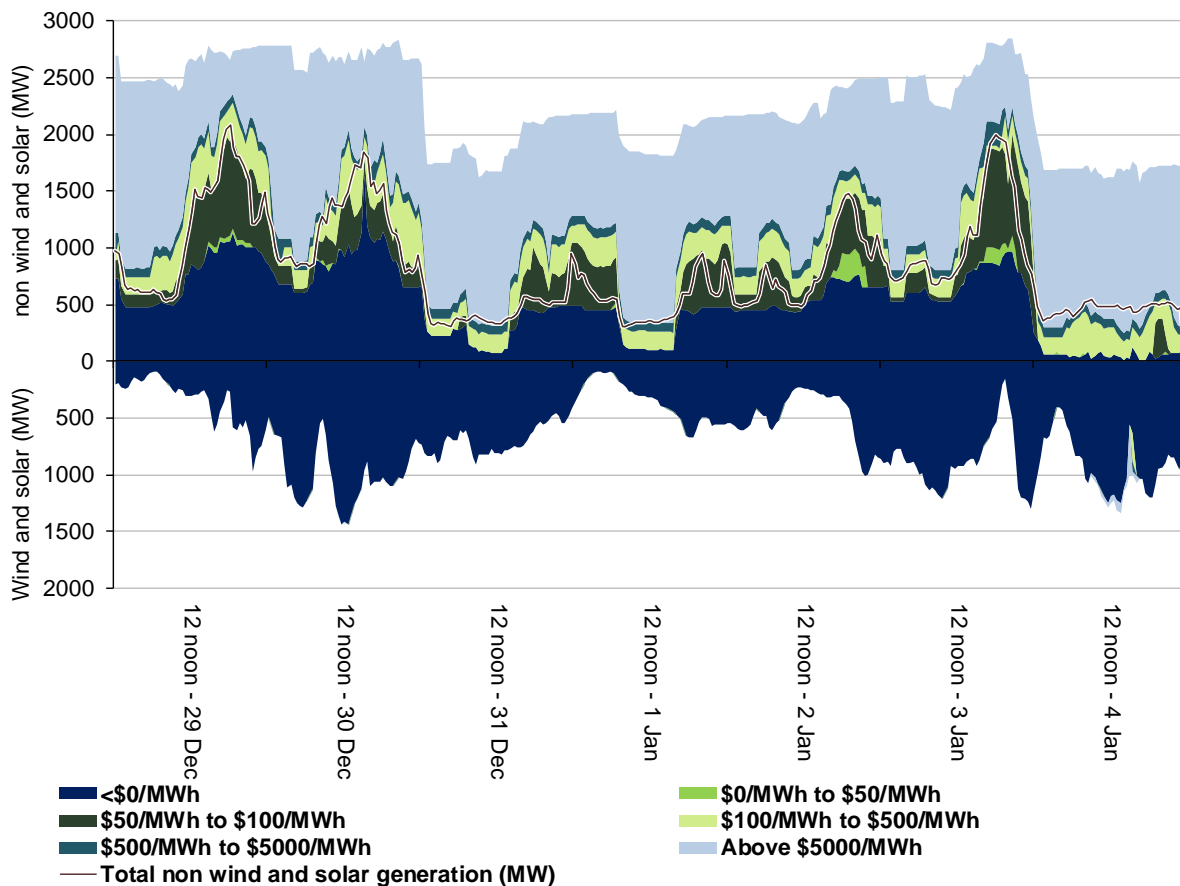
**Figure 4: New South Wales generation and bidding patterns**



