As Australia gears up for its emissions trading scheme in 2010, Anthony Collins of the Australian Securities Exchange examines the country’s emissions profile and looks at how the financial markets supporting the scheme are likely to evolve.

The shape of things to come

Australia’s Carbon Pollution Reduction Scheme (CPRS), scheduled for a 2010 launch, has already spurred forward trading in carbon pollution permits in the country’s over-the-counter (OTC) markets, even though the design of the scheme is yet to be finalised. Emissions and renewable energy trading schemes are not new to Australia (see text box), and those firms with compliance obligations under the forthcoming scheme are well prepared to leverage existing market infrastructure to manage their price and counter-party risks.

Australia’s emissions profile

In 2006, Australia’s net greenhouse gas emissions using the Kyoto accounting provisions were 576 million tonnes of carbon dioxide-equivalent (CO₂-e). The sectoral breakdown of these emissions is shown in figure 1.

The bulk of Australia’s emissions come from stationary energy (predominately electricity generation but also fuels consumed in the manufacturing, construction and commercial sectors), transport and agriculture. With the inclusion of the agricultural sector deferred until at least 2015, Australia’s electricity generators alone will initially account for almost 50% of total compliance obligations under the scheme.

What bodes well for an efficient market to service Australia’s scheme is that the 21 generators in the National Electricity Market (NEM), other large compliance buyers and the financial trading community supporting them are au fait with trading OTC and futures markets for related energy markets, such as electricity, to manage their price and counter-party risks.

Figures 2 and 3 illustrate the growth of electricity futures and options at the Australian Securities Exchange (ASX) since their inception. Given that all of the participants in Australia’s financial markets (including almost every compliance buyer under the forthcoming CPRS) are existing users of its infrastructure, the ASX anticipates that its futures and options markets for carbon pollution permits will emerge much faster and quickly become significantly larger than those for electricity.

Australia’s role in the Asia-Pacific

Australia’s financial markets are widely considered to be the most liquid and sophisticated in the Asia-Pacific. Australia’s financial markets are well serviced by OTC trading infrastructure and exchange-based trading mechanisms, clearing houses and settlement services. Moreover, all of the global investment banks and brokerage houses have a physical presence in Australia. It is these firms, together with the strength of Australia’s own banking, finance and advisory (legal, accounting, risk management advisory) sectors that will provide trading, finance and risk advisory services to the corporate sector in Australia and throughout the region.

Australia’s debt and equity markets are particularly well placed to help raise the requisite capital to develop and deploy new low-emissions technologies. Of note, there are already over a dozen companies listed at the ASX either developing or deploying...
clean technologies such as carbon capture and storage, geo-thermal, wind, solar and tidal energy as well as carbon sequestration.

Singapore and Hong Kong are not alone in the region claiming to be the logical home for the trading of carbon credits. While investment in Clean Development Mechanism (CDM) projects in China, India and elsewhere in Asia has been profitable for many investors, secondary liquidity in CERs is low relative to that generated by permit issuance within the European Union’s Emissions Trading Scheme (EU ETS).

In the absence of an ETS or some other mandatory constraint on emissions throughout Asia prior to 2012, the success of exchange-based markets for Kyoto units outside of those already servicing compliance buyers in Europe will be limited.

In other words, Australia is uniquely placed in the Asia-Pacific with a 2010 commencement date for this scheme and a carbon footprint eight times that of New Zealand. Over time, as the international ‘carbon market’ becomes more fungible, those centres such as Australia that attract an initial critical mass of liquidity in the first instance will be well placed to build on this liquidity in the post-Kyoto period.

The Australian Financial Markets Association (AFMA) supports linkages to comparable international schemes as an aim to aspire to, as these links would ultimately create a broader and deeper market. However, AFMA is also of the view that, given the size, breadth and depth of the forthcoming CPRS as a stand-alone market, there would be sufficient domestic liquidity such that “accessing offshore liquidity” does not make linkages an imperative.

The same cannot be said of the forthcoming ETS in New Zealand where the National Party (who are currently in opposition) has recently stated one of their reasons for not supporting the Climate Change (Emissions Trading and Renewable Preference) Bill until after the forthcoming election expected in November 2008 is to provide further time to explore direct links with Australia’s forthcoming scheme.

**Mandatory and prospective environmental trading schemes operating in Australia**

There are currently five environmental trading schemes operating in Australia, one national scheme, the Mandatory Renewable Energy Target scheme (MRET) and four state-based schemes:

- Victorian Renewable Energy Target scheme (VRET);
- New South Wales Greenhouse Gas Abatement Scheme (GGAS);
- Australian Capital Territory (ACT) GGAS equivalent, and
- The 13% Gas Scheme.
- The Victorian Energy Efficiency Trading (VEET) Scheme will commence in Victoria on 1 January 2009 and NSW and South Australia have announced plans to introduce their own versions of this scheme also from 1 January 2009.

The federal government initiated Australian Carbon Pollution Reduction Scheme (CPRS) is due to start in 2010 and will replace the GGAS scheme and possibly the 13% Gas Scheme.

