WEEKLY ELECTRICITY MARKET ANALYSIS

AUSTRALIAN ENERGY REGULATOR

22 April - 28 April 2012

Summary

Weekly average spot prices ranged from $30/MWh in Queensland to $35/MWh in Tasmania. At around midday on Sunday, South Australia saw extreme negative prices driven by AGL rebidding.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 22 April to 28 April and the 11/12 financial year to date (YTD) 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 22 Apr – 28 Apr 2012	30	34	33	31	35
% change from previous week*	-12	-11	-9	-18	-29
11/12 financial YTD	30	30	27	32	33
% change from 10/11 financial YTD **	-15	-35	-4	-26	8

*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.

Further information is provided in Appendix A when the spot price exceeds three times the weekly average and is above $250/MWh or less than -$100/MWh. Longer term market trends are attached in Appendix B[1].

Financial markets

Figures 2 to 9 show futures contract[2] prices traded on the Australian Securities Exchange (ASX) as at close of trade on Monday 30 April 2012. Figure 2 shows the base futures contract prices for the next three calendar years, and the average over these three years. Also shown are percentage changes[3] from the previous week.

[1] 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 -> Monitoring, reporting and enforcement -> Electricity market reports -> Long-term analysis.

[2] Futures contracts traded on the ASX are listed by d-cyphaTrade (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.

[3] Calculated on prices prior to rounding.

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

	QLD		NSW		VIC		SA	
Calendar Year 2013	54*	-2%	57*	-2%	53*	-1%	56	-1%
Calendar Year 2014	52	0%	55*	-1%	50*	-1%	57	0%
Calendar Year 2015	62	0%	59	0%	60	0%	69	0%
Three year average	56	-1%	57	-1%	54	-1%	61	0%

Source: d-cyphaTrade www.d-cyphatrade.com.au
* denotes trades in the product.

Figure 3 shows the $300 cap contract price for Q1 2013 and calendar year 2013 and the percentage change[4] from the previous week.

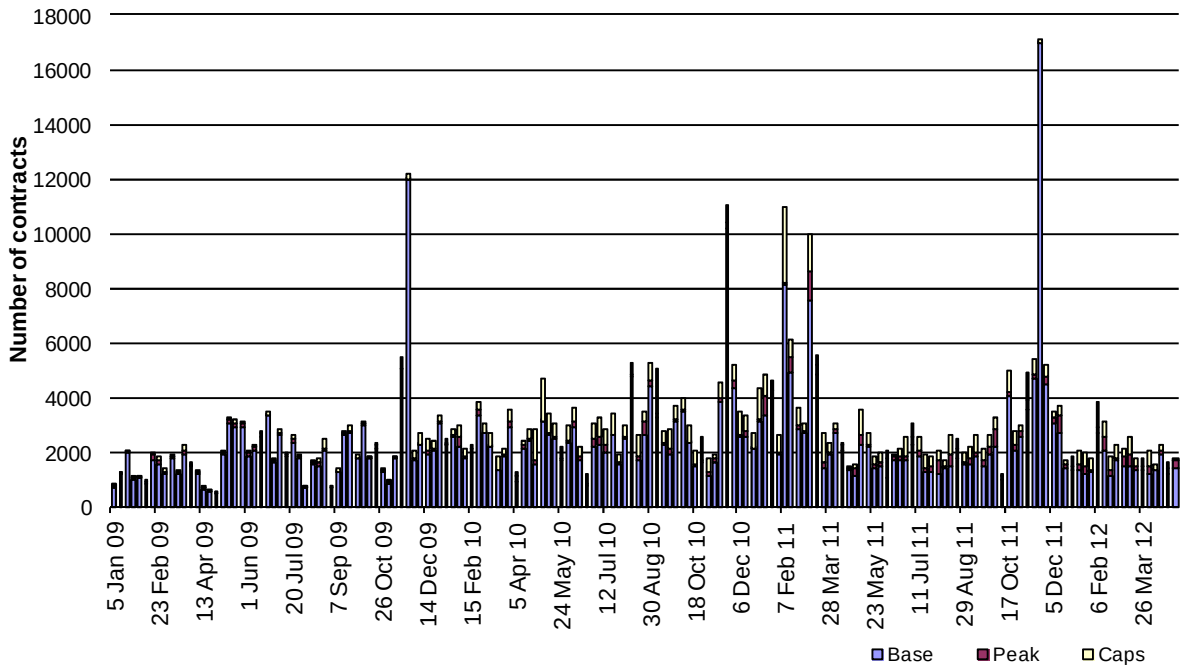
Figure 3: $300 cap contract prices ($/MWh)

