

# WEEKLY ELECTRICITY MARKET ANALYSIS



AUSTRALIAN ENERGY  
REGULATOR

10 October – 16 October 2010

## Summary

Weekly average spot prices ranged from \$17/MWh in Tasmania to \$51/MWh in South Australia. The high weekly average in South Australia was the result of two spot prices above \$4000/MWh on 13 October following the unexpected shutdown of around 480 MW of generation. The detailed reasons for these high spot prices are explained in Appendix A.

## Spot market prices

Figure 1 sets out the volume weighted average prices for the week 10 October to 16 October 2010 and the 2010-11 financial year across the NEM. It compares these prices with price outcomes from the previous week and year to date respectively.

**Figure 1: Volume weighted average spot price by region (\$/MWh)**

	Qld	NSW	VIC	SA	Tas
Average price for 10 Oct - 16 Oct 2010	21	23	20	51	17
% change from previous week*	2	-1	-3	788	-8
10/11 financial YTD	22	29	25	28	38
% change from 09/10 financial YTD **	-18	2	-1	4	61

\*The percentage change between last week's average spot price and the average price for the previous week. Calculated on VWA prices prior to rounding.

\*\*The percentage change between the average spot price for the current financial year and the average spot price for the previous financial year. Percentage changes are calculated on VWA prices prior to rounding.

The AER publishes further information if a spot price exceeds three times the weekly average and is above \$250/MWh. Details of these events are attached in Appendix A. Longer term market trends are attached in Appendix B<sup>1</sup>.

## Financial markets

Figures 2 to 9 show futures contract<sup>2</sup> prices traded on the Sydney Futures Exchange (SFE) as at close of trade on Monday 18 October 2010. Figure 2 shows the base futures contract prices for the next three calendar years, and the three year average. Also shown are percentage changes<sup>3</sup> compared to the previous week.

<sup>1</sup> Monitoring the performance of the wholesale market is a key part of the AER's role and an overview of the market's performance in the long-term is provided on the AER website. Long-term statistics can be found there on, amongst other things, demand, spot prices, contract prices and frequency control ancillary services prices.

To access this information go to

[www.aer.gov.au](http://www.aer.gov.au) -> Monitoring, reporting and enforcement -> Electricity market reports -> Long-term analysis.

<sup>2</sup> Futures contracts traded on the SFE are listed by d-cyphaTrade ([www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)). A futures contract is typically for one MW of electrical energy per hour based on a fixed load profile. A base load profile is defined as the base load period from midnight to midnight Monday to Sunday over the duration of the contract quarter. A peak load profile is defined as the peak-period from 7 am to 10 pm Monday to Friday (excluding Public holidays) over the duration of the contract quarter.

<sup>3</sup> Calculated on prices prior to rounding.

**Figure 2: Base calendar year futures contract prices (\$/MWh)**

	QLD		NSW		VIC		SA	
Calendar Year 2011	31	-1%	41*	-1%	35*	-1%	41	-2%
Calendar Year 2012	34*	0%	44*	0%	38*	0%	45	0%
Calendar Year 2013	50	-1%	56	0%	55	0%	69	0%
Three year average	38	-1%	47	0%	43	0%	52	0%

Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)  
 \* denotes trades in the product.

Figure 3 shows the \$300 cap contract price for the first quarter of 2011 and the 2011 calendar year and the percentage change<sup>4</sup> from the previous week.

