WEEKLY ELECTRICITY MARKET ANALYSIS

AUSTRALIAN ENERGY REGULATOR

11 September - 17 September 2011

Summary

Weekly average spot prices were around $30/MWh in all regions apart from South Australia, where the average price was $64/MWh.

Spot market prices

Figure 1 sets out the volume weighted average (VWA) prices for the week 11 September to 17 September 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 11 - 17 September 2011	29	31	31	64	30
% change from previous week*	-14	8	18	86	11
11/12 financial YTD	29	31	30	38	31
% change from 10/11 financial YTD **	34	0	14	28	-31

*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. 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 19 September 2011. 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 2012	41	0%	46	0%	42	0%	51	2%
Calendar Year 2013	51	0%	56	0%	50	0%	58	0%
Calendar Year 2014	56	0%	59	0%	60	0%	69	0%
Three year average	49	0%	54	0%	51	0%	59	0%

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

* There were no trades in these products.

Figure 3 shows the $300 cap contract price for Q1 2012 and calendar year 2012 and the percentage change[4] from the previous week.

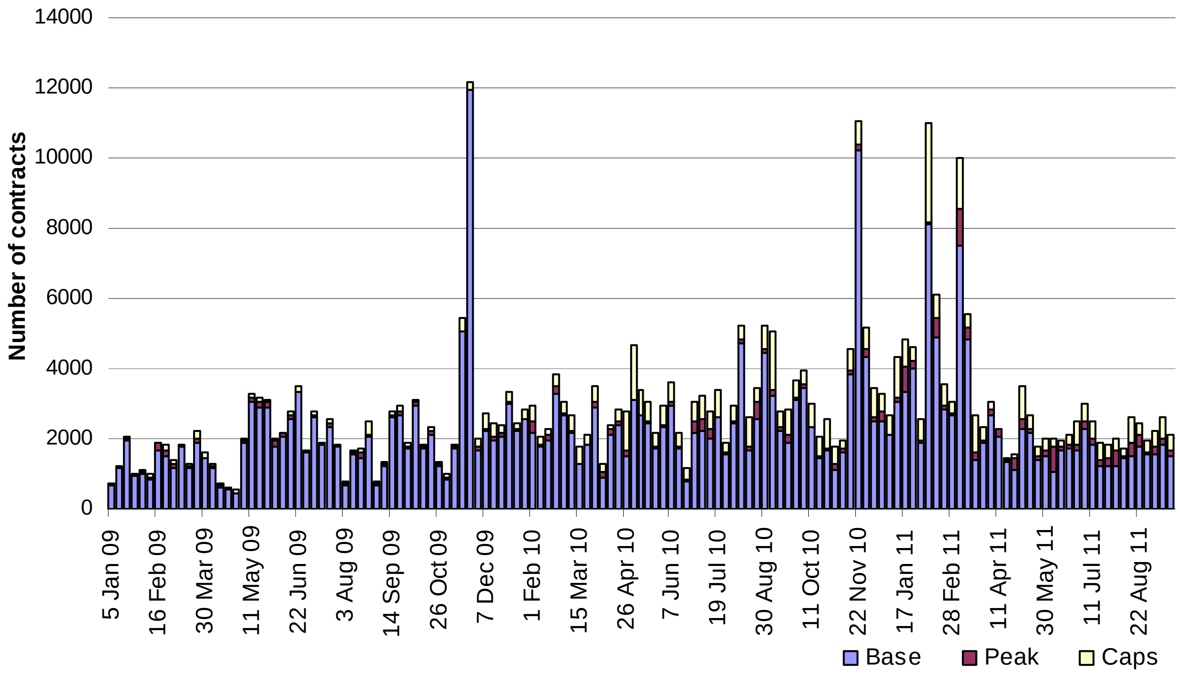
Figure 3: $300 cap contract prices ($/MWh)

	QLD		NSW		VIC		SA	
Q1 2012 (% change)	13	-1%	15*	0%	16*	0%	32	3%
2012 (% change)	6	0%	9	-1%	6	1%	11	-1%