	QLD		NSW		VIC		SA	
Q1 2013 (% change)	15*	-1%	15	0%	16*	0%	24	0%
2013 (% change)	7	-1%	9	0%	7	-1%	10	0%

Source: d-cyphaTrade 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

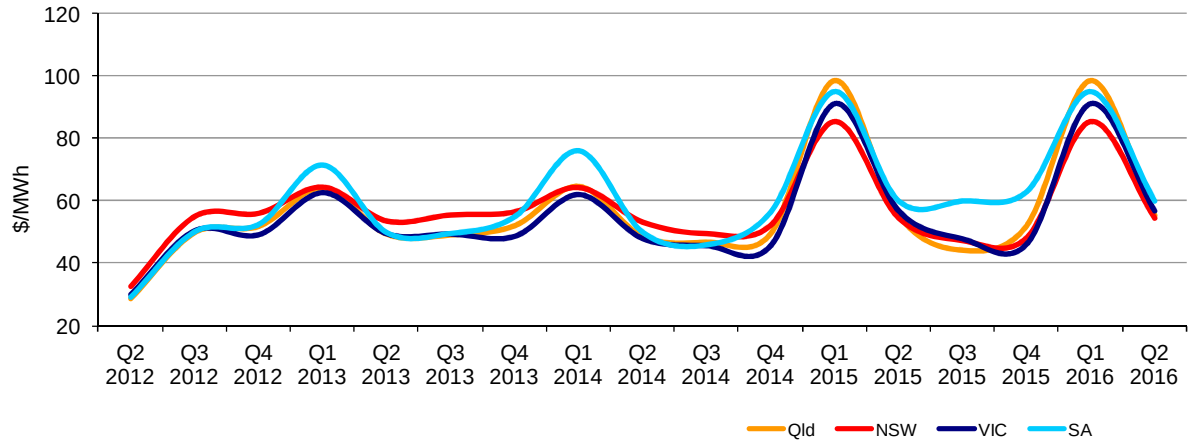


Source: d-cyphaTrade www.d-cyphatrade.com.au

[4] Calculated on prices prior to rounding.

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

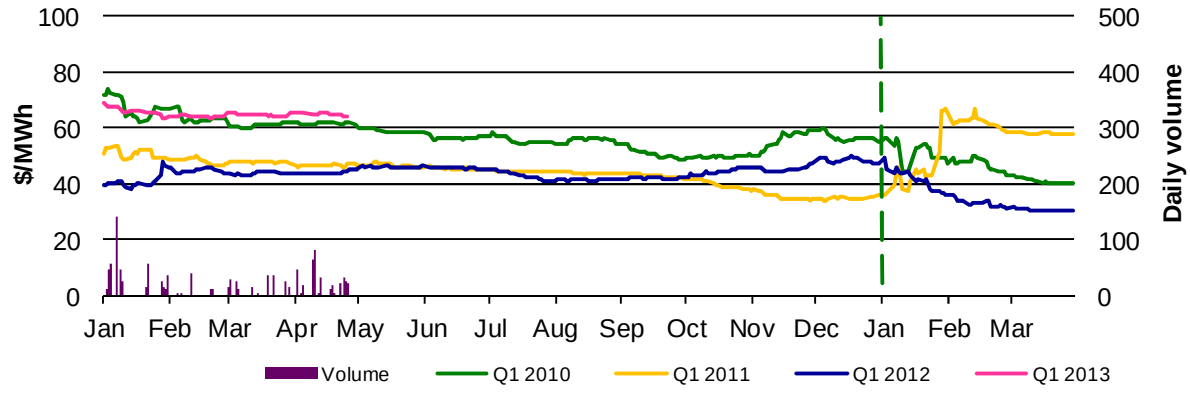
Figure 5: Quarterly base future prices Q2 2012 – Q4 2016



