Creating a global carbon market

Anthony Hobley
Norton Rose LLP

1 Beginnings of the carbon market

Over a decade ago, 160 of the world's countries joined an international treaty – the 1992 United Nations Framework Convention on Climate Change (UNFCCC) – to establish an international legal framework to tackle the emerging issue of climate change.[1] The UNFCCC has, at the time of writing, been ratified by 175 countries including the United States.[2]

The UNFCCC creates an umbrella within which all aspects of addressing climate change can be coordinated including: mitigating and adapting to the effects of climate change; and the process of reaching scientific consensus on the causes, impacts and responses required to tackle climate change. The necessary detail beneath this umbrella is settled by the Convention's governing body, the Conference of the Parties (CoP).

The UNFCCC creates a number of soft targets, the clearest of which is that the parties take action to prevent dangerous climate change. The question "what is dangerous climate change?" leads us to a critical part of the UNFCCC framework – the International Panel on Climate Change (IPCC), an international group of scientists who examine and report on the science of climate change every five years.

The emerging scientific consensus on tackling climate change is coordinated through the IPCC process and there is now almost unanimous scientific consensus that climate change is happening and that it is a result of man-made anthropogenic emissions.[3] It has even reached the stage where Senators proposing federal action in the United States no longer need to begin their speeches by stating that there is international scientific consensus that climate change is happening and results from human activities.

Taking the effect and cause of climate change as read, the consensus as to what needs to be done to mitigate global warming provides the vital context for examining the emerging global carbon market and its future development. The prevailing consensus is that the risks of irreversible and potentially cataclysmic alterations to the global ecosystem will amplify if global warming increases above

1 For a more detailed overview of this process and the relevant international provisions see Hobley, A., 2002, "Is Kyoto Dead? Climate Change After Bush" 5 *Env. Liability*, p 167 and http://unfcc.int/essential_background/items/2877.php.

2 http://unfccc.int/kyoto-protocol/background/status-of-ratification/items/2613.php.

3 Copies of the third IPCC Assessment report can be downloaded in English, Arabic, Chinese, French, Russian and Spanish from: http://www.grida.no/climate/ipcc_tar/.
The fourth Assessment Report of the IPCC will be available in January 2008.

2˚C compared to pre-industrial temperatures. The EU, for example, believes that the principal objective of global action against climate change must be to keep global temperature increase within a 2˚C limit. Any additional warming above the 2˚C limit, however fractional, would have severe repercussions: the EU estimates that a global temperature increase of 2.5˚C above pre-industrial levels would be likely cause an additional 3 billion people worldwide to suffer from water scarcity.[4]

If global temperature increases are to be restricted to within the 2˚C limit, then atmospheric concentrations of greenhouse gases (GHGs) need to remain well below 550 ppm CO2 eq. Indeed the EU estimates that even by stabilising long-term concentrations of GHGs at around 450 ppm CO2 eq, there is still only a 50% chance of limiting any global average temperature increase to less than 2˚C.[5] Although the 2˚C limit is attainable, these statistics highlight the need for international discussions to move beyond rhetoric and negotiations to firm commitments.

The consensus, or whatever it becomes, is important as it forms the benchmark against which international and domestic decision-making will be made. It is an indicator of the order of magnitude of the technical and policy challenges and can be used as a guide to the specific policy tools that are required.

This point is neatly illustrated by the events that followed the agreement of the UNFCCC in 1992, when it became apparent that the issue of climate change was more serious than had been thought[6] and that more was needed than the soft and non-quantitative UNFCCC targets, which could and were being ignored in practice. The Convention took effect in 1994, but by the following year governments were already negotiating the Kyoto Protocol, which was adopted unanimously in 1997 and entered into force on February 16 2005.

The Kyoto Protocol's major feature is its legally binding targets and timetables for the reduction of GHG emissions for 38 of the world's leading economies – referred to in the Protocol as Annex 1 countries. These targets range from -8% to +10% of the Annex 1 countries' individual 1990 emissions levels "with a view to reducing their overall emissions of such gases by at least 5.2% below existing 1990 levels in the commitment period 2008 to 2012" (the "Kyoto Commitment Period"). The targets form the basis for the assigned amount of each Annex 1 country, which represents the amount of GHGs that each country is permitted to emit during the Kyoto Commitment Period. The assigned amount is measured in Assigned Amount Units (AAUs) – the primary Kyoto Protocol unit of accounting, each AAU representing one tonne of Carbon Dioxide Equivalent (CO2e).[7] In almost all cases, the limits, even those set at +10% of 1990 levels, demand significant reductions in currently projected emissions. Future mandatory targets are envisaged for "commitment

4 Climate Change and the EU's response, Brussels November 27 2007 http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/515&format=HTML&aged=0&language=EN&guiLanguage=en.

5 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0002:EN:NOT.

6 Relevant IPCC report. See http://www.ipcc-ch/pub/sa(E).pdf.

7 The Kyoto Protocol covers the so called "six-gas basket" which this covers: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and three fluorinated gases, HFCs, PFCs, and SF6. CO2e is an internationally accepted measure that expresses the amount of global warming of GHGs in terms of carbon dioxide that would have the same global warming potential.

periods" after 2012. The intention was that these were to be negotiated well in advance of the periods concerned.