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

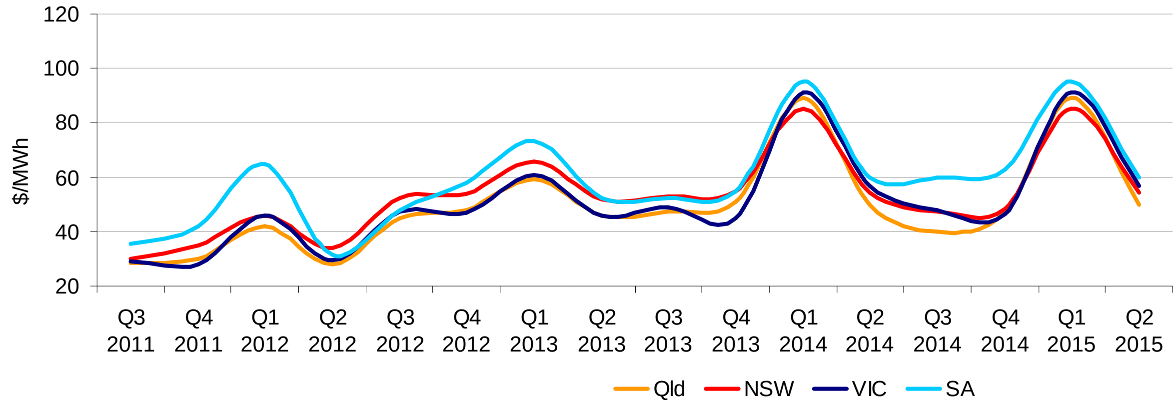


Source: d-cyphaTrade www.d-cyphatrade.com.au

[4] Calculated on prices prior to rounding.

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

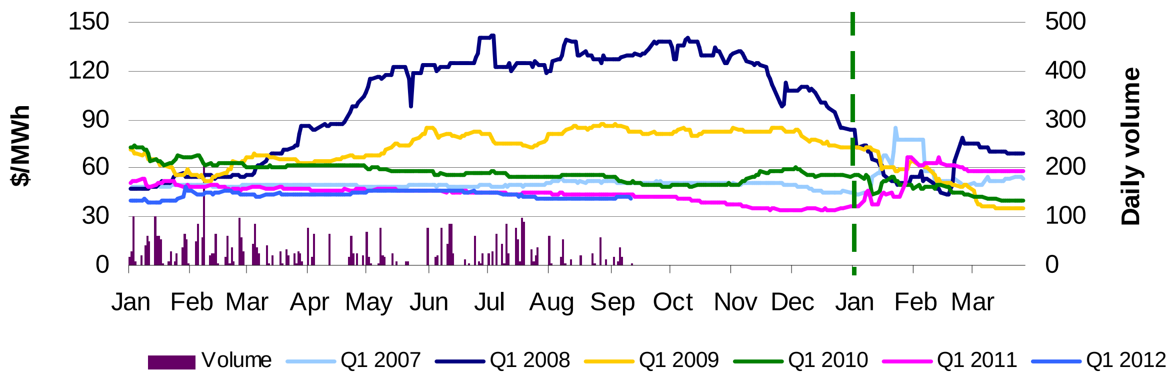
Figure 5: Quarterly base future prices Q3 2011 – Q2 2015



