

Urgently needed emission reductions and climate finance: Can market mechanisms deliver?

By Kate Dooley

The latest IPCC report made clear the scale of emission reductions required, with a total atmospheric carbon budget remaining of less than 950 Gt CO₂ for a 'likely' chance to stay below 2C temperature increase, with an even stricter budget required to stay below 1.5C as called for by island nations and the least developed countries.

It is still technically and economically feasible to limit temperature increases to below 1.5C, but this requires real ambition, from both developed and developing countries, to have any chance of averting a climate catastrophe. Despite the urgent situation, governments are continuing to talk about establishing new carbon markets under the Convention. The current negotiations on carbon markets evolved out of the Bali Action Plan paragraph on 'various approaches... to promote cost effective mitigation actions'.¹ This discussion has evolved into the linked agenda items on Framework for various approaches (FVA), the New market-based mechanism (NMM) and Non-market-based approaches (NMA).

This is despite a growing lack of evidence that carbon trading can actually reduce emissions and contribute to averting a climate catastrophe. With emission trading schemes around the world in decline or being disbanded,² and evidence that existing carbon trading are possibly increasing emissions,³ focusing on market-based instruments in the form of emissions trading limits capacity to develop the effective responses that are needed.

There are a number of concerns around markets mechanisms and carbon trading that need to be thoroughly considered. These involve both fundamental problems inherent to the design of emissions trading systems, as well as problems related to implementation, governance and resource distribution from market mechanisms. These are discussed in more detail below.

Ambition is not conditional on access to flexible mechanisms

The stated purpose of the **Framework on Various Approaches (FVA)** under the UNFCCC is to allow Parties to increase mitigation ambition, including via market and non-market based mechanisms. This raises the question of sequencing, with developed country Parties saying that ambition, in the form of increased mitigation pledges, is conditional on access to markets and flexible mechanisms. Other Parties have questioned the logic of this sequencing, saying that access to carbon markets does not in itself create ambition - ambition must be secured before there can be any consideration of flexible mechanisms.⁴

The Durban Conference of the Parties (COP) in 2011 included an agreement to discuss establishing a **New Market Mechanism (NMM)** under the Convention. Since that time, the two largest carbon markets, the European Union's Emissions Trading Scheme (EU ETS) and the Clean Development Mechanism (CDM), have suffered drastic price collapses and ongoing problems with integrity (including large scale theft of credits and double-counting). With no demand and an oversupply of credits in existing carbon markets, the raised ambition that is used to justify markets has not materialised.

¹ Dec 1/CP.13, paragraph 1(b)(v)

² Reuters January 2, 2014: *Value of Global CO₂ markets drops 38 pct in 2013*. <http://uk.reuters.com/article/2014/01/02/co2-market-global-idUKL6N0KCIUY20140102>

³ Erikson et al (2014) Net climate change mitigation of the Clean Development Mechanism. *Energy Policy*, in press

⁴ See: TWN Warsaw News Update No 16: *SBSTA: No consensus on market mechanisms in Warsaw*.

http://www.twinside.org.sg/title2/climate/news/warsaw01/TWN_update16.pdf, and TWN Bonn News Update No 18: *Review collapsed markets before moving on new markets, say developing countries*.

http://www.twinside.org.sg/title2/climate/news/Bonn11/TWN_update18.pdf

Lack of climate finance for vulnerable countries

Finance arrangements which allow developed countries to offset mitigation commitments undermine climate mitigation, both through allowing increased emissions in industrial countries, and through failing to scale up climate finance to enable emission reductions in poorer countries. The CDM continues to be characterized by a highly asymmetrical distribution of resources, attracting investment where risk is lowest and return is highest. This is why more than 70% of approved CDM projects can be found in only four countries (with less than 3% of CDM projects located in Africa).⁵ Limited distribution of finance remains a very real risk under proposals for the NMM. Since the beginning of 2013, operators in the EU may only purchase CDM credits generated in least developed countries (LDCs),⁶ in an attempt to resolve this distribution problem. However, existing pre 2013 credits, the persistent lack of overall demand for credits in the EU ETS, and a consistently low carbon price, mean that LDCs are not likely to see any significant increase in new CDM projects, and those they do see may require prohibitive upfront costs coupled with limited revenue from carbon markets.