Commitments under the Protocol vary from nation to nation. The overall 5.2% target for developed countries is to be met through cuts (from 1990 levels) of 8% in the European Union (EU 15), Switzerland, and most Central and East European states; 6% in Canada; 7% in the United States (although the United States has since withdrawn its support for the Protocol); and 6% in Hungary, Japan, and Poland. New Zealand, Russia, and Ukraine are to stabilise their emissions, while Norway may increase emissions by up to 1%, recent ratifiers Australia by up to 8%, and Iceland by 10%. These numbers are the outcome of long, complex negotiations and horse trading in Kyoto. The EU has made its own internal agreement to distribute its 8% target among its Member States. These targets range from a 28% reduction by Luxembourg and 21% cuts by Denmark and Germany to a 25% increase by Greece and a 27% increase by Portugal.

Commentators have speculated that major compromises, particularly to allow greater use of sinks or land use, land change and forestry (LULUCF), made at Bonn (CoP6) in July 2001 and Marrakech (CoP7) in November 2001 (which resulted in the so-called "Marrakech Accords")_ have effectively reduced the aggregate target to somewhere between 0.5 and 1.5%. But, even if the targeted emissions of the Kyoto Protocol are a modest goal, the aggregate target represents a radical change from the still rising trend.[8]

Perhaps the greatest legacy of the Kyoto Protocol, however, will not be those modest cuts, but the principle it establishes of legally binding cuts and, importantly for the subject of this chapter, the universal norms for international emissions trading created beneath it, which provides a blueprint for a global carbon market (the "Kyoto Legacy"). It is this set of norms which will allow the emergence of a global carbon market, whether it grows from the top down or from the bottom up.

At one level, the Kyoto Protocol is a simple agreement. It sets legally binding targets and a timetable for their achievement by Annex 1 parties. Despite much misinformation to the contrary, the Protocol does not dictate how these countries should meet their targets – it provides three innovative options (described below), but it is up to each country to determine exactly how to do this.

At the political level, however, the Kyoto Protocol is a troublesome, complicated agreement, as demonstrated by the many years it took to enter into force. The Protocol's biggest challenge is to be effective against a worldwide problem in a politically acceptable way. This challenge has led to a multiplication of panels and committees to monitor and referee its various programmes. Even after the agreement was approved in 1997, further negotiations were deemed necessary to hammer out instructions on how to "operate" it in the form of the Marrakech Accords.

There is a delicate balance to international treaties. Those appealing enough to gain widespread support are often not strong enough to solve the problems they seek

8 For a more detailed overview of this process and the relevant international provisions see Hobley, A., 2002, "Is Kyoto Dead? Climate Change After Bush" 5 *Env. Liability*, p 167 and http://unfcc.int/essential_background/items/2877.php.

to address. The UNFCCC is a case in point, despite its many valuable provisions. Yet treaties with real "teeth" may have difficulty attracting enough widespread support to be effective. In that respect, the Kyoto Protocol is also remarkable, being widely acknowledged as having some of the toughest enforcement provisions of any multilateral treaty. Only the WTO Treaty is considered to be tougher.[9]

The Protocol provides Annex I parties with a major helping hand to achieve their targets by giving them the option to use flexible or market mechanisms, the so-called Kyoto "Flexible Mechanisms", which are:

- International Emissions Trading (IET), as set out in Article 17 of the Kyoto Protocol, which allows Annex I parties who are likely to exceed their assigned amount to sell their excess AAUs to other Annex 1 parties to meet their reduction targets. It also allows such parties to trade credits generated by projects under the other two flexible mechanism CDM and JI outlined below.
- The Clean Development Mechanism (CDM), defined in Article 12, provides for Annex I parties (developed countries) to earn Certified Emission Reductions (CERs) by implementing projects in non-Annex I parties (developing countries) that reduce emissions or absorb carbon through accredited activities, and which assist the host countries in achieving sustainable development. The CDM is supervised by the CDM Executive Board.
- Joint Implementation (JI), defined in Article 6 of the Kyoto Protocol, provides for an Annex I Party (with a commitment inscribed in Annex B of the Kyoto Protocol) to implement an emission-reducing project or a project that enhances removals by sinks in the territory of another Annex I party and count the resulting emission reduction units (ERUs) towards meeting its own Kyoto target.

In other words, the Kyoto Protocol allows countries, if they so wish, to buy and sell GHG emissions "units" and "credits". This is the basic premise of IET. The Protocol also provides for a system of project-based emissions reductions. This allows an Annex 1 country to finance emissions-reducing or emissions-avoiding projects in developing nations through the CDM or in other developed countries through JI. These Flexible Mechanisms are one of the Protocol's ground-breaking features that lower the overall costs of achieving its emissions targets. They enable parties to access least-cost opportunities to reduce emissions, or to remove carbon from the atmosphere in other countries. While the cost of limiting emissions varies considerably from region to region, the effect for the atmosphere of limiting emissions is the same, irrespective of where the action is taken.

9 For a detailed examination of the Protocol's enforcement mechanisms, see Depledge J, Yamin F, Chapter 12 "Compliance"; The International Climate Change Regime: A Guide to Rules, Institutions and Procedures, CUP 2004.