

Background to greenhouse gas emissions market

Linked to the UN Framework Convention on Climate Change, the Kyoto Protocol is an international agreement committing 37 industrialised countries and the European community to reducing greenhouse gas (GHG) emissions to an average of 5% against 1990 between 2008-2012. Placing heavier burdens on developed nations under the “common but differentiated responsibilities” principle, it recognises that the prolonged industrial activity in these countries is principally responsible for the current high levels of GHG emissions.

Over 30 gases have been identified as climate-changing greenhouse gases, mainly organic compounds, but also including water vapour, that affects the atmosphere composition and ozone layer, thus contributing to ‘global warming’. Within this group, six have been specified in the Kyoto Protocol (UN, 1998) as requiring regulation:

- Carbon dioxide
- Methane
- Nitrous oxide
- Hydrofluorocarbons
- Perfluorocarbons
- Sulphur hexafluoride

Although most GHG reduction targets should be through national measures, additional means were proposed through market-based mechanisms. These markets were encouraged not only to help emission targets to be met in a cost-effective manner, but also to stimulate green investment, particularly in developing countries and the private market. The Kyoto mechanisms are emissions trading schemes, the clean development mechanism (CDM) and joint implementation (JI).

The emissions targets are quantified into allowed units, and it is the trading of surplus (or shortage) of these allowed units that has led to the commodity market now known as the ‘Carbon Market’. Transfers and acquisitions of these units are tracked and recorded through registry systems under the Kyoto Protocol, with international transaction logs ensuring secure transfer between countries.

As well as the actual emission units, other units, each equal to a tonne of CO₂, may be transferred, such as removal units using land use and change basis, emission reduction units and certified emission reduction units from other projects not directly related to GHG emissions.

Many different forms of trading have evolved to provide entities with the flexibility to determine the most economic means to reduce emissions. These different market forms

are a consequence of products traded and scope of the market and registry processes. The following are very brief outlines of different trading markets:

- Bubbles allow multiple emissions sources to combine total emissions targets from these multiple sources under one accounting entity.
- Offsets or Credit-based Emission Reduction trading systems are project-based, often incorporating non-capped industries and entities. This allows an increase in emissions by obtaining offsetting reductions from voluntary, permanent emission reductions.
- Cap and Trade Programs are tradable units based on regulated permanent aggregated caps on total emissions in a system. Trading occurs when excess allowances, liberated through actions or improvements made, can be sold to an entity requiring allowances.
- Baseline Emission Reduction trading systems allows voluntary reduction in emissions below an agreed baseline under business as usual. Accreditation is based on the difference in emissions with and without the proposed project. The Clean Development Mechanism (CDM) relies on such a mechanism.
- Rate-based (or relative) emissions trading focuses on promoting increased efficiency without limiting growth of the underlying business. Units are based on improvement of efficiency beyond the target levels.

These markets can be used in combination with each other and have been applied to national and regional markets, as well as under the Kyoto mechanisms.

The discussion topics in this conference have come from the development and progression of the initial baseline GHG trading market. These are discussed in more detail in the following documents. All of the subsequent market mechanisms have evolved from a system restricting the aggregate allowable amount of pollutant but allowing market forces to move allowed emissions to highest value areas. The questions we raise in this conference stem from us wishing to determine a suitable market for the CARBONplus business idea. While recognising that market transactions are driven by relative prices of emission reduction opportunities among market participants, which market will accept the higher price of additional co-benefits?