Carbon Trading: A good idea is going through a bad patch

By Sam Fankhauser

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Each year in late spring carbon market professionals gather for Carbon Expo, the biggest – although far from the only – trade fair for the carbon market. It is a busy, bustling event, and a look around the crowded conference hall confirms that carbon trading is no longer a fringe activity.

Carbon trading is a well-established, global industry that in 2010 turned over an estimated €90 billion.[1] Like other commodity markets, the "global" carbon market is in fact a series of smaller, differentiated trading platforms and products, which makes trading carbon both interesting and complex.

Carbon Expo boasts around 3,000 participants from over 100 countries.[2] According to a recent survey, they and their colleagues earn an average salary of $79,000. A quarter of them earned over $100,000 in 2010.[3]

The 250 or so exhibitors at Carbon Expo include blue chip financial institutions like Barclays Capital and JP Morgan as well as specialized brokers, project developers and investment boutiques. There is a thriving service sector that makes the industry run smoothly: trading platforms, ratings agencies, information providers, carbon lawyers, consultants, auditors, recruitment agencies and much else. Two main trade associations look after the interests of their members, the International Emissions Trading Association and the Carbon Markets & Investors Association.

In short, here is an industry that looks every bit as established and sophisticated as trading in traditional commodities like oil, gas, wheat or gold.

The international carbon market has reached this point in a relatively short period of time. Trading did not start in earnest until

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2005, when the European Emissions Trading Scheme opened and the Kyoto Protocol came into force. Since then, the carbon market has grown by over 60% on average each year.

The concept of environmental markets itself goes back much longer. Economists have known and argued for a long time that tradable permit systems can be an efficient way of curtailing pollution – more efficient than traditional regulation and as efficient as a pollution tax.

The advantage over regulation is that permit trading allows emission reductions to occur where they are cheapest to achieve. Firms that find it hard to cut their emissions will buy extra permits from firms that can reduce theirs more easily. A given target can thus be reached at a much lower cost. The choice between pollution taxes and permits is more complex. According to economic theory it depends on how fast the costs of emission reduction rise at the margin. However, in practice permits usually have the edge over taxes because they are much easier to introduce politically.

The first environmental markets were set up in the United States in the 1980s and 1990s. Before the advent of carbon trading, the most successful environmental market was the US Acid Rain Program, a market in sulphur dioxide emissions that was established under the 1990 Clean Air Act. Although not without its problems, the Acid Rain Program is widely credited with achieving the objectives of the Clean Air Act at a fraction of the cost originally anticipated.

The clean development mechanism

Based on that positive experience, the United States pushed for the inclusion of market-based instruments into the Kyoto Protocol when it was negotiated in 1997. Other parties, including the European Union, were initially skeptical but endorsed the concept in the hope that it might bring the US into the deal.

In the event, this did not happen, of course. The US never ratified Kyoto and as a consequence did not play a major role in the development of the global carbon market. The centre of gravity in environmental markets soon moved to Europe and now increasingly to Asia. But the market mechanisms the US pushed for under Kyoto did take off.

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The Kyoto Protocol introduced three market-based, or "flexible", mechanisms and most successful of them is the Clean Development Mechanism (CDM). The CDM is an offset market, rather than a traditional permit system like the Acid Rain Program. In an offset scheme investors obtain "credits" by implementing a project that reduces emissions relative to an agreed and verified baseline. For example, they might install wind turbines instead of investing in coal-fired electricity generation. The credits can be sold on the international markets. In the case of the CDM, the project has to be located in a developing country and the ultimate buyer is typically a government or a firm in a developed country. They use the credits to offset their own, domestic emissions.

There are currently about 3000 registered CDM projects and many more are at various stages of development. It is estimated that from its inception up to 2012, when current Kyoto arrangements run out, the CDM will reduce global carbon emissions by about a billion tonnes of CO2 – about a year and a half's worth of UK emissions.

The CDM is not without its critics. Environmentalists suspect that many CDM projects would have happened anyway and that the credits they generate do not reflect additional emission cuts. The development community is disappointed about the low market share of least-developed countries in the CDM. Most projects are in a small handful of middle-income countries, led by China, which have cornered the market. The business sector complains about the slow and erratic regulatory process. It can take months to get a project through the UN-led registration and verification system and the rules are subject to constant change.

The critics all have a point. The CDM is indeed slow, it is focused on a few countries and not all projects are additional. To some extent this is inherent in a mechanism that awards credits against an unobservable, hypothetical baseline. Mistakes are bound to happen and an elaborate regulatory process to minimize them is part of the course.

None of this changes the fact that the CDM has surpassed all expectations. It has helped to introduce emission reduction as a business opportunity to developing countries across the globe. It has created a global market for emission reductions that was worth €13-18 billion in 2010.

The EU Emissions Trading Scheme

If the CDM is the scheme with the widest global reach, the EU Emissions Trading Scheme (EU ETS) is the biggest and most liquid carbon market in the world, and this by some distance. Over 5.5 billion EU allowances are traded annually,[4] worth €80 billion in 2010. Some 11,000 installations – electricity producers, refineries and heavy industry – participate in the scheme.

