



# ENERGY FOCUS

## CARBON PRICE - 2010

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DELIVERING  
EXCHANGE TRADED  
ENERGY DERIVATIVES  
TO THE AUSTRALIAN  
MARKET



### STOP PRESS!

THE AUSTRALIAN ELECTRICITY FUTURES & OPTIONS MARKET PROVIDES A CARBON PRICE *BEFORE* THE RELEASE OF THE AUSTRALIAN EMISSIONS TRADING SCHEME!



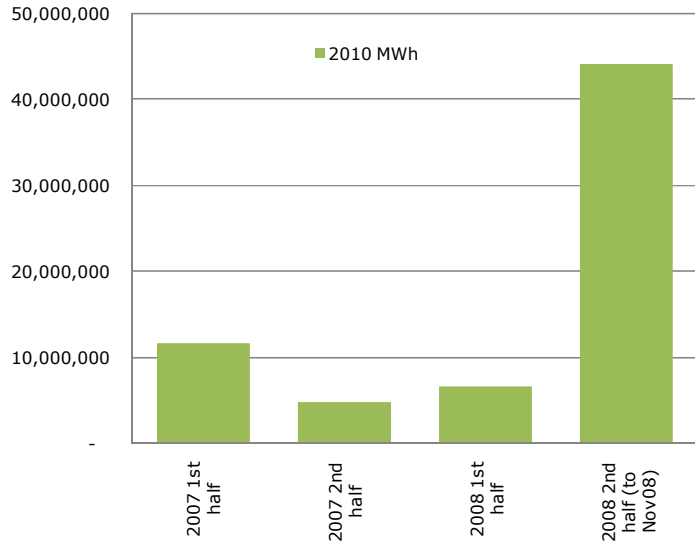


**2010 electricity trades  
44 TWh via SFE  
in 5 months to Nov 08**

## EMISSIONS TRADING BOOSTS 2010 ELECTRICITY FUTURES AND OPTIONS LIQUIDITY

The d-cypha SFE Electricity Futures and Options market has experienced an unprecedented increase in liquidity in 2010 hedge contracts. The prospect of the federal Emissions Trading Scheme (ETS) commencing in July 2010 has stimulated additional trading in long dated contracts as market participants seek to hedge the uncertainty of carbon-affected power prices beyond July 2010.

During the 5 months from July 2008 to November 2008, over 44 million MWh of 2010 futures and options have traded on the Sydney Futures Exchange (SFE). See figure below of 2010 futures and options trades since 2007:



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In a single day (4th September 2008), 4.5 million MWh of 2010 contracts were traded, demonstrating the ability of the futures market to absorb large transaction parcels.

### ELECTRICITY FUTURES ARE "CARBON CLEAN"

Electricity futures contracts are cash settled to the average NEM pool price, without exposing retailers and other derivative buyers to additional contractual carbon costs. i.e. electricity retailers and large industrial electricity consumers can hedge their power price risk using futures and exchange traded options without being exposed to subsequent contract price adjustment for generator carbon emissions, unlike some Over the Counter (OTC) contracts.

### HEDGE ACCOUNTING BENEFITS

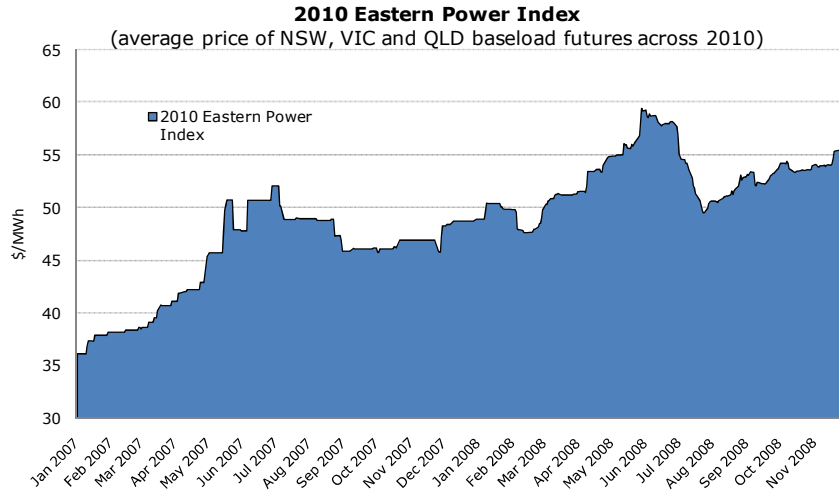
Being "carbon-clean" enables futures contracts to be easily marked to market for hedge accounting purposes, using automatic and independent daily price settlements from the SFE. This eliminates the need to maintain numerous emissions-adjusted valuation benchmarks as may otherwise be required for OTC electricity hedge contracts with individual generators.





## ETS EFFECT ON CURRENT ELECTRICITY PRICES

The following chart of the d-cyphaTrade 2010 Eastern Power Index (EPI) shows the strong increase in 2010 electricity futures prices since January 2007. As demonstrated, 2010 electricity futures prices across the Eastern Seaboard have increased by 53% to an average price of over \$55 per MWh.



