The Future of CDM in Africa

The Clean Development Mechanism ("**CDM**") was established by the Kyoto Protocol in 1997 as a way of promoting emission reduction energy projects in developing countries and thereby contributing to the global climate change strategy. The incentive for developing countries to participate in the scheme is that projects registered with CDM earn Certified Emission Reduction units ("**CERs**") which can be sold to entities in industrialised countries, known as Annex 1 countries under the Kyoto Protocol. CERs so acquired can then be used for trading and allocated towards an entity's legally binding emission reduction targets.

EU Emissions Trading Scheme ("EU ETS")

The EU ETS is the most high profile market in which this takes place and functions on 'cap and trade' principles. Each polluting entity under the scheme is entitled to emit a given level of greenhouse gases per year (i.e., a cap on pollution) and through free allocation and auctioning, it receives a number of allowance units corresponding to such level. At the end of a year, the entity must surrender allowance units equal to its actual pollution levels.

If it has been unable to reduce emissions in line with its cap, it will either incur a fine of €100 per tonne of excess emissions or meet its compliance obligations by acquiring additional allowance units in the market. Those entities with a surplus of allowance units (against their own pollution levels) and wholesale traders are the main suppliers of such units under the scheme. Thus, the downward pressure of a cap on emissions forces parties to trade in order to meet compliance obligations – it is a market driven by regulation.

The allowance units that an entity may surrender are usually comprised of EU Allowances (those issued freely at the start of the year under the EU ETS – a process which is gradually being replaced by auctioning) but may also include other international units (in a given proportion) such as CERs. Demand for allowance units and the ability to use CERs for compliance in schemes like the EU ETS (due to proportion levels as well as qualitative restrictions on eligibility – see below) underpin their value and therefore the drive for CER generation and CDM in general.

The first decade of CDM in Africa

The first year that projects could be registered with CDM was 2001. Since then over one billion CERs have been issued to project participants. However, only a relatively small percentage of these CERs have been generated by projects based in Africa, with the vast majority of projects being located in China, India and South America. As of 31 January 2013, out of 6060 registered projects, only 1.9% were in Africa, compared to 85.3% for Asia and the Pacific.

At the first conference of the parties to the Kyoto Protocol held in Montreal in 2005, concerns were raised about Africa's low level of participation in CDM. Various initiatives were set up to combat the regional imbalance including the Nairobi Framework, introduced by the United Nations, the World Bank and the African Development Bank in 2006, to target sub-Saharan African participation by promoting investment opportunities, improving inter-agency coordination and building and enhancing CDM designated national authorities (those responsible for CDM projects in a country).

The effort made to encourage African participation in CDM has had a positive effect. In December 2007, only 42 CDM projects were either registered or in the pipeline for validation or registration in Africa. This number grew to 75 in December 2008 and reached 267 by December 2012. Yet while the number of projects has increased, participation remains concentrated in only a handful of African countries. At the end of January this year, South Africa had the most projects with 85, followed by the Ivory Coast with 38 and Kenya with 32. Many countries on the continent have no registered projects at all.

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Case studies - The Humbo and Lake Turkana

A good example of an innovative clean development to come online in the last few years is the Humbo forest reclamation project in Ethiopia. The project, which will restore over 2,700 hectares of degraded forest through the planting and maintenance of new trees, will reduce carbon emissions by an estimated 880,000 metric tonnes over the next 30 years. The project, while also supporting local income and employment generation, will earn project participants around 30,000 CERs per year.

Promotion of land-use and forestry projects, such as the Humbo project, is seen as one of the key drivers in increasing CDM participation in Africa, due to their relative simplicity and low costs. However, a significant obstacle to the progress of such projects is the current ineligibility of generated CERs for compliance in the EU ETS. CERs generated from land use, land change use and forestry projects, together with nuclear and certain types of industrial gas projects (specifically, destruction of HFC-23 and N20 from adipic acid production) are not eligible for compliance purposes in the EU ETS (and approval for participation in large hydroelectric projects (in excess of 20 megawatts) is subject to the project satisfying the World Commission on Dams guidelines).