In addition to issues of asymmetry in regional distribution, there is a question of where finance from emissions trading is directed. There is no direct link between the size of the carbon market (by value) and the investment available for actual emission reduction activities. A vast majority of investment in emissions trading schemes, such as the EU ETS, is in derivatives (estimates range from 64-99%).⁷ In line with all commodity markets, only a fraction of the US \$52.9 billion⁸ invested in the carbon market is available to finance emission reducing activities, with a very small proportion of that going to developing countries and projects on the ground.⁹ New or expanded carbon markets will primarily increase trading volume, not financial flows to actual emission reduction activities.

“Most cost” emissions reductions

Despite emissions trading being proposed as a “cost effective” mitigation tool, carbon markets have been shown to be many times more expensive than direct regulation. An analysis from Swiss bank UBS in 2011 found that the EU ETS had failed to deliver any real reductions in emissions while delivering windfall profits to energy companies, at a cost to the taxpayer estimated to reach 240 billion by 2020, a staggering public cost in a time of economic crisis.

Similarly the CDM, far from reducing abatement costs, has also created windfall profits, increasing public costs to reduce emissions many times over. One example comes from a CDM project in South Korea and Brazil to eliminate nitrous oxide, which generated \$189 million in credits at a cost to the company of only \$15 million.¹⁰ Such examples abound, underlining that market mechanisms are often not the most appropriate solution in areas of public policy.

Lack of environmental integrity

Another key assumption in the use of carbon markets is that they deliver *real, permanent, additional and verified* mitigation outcomes - referred to as environmental integrity. Environmental integrity is key to ensuring emission reductions are real, yet the integrity of carbon markets is limited by a variety of factors, for example:

- Through lack of additionality. That emission reductions are additional to what would have happened anyway is central to the claim that buying offsets reduces emissions. Yet additionality is impossible to prove, and studies have shown that the majority of credits in offset markets may not be additional.¹¹
- Locking in carbon-intensive systems in the North. The ability of industrialised countries to purchase offset credits from outside of their collective cap reduces the need to implement transformational change towards low-carbon societies, ‘locking-in’ polluting technologies.
- Proposals under the FVA to legitimize a variety of national and sub-national systems that have weaker environmental standards and conditions than those currently agreed through the UN processes;
- Facilitating a process that falsely creates fungibility between credits generated in different sectors, despite the fact there is huge variability in technical reliability and permanence.¹² Emissions from land-based sources, such as

⁵ UNEP Riso Centre: CDM projects by host region. <http://cdmpipeline.org/cdm-projects-region.htm>

⁶ Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community Text with EEA relevance, article 11a. <http://eur-lex.europa.eu/LexUriServ.do?uri=OJ:L:2009:140:0063:01:EN:HTML>

⁷ Derivatives trading refers to the process of *financialisation* – carbon credits become commodities traded on financial markets, creating speculation and investment from financial actors unrelated to emission reduction projects.

⁸ Reuters January 2, 2014: *Value of Global CO₂ markets drops 38 pct in 2013*. <http://uk.reuters.com/article/2014/01/02/co2-market-global-idUKL6N0KC1UY20140102>

⁹ The exact proportion available to finance emissions reductions is unclear, due to the opaqueness of an increasingly complex carbon market, but some estimates put this at 2-3% of overall market value (see, *inter-alia*, The Munden Project (2011) REDD and Forest Carbon: <http://mundenproject.com/wp-content/uploads/2013/07/forestcarbonreport2.pdf>).