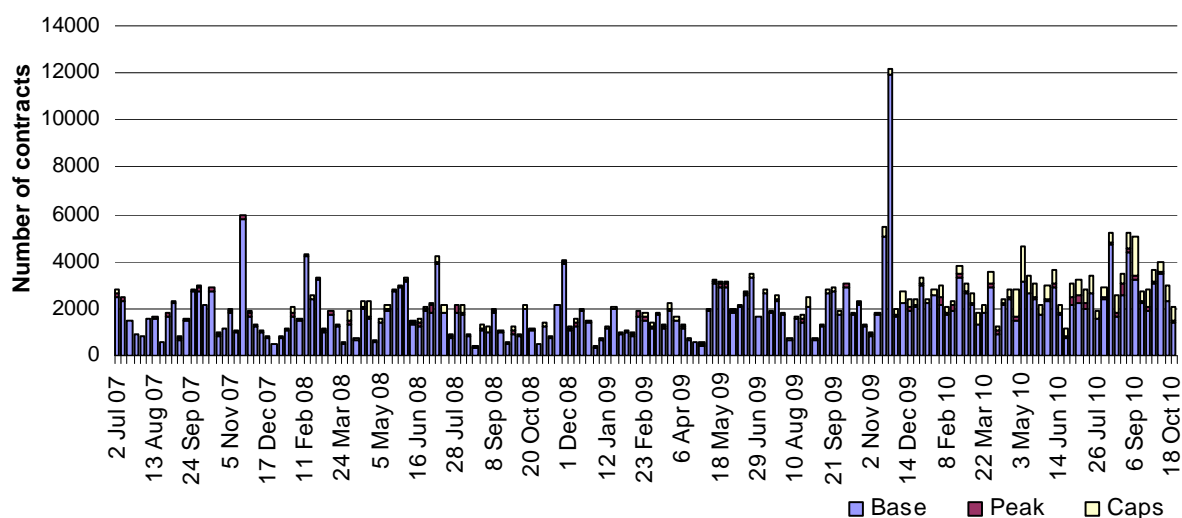
**Figure 3: \$300 cap contract prices (\$/MWh)**

	QLD		NSW		VIC		SA	
Q1 2011 (% Change)	15*	0%	20*	0%	24*	0%	31	0%
2011 (% Change)	7	0%	13	0%	9	0%	11	0%

Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)  
 \* denotes trades in the product.

Figure 4 shows the weekly trading volumes for base, peak and cap contracts. The date represents the end of the trading week.

**Figure 4: Number of exchange traded contracts per week**

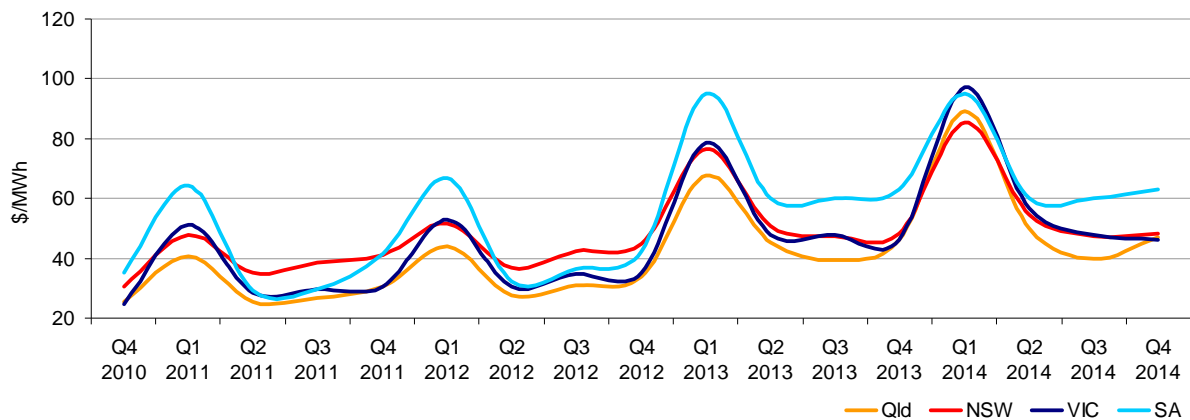


Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

<sup>4</sup> Calculated on prices prior to rounding.

Figure 5 shows the prices for base contracts for each quarter for the next four financial years.

