Senate Inquiry on the Government's Carbon Pollution Reduction Scheme

Submission to the Inquiry

From: Mark Lewis

Reason for submission: As a non-Australian (I am a British citizen), my interest in the Senate's Inquiry stems from my professional position as a Managing Director of Commodities Research with Deutsche Bank, and the Head of Deutsche Bank's carbon-emissions research. In this capacity, I have followed the workings of the European Union's Emissions-Trading Scheme (EU-ETS) very closely since its inception in 2005, and have also followed the global debate on carbon trading very closely over the last few years.

With specific respect to Australia, I have visited the Commonwealth four times in the last two years (first in June 2007 just after the publication of the Prime Ministerial Task Group's report on emissions trading, and most recently for the week of the 9th of March this year) to meet with policymakers, corporations, and institutional investors. The exchanges I have had with these parties over the last two years have enabled me to share my views on the experience of the EU-ETS to date, and to learn about the key issues raised by the introduction of emissions trading in Australia as this debate has evolved.

As a result, in my submission I restrict myself to commenting on certain technical aspects of carbon trading, comparing and contrasting the approach proposed in the Australian Government's Carbon Pollution Reduction Scheme (CPRS) with the approach followed so far by the EU-ETS. To the extent that the overriding objective of any carbon-trading scheme is to reduce emissions at least cost, my comments are intended to elucidate the likely effectiveness of the CPRS versus the EU-ETS on the aspects discussed.

I preface my comments with the below disclaimer.

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I would like to comment on four aspects of the proposed CPRS and, where relevant, to compare and contrast these aspects with the approach adopted in the EU-ETS: (i) the auctioning of allowances in the CPRS; (ii) the methodology used for granting free allowances to sectors and industries subject to the risk of carbon leakage; (iii) the need for retaining supply-side flexibility in the setting of the cap; (iv) the allowed use of offset credits.

1. The auctioning of allowances under the CPRS

From an economic point of view, auctioning represents the most efficient method for allocating emissions allowances in a cap-and-trade scheme. As a result, I start from the premise that the ideal method for allocating allowances under the CPRS would be to auction 100% of the allowances, and then, where necessary, to compensate on an *ex-post* basis (for example via rebates) those parties

with legitimate claims for compensation (for example, Australian companies, sectors, and industries at risk of carbon leakage owing to international competition from industries in third countries that do not impose any carbon constraint on their companies, sectors, or industries).

The Australian CPRS starts from the same premise (i.e. that auctioning is the most economically efficient method for ensuring price discovery and allocative efficiency), and the Government's Commentary to the draft CPRS Bill states (Chapter 3, Paragraph 11) that the policy objective over time is to move progressively towards 100% auctioning, 'subject to the provision of transitional assistance for emissions-intensive trade-exposed industries and compensation for coal-fired electricity generation'.

Indeed, while there will be exemptions from auctioning initially in order to guard against carbon leakage (in the case of emissions-intensive trade-exposed industries) and stranded assets (in the case of coal-fired electricity generation), it is clear that the CPRS will begin with a much higher level of auctioning than was the case in the EU-ETS.

In this respect, Chapter 3, Paragraph 9 of the Government's Commentary to the draft CPRS Bill states that 'the Government has decided that a large proportion of Australian emissions units will be auctioned'. Based on conversations I had with policymakers, industrial companies, and media commentators on my trip to Australia in March 2009, I came away with the impression that up to 75% of the total amount of allowances to be allocated could be auctioned from the beginning of the scheme.

This would represent a radical improvement upon the experience of the EU-ETS. During the first trading period of the EU-ETS (which covered the three years 2005-07), 100% of the allowances were allocated free of charge, while for the second trading period (which covers the five years 2008-12), the Directive governing the scheme stipulated that no more than 10% of the total number of allowances would be auctioned, with the rest again allocated free of charge (and in practice, I estimate that the proportion of allowances auctioned over 2008-12 will be even lower than this at about 5%). Finally, even from the beginning of Phase 3 of the EU-ETS (which will cover the eight years 2013-20), I estimate that the level of auctioning will be in the range of 50%-60%, that is to say 40%-50% of the allowances will still be allocated free of charge.

