Electricity Report

AUSTRALIAN ENERGY REGULATOR

8 – 14 December 2019

Weekly Summary

Average prices for the week ranged from $53/MWh in South Australia and Tasmania to $68/MWh in Queensland. During the week, there were four price events of around $320/MWh in Queensland.

There were numerous instances where AEMO reclassified the loss of network elements as reasonably possible, mostly in Queensland due to lightning and in New South Wales due to bushfire conditions. This can reduce flow on those network elements and lead to a reduction in generation or interconnector capability. Despite the amount of reclassifications this week, they did not lead to any significant increase in spot prices.

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 8 to 14 December 2019.

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

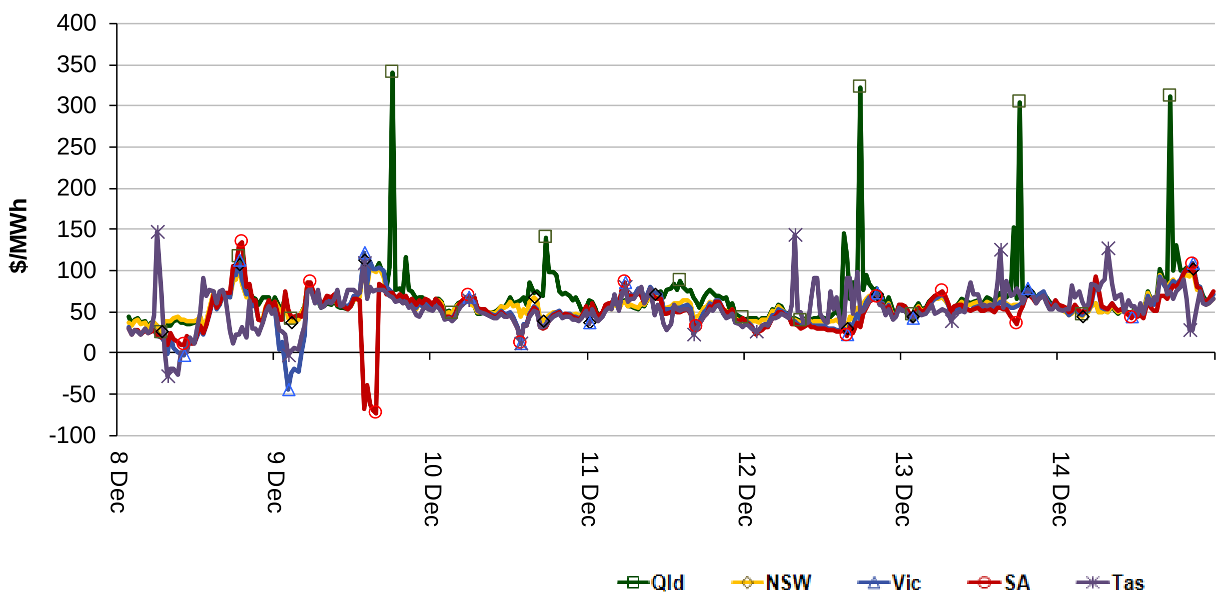


Figure 2 shows the volume weighted average (VWA) prices for the current week (with prices shown in Table 1) and the preceding 12 weeks, as well as the VWA price over the previous 3 financial years.