More traditional forms of clean energy development also have a place in Africa. Solar energy, for example, represents one of the main opportunities but, other than in the Ivory Coast where 11 solar projects have been registered, the technology has been largely underused.

Wind energy is another potential growth energy source. The Lake Turkana wind power project in Kenya is a 582 million Euro project backed by the African Development Bank, which when completed will be the largest wind farm in Africa with a capacity of 300 megawatts of power. The project, which will comprise 365 wind turbines installed on 16,000 hectares, will earn the project participants an estimated 736,615 CERs each year. The project will allow the country to diversify from hydroelectric power, which provides around 60% of its electricity needs but is prone to drought and irregular rainfall.

Future foreign investment

It is not surprising that a lack of external investment has been one of the most commonly cited reasons for low CDM activity in Africa. That said, foreign investment is increasing steadily with countries such as China emerging as significant backers of the continent, evidenced by initiatives like the state-owned China-Africa Development Fund which aims to invest a total of US$5 billion in Africa. Whilst most of the fund's investments have so far been in more traditional sectors, such as mining and infrastructure, there is suggestion that the fund will soon turn to clean energy.

The potential for an increase in foreign investment in CDM is also shown by Ernst & Young 2012 Africa Attractiveness Report, which predicts that foreign direct investment inflows into Africa will reach US$150 billion by 2015. This boost in investment, coupled with the widely held belief that growth in Africa will surge in the long-term, is encouraging for future CDM investment.

New chapters for Kyoto and the EU ETS

Foreign investment into African CDM projects should also be spurred on by the positive state of the Kyoto Protocol and the EU ETS. In December last year the conference of the parties to the Kyoto Protocol held in Doha agreed that the protocol would extend to a second commitment period ("**CP2**"). CP2 commenced on 1 January 2013 and will run for eight years until 31 December 2020. At the Doha conference, the EU's commitment to reduce emissions by 20% of 1990 levels by 2020 was confirmed.

The EU ETS also entered its third phase on 1 January 2013. One of the main characteristics of the third phase is that CERs from projects registered from 1 January onwards can only be used for compliance if the projects are located in either a country which has a bilateral agreement with the EU (none at present) or a 'Least Developed Country' ("**LDC**").[1] This is relevant for the future of CDM in Africa as the UN's list of LDCs includes 31 African countries (accounting for 63% of total LDCs) and does not include any of the current largest CER producers such as China or India.

This should result in both the United Nations and commercial investors focussing more on new project opportunity in the African CDM market. For the investors, the expectation that CER prices in the EU ETS will soon be on the rise (in part, due to global supply diminishing in the short-term), will provide additional incentive.

[1] However, CERs issued in relation to emission reductions arising before 31 December 2012 may be used for compliance purposes until 31 March 2015 and CERs issued in relation to emission reductions after 1 January 2013 may be used for compliance throughout phase 3 of the EU ETS if the project was registered before 31 December 2012

Conclusion - what is the future of CDM in Africa?

Africa's participation in CDM as a percentage of overall involvement is small and it is not expected to reach the levels of China, India or South America in the near future. However, the outlook for CDM in Africa is rather promising. Recent data from the body that monitors CDM shows that in the last three years there has been a significant increase in the number of CDM projects initiated in Africa compared to other regions of the world, a trend observers predict is likely to continue (which is well supported by some of the factors mentioned above).

Over the last decade Africa has made significant improvements as a place to do business (to read our recent article on 'How easy is it to do business in Africa', click here). The combination of this, the UN's commitment to addressing CDM regional imbalance, increasing levels of foreign investment, and continued support and improvement of the Kyoto Protocol and the EU ETS is likely to be central to the future success and growth of CDM in Africa.