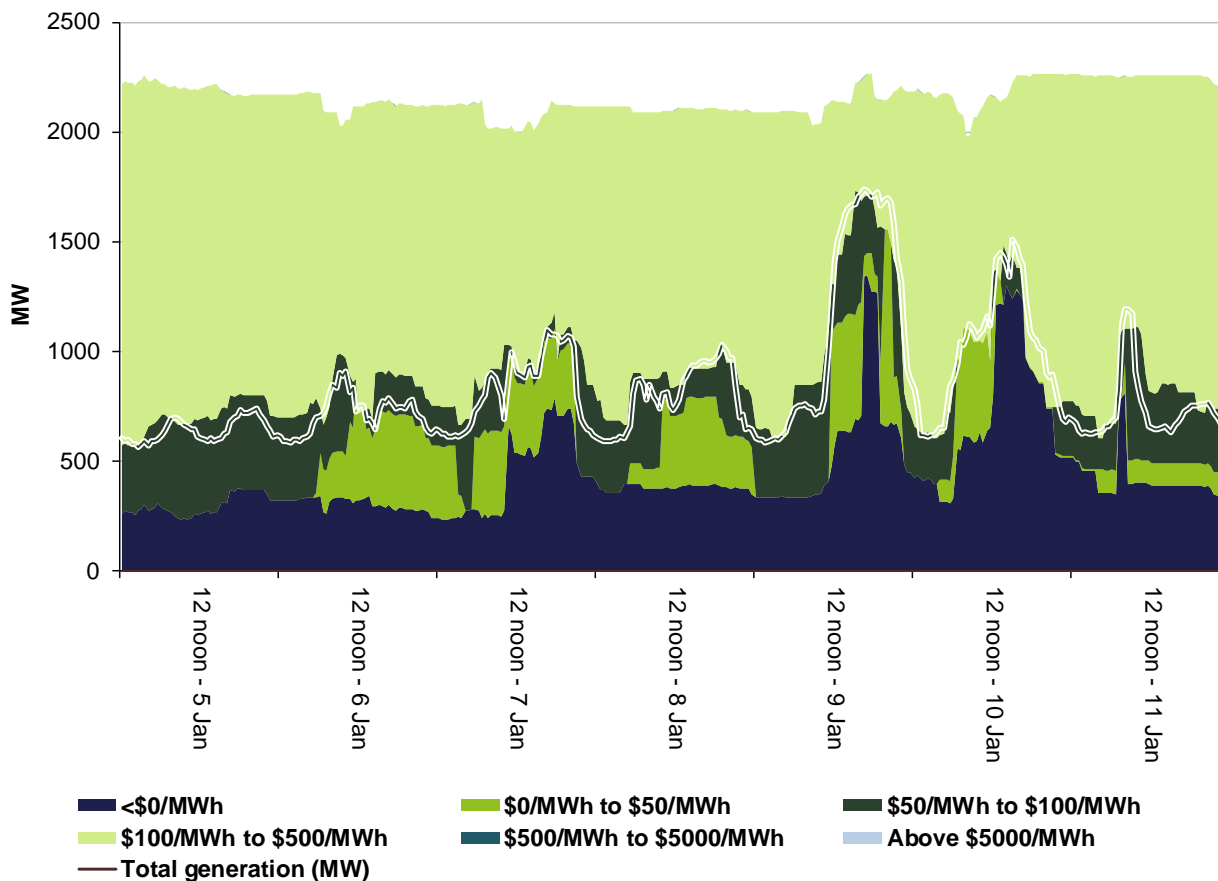
**Figure 5: Victoria generation and bidding patterns**