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

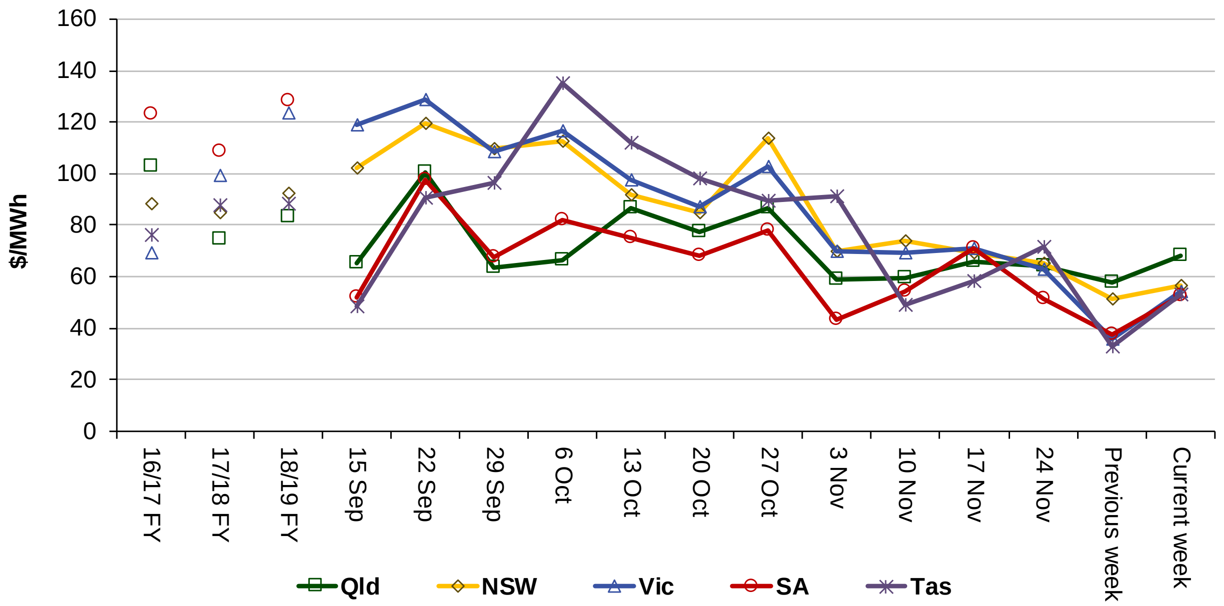


Table 1: Volume weighted average spot prices by region ($/MWh)

Region	Qld	NSW	Vic	SA	Tas
Current week	68	57	54	53	53
18-19 financial YTD	83	89	92	97	61
19-20 financial YTD	67	84	93	74	74

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 197 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	7	46	0	1
% of total below forecast	4	36	0	5

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 7show 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