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

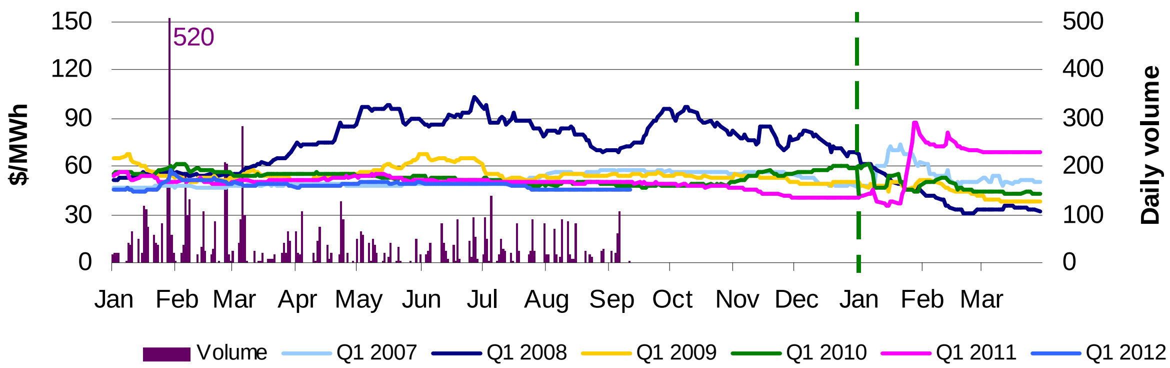
Figures 6-9 compare for each region the closing daily base contract prices for the first quarter of 2007, 2008, 2009, 2010, 2011 and 2012. Also shown is the daily volume of Q1 2012 base contracts traded. The vertical dashed line signifies the start of the Q1 period for which the contracts are being purchased. To understand the diagrams, the dark-blue line in figure 6 demonstrates 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, 2011 and 2012



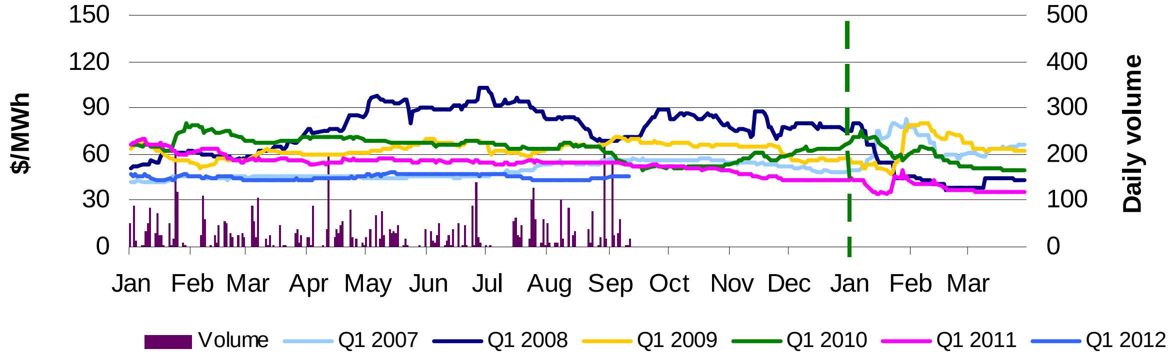
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 7: New South Wales Q1 2007, 2008, 2009, 2010, 2011 and 2012



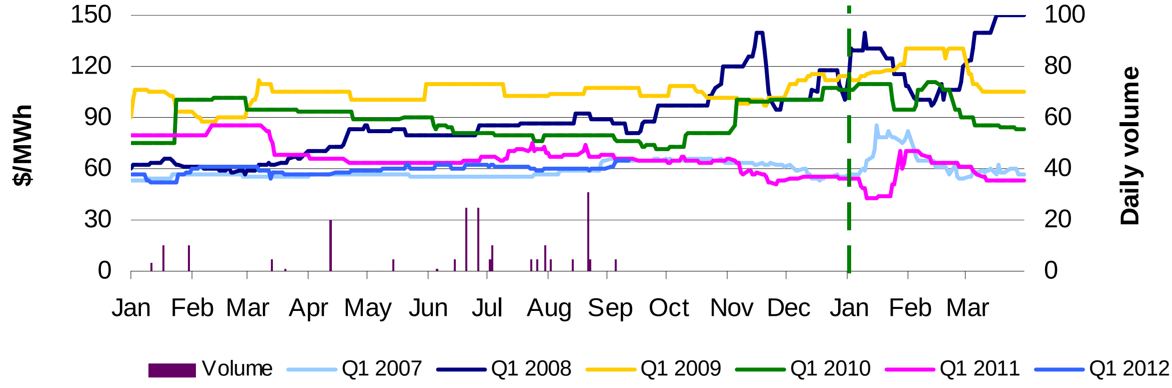
Source: d-cyphaTrade www.d-cyphatrade.com.au