In short, if the impression I have formed is correct and under the CPRS c.75% of the allowances were to be auctioned from day one, then this would mean that the CPRS would start with a higher level of auctioning than the EU-ETS would have achieved even after eight years. As such, the CPRS would start with a (significantly) more efficient price mechanism than the EU-ETS.

2. The methodology used for granting free allowances to prevent carbon leakage: dynamic benchmarking under the CPRS versus static benchmarking under the EU-ETS

With the introduction of any emissions-trading scheme, policymakers' first priority must be the avoidance of carbon leakage. This is because carbon leakage – the replacement of domestically produced goods subject to a carbon constraint by goods produced in third countries not subject to a carbon constraint – would result in higher overall global emissions and lower employment in the country introducing the emissions-trading scheme. Preventing carbon leakage is therefore essential to vouchsafing both the environmental integrity of the CPRS and its political acceptability.

So, how does the proposal to allocate allowances free of charge to sectors and industries at risk of carbon leakage under the CPRS compare with the experience of the EU-ETS?

As already mentioned above, in Phases 1 and 2 of the EU-ETS, the overwhelming majority of allowances to all installations – whether at risk of carbon leakage or not – will be allocated free of charge. For Phases 1 and 2 of the EU-ETS, each Member State produced its own National Allocation Plan, and the specific procedures for determining the amount of allowances that would be allocated for free to each installation can therefore vary from country to country.

For example, in the case of Germany (the largest Member State covered by the EU-ETS, accounting for c.25% of the total emissions covered by the EU cap), in Phase 1 allowances were allocated for free on a grandfathered basis with reference to the emissions recorded over 2000-02, while in Phase 2 the method of free allocation has switched to static benchmarking, where allocations are again made for free based on a historic level of production but this time adjusted for an industry-wide benchmark.

Indeed, for Phase 3 of the EU-ETS, the European Commission intends to use static benchmarking across the EU as a whole as the methodology for determining free allocations for those industries and sectors deemed to be at risk of carbon leakage.

With free allocations under static benchmarking, allowances are allocated on an *ex-ante* basis to installations free of charge with reference to an industry-wide efficiency benchmark and the installation's own level of production over a given reference period. Installations then receive the same amount of allowances for free each year over the trading period in question (if the installation closes then the free allowances are taken away for the rest of the period, but except in the case of plant closures there is generally no link under static benchmarking between the ongoing level of production and the amount of free allowances received).

Whilst the use of static benchmarking represents an improvement on grandfathering to the extent that less carbon-efficient producers will receive fewer free allowances than more carbon-efficient producers for a given level of historic output, the basic problem when allowances are allocated free of charge on an *ex-ante* basis is that the volumes bought and sold in the market on any given day do not necessarily correspond to the fundamental supply-and-demand dynamics.

This is because all installations effectively start off with a long position of greater or lesser size, which leads them to behave differently from how they would behave if they had to buy all of their allowances on a pay-as-you-go basis. Specifically, the free allocation of EUAs on an *ex-ante* basis impedes market efficiency on three levels:

(i) static efficiency is reduced, in that the short-term clearing price is distorted either (a) by the delay in buying in an upward-trending market (as occurred in the first half of 2008 in the EU-ETS), or (b) by the risk-free selling in a downward-trending market (as has been occurring since the EU economy went into recession in the third quarter of 2008);

(ii) dynamic efficiency is reduced, in that companies may make the wrong – i.e. more carbon-intensive -- investments based on a price signal that does not fully reflect the tightness of the cap over the long term; and

(iii) allocative efficiency is reduced, in that consumers do not receive the full/any incentive to switch their purchases from high carbon-intensive goods to lower-carbon intensive ones because the price signal is only partially/not at all being reflected in the cost base of producers in the first place.

The market inefficiency of most immediate concern at the moment in the EU-ETS is the reduction in static efficiency caused by such high levels of *ex-ante* free allocations (although this then translates automatically into problems with dynamic and allocative efficiency in any case).

The problem is that in a recession installations might find that they have been given more allowances than they need (at least in the short term). If, at the same time, they are finding it harder than usual to obtain short-term liquidity from their banks owing to the credit crunch, then they will have a big incentive to sell EUAs in the short run, even if they might need them at some point in the future.