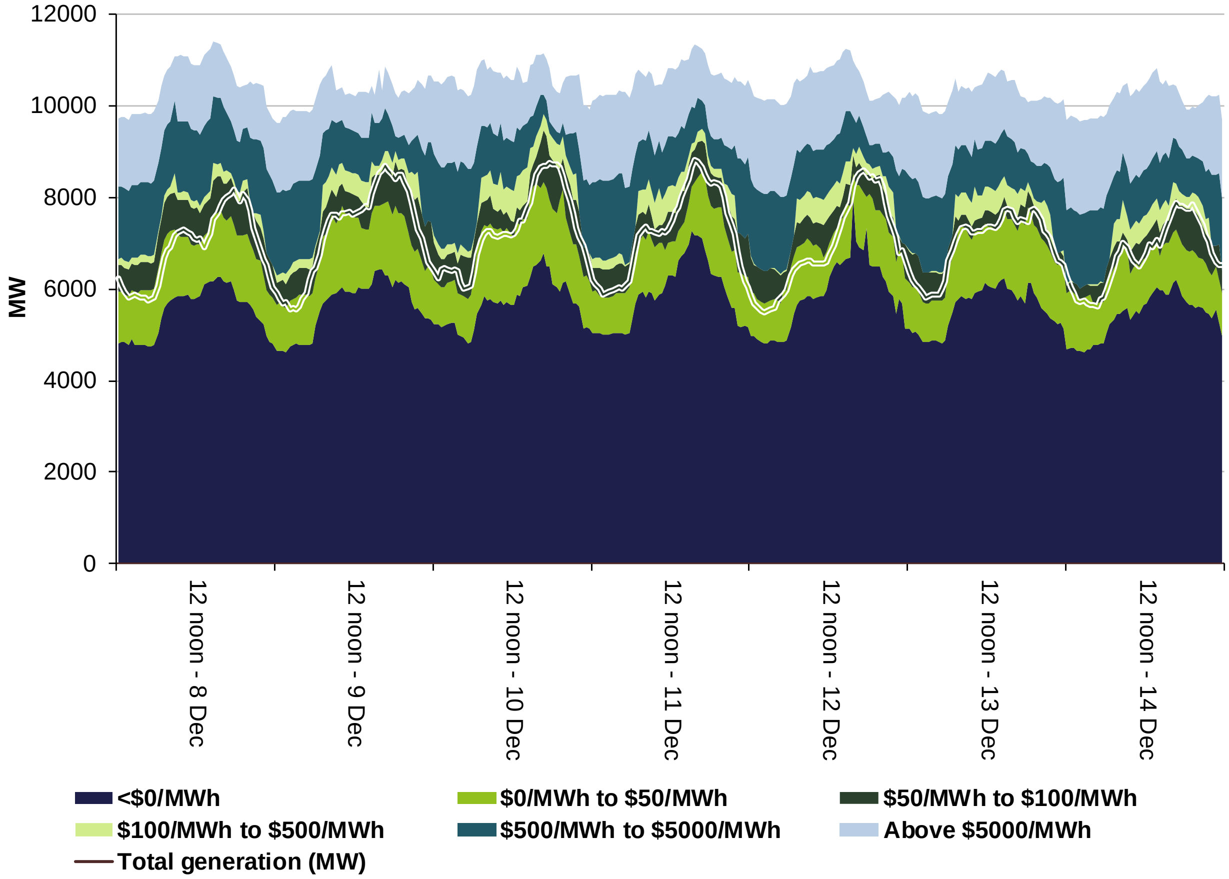


Figure 4: New South Wales generation and bidding patterns

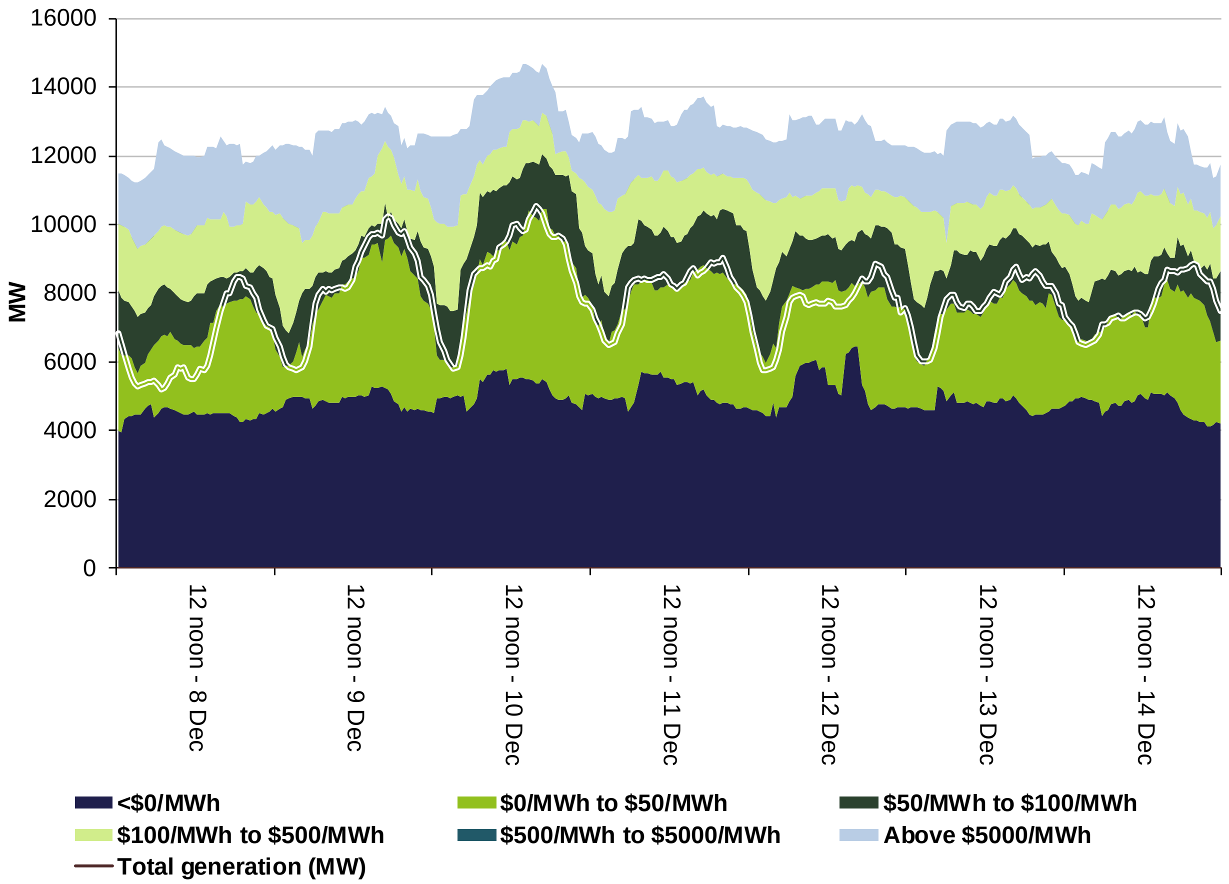


