

3 August 2007

Ms Joanne McGilchrist
Climate Change, Energy and Commercial Operations
New Zealand Treasury
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WELLINGTON NEW ZEALAND

Dear Ms McGilchrist

COMMENTS ON KYOTO CARBON PRICE ANALYSIS OF JULY 2007

I have considered your analysis of a 'representative' emissions price for the valuation of possible future greenhouse gas emission liabilities under the Kyoto Protocol and offer comments below. I note that the methodology you have adopted mirrors that applied by Mr Geoff Sinclair last year for this purpose — which was peer reviewed, and agreed, by the Allen Consulting Group (ACG) in order to assure its robustness and fitness for purpose.

Key observations on your methodology and proposed emissions price for forward estimates purposes follow:

- Your methodology and the proposed price — being based on actual prices being paid in forward markets for Kyoto consistent emission allowances — is likely to represent a first-best approach to estimating the budget implications of covering New Zealand's projected 2008-12 emission entitlement shortfall through purchases in the international market.
- Forward markets reflect the price expectations of those seeking to buy and sell emission allowances at a future date, and reflect discounting for time and risk. There are still significant uncertainties about international supply and demand conditions for Kyoto allowances — this is a function of uncertainties around factors including the:
 - abatement opportunities available within Kyoto-ratifying countries (ie. the shape of marginal abatement cost curves),
 - volume of abatement 'credits' likely to be generated from the project-based mechanisms (CDM and JI)
 - extent to which nations will utilise emissions trading mechanisms to satisfy their Kyoto obligations;
 - extent to which nations such as Russia and Ukraine might restrict supply of their surplus Assigned Amount Units (tradable between Kyoto Parties); and
 - likely implications of post-2012 greenhouse negotiations and targets (a key influence on incentives to bank Kyoto allowances, rather than sell them in the 2008-12 period).

- Efforts to reflect the interaction of these effects in an economic modelling context generate a wide range of potential Kyoto prices. By way of illustration, in a 2003 analysis of Kyoto emission prices ('On Carbon Prices and Volumes in the Evolving Kyoto Market' (paper for the OECD Global Forum on Sustainable Development, Paris 17-18 2003), Professor Michael Grubb reported Kyoto price forecasts drawn from several modelling exercises — estimated prices spanned a range of 'close to zero' to US\$13.60 per tonne of CO₂e (if the USA remains outside the Protocol). Further, he points out that there are several reasons to expect that models may tend to 'over-predict' equilibrium prices. Similar results and observations can be gleaned from a range of other sources.
- Against the backdrop of these uncertainties, the analysis of prices in forward markets provides a pragmatic means of reflecting actual judgments and investment behaviours triggered by those with an economic stake in future carbon market outcomes.
- As reflected in your proposed methodology, it is important to distinguish between forward prices for Kyoto-consistent emission allowances and forward prices generated in the European Union emissions trading system (EU ETS). As explained in detail in the ACG advice on a Kyoto price provided to New Zealand Treasury in 2005, restrictions within the EU ETS tend to systematically drive the price of EU ETS emission allowances (EUAs) above that of Kyoto consistent emission allowances generated outside the EU ETS. Kyoto allowances available to the New Zealand government can be expected to trade at a lower price to similarly vintaged (2008 and beyond) EUAs.

With these issues and uncertainties in mind (detailed in ACG's previous advice to New Zealand Treasury on this matter, provided in 2005 and 2006) we support the use of the approach detailed in your paper for determining an 'indicator' price for the purchase of Kyoto-compliant emission allowances — should New Zealand decide to source allowances from the current market.

However, it is apparent that a range of factors will continue to influence supply and demand conditions in the Kyoto market, and expectations around these. This highlights the speculative and potentially volatile nature of prices in the forward market, and the continuing market process of price discovery and assimilation of new information. Unravelling and taking a position on these elements would be a complex and intensive exercise — that would still ultimately require a degree of judgement about the likelihood of future international outcomes. **The methodology (and data sources) you have applied is, in our view, a robust high level approach to this set of issues, and the estimated emissions price of USD 11.90 per tonne of carbon dioxide equivalent provides a reasonable basis at the present time for valuing possible future liabilities under the Kyoto Protocol.**



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