Figure 8: Victoria Q1 2007, 2008, 2009, 2010, 2011 and 2012



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

Figure 9: South Australia Q1 2007, 2008, 2009, 2010, 2011 and 2012



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 45 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	0	22	0	4
% of total below forecast	30	14	0	30

[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 105 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	-105	96	-149	-27
NSW	-658	151	-972	-195
VIC	-566	-222	-624	-131
SA	30	14	-171	29
TAS	-333	521	76	-45
TOTAL	-1632	560	-1840	-369

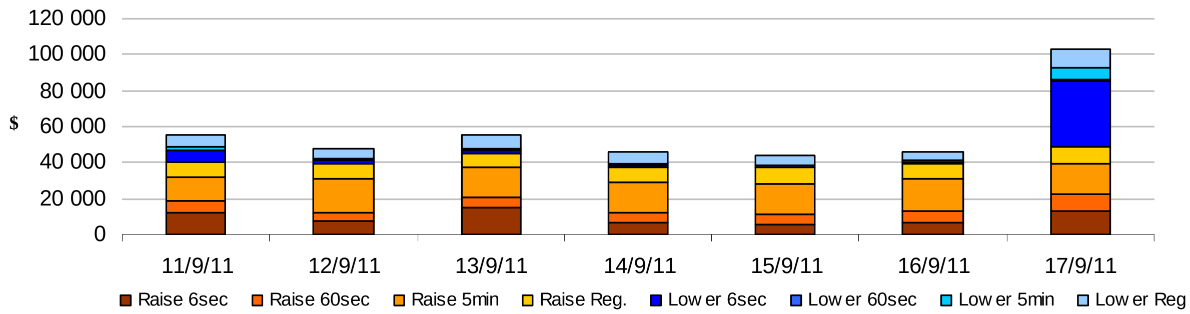
Ancillary services market

The total cost of frequency control ancillary services (FCAS) on the mainland for the week was $290 000 or less than one per cent of energy turnover on the mainland.

The total cost of FCAS in Tasmania for the week was $108 000 or close to two 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
November 2011

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

Detailed Market Analysis

AUSTRALIAN ENERGY REGULATOR

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South Australia

There were four occasions where the spot price in South Australia was greater than three times the South Australia weekly average price of $64/MWh and above $250/MWh.

Monday, 12 September

12 AM	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	250.78	44.42	45.26
Demand (MW)	1718	1705	1708
Available capacity (MW)	1870	1892	1973
12:30 AM	**Actual**	**4 hr forecast**	**12 hr forecast**
Price ($/MWh)	3800.96	43.85	43.86
Demand (MW)	1670	1632	1635
Available capacity (MW)	1863	1885	1858

Conditions at the time saw demand and available capacity close to forecast.

Imports into South Australia from Victoria were close to the combined import limit of around 600 MW and there was no capacity in South Australia priced between $45/MWh and $220/MWh. These conditions meant that any reductions in import capability, rebidding of capacity into high price bands or increases in demand, had the potential to cause a jump in price. For the 11.35 pm dispatch interval, a 50 MW increase in demand saw higher priced energy offers dispatched, setting the five-minute price at around $250/MWh (and continuing for a further five dispatch intervals).

In response to the increase in price, at 11.48 pm, effective from 11.55 pm, AGL rebid 98 MW of capacity at Torrens Island from prices below $45/MWh to above $11 200/MWh. The reason given was “23:50A Change in Forecast::Price increase in SA [$499/$46] 5MPD vs PD”.

Further increases in demand combined with the above rebid from AGL saw the five-minute price reach $11 200/MWh for the 12.10 am and 12.15 am dispatch intervals.

There were no other significant rebids.

Monday, 12 September

7:30 AM	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	1910.01	49.87	43.77
Demand (MW)	1557	1573	1513
Available capacity (MW)	1851	1820	1848

A planned outage of the Kerang-Red Cliffs 220 kV line saw imports into South Australia across Murraylink limited to as low as 39 MW from 7 am. With some generators trapped in FCAS or receiving start up signals, a 28 MW increase in demand led to 12 MW of high price capacity being dispatched at 7.05 am causing the five-minute price to spike at $11 264/MWh. AGL then rebid capacity into negative price bands and prices return to previous levels.