Figure 5: Victoria generation and bidding patterns

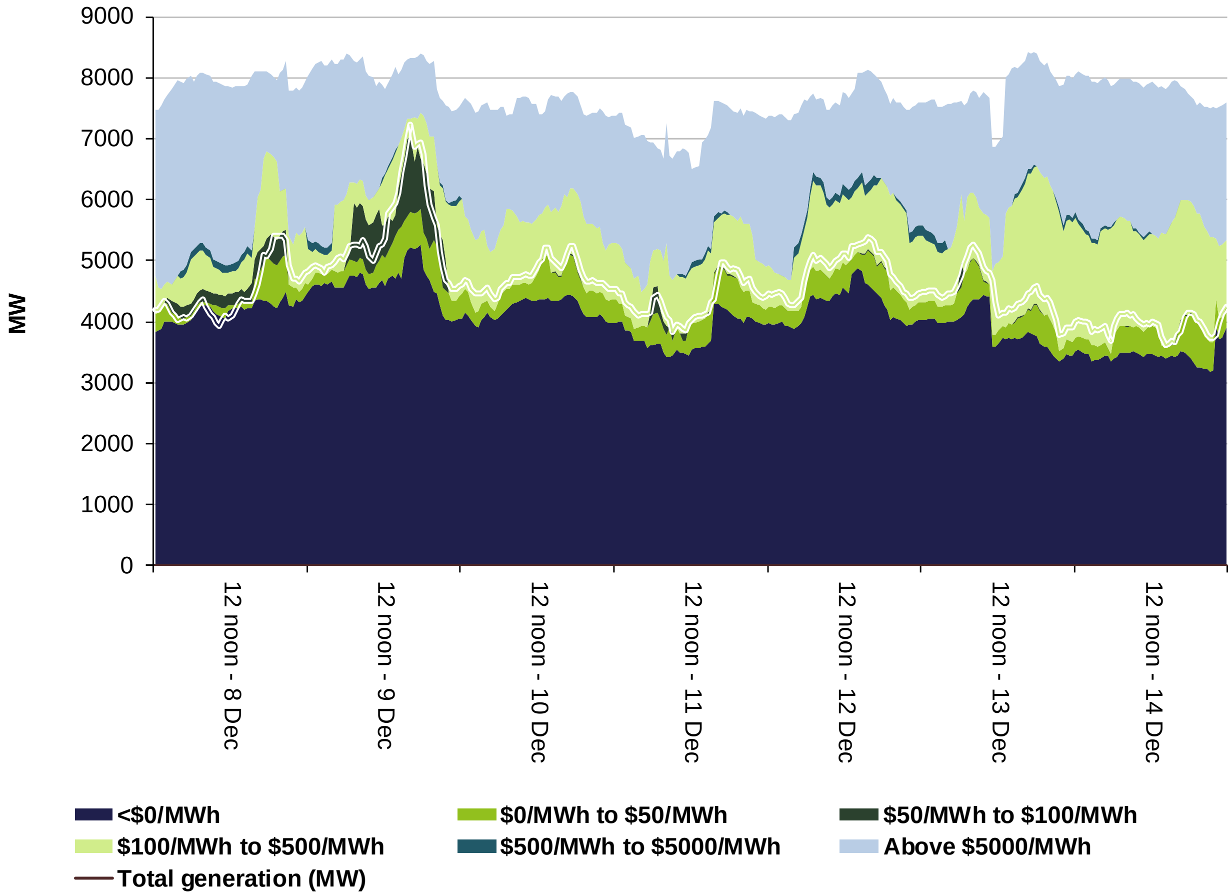


Figure 6: South Australia generation and bidding patterns

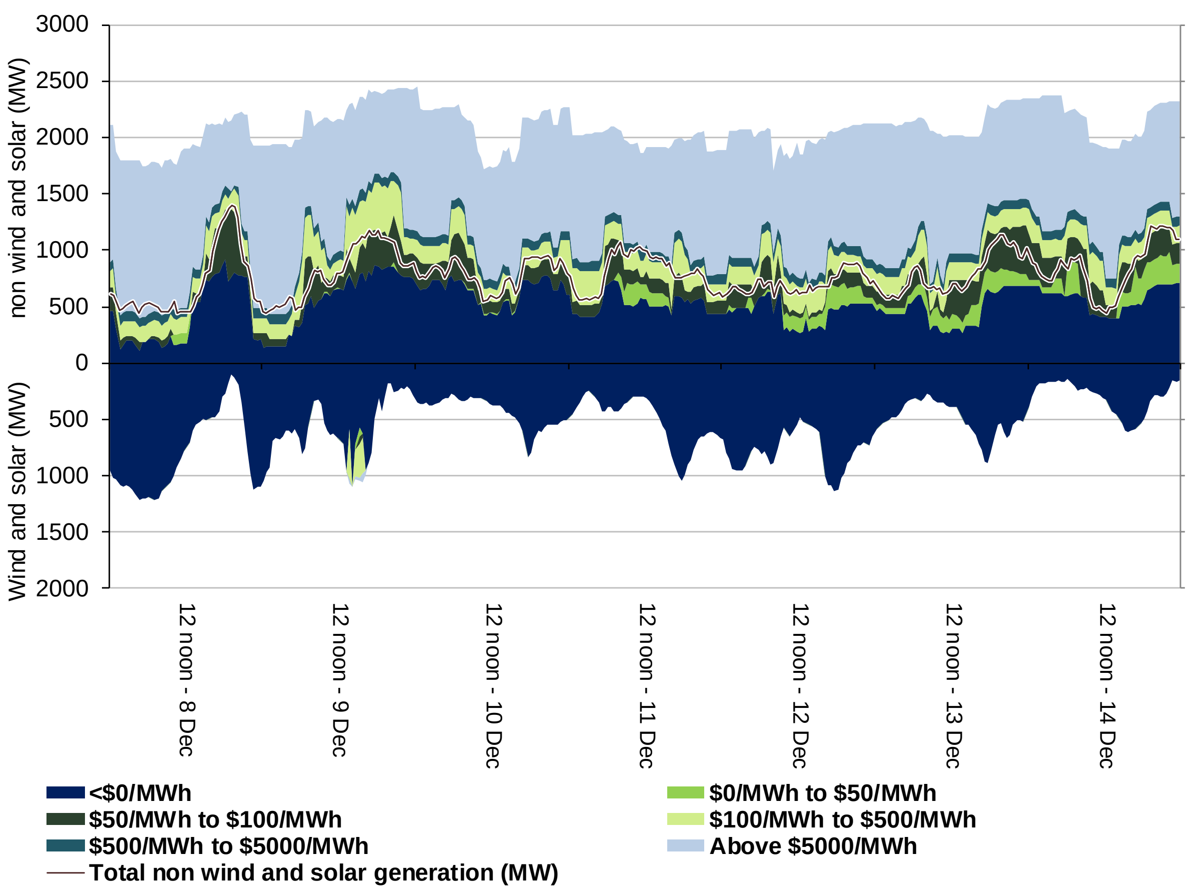