The multiplicity of trading schemes has resulted in reduced liquidity, uncertainty of future pricing and significant transaction and compliance costs for scheme participants. The government commissioned Garnaut Review (and the Parer Review that came before it in 2002) convincingly argues that a single Australian Emission Trading Scheme would make all other schemes (apart for MRET over a transition period) unnecessary. To this end, the Commonwealth government is working with the state governments to rationalise the number of existing and proposed schemes, together with other non-complementary measures.

The size of the voluntary market for carbon credits in Australia is very small. The Greenhouse Friendly Accreditation Standards are the most commonly used for verification and the value of the associated market is approximately $20 million year annum.

Due to the broad coverage of the forthcoming Australian CPRS, the domestic supply (and demand) for credits is likely to remain small. The global demand for credits in the voluntary markets equates to less than 1% of that in the current mandatory schemes, which have far better prospects to meaningfully address climate change over time.
Australia’s Carbon Pollution Reduction Scheme

Of note, all of the existing futures exchange and central counterparty clearing infrastructure underpinning the financial markets in New Zealand currently reside in Australia, as do most of the interest rate, equity, commodity, energy and environmental product divisions of the major trading banks, investment banks and brokerage houses present in Australasia.

The forthcoming scheme

The aims of the CPRS are to:
- help Australia meet its emissions reduction targets in the most flexible and cost-effective way;
- support an effective global response to climate change; and,
- provide transitional assistance for the most affected households and firms.

Since the release of the Green Paper the public debate has appropriately centred around the level and form of transitional assistance (compensation) for business and households, the commencement date for the Scheme, and what caps on carbon pollution should be imposed on the Australian economy over-time relative to efforts by other countries.

The following summarises the preferred positions on the design of Australia’s CPRS as outlined in the Government’s Green Paper released in July.

Coverage

The scheme will cover the stationary energy, transport, fugitive emissions, industrial processes and waste sectors, and all six greenhouse gases counted under the Kyoto Protocol from the time the CPRS begins.

In general, the emissions threshold for direct obligation under the scheme would apply to all entities with facilities that have direct emissions of 25,000 tonnes of CO₂-e a year or more.

The government has signalled that it is inclined to include agriculture by 2015 and will make a final decision on this by 2013.
Reforestation (as defined for the first commitment period of the Kyoto Protocol) would be included, on a voluntary basis, from the commencement of the scheme in 2010.

Given its broad coverage there is limited scope for generating credits from uncovered sectors within the Australian economy.

**Emissions targets and scheme caps**

The government will set five years of firm caps, which will be extended annually or as per the terms of a post-Kyoto period agreement:

- A further 10 years of gateways (that is, minimum and maximum cap levels), extended every five years to let industry and financial markets know the upper and lower bounds of what the cap will be;
- Firm caps will not be finalised until Q1 2010 in order to factor in the outcome of negotiations on the post-Kyoto period due to take place at Copenhagen in late-2009.

At the end of 2008, in the context of the white paper, the government will announce a medium-term national target within upper and lower bounds for 2020, together with broad guidance on the pathway to this target, in order to provide investors and market participants information on intended plans, while also retaining sufficient flexibility for the government.

As stated in the paper: “the government’s intention is that there would be scheme caps for each year to 2015, followed by a gateway at 2020 and a gateway at 2025”. In 2013 there will be scheme caps for each year up to 2018, with a gateway at 2020 and 2025, and with the 2030 gateway to be set for the first time following a review in 2015.

**A safety value**

In a bid to ensure a smooth transition occurs in the early years of the scheme, the Green Paper proposes a price cap that would be “set high enough so to ensure a very low probability of use”.

**The allocation of permits**

No less than 70% of permits (including some future date-stamped permits) are to be auctioned. The first auction would take place as early as is feasible in 2010, prior to the start of the scheme.

Four years of vintages would be auctioned (a current vintage plus an advance auction of three future vintages).

Auctions would be held each quarter, with the fourth auction held one month after the financial year in the lead up to the relevant surrender date. The advance auction of future-year vintages would occur once each year.

Over the long term the government proposes moving to 100% auctioning.

**International linking**

Compliance buyers would be able to meet their obligations by using eligible Kyoto units (Joint Implementation (JI), Removal Units and Certified Emissions Reductions (CERs)) for compliance in the scheme, limited to a maximum percentage of each entity’s obligation.
The auctioning of carbon pollution permits will benefit the efficiency of forward price discovery and in turn the investment required to transform Australia over time into a less carbon intensive economy.

It is not proposed that Assigned Amount Units (AAUs) will be accepted (albeit this position is to be reviewed in light of international developments). In order to facilitate a smooth start, the scheme would prohibit the export of Australian permits.

The Green Paper reiterates that Australia’s position will be to argue for the inclusion of avoided de-forestation in a post-Kyoto-period framework.

Banking and borrowing
Unlimited banking of permits would be allowed under the CPRS. The scheme would permit a limited amount of short-term borrowing by allowing liable entities to discharge up to a certain percentage (less than 5%) of their obligations by surrendering carbon permits dated from the following year.