This is exactly what has been happening in the EU-ETS since the third quarter of 2008. The recession has reduced industrial output, and hence the need for emissions allowances in 2008 and 2009. As a consequence, with credit much more tightly constrained than usual as a result of the stress being experienced in global financial markets, many installations in the EU-ETS have been selling allowances that they now think surplus to requirements in order to raise cash for working-capital purposes.

In other words, a (significant) amount of selling has occurred in the EU-ETS purely as a consequence of the methodology used to allocate the allowances. Had the allowances been auctioned, the installations would simply not have bought the number of allowances they were given for free in the first place, with the result that there would not have been the same level of selling. In short, the market price in the EU-ETS has been distorted by the use of static benchmarking.

Under the CPRS, by contrast, the plan is to allocate allowances for free to sectors and industries at risk of carbon leakage (emissions-intensive, trade-exposed sectors and industries) by using a methodology of dynamic benchmarking.

Under dynamic benchmarking, allowances are allocated with reference to an industry-wide benchmark and *ongoing* levels of production rather than historic levels of production.

This means that to the extent that the free allocations are made with reference to the ongoing level of production, there should be little or no risk of the CPRS experiencing the kind of problems currently occurring in the EU-ETS, whereby many industrial installations appear (at least in the short term) to have significant amounts of surplus allowances. As a result, there should be little or no risk of the CPRS suffering the kind of price distortion currently being experienced in the EU-ETS.

That said, the disadvantage of dynamic benchmarking is that with free allocations linked to the level of production, there is by definition no opportunity cost to producers in forgoing production and hence no incentive to reflect the cost of carbon in the selling price of their goods. As a result, both static efficiency and allocative efficiency are reduced by this method of allocating allowances for free.

At the same time, however, it should be remembered that the CPRS envisages starting with a much higher level of auctioning to begin with in any case, so the extent to which the lack of an opportunity

cost will undermine the effectiveness of the price mechanism overall is low. Moreover, although there is in theory an opportunity cost to producers under *ex-ante* benchmarking, on the basis of the experience of the EU-ETS to date only the power-generation sector (which is not subject to the risk of carbon leakage) would appear to show unambiguous evidence of passing through the cost of carbon in its selling price.

Industrial installations in the EU-ETS are faced with a dilemma (should they pass through the cost of carbon and risk market-share loss, or not pass it through and thereby dilute the price signal?), and appear to date to have opted for low/minimal pass-through, with the result that their competitiveness is unaffected but the systemic price signal is muted.

In short, I think that because (i) Australia's CPRS envisages a much higher level of auctioning from day one than the EU-ETS will display even after eight years, and because (ii) to the extent that such free allowances as are allocated will be linked to ongoing production rather than historic production as under the EU-ETS, the CPRS will have a (significantly) more efficient price mechanism than the EU-ETS.

3. Setting the cap: the need for supply-side flexibility

Under the EU-ETS, the caps for Phases 1 and 2 were set using a procedure under which all 27 Member States of the EU submitted National Allocation Plans to the European Commission, with the Commission deciding whether the national caps proposed by the Member States were acceptable or not, and, where necessary, cutting them back.

In Phase 1, the price of European carbon credits (known as European Unit Allowances, or EUAs) eventually collapsed to near zero from an earlier high of €30/tonne. This was because after the publication of the first verified emissions data in 2005, it transpired that the aggregate cap of the 27 Member States was nearly 10% higher than the actual level of emissions, and with no banking of Phase-1 EUAs into Phase 2 allowed, Phase 1 of the EU-ETS was rendered an over-supplied market.

The architecture of Phase 2 of the EU-ETS is superior to that of Phase 1 in that (i) the level of the aggregate EU-wide cap was cut back with a view to correcting for the over-allocation in Phase 1, and (ii) Phase-2 EUAs are bankable into future trading periods (which means that in theory the problem of oversupply experienced in Phase 2 should never recur given that it is in the policymaker's gift to tighten the cap in future trading periods and thereby increase the value of EUAs in the current trading period).

However, given the very weak macro-economic background at the moment, the market is uncertain as to how long and how deep the EU recession will ultimately be, and the fact that the supply of EUAs is now fixed out to 2020 while the risk to demand is still to the downside, is preventing the banking mechanism from encouraging sufficient numbers of compliance buyers/speculators to buy at the moment. In short, with the supply of EUAs fixed out to 2020, the EU-ETS is subject to the risk of periodic price spikes and price crashes.