**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.

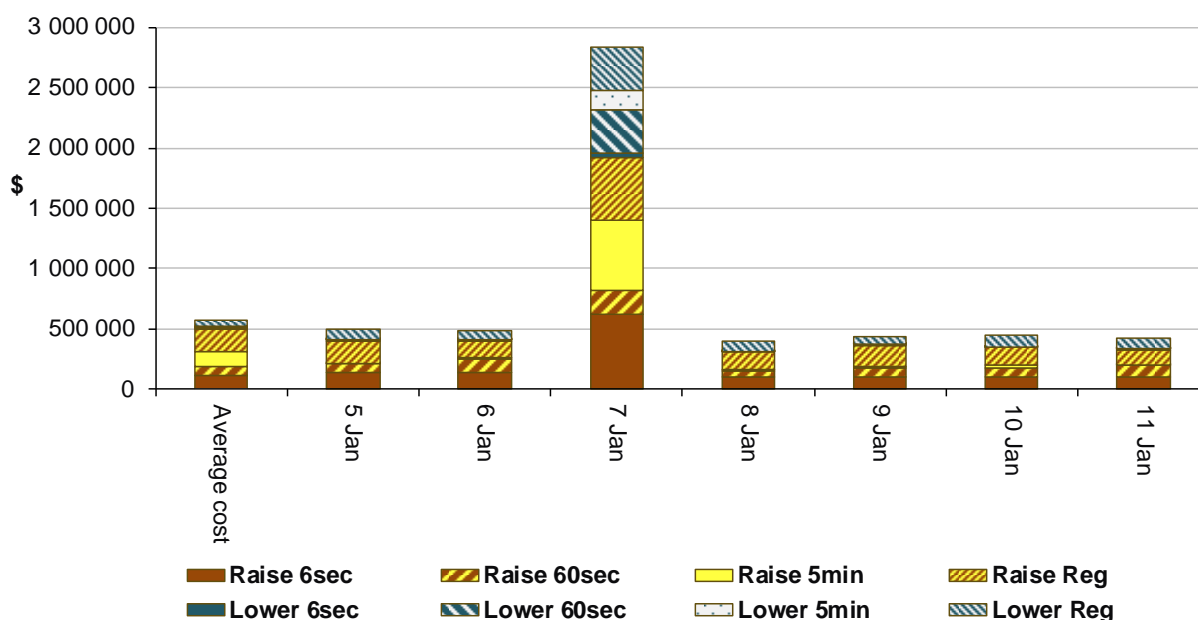
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was \$5 019 000 or around 3 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$503 500 or around 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**



On 7 January at around 3.30 am an event at the Liddell substation resulted in Queensland separating from the rest of the NEM. This meant that Queensland had to provide its own FCAS which saw all FCAS prices exceed \$1000/MW. Most services went to or close to the price cap for 10 minutes before Queensland re-joined the NEM.

## Detailed market analysis of significant price events

### Queensland

There was one occasion where the spot price in Queensland was greater than three times the Queensland weekly average price of \$52/MWh and above \$250/MWh.

#### Tuesday, 7 January

**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
4 am	283.99	47.75	40.89	5747	5740	5676	10 576	10 598	10 403

Demand and availability were close to forecast.

At around 3.30 am Queensland was separated from the rest of the NEM at the Liddell substation. This resulted in the dispatch price reaching \$1493/MWh for one dispatch interval at 3.45 pm.

### Victoria

There was one occasion where the spot price in Victoria was greater than three times the Victoria weekly average price of \$54/MWh and above \$250/MWh.

#### Thursday, 9 January

**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 pm	254.62	145.00	435.49	6975	7227	7074	8592	8933	8976

Demand was around 250 MW and availability was around 340 MW lower than forecast four hours ahead. At 3.56 pm Origin extended the outage of a Mortlake which effectively withdrew 251 MW of capacity priced below \$50/MWh. A constraint managing an outage of the Dederang to South Morang line forced flows into New South Wales until the start of the 6.45 pm dispatch interval.

This combination of the factors led to prices around \$340/MWh from 6.15 pm until 6.50pm.

## South Australia

There were two occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of \$57/MWh and above \$250/MWh.