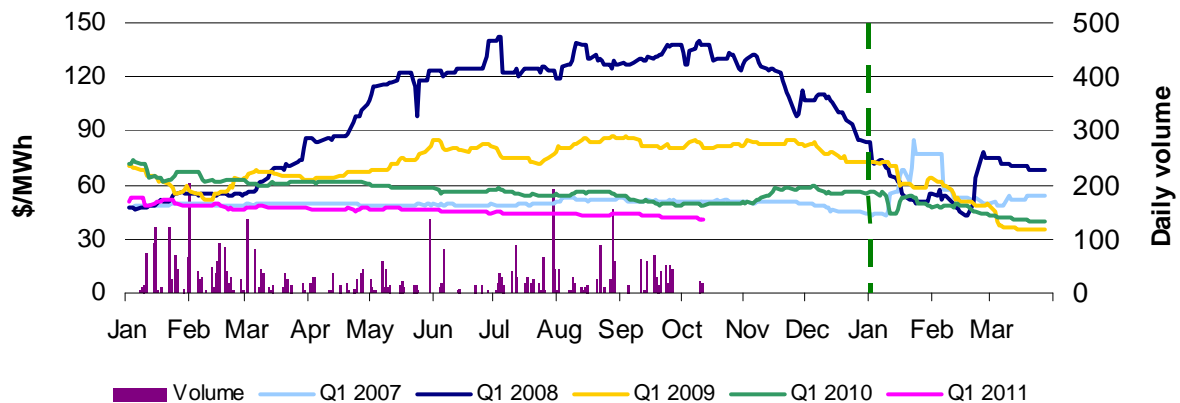
**Figure 5: Quarterly base future prices Q4 2010 – Q4 2014**



Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

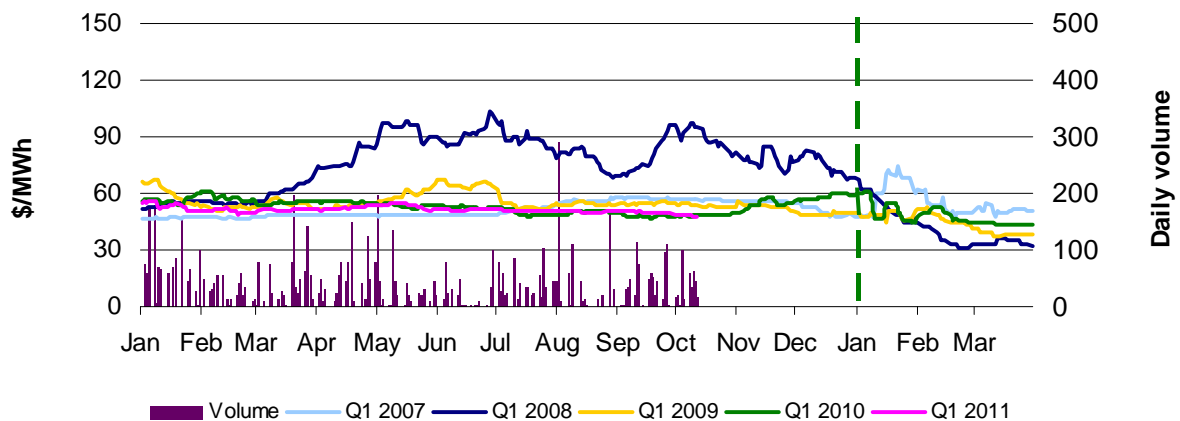
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010 and 2011. Also shown is the daily volume of Q1 2011 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased. To understand the diagrams, the dark-blue line demonstrates in figure 6 that throughout the middle of 2007, the market had an expectation of very high spot prices in the first quarter of 2008.