Source: d-cyphaTrade www.d-cyphatrade.com.au

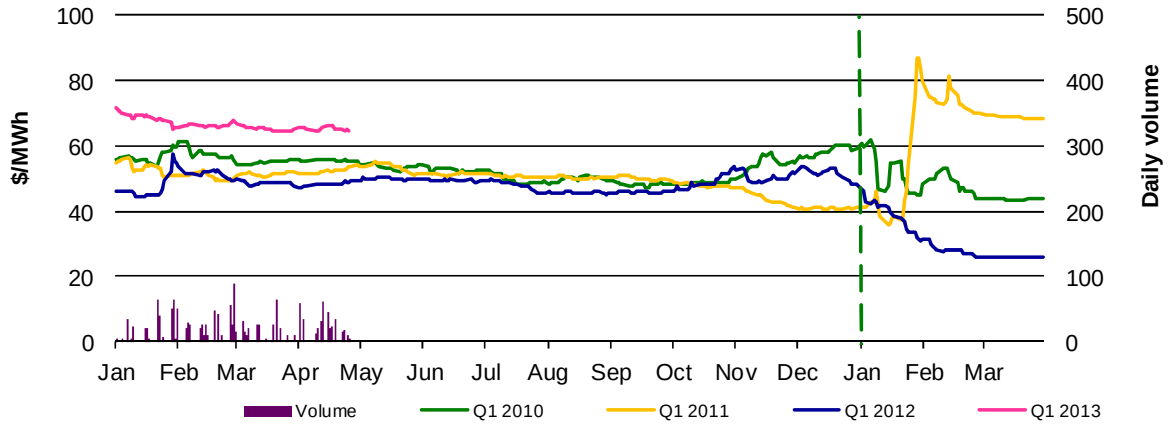
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2010, 2011, 2012 and 2013. Also shown is the daily volume of Q1 2013 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased.

Figure 6: Queensland Q1 2010, 2011, 2012 and 2013



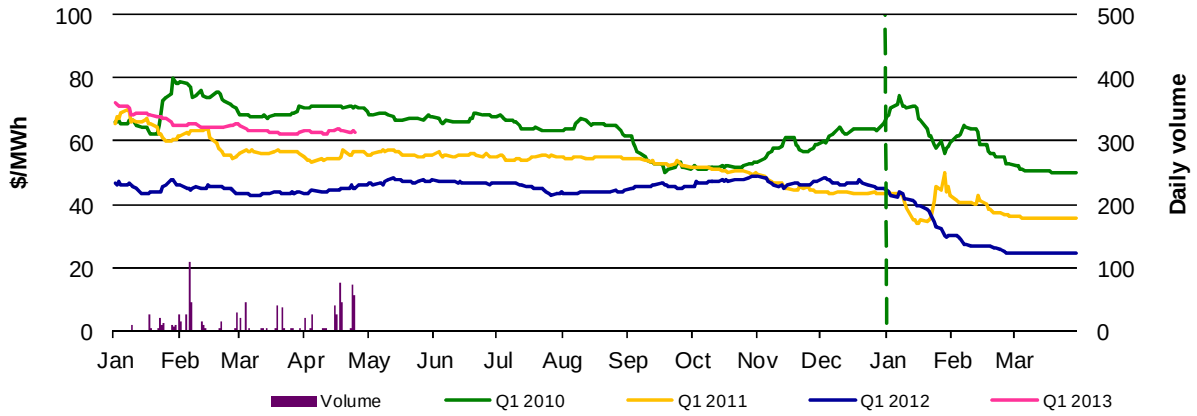
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 7: New South Wales Q1 2010, 2011, 2012 and 2013