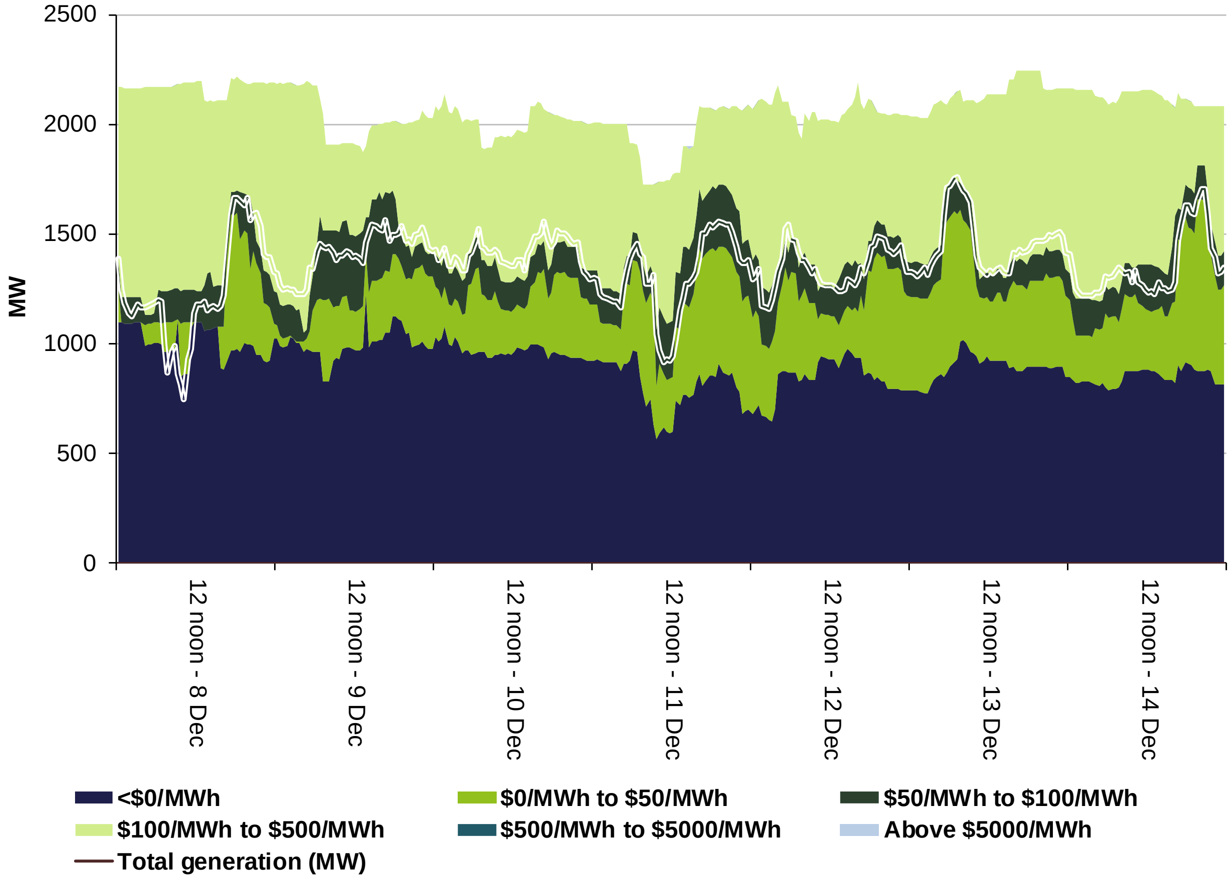


Figure 7: Tasmania generation and bidding patterns



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.