**Figure 6: Queensland Q1 2007, 2008, 2009, 2010 and 2011**



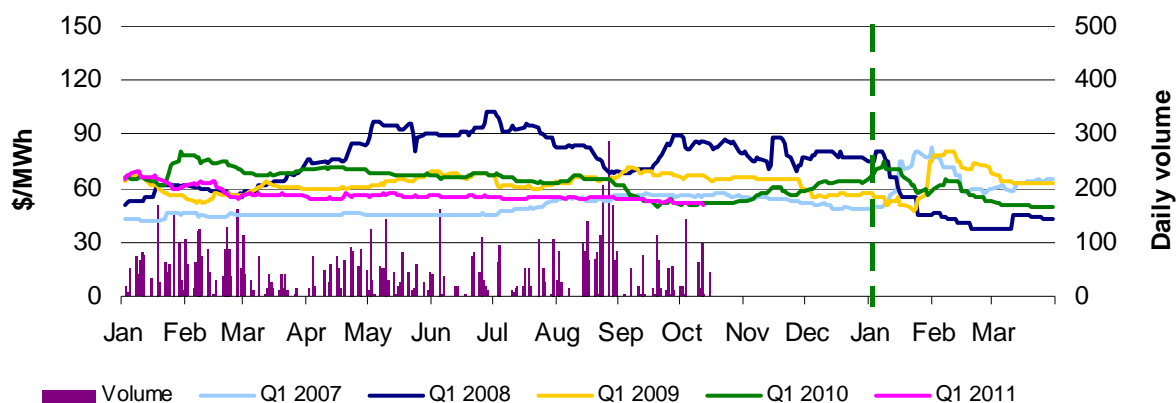
Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 7: New South Wales Q1 2007, 2008, 2009, 2010 and 2011**



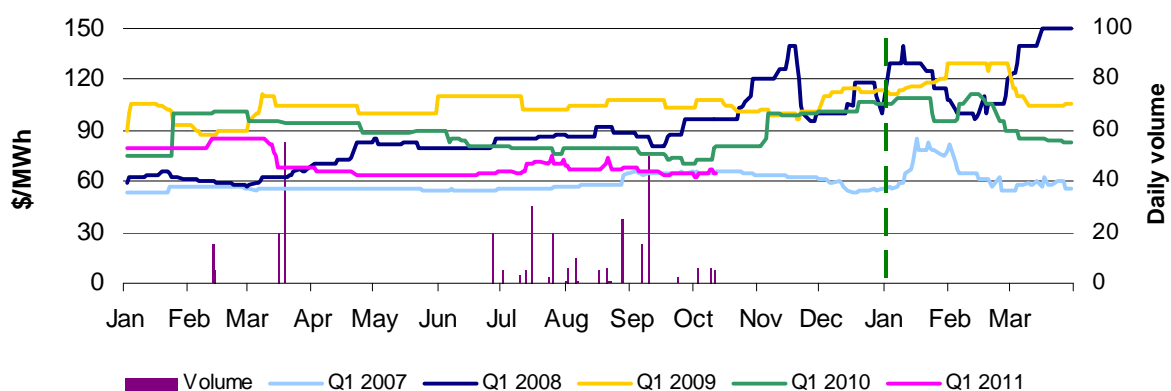
Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 8: Victoria Q1 2007, 2008, 2009, 2010 and 2011**



Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

**Figure 9: South Australia Q1 2007, 2008, 2009, 2010 and 2011**



Source: d-cyphaTrade [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au)

\*The daily volume scale for South Australia is smaller than for other regions to reflect the lower liquidity in the market in South Australia.

### Spot market forecasting 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 as participants react to changing market conditions. There were 38 trading intervals throughout the week where actual prices varied significantly from forecasts<sup>5</sup>. This compares to the weekly average in 2009 of 103 counts. Reasons for these variances are summarised in Figure 10<sup>6</sup>.

**Figure 10: Reasons for variations between forecast and actual prices**

	Availability	Demand	Network	Combination
% of total above forecast	6	0	0	7
% of total below forecast	69	15	0	3

<sup>5</sup> A trading interval is counted as having a variation if the actual price differs significantly from the forecast price either four or 12 hours ahead.

<sup>6</sup> 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.