¹⁰ For this and other examples see FERN (2010) Trading Carbon: How it works and why it is controversial, p74. http://www.fern.org/sites/fern.org/files/tradingcarbon_internet_FINAL.pdf

¹¹ Erikson et al (2014) Net climate change mitigation of the Clean Development Mechanism. *Energy Policy*, in press

forests and soil, are particularly prone to reversal, with fires, floods, drought and climate change itself increasing the risk that terrestrial carbon pools will release CO₂ rather than store it.^{13,14} Because of this, forest carbon credits in the CDM are subject to strict permanence rules, and excluded from the EU ETS altogether over concerns relating to permanence, leakage and verification.¹⁵

Many countries see the FVA as a possibility to establish an institution that accounts for or registers internationally traded carbon units, arguing that regulating the proliferation of carbon markets is better than not doing so. In reality, facilitating new and linked carbon markets under the UNFCCC is likely to institutionalise weak environmental integrity in the mechanisms that it would cover, for the reasons outlined above.

Shifting the burden - conservative accounting

Environmental integrity is often described as accounting for ‘what the atmosphere sees’ in terms of emissions or removals of GHG. Proposed standards for environmental integrity result in shifting the burden to developing countries. Current discussions under the NMM on conservative accounting – including crediting thresholds, buffers to deal with non-permanence and discounting, contravene the principles of the Convention by shifting the mitigation burden, as well as the cost for this burden, onto developing countries. Conservative accounting is unsuitable as a way to deal with the lack of environmental integrity in carbon market mechanisms.

One of the purposes of conservative accounting is to increase confidence in the environmental integrity of carbon credits, by issuing fewer credits than were generated, thereby compensating for inaccuracies in measurements, baseline setting, leakage or reversals. For example, if a project or action generates 100 tonnes of emission reductions, but is only rewarded for 60 tonnes (a 40% discount factor), then the risk is reduced that the atmosphere ‘sees’ overall emissions increasing. In this scenario, the burden for environmental integrity is borne by host countries that wish to participate in a market mechanism, by decreasing income potential.

Developments such as weakening permanence rules to improve market liquidity, while discounting credits to account for uncertainty in emission reductions disadvantage countries hoping to earn climate finance through market mechanisms. Host countries will need to invest a great deal of money to measure and verify carbon, while conservative accounting methods will reduce the eventual amount of carbon credits compensated to a fraction of the carbon measured. All of this while transferring liability to host countries for reversals that may be ultimately outside of their control.

Beyond offsets – more conservative accounting

Given the criticisms of the CDM, and the recognition that offsetting does not reduce total emissions (at best only shifting these reductions from developed to developing countries), central to discussions to scale up carbon markets is the claim to move ‘beyond offsetting’. In the ‘beyond offsets’ dialogue, the focus is on *net* emission reductions, relying on conservative accounting methods to ensure global emissions are reduced. The EU refers to this as the ‘transition from pure offsetting to the generation of net mitigation benefits.’¹⁶

The concept of a *net* decrease in emissions has yet to be defined. A net decrease is assumed to have been achieved by setting ‘crediting thresholds’ which are below the business-as-usual (BAU) baseline, discounting, or other conservative accounting measures which reward less than the measured emission reductions. This requires developing countries to significantly reduce their emissions compared to a BAU trajectory before any credits are issued, through a ‘crediting baseline’ or ‘incentive level,’ which is set below the BAU baseline.

Conservative accounting alone, however, is insufficient to achieve a ‘net decrease’ in global emissions.¹⁷ To reduce emissions on the scale and timeframe that are needed, emissions must be reduced across all sectors and from as many countries as possible very quickly. There is no atmospheric space for emission reductions in one place to displace emissions in another.

Solutions - Non-market-based approaches should take priority

‘Non-market-based’ refers to a variety of approaches, many of which involve market-based measures and incentives, such as: direct emissions pricing (carbon tax); subsidy reform including fossil fuels and agriculture subsidies in

¹² Mackey et al (2013) Untangling the confusion around land carbon science and climate mitigation policy. *Nature Climate Change* 3 552-557

¹³ Hopkins, F. et al (2012) Warming accelerates decomposition of decades-old carbon in forest soils. *Proceedings of the National Academy of Sciences of the United States of America*. <http://www.pnas.org/content/early/2012/06/07/1120603109.abstract>.

