



## AUSTRALIAN ELECTRICITY AS AN ALTERNATIVE INVESTMENT

Energy and commodities are growing in popularity as a separate investment asset class in their own right. Volatile investment returns from mainstream asset classes such as domestic and international equity markets, fixed interest and property markets have emphasised the diversification benefits of energy-price linked investments.

The Australian electricity market is uniquely non-correlated to international oil and gas prices, or other factors that commonly affect fixed interest, equity and property markets. Wholesale investment professionals seeking portfolio diversification opportunities have a myriad of potential investment strategies to chose from, benchmarked to Australian electricity prices.

d-cyphaTrade ASX Electricity Futures are cash settled without physical electricity delivery, providing professional funds managers with the ability to create electricity price-linked investments directly via their SFE Participant, avoiding many of the costs and risks associated with investing in physical power assets.

d-cyphaTrade has launched 2 indices based on variations of a calendar year index comprising d-cyphaTrade ASX Australian Electricity contracts for a 1 year duration across either the Australian National (NSW, VIC, QLD and SA) or the Australian Eastern Seaboard (QLD, NSW, VIC) regions.



# Australian Power Indices

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DELIVERING  
EXCHANGE TRADED  
ENERGY DERIVATIVES  
TO THE AUSTRALIAN  
MARKET





## AUSTRALIAN POWER INDICES

The methodology of selecting the component futures contracts for inclusion in both the National Power Index and the Eastern Power Index has been determined on the basis of contract liquidity and open interest.

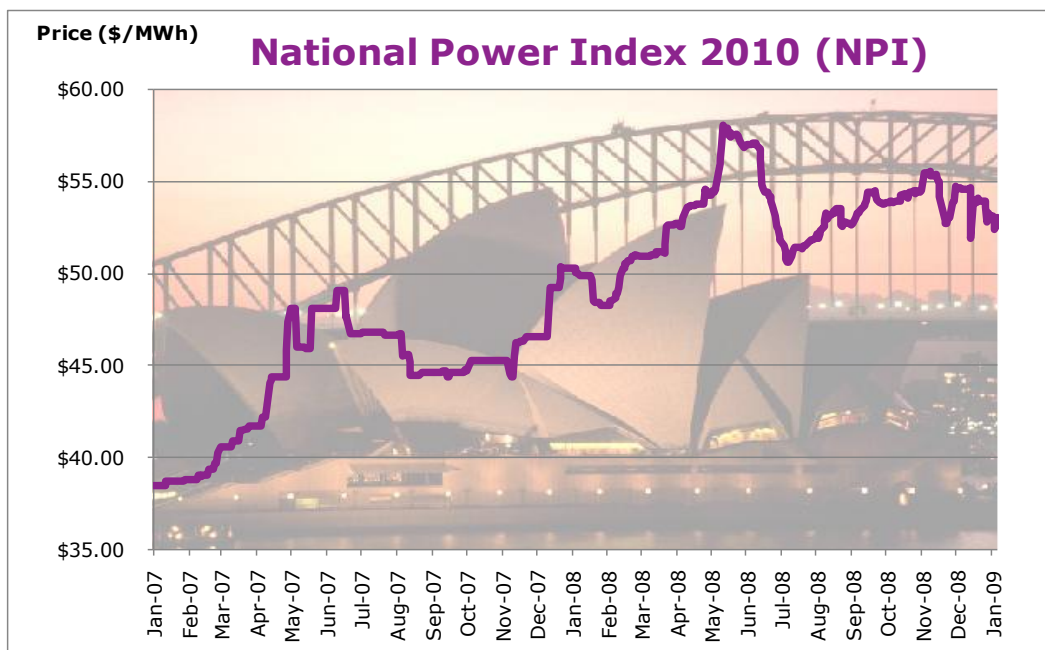
### 1. NATIONAL POWER INDEX (NPI)

d-cyphaTrade has launched the National Power Index (NPI). The NPI is calculated as the national average price of d-cyphaTrade ASX Electricity Futures contracts covering a calendar year and will be quoted for all available calendar years listed including the prompt with a cascading expiry. It represents a single national basket of electricity futures listed across the National Electricity Market (NEM) regions of NSW, VIC, SA and QLD.