**Thursday, 9 January**

**Table 5: Price, Demand and Availability**

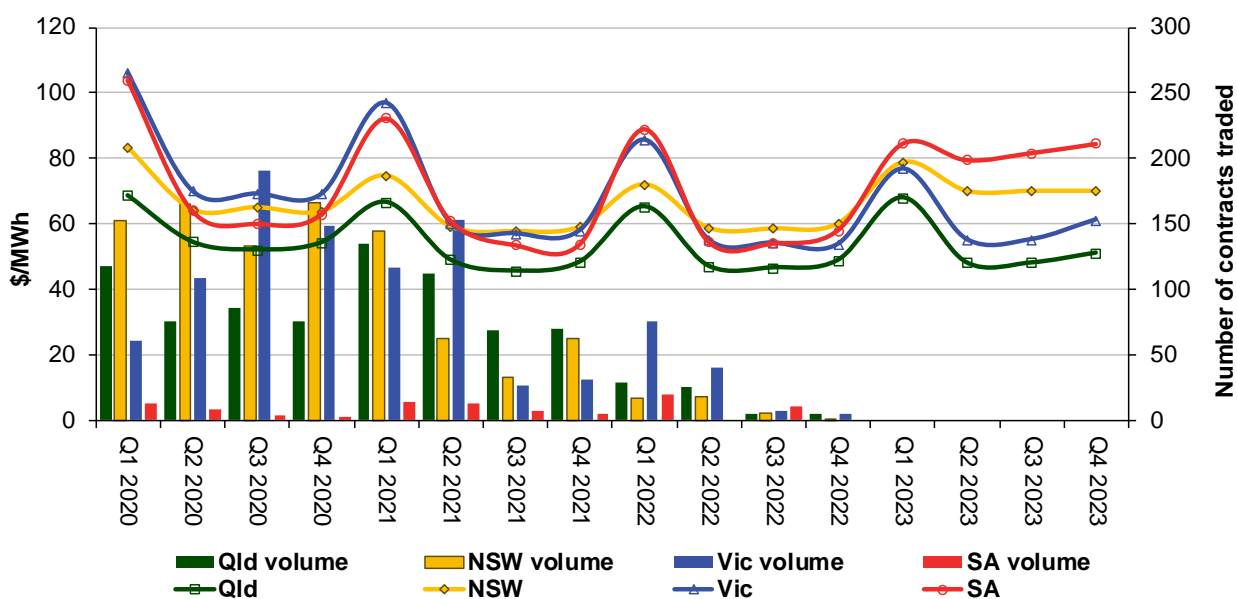
Time	Price (\$/MWh)			Demand (MW)			Availability (MW)		
	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast	Actual	4 hr forecast	12 hr forecast
6.30 pm	263.25	578.81	566.63	2817	2783	2770	3328	3355	3305
7 pm	279.65	162.80	472.70	2772	2773	2749	3066	3286	3226

Prices were aligned with those in Victoria but the Victorian price threshold did not trigger at 6.30 pm as it was \$248/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 2020 – Q4 2023**