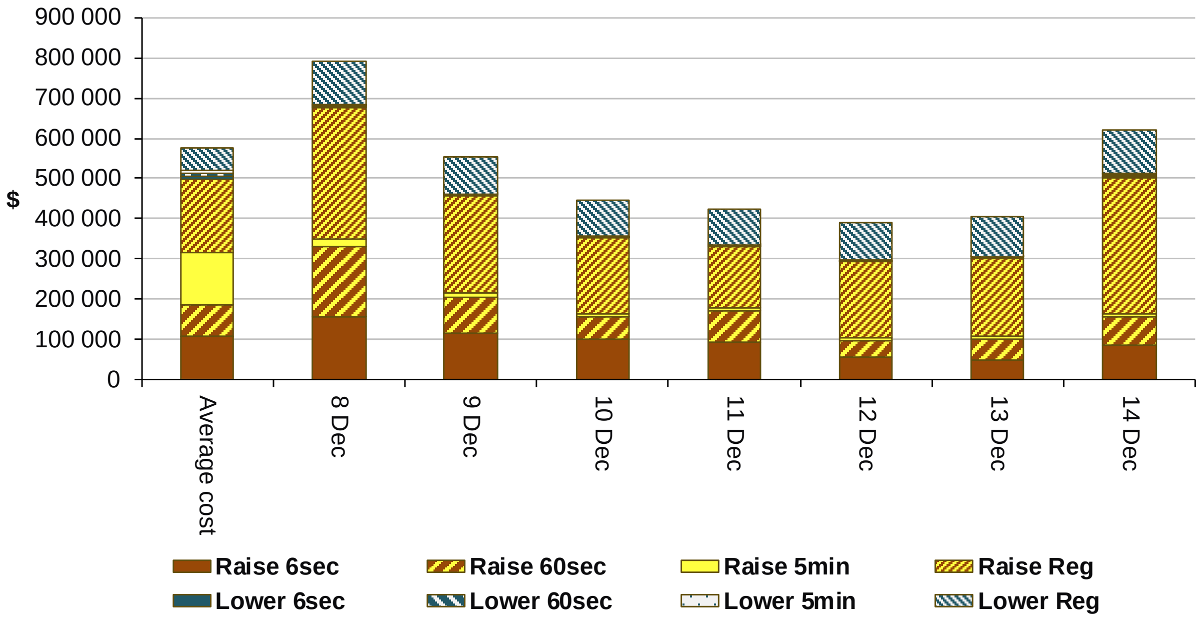
The Electricity Rules stipulate that generators pay for raise contingency services and customers pay for lower contingency services. Regulation services are paid for on a “causer pays” basis determined every four weeks by AEMO.

The total cost of FCAS on the mainland for the week was $3 169 000 or less than 2 per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $466 000 or around 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



Detailed market analysis of significant price events

Queensland

There were four occasions where the spot price in Queensland was greater than three times the Queensland weekly average price of $68/MWh and above $250/MWh.

Monday, 9 December

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	340.45	90.99	159.25	8479	8379	8372	10 229	10 462	10 344

Demand was 100 MW higher than forecast and availability was around 230 MW lower than forecast, four hours prior. Lower than forecast availability was due to rebids for plant reasons that removed around 200 MW of capacity across Millmerran, Tarong and Darling Downs power stations that was offered below the forecast price.

At 6.25 pm demand increased by almost 70 MW and with lower priced capacity ramp up-constrained and unable to set price, the dispatch price increased to $1478/MWh. However, only 2 MW of capacity was provided by Kareeya power station at this price.

Thursday, 12 December

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	322.74	67.80	90.99	8721	8489	8742	10 325	10 684	10 729

Demand was 232 MW higher than forecast and availability was around 360 MW lower than forecast, four hours prior. In the lead up to the start of the trading interval, rebids for technical plant reasons removed around 250 MW of capacity across Darling Downs, Millmerran, Gladstone, and Swanbank power stations that was offered below $77/MWh.

At 5.55 pm solar generation dropped by 45 MW and with cheaper priced generation ramp constrained, the dispatch price increased to $1412/MWh for one dispatch interval. However, only 5 MW of capacity was provided by Oakey power station at this price.