## Demand and bidding patterns

The AER reviews demand, network limitations and generator bidding as part of its market monitoring to better understand the drivers behind price variations. Figure 11 shows the weekly change in total available capacity at various price levels during peak periods<sup>7</sup>. For example, in Queensland 288 MW less capacity was offered at prices under \$20/MWh this week compared to the previous week. Also included is the change in average demand during peak periods, for comparison.

**Figure 11: Changes in available generation and average demand compared to the previous week during peak periods**

MW	<\$20/MWh	Between \$20 and \$50/MWh	Total availability	Change in average demand
QLD	-288	40	-539	-166
NSW	584	250	381	380
VIC	485	-41	520	122
SA	-82	28	-91	29
TAS	20	-77	-209	-10
<b>TOTAL</b>	<b>719</b>	<b>200</b>	<b>62</b>	<b>355</b>

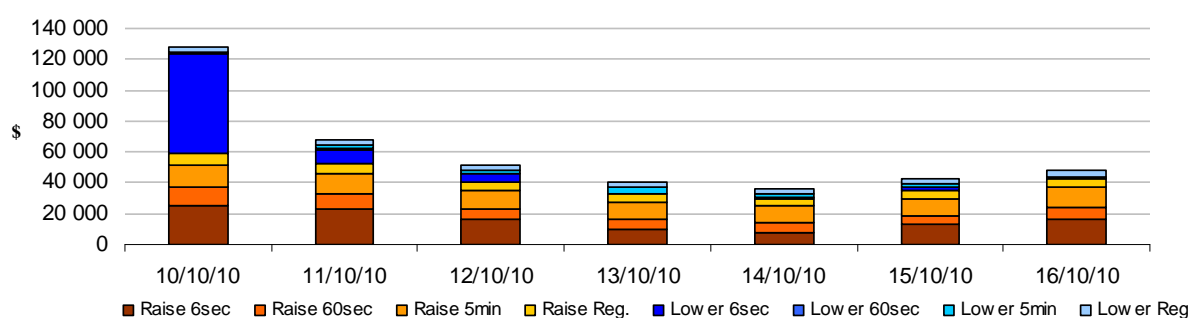
## Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was \$282 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was \$134 000 or just over four per cent of energy turnover in Tasmania. On 10 October at 11.05 pm the price for lower 6-second services in Tasmania reached \$3908/MW as a result of the interaction of the energy and FCAS markets. This resulted in FCAS costs for lower 6-second services of \$63 558/MW on the day.

Figure 12 shows the daily breakdown of cost for each FCAS for the NEM.

**Figure 12: Daily frequency control ancillary service cost**



## Australian Energy Regulator October 2010

<sup>7</sup> A peak period is defined as between 7 am and 10 pm on weekdays, which aligns with the SFE contract definition.

## Detailed Market Analysis



10 October – 16 October 2010

### 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 \$51/MWh and above \$250/MWh.

#### Wednesday, 13 October

11:00 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	4466.34	29.69	29.77
Demand (MW)	1654	1741	1743
Available capacity (MW)	1703	2147	2160
11:30 am	Actual	4 hr forecast	12 hr forecast
Price (\$/MWh)	4140.15	29.77	29.77
Demand (MW)	1635	1754	1754
Available capacity (MW)	1617	2145	2158

Conditions at the time saw demand up to 119 MW lower than forecast, while available capacity was up to 530 MW below that forecast four hours ahead.

Flows into South Australia were limited across both interconnectors at the time of high prices due to a planned outage of Murraylink.

At around 6 am, Alinta Energy's Northern Power Station unit 2 tripped from 272 MW to zero (all of this capacity was priced below \$20/MWh). The unit's return to service was delayed on several occasions before returning to service the following day.

At 10.02 am International Power reduced the availability of Mintaro by 86 MW (all of this capacity was priced above \$12 200/MWh), due to problems starting the plant.

At 10.40 am, (first seen in the market systems at 10.50 am), Origin Energy's Quarantine Power Station unit 5 tripped from 125 MW to zero (all this capacity was priced below zero). The unit returned to service from 1.10 pm.