The EU ETS is a fully-fledged cap-and trade scheme that covers about half of the EU's greenhouse gas emissions. Participating installations are required to hand in an allowance for each tonne of CO2 they emit. The scheme will run until at least 2020 with the emissions cap gradually tightening. In 2012 the EU ETS will be expanded to include aviation.

The market offers a number of products that allow firms to manage their carbon exposure. EU allowances are traded spot and in the futures market all the way out to 2020, although most trading is no more than one or two years ahead.

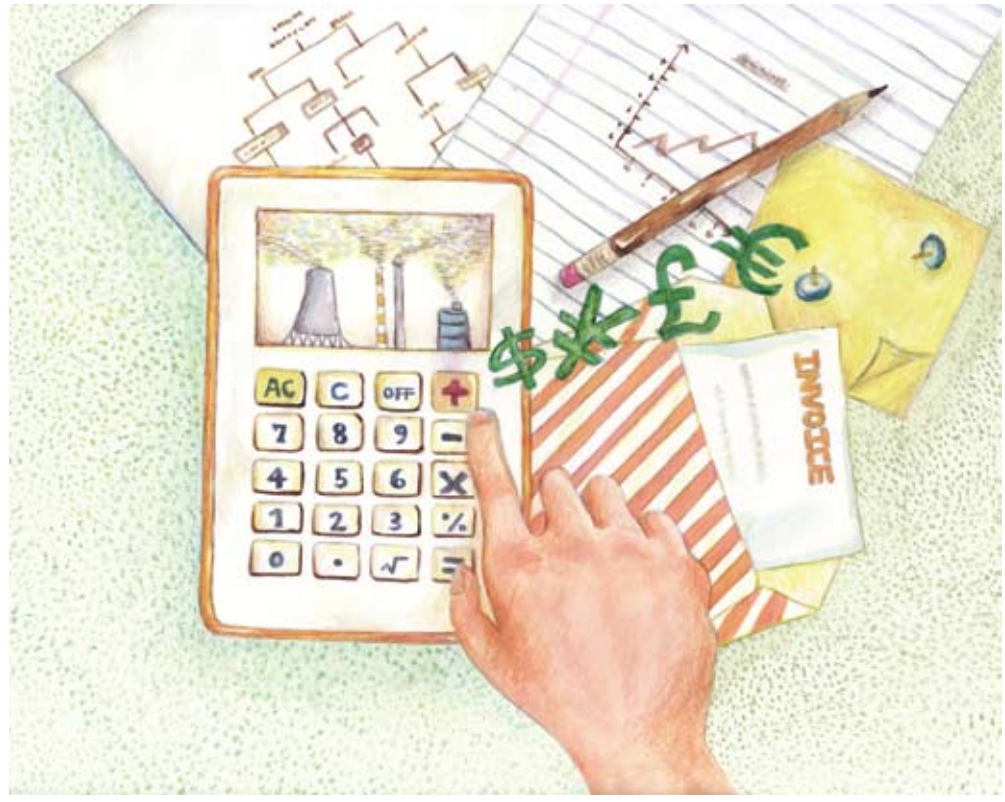
The EU ETS is the biggest source of demand for CDM credits, as the scheme allows firms to submit a certain amount of offset credits *in lieu* of EU allowances. As a result the two markets have become tightly linked and the spread between the two prices is closely monitored.

The design of the EU ETS reveals an intriguing mix of real-world pragmatism and adherence to market principles. To secure the buy-in of industry allowances are for the most part distributed for free. With an allowance pool of 2 billion permits and an average price of maybe €15, this constitutes a €30 billion transfer to Europe's most carbon-intensive firms. The European Commission is now trying to claw back some of this money and from 2013 onward the majority of allowances will be auctioned. Only sectors such as steel that are subject to international competition will continue to receive free allowances. This is to maintain the competitiveness of these firms in the international market.

To build consensus individual member states were given a fair amount of autonomy in the allocation of emission permits. This led to rather generous allocations certainly in the first trading phase (2005-07) and arguably even in the second phase (2008-12). This will however be corrected in the third phase, starting in 2013, when allocation decisions will be made centrally.

The pragmatism ends when it comes to price setting. The European Commission has stuck firmly to its belief that the allowance price should be set by the market. In the early years prices fluctuated widely, for both desirable and undesirable reasons. Many economists would have liked some flexibility in the emissions cap to counter-balance these fluctuations, but the Commission stood firm. The result were sharp falls in allowance prices in 2006 (due to an over-generous permit allocation) and 2008 (due to the economic recession). In neither situation was the regulator able to respond to the unfolding events.

Over the last 18 month the EU allowance price has been fairly stable, however, at around €15 per tonne of CO2. This is probably a lower price signal than most European policy makers would like. Some environmentalists have even questioned whether the scheme has resulted in any real emission reductions at all, although the empirical evidence suggests that it has.[5]



The crucial point is that European carbon emissions are unequivocally capped. Moreover, the EU ETS has changed the mindset of industry. Firms now factor the price of carbon into their business decisions as a matter of course, in much the same way as they account for other costs.