Compensation
All revenues from auctioning are to be used to assist households and business with the adjustment to the scheme.

The government intends to shield motorists from higher fuel bills by decreasing fuel taxes on a cent-for-cent basis.

Commentary on the proposed positions
Of the estimated 1,000 firms with compliance obligations under the forthcoming scheme, the 50 largest compliance buyers (accounting for 80% of total carbon pollution) will be active users of forward markets. Smaller compliance buyers are more likely to manage their carbon risks through intermediaries such as banks like they currently do when managing their interest rate, currency and commodity price exposures.

The proposed early commencement and level of auctioning should enable price discovery to quickly establish the marginal cost of abatement across all impacted firms that will be covered by the scheme, including firms receiving various forms of compensation.

The auctioning of future-year dated carbon pollution permits will benefit the efficiency of forward price discovery and risk transfer and in turn the investment required to transform Australia over time into a less carbon intensive economy.

Setting caps (the supply constraint) for five years will support a robust forward market. However, liquidity in most forward markets does not exceed three years. For example, while up to six years of futures contracts are available for trading in the EU ETS, the majority of liquidity resides in the prompt calendar year. In other words, the proposed five-year reviews and gateways provide a balance between providing some certainty for business while retaining a fair level of flexibility to reflect the outcome of on-going international negotiations on climate change.

While the proposed price cap is not completely ideal (in the absence of a make-good provision, it is a form of taxation), it will not diminish the role of the financial markets to help firms to raise capital and mitigate their compliance risks. The safety value, endorsed by the previous Prime Minister’s Emissions Trading Task Group and National Emissions Trading Taskforce (NETT) proposals, is intended to assist with a smooth transition to having a carbon constraint on the economy.

That said, the proposal for unlimited banking may undermine the value of a temporary price cap if the market values the future value of permits at a higher value. It is worth noting that the price cap implies that the cost of making up any difference between national emissions and an internationally negotiated target will be borne by the government, in other words by tax payers.

How are the carbon markets likely to evolve in Australia?
The fundamentals of the proposed scheme design (namely broad coverage, the central role of auctioning and the early of issuance of permits) together with the sophisticated risk management practises of the larger compliance buyers in Australia bodes well for a vibrant OTC and futures market.

Legislative certainty will be the catalyst for the standardisation of OTC and futures products, albeit forward pricing will reflect some uncertainty regarding the ‘supply constraint’
until the caps for the first five years of the scheme are set in the first quarter of 2010.

As was the experience in Europe, early trades have commenced in the OTC market prior to the finalisation of the scheme’s design, commencement date and trajectory. Significantly, these early trades have established a starting point for factoring carbon into critical investment decisions and forward trading in carbon intensive sectors such as electricity. Unsurprisingly, most participants in these early trades have a requirement to ‘pass through’ their forthcoming carbon exposure to customers and/or hedge their renewable energy portfolio.

Liquidity in the forward markets will continue to grow as the details regarding the scheme design and start date become more certain. It is important to note that key aspects of the CPRS’s design may not be resolved until the bill is actually passed. The recent difficulties in passing the Climate Change Bill in New Zealand highlights just how politicised the passage of such a bill can become.

The Treasury modelling due in October 2008 together with further details in the White Paper to be published before the end of 2008 should assist the market to price forward. The signalling of a shallow trajectory, as predicted by many pundits, will reduce the demand for eligible Kyoto units that may be valued higher in other schemes, for example the EU ETS. Conversely, a steep trajectory (or the unlimited banking provision) may see carbon pollution permit prices reach or exceed prices in markets for eligible Kyoto units.

In its first few years, it is likely that the market price for carbon pollution permits in Australia will be driven by the trajectory set for the scheme and its inter-play with prices in inter-related energy markets and R.E.C.s, more so than the international market for eligible Kyoto units.

Australia is well serviced by OTC and exchange-based market infrastructure. The Australian Financial Markets Association (AFMA), which has been instrumental in developing markets to support Australia’s existing emissions and renewable energy trading schemes, will be the primary conduit for standardising the documentation required, most likely under the auspices of an International Swaps and Derivatives Association (ISDA) Master Agreement.

With respect to futures and exchange-based spot markets, the ASX as well as no fewer than three start-up market providers have signalled their intention to develop futures markets. As with the EU ETS, and experience within Australia when two futures exchanges (the Australian Stock Exchange and the Sydney Futures Exchange (SFE)) competed in 2002/03 to offer electricity futures and options, liquidity will quickly gravitate to the exchange providing the best value proposition. Figure 4 illustrates the likely evolutionary path of emissions trading in Australia.

The final form of Australia’s scheme will be refined over the coming months to reflect feedback on the options and preferred approaches set out in the Green Paper.

As the course continues to be set, Australia’s financial markets are well placed to service the market risks associated with the forthcoming implementation of this scheme and help raise the capital necessary to transform Australia into a less carbon intensive economy.

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1. The Australian Securities Exchange was formed through the merger of the Australian Stock Exchange and SFE Corporation in July 2006.