¹⁴ High levels of uncertainty exist in accounting for terrestrial emissions, with IPCC guidelines suggesting 60% on average for forestry and land-use change compared to 10% for electricity generation and industrial processes. See: IPCC Guidelines for National Greenhouse Gas Inventories. Reporting Instructions

¹⁵ See DG Climate Action: http://ec.europa.eu/clima/policies/forests/lulucf/index_en.htm

¹⁶ See EU submission at: http://unfccc.int/files/documentation/submissions_from_parties/application/pdf/nmm_eu.pdf

¹⁷ See UNFCCC NMM Technical Paper, 24 August 2012. <http://unfccc.int/resource/docs/2012/tp/04.pdf>, which notes that eliminating double counting and cancelling of credits would also be needed to achieve a net decrease.

developed countries; renewable energy feed-in tariffs; energy efficiency and other negative cost measures; tackling consumption and addressing the role of technology transfer and intellectual property rights (IPRs). While many of these are technically market approaches, these are all elements of the non-market-based approach negotiations.

Under a non-market based approach, the FVA, operating as an information sharing hub could serve as an important place for the transfer of knowledge and know-how on approaches that reduce emissions at least cost. Approaches that should be considered within the scope of non-market-based approaches include:

- Environmental education relating to the sustainable use of resources;
- Technology development, diffusion, capacity building, and transfer to developing countries, including via publicly funded research;
- Technology assessments to ensure environmentally and socially sound technologies prior to their diffusion and transfer
- Sustainable environment, energy, land, and other natural resource policy;
- Implementation of direct regulations to ban undesirable technologies;
- Support for publicly funded research and development;
- Review of public subsidies to corporations involved in energy production to consider impact on the climate;
- The 'pricing' of carbon through direct taxation;
- Significant increase in energy efficiency measures;
- Policies to improve the infrastructure of mass public transit.

Participation in these approaches may be considered contributions toward developed countries' mitigation and financial obligations under the Convention

Conclusion

The time for flexibility is over – it is time for developed countries to meet their commitments under the Convention, and increase ambition by enabling enhanced action in developing countries via financing, technology transfer and capacity building on approaches which reduce emissions at source.

In a world where only modest emissions reductions were needed, one may argue that emissions trading and offsets could be an option to consider, although there are still numerous problems would remain in the design and implementation of trading schemes. However, in a world where all countries need to rapidly transition towards decarbonisation, there is no room for offsetting and trading emissions. Real reductions need to take place at source and as quickly as possible. Any scheme that delays such action increases the risk of dangerous climate change. Reductions need to take place both in developed countries (through regulations and standards) and in developing countries (enabled by means of implementation – not offset credits). There is no justification, given the low levels of ambition, low market value and lack of demand for existing carbon credits to be establishing new markets. Market mechanisms cannot achieve the scale of reductions needed.

Recommendations:

In light of the above considerations, there must be no new market-based mechanisms established under the Convention. This calls into question the role of the FVA, given the way this has developed as a framework to verify internationally traded credits for compliance under the Convention. If the FVA is to be established, its role should be limited to two functions: 1) to review why current emissions trading schemes have failed, and 2) to share information on non-market-based approaches.

Knowledge sharing, developing best practices, expert review and the assessment of policies and approaches will be crucial to deploying the range of incentives, policies, regulation and technology transfer needed to drive rapid decarbonisation in all countries, consistent with the principles of the Convention (for developed countries to take the lead, and developing country mitigation to be enabled under Article 4.7). There is no role for trading emissions in this vision of rapid decarbonisation. In addition, a thorough evaluation of existing emission trading schemes is needed, to establish why carbon trading has failed to reduce emissions, and to evaluate the effectiveness of carbon trading as a greenhouse gas (GHG) abatement measure. Rather than opening up new markets, the role of the FVA should be to facilitate such a review.