Friday, 13 December

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	304.21	76.99	66.74	7760	7881	7873	10 065	10 274	10 507

Demand was 121 MW lower than forecast and availability was 209 MW lower than forecast, four hours prior. Rebids by Origin energy in the lead up to the start of the trading interval, removed around 245 MW of capacity at Darling Downs Power Station priced below $62/MWh due to technical plant issues.

Rebids effective 6.20 pm shifted net 75 MW of capacity from $0/MWh to the price ceiling. At 6.25 pm demand increased by 100 MW and cheaper priced generation ramp up-constrained and unable to set price, the dispatch price increased to $1478/MWh. Only 10 MW was dispatched by Kareeya at this price.

Saturday, 14 December

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
5.30 pm	310.64	76.99	90.99	8016	7913	7850	10 314	10 331	10 407

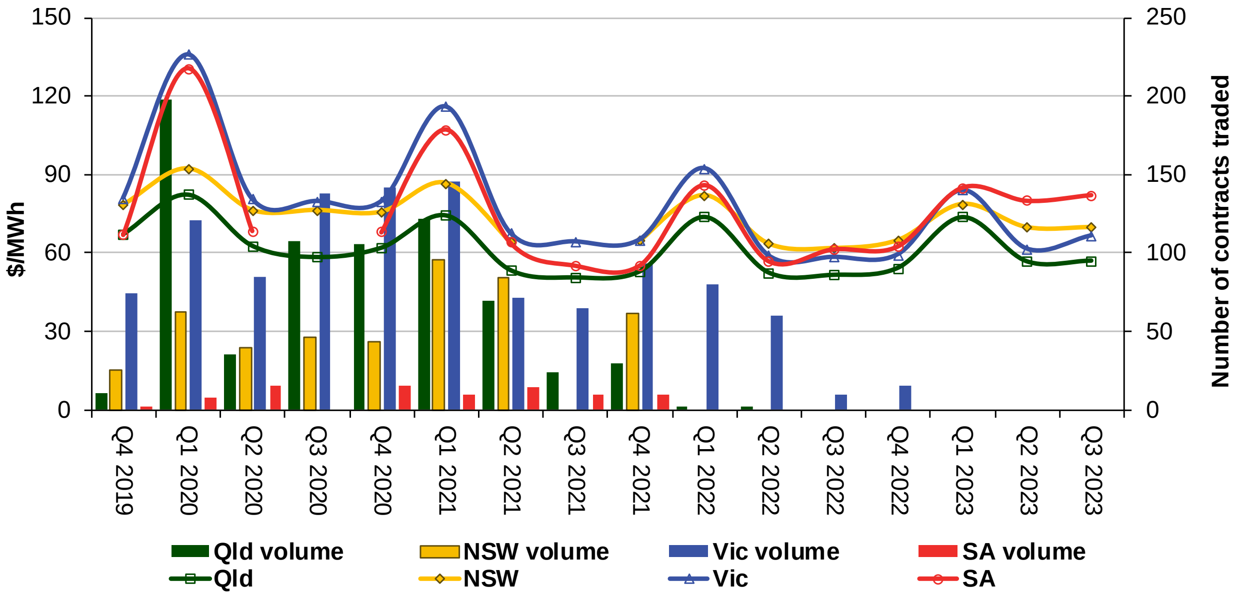
Demand was 103 MW higher than forecast while availability was close to forecast, four hours prior. Rebids in the lead up to the trading interval by CS Energy removed 280 MW of capacity priced below $77/MWh across Gladstone and Callide B power stations due to technical reasons.

At 5.30 pm, demand increased by 32 MW and solar generation dropped by 36 MW. With cheaper priced capacity either ramp up-constrained or stranded in FCAS and unable to set price, the price increased to $1411/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.