The NPI is the average base load price of electricity across NSW, VIC, SA and QLD. It includes the 4 consecutive futures quarters which make up a calendar year, in each calendar year listed on the SFE including the prompt. Each calendar year NPI therefore represents the average MWh-weighted price of 16 component quarterly futures contracts with a combined minimum energy coverage of 35,040 MWh for each year. The prompt calendar year NPI may incorporate official cash settlement prices of expired quarters and non-expired futures quarters across the year.

As at 28/01/09	Index Settlement Price Components				MWh per contract
	NSW BASE	VIC BASE	QLD BASE	SA BASE	
Q1 2009 (Jan to Mar)	\$46.50	\$64.05	\$59.00	\$121.00	2,160
Q2 2009 (Apr to Jun)	\$43.75	\$43.50	\$36.85	\$46.50	2,184
Q3 2009 (July to Sep)	\$45.25	\$43.50	\$36.85	\$46.50	2,208
Q4 2009 (Oct to Dec)	\$43.50	\$42.50	\$45.65	\$59.85	2,208
Q1 2010 (Jan to Mar)	\$58.00	\$72.50	\$65.10	\$100.00	2,160
Q2 2010 (Apr to Jun)	\$45.30	\$44.75	\$37.25	\$47.00	2,184
Q3 2010 (July to Sep)	\$54.50	\$54.00	\$47.20	\$51.00	2,208
Q4 2010 (Oct to Dec)	\$54.50	\$54.00	\$56.90	\$51.00	2,208
Q1 2011 (Jan to Mar)	\$76.55	\$94.45	\$80.05	\$90.00	2,160
Q2 2011 (Apr to Jun)	\$55.00	\$55.60	\$47.65	\$55.00	2,184
Q3 2011 (July to Sep)	\$54.50	\$60.65	\$50.90	\$58.00	2,208
Q4 2011 (Oct to Dec)	\$56.00	\$61.70	\$61.05	\$58.00	2,208
Q1 2012 (Jan to Mar)	\$86.00	\$90.00	\$89.00	\$90.00	2,184
Q2 2012 (Apr to Jun)	\$55.00	\$56.00	\$50.00	\$56.00	2,184
Q3 2012 (July to Sep)	\$51.00	\$58.25	\$49.00	\$53.00	2,208
Q4 2012 (Oct to Dec)	\$52.00	\$56.75	\$60.70	\$55.00	2,208
<b>NPI 2009</b>	<b>\$51.46</b>	✓	✓	✓	<b>35,040</b>
<b>NPI 2010</b>	<b>\$55.75</b>	✓	✓	✓	<b>35,040</b>
<b>NPI 2011</b>	<b>\$63.35</b>	✓	✓	✓	<b>35,040</b>
<b>NPI 2012</b>	<b>\$62.93</b>	✓	✓	✓	<b>35,136</b>

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## 2. THE EASTERN POWER INDEX (EPI)