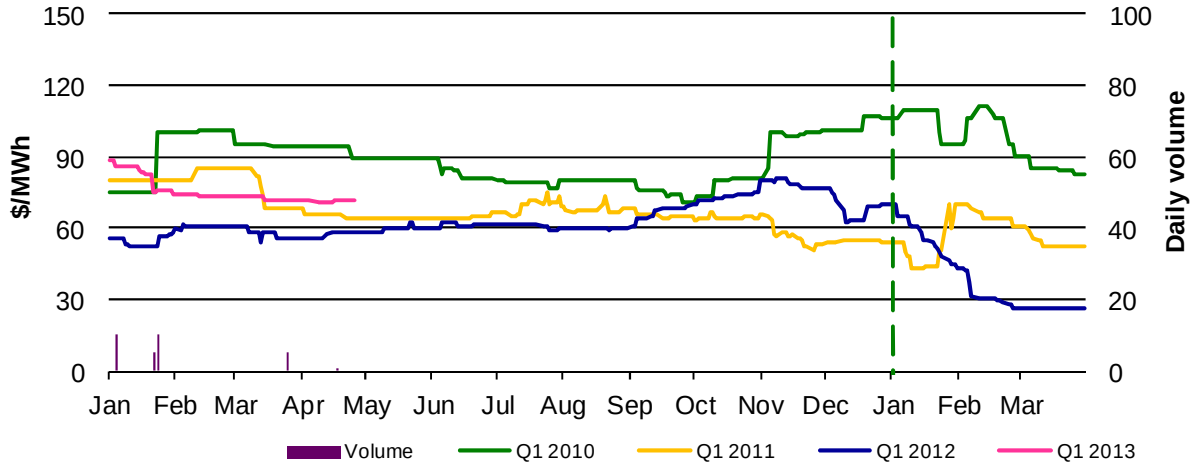
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 8: Victoria 2010, 2011, 2012 and 2013



Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 9: South Australia Q1 2010, 2011, 2012 and 2013



Source: d-cyphaTrade 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 63 trading intervals throughout the week where actual prices varied significantly from forecasts[5]. This compares to the weekly average in 2010 of 57 counts and the average in 2009 of 103. Reasons for these variances are summarised in Figure 10[6].

Figure 10: Reasons for variations between forecast and actual prices

	Availability	Demand	Network	Combination
% of total above forecast	2	19	0	1
% of total below forecast	50	20	0	8

[5] 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.

[6] 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[7]. For example, in Queensland 114 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	-114	-26	-238	-189
NSW	276	30	40	-217
VIC	64	-382	-65	-115
SA	-122	50	31	-129
TAS	-12	286	62	-4
TOTAL	92	-42	-170	-654

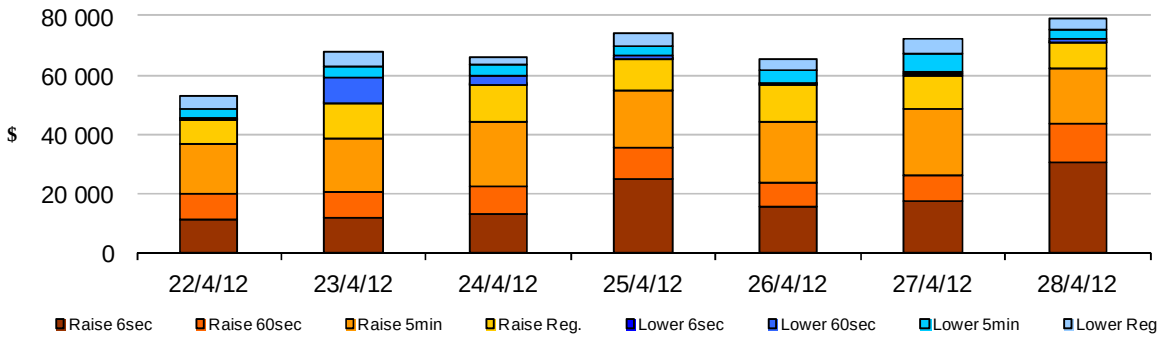
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was $381 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $96 000 or one and a half per cent of energy turnover in Tasmania.

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
May 2012

[7] A peak period is defined as between 7 am and 10 pm on weekdays.

15 April– 21 April 2012

South Australia:

There were two occasions where the spot price in South Australia was less than -$100/MWh.

Sunday, 22 April

11:30 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	-216.66	20.86	15.07
Demand (MW)	1045	1068	944
Available capacity (MW)	3085	3125	3150
Noon	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	-372.79	19.79	14.71
Demand (MW)	1051	1085	958
Available capacity (MW)	2876	3132	3151

Conditions leading up to the negative prices saw demand and available capacity close to that forecast. At the time available capacity was up to 256 MW lower than forecast. Targeted reductions in output from semi-scheduled wind generation as a result of constraints or in this case, as a result of regional prices lower than their offer price are reported as a reduction in regional available capacity.

Over four rebids at 10.25 am, 10.27 am 10.29 am and 10.30 am, all effective from 11.05 am AGL rebid 495 MW of capacity at Torrens Island from prices above $32/MWh to -$997/MWh. This saw all 720 MW of capacity at Torrens Island priced at the price floor from 11.05 am to 1 pm. The reason given was “10:00A dispatch price lower than predispatch :: SA $28”.