There were no other significant rebids.

Thursday, 15 September

10 AM	Actual	4 hr forecast	12 hr forecast
Price ($/MWh)	2113.27	75.50	75.50
Demand (MW)	1606	1704	1670
Available capacity (MW)	2073	1944	1909

Conditions at the time saw demand around 100 MW lower than forecast four hours ahead and available capacity 129 MW higher than forecast four hours ahead.

A constraint managing a planned outage of the Kerang-Red Cliffs 220 kV line was limiting imports into South Australia from Victoria across the Murraylink interconnector at the time to around 85 MW. In addition, imports into South Australia from Victoria across the Heywood interconnector were limited to around 385 MW as a result of a binding constraint to manage voltage stability limits between Victoria and South Australia.

Output from Pelican Point was being limited to 210 MW due to a planned outage of the Parafield Gardens West 275 kV line. In addition there was no capacity priced between $76/MWh and $11 000/MWh. These conditions meant that any reductions in import capability, rebidding of capacity into high price bands or increases in demand, had the potential to cause a jump in price.

At 9.18 am, effective from 9.35 am, AGL rebid 330 MW of capacity at Torrens Island from prices below $50/MWh to above $11 000/MWh (280 MW or 85 per cent of this was priced at the price cap). The reason given was “05:01A unfcast network constraint :: S-PPT210”. As a result, higher priced generation offers from Torrens Island were dispatched, causing the five-minute price to reach $12 498/MWh at 9.35 am. Prices returned to previous level at 9.40 am following a reduction in demand.

There were no other significant rebids.

Detailed NEM Price and Demand Trends

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

Financial year	QLD	NSW	VIC	SA	TAS
2011-12 ($/MWh) YTD	29	31	30	38	31
2010-11 ($/MWh) YTD	21	31	27	29	45
Change*	34%	0%	14%	28%	-31%
2010-11 ($/MWh)	34	43	29	42	31

Table 2: NEM turnover

Financial year	NEM Turnover** ($, billion)	Energy (TWh)
2011-12 (YTD)	$1.368	45
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)
May-11	28	30	35	35	39	0.499
Jun-11	26	28	29	33	30	0.447
Jul-11	27	32	31	36	34	0.508
Aug-11	29	31	31	36	29	0.483
Sep-11 (MTD)	31	29	28	46	28	0.253
Q1 2011	65	90	41	83	27	3.484
Q1 2010	46	52	67	134	27	3.014
Change*	41%	74%	-38%	-38%	2%	15.57%

Table 4: ASX energy futures contract prices at end of 19 September

	QLD		NSW		VIC		SA	
Q1 2012	Base	Peak	Base	Peak	Base	Peak	Base	Peak
Price on 12 Sep ($/MW)	42	66	46	72	46	75	64	106
Price on 19 Sep ($/MW)	42	65	46	72	46	75	65	111
Open interest on 19 Sep	1390	110	1825	425	1956	251	170	5
Traded in the last week (MW)	55	20	172	20	116	5	5	0
Traded since 1 Jan 11 (MW)	4706	146	7125	728	5137	392	220	5
Settled price for Q1 11($/MW)	57	96	68	118	35	51	53	93

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

Comparison:	QLD	NSW	VIC	SA	TAS	NEM
July 11 with July 10						
MW Priced <$20/MWh	-826	-665	-448	99	121	-1718
MW Priced $20 to $50/MWh	202	753	-162	29	-282	539
August 11 with August 10						
MW Priced <$20/MWh	-1212	-877	10	-152	-198	-2429
MW Priced $20 to $50/MWh	96	656	-241	57	-43	524
September 11 with September 10 (MTD)						
MW Priced <$20/MWh	-1045	-1193	-165	-471	-268	-3142
MW Priced $20 to $50/MWh	-290	920	-97	191	34	757

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