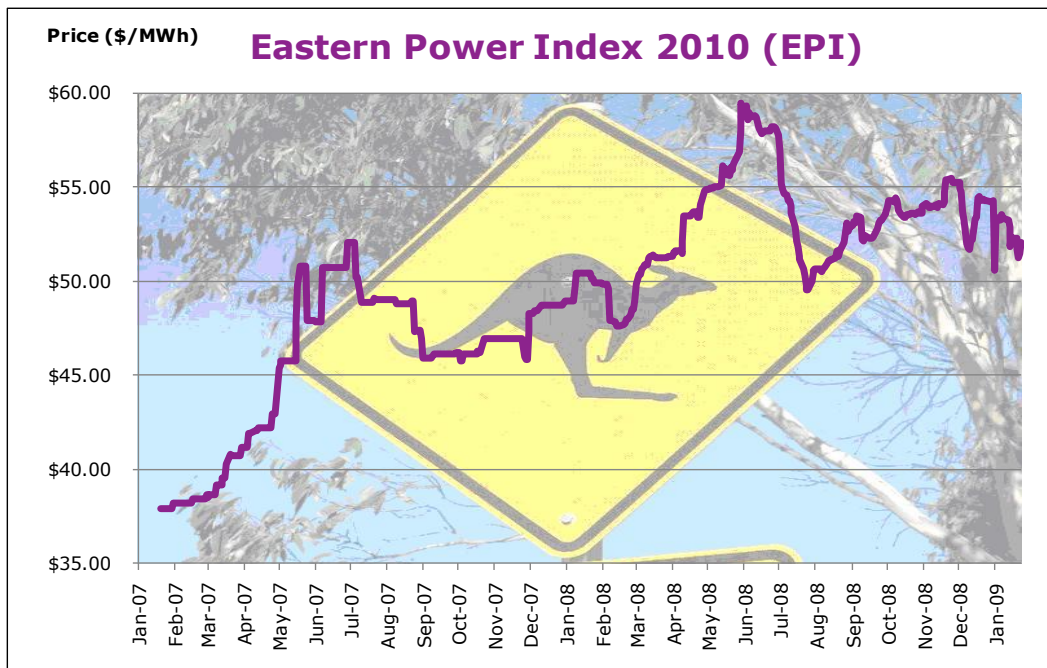
d-cyphaTrade has launched the Eastern Power Index (EPI). The EPI is calculated as the national average price of d-cyphaTrade ASX Electricity Futures contracts covering a calendar year across the Australian Eastern Seaboard and will be quoted for all available calendars listed including the prompt, with a cascading expiry. It represents a single national basket of the most liquid electricity futures listed across the National Electricity Market (NEM) Eastern Seaboard regions of NSW, VIC and QLD.

The EPI represents the average base load price of electricity across the 3 most liquid regions of the NEM (NSW, VIC and QLD). It includes the 4 consecutive futures quarters which make up a calendar year, in each calendar year listed on the SFE including the prompt. The EPI therefore represents the average MWh-weighted price of 12 component quarterly futures contracts with a combined minimum energy coverage of 26,280 MWh for each year. The prompt calendar year EPI may incorporate official cash settlement prices of expired quarters and non-expired futures quarters across the year.

The indices are published daily by d-cyphaTrade using official daily settlement prices from Sydney Futures Exchange. See [www.d-cyphaTrade.com.au](http://www.d-cyphaTrade.com.au)

As at 28/01/09		Index Settlement Price Components				MWh per contract
		NSW BASE	VIC BASE	QLD BASE	SA BASE	
Q1 2009 (Jan to Mar)	\$46.50	\$64.05	\$59.00	\$121.00	2,160	
Q2 2009 (Apr to Jun)	\$43.75	\$43.50	\$36.85	\$46.50	2,184	
Q3 2009 (July to Sep)	\$45.25	\$43.50	\$36.85	\$46.50	2,208	
Q4 2009 (Oct to Dec)	\$43.50	\$42.50	\$45.65	\$59.85	2,208	
Q1 2010 (Jan to Mar)	\$58.00	\$72.50	\$65.10	\$100.00	2,160	
Q2 2010 (Apr to Jun)	\$45.30	\$44.75	\$37.25	\$47.00	2,184	
Q3 2010 (July to Sep)	\$54.50	\$54.00	\$47.20	\$51.00	2,208	
Q4 2010 (Oct to Dec)	\$54.50	\$54.00	\$56.90	\$51.00	2,208	
Q1 2011 (Jan to Mar)	\$76.55	\$94.45	\$80.05	\$90.00	2,160	
Q2 2011 (Apr to Jun)	\$55.00	\$55.60	\$47.65	\$55.00	2,184	
Q3 2011 (July to Sep)	\$54.50	\$60.65	\$50.90	\$58.00	2,208	
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Q1 2012 (Jan to Mar)	\$86.00	\$90.00	\$89.00	\$90.00	2,184	
Q2 2012 (Apr to Jun)	\$55.00	\$56.00	\$50.00	\$56.00	2,184	
Q3 2012 (July to Sep)	\$51.00	\$58.25	\$49.00	\$53.00	2,208	
Q4 2012 (Oct to Dec)	\$52.00	\$56.75	\$60.70	\$55.00	2,208	
<b>EPI 2009</b>	<b>\$45.86</b>	✓	✓	✓	✗	<b>26,280</b>
<b>EPI 2010</b>	<b>\$53.63</b>	✓	✓	✓	✗	<b>26,280</b>
<b>EPI 2011</b>	<b>\$62.76</b>	✓	✓	✓	✗	<b>26,280</b>
<b>EPI 2012</b>	<b>\$62.76</b>	✓	✓	✓	✗	<b>26,352</b>

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## NPI AND EPI – CALCULATION EXAMPLE

The Index prices are calculated by taking the MWh-weighted average price of the component base load futures contract prices, rounded to 2 decimal places. 16 quarterly futures prices will be used to calculate a NPI and 12 quarterly futures prices will be used to calculate an EPI.