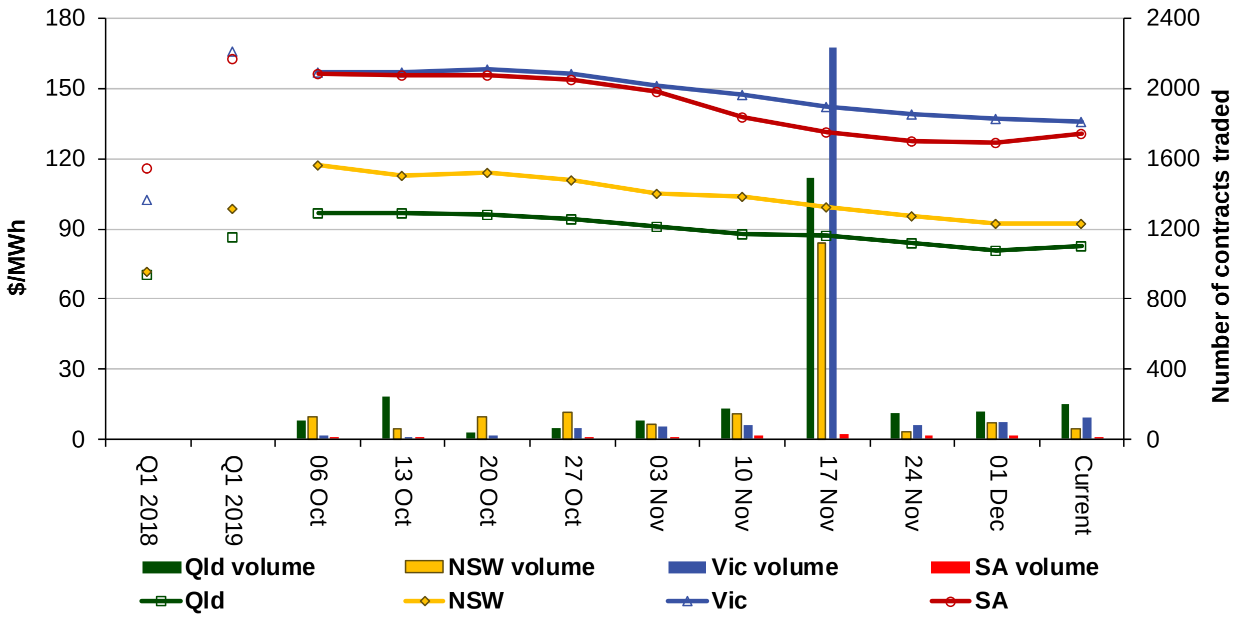
Figure 9: Quarterly base future prices Q4 2019 – Q3 2023



Source. ASXEnergy.com.au

Figure 10 shows how the price for each regional Q1 2020 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)



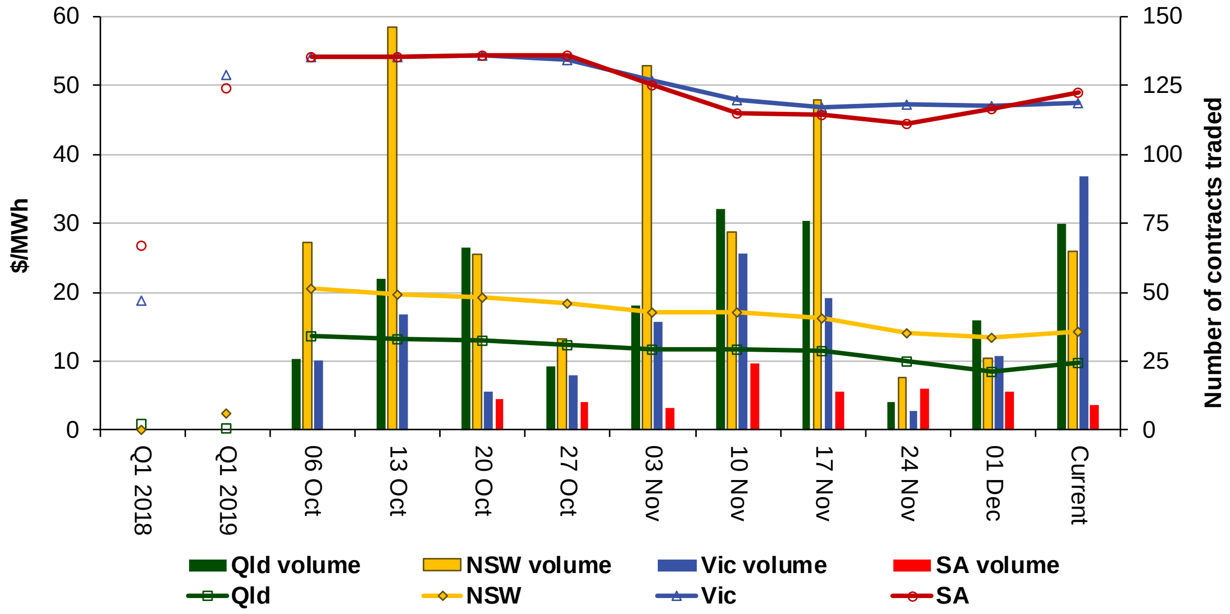
Note. Base contract prices are shown for each of the current week and the previous 9 weeks, with average prices shown for periods 1 and 2 years prior to the current year.

Source. ASXEnergy.com.au

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 2020 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.

Figure 11: Price of Q1 2020 cap contracts over the past 10 weeks (and the past 2 years)



Source. ASXEnergy.com.au

Australian Energy Regulator
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