At 10.41 am, effective from 10.50 am, TRUenergy rebid 54 MW of available capacity at its Hallett Power Station from below \$580/MWh to above \$12 100/MWh. The reason given was "11:32A band adj due to market price". At 10.55 am, 29 MW of this capacity was removed-the reason given was "11:54P adj avail due to gt isolated".

At 10.46 am, effective from 10.55 am, AGL rebid 100 MW of available capacity at its Torrens Island units A2 and B4 from prices below \$35/MWh to above \$12 400/MWh. The reason given was "10:40A chg in forecast::pd price increase SA \$560".

The five minute price increased from \$590/MWh at 10.50 am to close to the price cap at 10.55 am and stayed there for four dispatch intervals. However, in response to changes in predispach prices, AGL and International Power submitted further rebids, shifting capacity into lower price bands and by 11.15 am prices returned to previous levels.

There was no other significant rebidding.

A lack of reserve (LOR2) condition was declared by AEMO at 10.50 am. At 11.41 am AEMO issued an instruction (under clause 4.8.9 of the National Electricity Rules) to Australian Pipeline Trust to restore the Murraylink interconnector to service. Murraylink returned to service at around 2.30 pm.

# Detailed NEM Price and Demand Trends

for Weekly Market Analysis  
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**Table 1: Financial year to date spot market volume weighted average price**

Financial year	QLD	NSW	VIC	SA	TAS
2010-11 (\$/MWh) YTD	22	29	25	28	38
2009-10 (\$/MWh) YTD	26	29	25	27	24
Change*	-18%	2%	-1%	4%	61%
2009-10 (\$/MWh)	37	52	42	82	30

**Table 2: NEM turnover**

Financial year	NEM Turnover** (\$, billion)	Energy (TWh)
2010-11 (YTD)	\$1.645	62
2009-10	\$9.643	206
2008-09	\$9.413	208

**Table 3: Recent monthly and quarterly spot market volume weighted average price and turnover**

Volume weighted average (\$/MWh)	QLD	NSW	VIC	SA	TAS	Turnover (\$, billion)
Jun-10	23	35	33	38	32	0.563
Jul-10	22	28	27	31	31	0.495
Aug-10	22	37	28	28	70	0.579
Sep-10	22	24	23	27	21	0.386
Oct-10 (MTD)	21	23	20	27	18	0.186
Q3 2010	22	30	26	29	41	1.697
Q3 2009	26	28	25	27	24	1.918
Change*	-16%	5%	4%	6%	72%	-11.51%

**Table 4: ASX energy futures contract prices at end of 18 October**

	QLD		NSW		VIC		SA	
	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Q1 2011								
Price on 11 Oct (\$/MW)	41	71	48	80	52	92	65	108
Price on 18 Oct (\$/MW)	41	68	48	79	51	91	64	108
Open interest on 18 Oct	1623	157	2518	284	2172	125	147	0
Traded in the last week (MW)	41	10	219	0	225	30	11	0
Traded since 1 Jan 10 (MW)	4484	160	7430	379	8482	180	320	0
Settled price for Q1 10(\$/MW)	40	65	44	68	50	89	83	160

**Table 5: Changes to availability of low priced generation capacity offered to the market**

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
August 10 with August 09						
MW Priced <\$20/MWh	566	-841	-562	184	-86	-739
MW Priced \$20 to \$50/MWh	85	715	537	46	313	1696
September 10 with September 09						
MW Priced <\$20/MWh	495	762	85	655	73	2069
MW Priced \$20 to \$50/MWh	344	-417	125	-167	299	186
October 10 with October 09 (MTD)						
MW Priced <\$20/MWh	703	585	531	486	498	2802
MW Priced \$20 to \$50/MWh	269	-343	5	-113	-232	-414

\*Note: These percentage changes are calculated on VWA prices prior to rounding

\*\* Estimated value