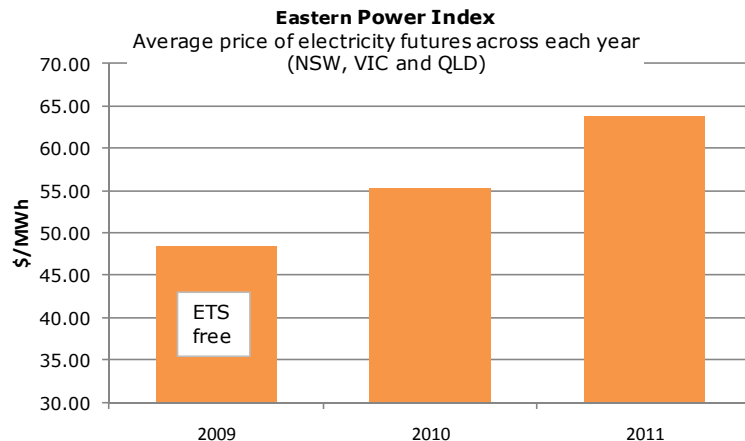
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The implications of this 2010 electricity hedge price rally include:

Electricity generators (including heavy carbon emitters) have been able to use the futures market to lock in revenue hedges at historically lucrative prices;

Electricity retailers and industrial electricity consumers face substantially increased hedging costs starting from 2010 unless they have already managed (hedged) their 2010 power price exposure;

The next 3 years of electricity futures prices across the Eastern Seaboard as illustrated by the forward curve of the EPI show a steep increase in electricity futures prices across the emissions affected years, with calendar 2011 baseload prices reaching approximately \$64/MWh.



The highest single region trade for a 2011 calendar year contract was \$67.50/MWh in VIC.

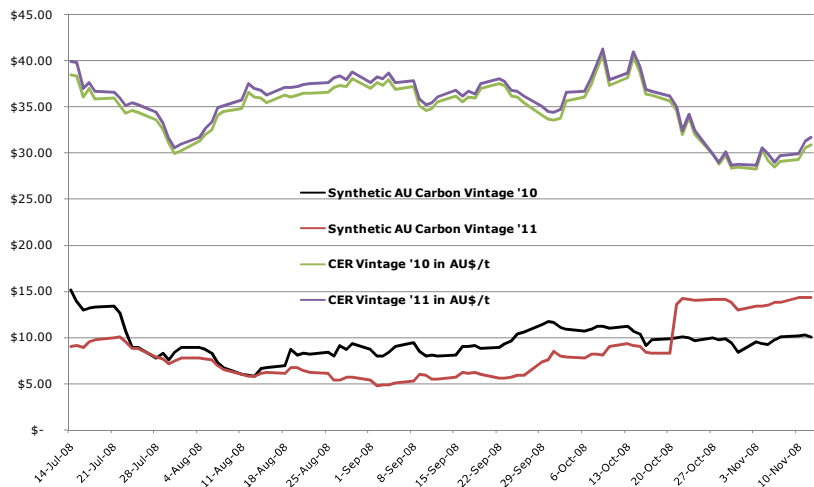
Such pricing is likely to reflect the market's perception that ETS costs to generators will be passed through as higher electricity pool prices. i.e. (i) existing high emitting generators will increase the price of generation offered into the electricity spot market to recoup increased ETS generation costs; and (ii) new cleaner technology generation such as natural gas-fired generators (with higher fuel costs) will begin to replace existing coal-fired generation.



## AUSTRALIAN AND INTERNATIONAL CARBON PRICES

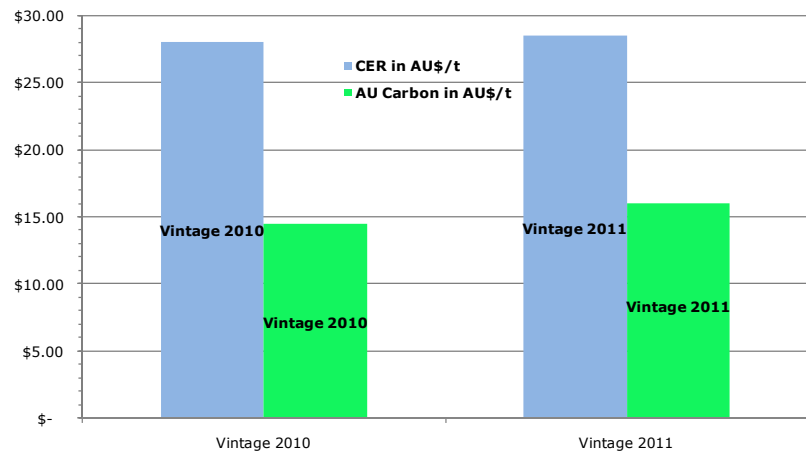
The Federal Government's Green Paper on the Carbon Pollution Reduction Scheme suggests that an Australian ETS may be linked to the Kyoto Protocol ETS. One type of Kyoto carbon credit is the Certified Emission Reduction (CER) certificate, which is traded on the European Climate Exchange (ECX). Assuming that 100% of the steep price increase between calendar year 2009 and calendar years 2010 and 2011 electricity futures prices is due to the expected cost of carbon emissions, then the price spread between the EPI '09 and the EPI '10 and EPI '11 provides a synthetic carbon price per tonne of Australian carbon emissions (assuming a generator emission rate of 1 tCO<sub>2</sub>/MWh).

The charts below compare futures prices of the ECX CERs vintages 2010 and 2011 to the synthetic Australian carbon price for 2010 and 2011 in AU\$/t implied from d-cypha SFE Electricity Futures prices.



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SFE - ECX Snapshot 02/12/2008



N.b. 2010 electricity futures spread calculation adjusted to reflect 1/2 year of ETS liability.

## ELECTRICITY FUTURES AND OPTIONS TRAINING

d-cyphaTrade futures and options workshops now incorporate analysis of international carbon markets and implications of international linkages to the Australian electricity market, for Australian energy companies. Please contact a member of the d-cyphaTrade Team on +61 2 8211 0617 or visit [www.d-cyphaTrade.com.au](http://www.d-cyphaTrade.com.au) for more information.