Crises and challenges

Despite the undeniable success over the past five years, the mood in the carbon market is distinctly subdued. Market sentiment has been affected by a series of regulatory problems and setbacks in growth expectations.

In the CDM complaints about the regulatory process are long-standing. The issues are well-recognised and there is an understanding that they will, eventually, be addressed. The deeper worry for the CDM is that the rules beyond 2012, when the current Kyoto rules expire, are still unclear.

Primarily this is an issue of demand. Until 2012 the demand for credits emanates from EU ETS installations and developed country governments like Japan that need to meet their Kyoto commitments. Once the current Kyoto arrangements expire, government demand may fall away. At the same time, the European Commission is planning to restrict the use of CDM credits after 2012 to offsets originating from least-developed countries.

The market is looking for a clear signal from policy makers on the future of the CDM. In the meantime, the flow of new projects that enter the CDM pipeline has started to dwindle.

The future of the EU ETS, in contrast, is assured until at least 2020 and the rules are fairly clear. What has affected confidence in the EU ETS is a series of accidents and regulatory blunders. In late 2009 it emerged that the EU ETS had become the vehicle for carousel fraud, a VAT-related scam that had previously afflicted the trade in mobile phones. The authorities were relatively quick to respond, but

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later crises painted the ETS regulators in a less favourable light.

In spring 2010 the Hungarian government re-sold a batch of CDM credits that firms had submitted for EU ETS compliance. Although technically legal (Hungary retired an equivalent amount of other carbon products instead), this made it difficult for the market to distinguish between genuine and tainted credits, and trading suffered. A similar issue occurred 10 months later when EU ETS allowances were stolen from several registries. Because the regulator was unable to clearly identify the stolen allowances, the spot market for carbon temporarily ground to a halt. In between the two events, the European Commission botched the announcement of an important regulatory change.

These are ultimately technical issues, but they demonstrate regulatory weakness and there is no doubt that they have affected market confidence, just as the uncertain future of the CDM has.

However, the greatest disappointment for carbon traders has not been problems in existing markets, but the failure to create new ones. When the US House of Representative passed a comprehensive carbon market bill in the summer of 2009 – the so-called Waxman-Markey bill – there was widespread optimism that the US might set up a federal carbon trading system that would be more than twice the size of the EU ETS. Following a year-long stalemate in the Senate and the 2010 Congressional elections this is now extremely unlikely to happen. In fact, environmental regulators are fighting to keep whatever regulatory powers they already have.

An immediate impact of the changed US outlook has been a precipitous fall in traded volumes under the Regional Greenhouse Gas Initiative (RGGI), a small trading system among 10 north-eastern and mid-Atlantic states, which was seen as a precursor to the much more ambitious federal scheme.

A brighter outlook

For a sector that has become accustomed to stellar rates of growth, the altered market outlook after the US elections has been hard to digest. Yet market commentators still expect an increase in trading volume of perhaps 15% for 2011 – hardly a market in crisis.

Moreover, sources of growth may over the long-term come from new and perhaps unexpected sources. Japan's emission reduction strategy continues to rely heavily on the use of carbon offsets from abroad, and officials are said to be working on a new offset standard. Plans for state-level emissions trading are still being pursued in California and other Western US states, although now in a distinctly changed political environment.

In Australia, the country's on-off relationship with carbon markets may be back on after the Multi-Party Climate Change Committee, a body set up after the 2010 general election, called for the establishment of a new, country-wide cap-and-trade scheme. The scheme could come into force in 2015 or 2017, following a 3-5 year pilot phase with a fixed carbon price.

Perhaps most intriguingly, China is rumoured to contemplate a trading scheme to curtail its growing greenhouse gas output, probably based on emission intensity targets. India has already forged ahead with a new energy efficiency scheme, the so-called "perform, achieve and trade" (PAT) system.

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Last but not least, the international push to reduce carbon emissions from deforestation and forest degradation (known as REDD) may well result in a larger role for market-based mechanisms in forestry emissions. The small but nimble voluntary carbon market is already experimenting with forest-based carbon credits.

Market-based instruments are also considered in many other contexts. Not all of these plans will materialize. However, the bustle of regulatory activity suggests that emissions markets remain one of the most trusted and attractive instruments we have to combat climate change.

The rapid rise of carbon markets has been astounding. The advent of carbon trading has not been without setbacks, and important lessons about market regulation and market design still need to be absorbed. However, given the speed at which carbon trading has turned from a theory into a €100 billion industry this should not be surprising.

About the author

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Notes

1. Market data are from Bloomberg New Energy Finance and Point Carbon, as reported in Carbon Finance 8(1), February 2011.
2. According to www.carbonexpo.com (accessed March 2011).
3. See the 2010 Carbon Salary Survey, www.carbonsalarysurvey.com
4. The EU ETS issues around 2 billion allowances annually, which means they change hands on average 2-3 times a year.
5. See Ellerman, A. and B. Buchner, 2008. Over-Allocation Or Abatement? A Preliminary Analysis of the EU ETS Based on the 2005-06 Emissions Data, Environmental and Resource Economics, 41(2): 267-287.