Worked example: Australian Power Indices daily price calculation for 28<sup>th</sup> January 2009 using official daily SFE settlement prices of underlying futures contracts as at 28<sup>th</sup> January 2009.

		Index Settlement Price Components				MWh per contract
		NSW BASE	VIC BASE	QLD BASE	SA BASE	
	Q1 20010 (Jan to Mar)	\$58.00	\$72.50	\$65.10	\$100.00	2,160
	Q2 20010 (Apr to Jun)	\$45.30	\$44.75	\$37.25	\$47.00	2,184
	Q3 2010 (July to Sep)	\$54.50	\$54.00	\$47.20	\$51.00	2,208
As at 28/01/09	Q4 2010 (Oct to Dec)	\$54.50	\$54.00	\$56.90	\$51.00	2,208
<b>EPI 2010</b>	<b>\$53.63</b>	✓	✓	✓	✗	<b>26,280</b>
<b>NPI 2010</b>	<b>\$55.75</b>	✓	✓	✓	✓	<b>35,040</b>

The EPI 2010 and NPI 2010 values in the table above were calculated as follows:

$$\text{NPI 2010} = [ (\text{NSW Q110} + \text{VIC Q110} + \text{QLD Q110} + \text{SA Q110}) \times 2160 \text{ hrs} + (\text{NSW Q210} + \text{VIC Q210} + \text{QLD Q210} + \text{SA Q210}) \times 2184 \text{ hrs} + (\text{NSW Q310} + \text{VIC Q310} + \text{QLD Q310} + \text{SA Q310}) \times 2208 \text{ hrs} + (\text{NSW Q410} + \text{VIC Q410} + \text{QLD Q410} + \text{SA Q410}) \times 2208 \text{ hrs} ] / (4 \text{ Regions} \times 8760 \text{ hrs})$$

$$\text{EPI 2010} = [ (\text{NSW Q110} + \text{VIC Q110} + \text{QLD Q110}) \times 2184 \text{ hrs} + (\text{NSW Q210} + \text{VIC Q210} + \text{QLD Q210}) \times 2184 \text{ hrs} + (\text{NSW Q310} + \text{VIC Q310} + \text{QLD Q310}) \times 2208 \text{ hrs} + (\text{NSW Q410} + \text{VIC Q410} + \text{QLD Q410}) \times 2208 \text{ hrs} ] / (3 \text{ Regions} \times 8760 \text{ hrs})$$

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## CREATING NPI AND EPI FUTURES PORTFOLIOS

Clients of SFE Participants may create a portfolio of futures contracts which emulate the Australian Power Indices. For example, a hedge fund manager could create an EPI futures portfolio across Calendar 2009 by simultaneously buying (or selling) a basket of 2009 base load futures contracts across NSW, VIC and QLD. This strategy could be executed by:

- Trading via the SFE SYCOM Custom Market (as a strategy order of any volume)  
e.g. +20 HNZ9, +20 HVZ9, +20 HQZ9;  
at prices which average to the desired EPI price.
- Trading via a negotiated off-market Block Trade (volumes  $\geq$  15 MW per quarter)  
e.g. +20 HNZ9, +20 HVZ9, +20 HQZ9;  
at prices which average to the desired EPI price.
- Trading via a negotiated off-market Pre-negotiated Trade (any volume)  
e.g. +10 HNZ9, +10 HVZ9, +10 HQZ9;  
at prices which average to the desired EPI price.

Historical NPI and EPI charting and data services are available on the d-cyphaTrade website for further analysis.

For further information please visit [www.d-cyphatrade.com.au](http://www.d-cyphatrade.com.au) or contact a member of the d-cyphaTrade Team on +61 2 9237 0900.