The rebidding by AGL saw forecast prices fall to the floor from 11.20 am (at the 10.35 am 5-minute pre-dispatch run), leading to a number of generators rebidding capacity into higher bands to avoid being dispatched. Participants that rebid capacity into higher price bands include Infigen (Lake Bonney), TruEnergy (Waterloo WF) and Alinta (Northern Power Station). Other wind farms that were significantly reduced in dispatch include Snowtown (generation decreased by more than 95 MW in one hour) and Clements gap (generation decreased by more than 50 MW in one hour). The output from wind generation reduced by 368 MW, from over 970 MW at 10.55 am to 605 MW by 11.45 am.

During the time of low prices up to 1720 MW of generation in South Australia was priced below -$960/MWh and the average wind generation dispatched was around 700 MW (320 MW of which was owned by AGL). The 5-minute dispatch price decreased below zero from 11.05 am to 12 pm, falling close to the floor for three dispatch intervals from 11.35 am. Significant rebids included:

- Over two rebids at 10.45 am and 10.48 am, effective from 10.55 am, Infigen rebid, 96 MW of capacity at Lake Bonney from prices below -$30/MWh to above zero. The reason given was “10.47 A SA Dem lower than 30Min PDS SL”.
- Over two rebids at 11.11 am and 11.29 am, effective from 11.20 am and 11.40 am respectively, TruEnergy rebid 111 MW of capacity at Waterloo WF from prices below -$80/MWh to zero. The reason given was “10:00 A band adj due to material change in SA PD” and “11.28 A bend adj due to material change in gen conditions”.
- Over two rebids at 11.05 am and 11.17 am, Alinta Energy rebid 145 MW of capacity at Northern Power Station from prices less than -$950/MWh to above $35/MWh. The reason given was “10:55 A predispatch lower than aemo forecasts@ 11:05”

There was no other significant rebidding.

Detailed NEM Price and Demand Trends

for Weekly Market Analysis
22 April - 28 April 2012

AUSTRALIAN ENERGY REGULATOR

Table 1: Financial year to date spot market volume weighted average price

Financial year	QLD	NSW	VIC	SA	TAS
2011-12 ($/MWh) YTD	30	30	27	32	33
2010-11 ($/MWh) YTD	35	46	28	44	30
Change*	-15%	-35%	-4%	-26%	8%
2010-11 ($/MWh)	34	43	29	42	31

Table 2: NEM turnover

Financial year	NEM Turnover** ($, billion)	Energy (TWh)
2011-12 (YTD)	$4.856	164
2010-11	$7.445	204
2009-10	$9.643	206

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)
Dec-11	26	26	23	25	26	0.369
Jan-12	35	26	25	28	39	0.447
Feb-12	32	27	27	29	37	0.427
Mar-12	28	26	24	26	36	0.396
Apr-12 (MTD)	30	34	33	30	36	0.426
Q2 2012 (QTD)	30	34	33	30	36	0.469
Q2 2011 (QTD)	25	27	26	28	27	0.385
Change*	17%	28%	26%	7%	33%	21.91%

Table 4: ASX energy futures contract prices at end of 30 April 2012

	QLD		NSW		VIC		SA	
Q1 2013	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Price on 23 Apr ($/MWh)	65	90	65	90	63	88	72	114
Price on 30 Apr ($/MWh)	64	90	64	89	63	86	72	114
Open interest on 30 Apr	561	56	775	195	612	63	25	0
Traded in the last week (MW)	97	0	50	0	128	0	0	0
Traded since 1 Jan 12 (MW)	1129	112	1518	140	976	78	31	0
Settled price for Q1 12($/MWh)	30	37	26	28	25	29	26	30

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
February 12 with February 11						
MW Priced <$20/MWh	-194	-460	-25	-213	154	-738
MW Priced $20 to $50/MWh	416	621	98	94	-404	825
March 12 with March 11						
MW Priced <$20/MWh	-151	-49	-33	-263	95	-402
MW Priced $20 to $50/MWh	479	395	43	91	-540	468
April 12 with April 11 (MTD)						
MW Priced <$20/MWh	5	-1882	-125	-49	163	-1887
MW Priced $20 to $50/MWh	425	632	-132	228	-191	963

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