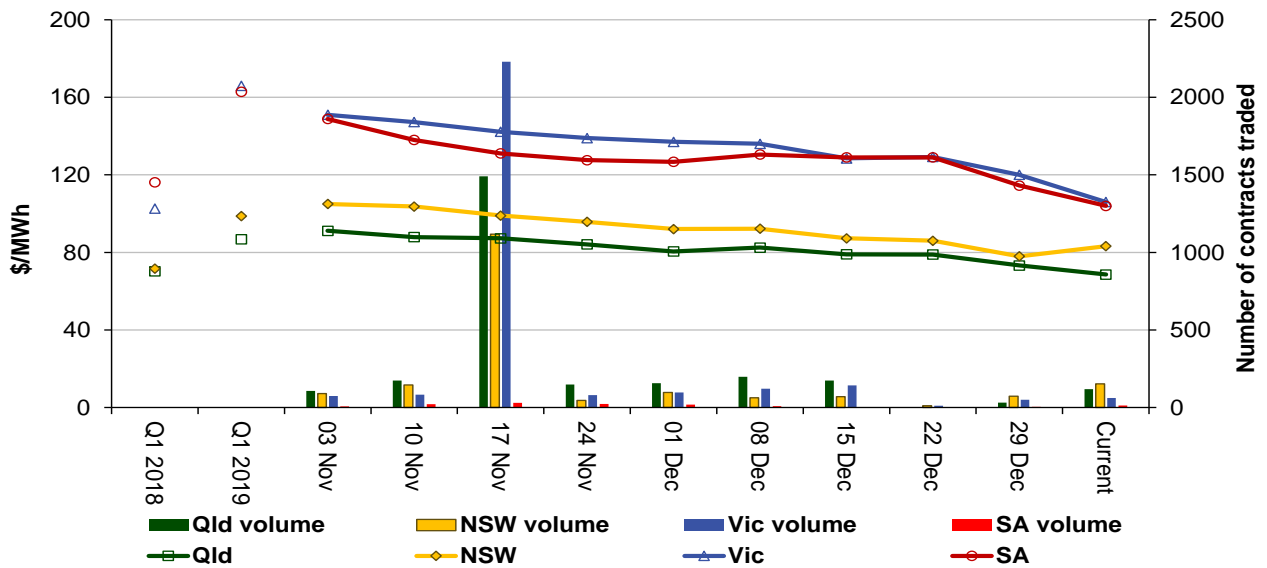


Source. ASXEnergy.com.au

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 2018 and quarter 1 2019 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 2020 base contracts over the past 10 weeks (and the past 2 years)**



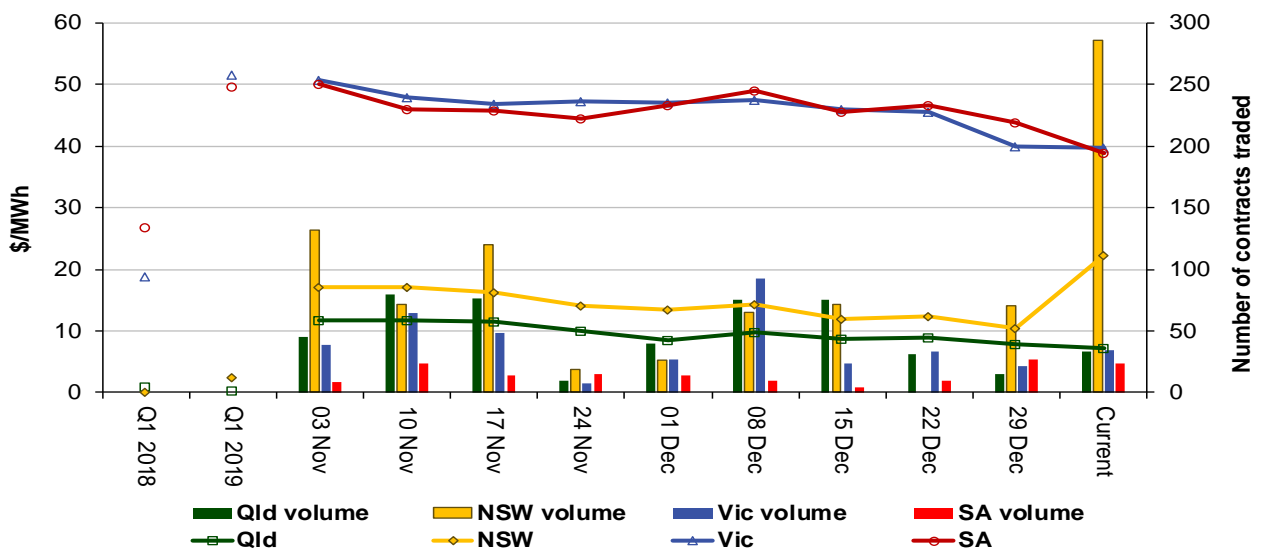
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

Source. ASXEnergy.com.au

Figure 11 shows how the price for each regional 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 2018 and quarter 1 2019 prices are also shown.

The high volume of trades and the doubling of prices for New South Wales cap contracts for the week starting 5 January 2020 is possibly due to market responses to high price events at the beginning of Q1 2020.

**Figure 11: Price of Q1 2020 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.