Against this backdrop, it is now clear that the EU would have done better to retain flexibility into the future. This would have enabled it to modify the cap as necessary over time in response to the variables influencing demand, the extent to which the ETS was keeping up with the timeframe for

achieving its policy objectives, and any changes in the scientific frame of reference requiring more or less urgent policy action to reduce emissions.

In no other commodity market is the supply fixed so far in advance, and by retaining flexibility on the precise level of the cap the EU would have been able to ensure that it was at all times perceived by the market to be as tight as necessary to achieve its policy objectives.

For example, instead of fixing a rigid cap so far in advance, the EU could have indicated an initial target for the cap whilst stating that this target would be subject to periodic review. Such reviews could take place annually, semi-annually or even on an *ad-hoc* basis, but with this flexibility to adjust the cap in response to market and policy developments over time, the EU would have been able to ensure at all times that it remained within the range required to ensure that the policy objectives were met.

Under such a scenario, market participants would have had to look through short-term conditions and ask themselves the question: what purpose is the carbon market actually meant to serve, and how are the authorities likely to take account of the impact of these short-term conditions on the policy objectives of the ETS when they next review the cap?

Alternatively, the EU could have instituted some form of central bank for carbon allowances. A central bank would have been able to intervene from time to time to ensure that the market remained within the parameters of the policy objectives whatever the prevailing economic, weather or commodity-price conditions at any particular time.

In this respect, the carbon market would have resembled the foreign-exchange (FX) market, where central banks are perfectly at liberty to step in at any time they choose in order to keep currency movements within the parameters of the policy objectives they are assigned by their governments. The FX market adapts psychologically to the possibility of central-bank intervention by always bearing in mind the parameters of the respective central banks' policy objectives, and so it would have been with a central carbon bank.

For the same reason, I think it is important for Australian policymakers to ensure they retain the flexibility to modulate supply in the CPRS in response to unforeseen demand-side shocks. In this way, they would be able to ensure that the cap is at all times perceived by the market to be set at a level appropriate to generating a clear, and undistorted price signal that will follow a predictable trajectory consistent with the long-term policy goal of transforming Australia into a low-carbon economy.

It may well be that in this respect the gateways envisaged in the CPRS will provide a periodic opportunity to modulate supply by altering the trajectory of the cap, but in my view the five-year intervals at which the gateways are planned are too widely spaced out for this to be effective. As a result, I would suggest that the CPRS provide for more frequent periodic review of the cap.

4. The allowed use of offset credits

To the extent that the CPRS is proposing to allow unlimited access to offset credits (specifically, Certified Emissions Reductions , or CERs, generated under the Kyoto Protocol's Clean Development Mechanism, or CDM), there is a risk that the price signal in the CPRS will not reflect the cost of

abatement in Australia, and hence that the incentive to invest in low-carbon technologies will be reduced. This is because with unlimited use of CERs, whenever the price of CERs is below the cost of domestic abatement in Australia (which is probably the case at the moment with 2009 CERs trading at c.€10/tone, or c.A$19/tonne), industrial installations covered by the CPRS will always have an incentive to purchase CERS rather than abate domestically. In effect, the cost of abatement in Australia will be set by the cost of abatement in a given host country of CDM projects.

In this respect, the approach adopted under the EU-ETS is in my view more effective, as it restricts the use of offset credits generated under the Kyoto Protocol's flexible mechanisms to a pre-defined level equating to roughly 7% of the total EU-ETS cap over 2008-20, with a view to ensuring that there should always be an incentive to abate within the EU in order to meet the cap.

In this way, the use of CERs serves to reduce the *average* cost of compliance for EU-ETS operators while the limit on their use should in theory ensure that the *marginal* price of allowances will be determined within the EU itself.

Conclusion

I think that as far as the level of auctioning and method of allocating free allowances envisaged under the CPRS are concerned, Australia's proposed cap-and-trade scheme represents a technical improvement upon the EU-ETS that will provide for a more robust and effective price mechanism.

At the same time, I think that the CPRS should provide for a more explicit and more frequent discretionary power on the part of the public authorities to be able to modulate the supply of allowances in response to variations in demand, and that the unlimited use of CERs will likely impede the development of a domestic carbon-price signal in Australia so long as the price of CERs remains at current levels.