

# Strengthen the CDM

*A Project Developer's perspective why the Clean Development Mechanism (CDM) should be used to offset emissions from UN organizations*

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by



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# Key points

- *While voluntary schemes can be a good solution for voluntary offsets in the unregulated areas, CDM is needed to provide a common currency for carbon in regulated areas and to set quality standards. To maintain the CDM it needs to be supported by additional demand. Hence, the PD Forum urges the UN bodies to start with a good example and to use CERs for their CO<sub>2</sub> offsetting focusing on high quality CERs and providing transparency to allow for public visibility of the CDM projects chosen.*
- *High quality CERs could be from projects that are e.g. certified by additional standards beside CDM such as Gold Standard or projects using specific technologies or have a certain size. There are lots of possibilities for the UN to define quality criteria for its offset projects to guarantee high quality CERs are procured for offsetting.*

## **The strength of CDM at a glance:**

- *The Clean Development Mechanism (CDM) is the first **truly international greenhouse gas mitigation compliance scheme**, and has been a success in promoting clean energy investments in the developing world. CDM projects represent a **combined investment in clean energy and low carbon technology of \$215-450bn**. Projects are concentrated in the major emerging economies, where emission reductions are needed most.*
- *The CDM has led to the **establishment of institutions** required to carry out **the monitoring, reporting and verification (MRV) of emissions** in developing countries. A **network of consultants, investors, verifiers and government officials** now exist in all major developing countries, which has facilitated the introduction of domestic emissions trading schemes.*
- *The CDM has developed norms on **emission calculations, baselines, additionality**, stakeholder consultation etc. that is co-used by the voluntary schemes such as VCS or Gold Standard to a large extent.*
- *The CDM has **strict controls for ensuring projects represent real emission reductions**, which are constantly strengthened and improved with oversight from the international community.*
- *The voluntary schemes alone cannot deliver the institutional capacity to further develop and improve the infrastructure of a robust and independent MRV. This is currently guaranteed by the UN accreditation of DOEs. Moreover, the UN is regularly updating the underlying regulation based on widespread international stakeholder consultation.*

# SECTION 1: CDM's has leveraged an unexpected amount of credits

*Over the past 14 years, the CDM has emerged as the world's largest carbon finance mechanism and has driven \$215-450bn investment into renewable energy and low carbon projects. Investment has been concentrated in major emerging economies, where emissions growth most needs to be slowed, and in renewable energy, critical for decarbonising the global power sector.*

*The Clean Development Mechanism (CDM) has leveraged between \$215bn-450bn of investment in clean technologies in developing countries.*

**The CDM has been a cost-effective way of unlocking large flows of clean tech investment.** Hosier et al, (2010) and Stadelmann et al (2011), estimate that for every \$1 of carbon finance, \$4-10 is leveraged. CDM provides an affordable way to encourage low carbon investment in the developing world.

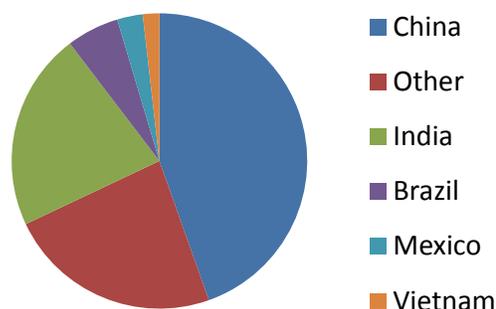
**CDM has been larger than any other developing country climate financing mechanism.** No other mechanism has managed to scale-up in the manner that the CDM has. Over its 30 year life time the World Bank's Global Environmental Facility has financed \$2.7bn of projects in developing countries, a fraction of the amount leveraged by CDM in its 10 year existence. The 5,000 registered projects represent over \$215bn of new investment, while if projects still at validation are included the figure is well over \$450bn (UNEP Risoe).

**Emerging country finance institutions have provided capital to clean energy projects.** In the majority of cases, debt funding for CDM projects has come from lending institutions in emerging markets (Michaelowa, 2012). The CDM has unlocked large amounts of emerging market capital and these banks have increased their experience in clean energy project finance based on carbon price signals.

*CDM finance has driven low carbon investments in the fast-growing economies, like China and India, where the need to slow emissions growth is most critical.*

**Over 70% of investments in CDM are concentrated in Brazil, India or China (the 'BICs').** Table 1 depicts leveraged investment per country for all active CDM projects.

**Table 1: Split of total CDM investment by country**



Source: UNEP Risoe

**The largest portion of future global emissions growth to 2030 is predicted to occur in the BIC countries.** Even if developed countries reduce their emissions to zero, if emissions continue to grow in the BICs in line with the baseline scenario, global temperatures will still rise well above 2°C. Supporting climate action in these countries is therefore critical. According to a recent study, China is estimated to require a massive \$280bn of investment per year by 2030 in order to keep global emissions below 2°C (McKinsey, 2010).

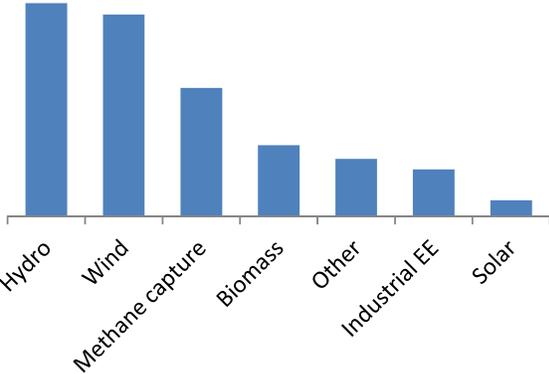
**Development of low carbon industries today has a catalytic effect on further projects.** Large increases in clean energy capacity, driven by the CDM, have resulted in the development of a renewable energy industry in the major emerging economies. For example, five of the top ten global wind turbine manufacturers are now either Indian or Chinese (IHS, 2012).

**CDM has also helped leverage \$65bn in Africa and Latin America (ex. Brazil).** Whilst the BICs have been the largest beneficiaries of CDM, the investment into other parts of the world has still been significant. (UNEP Risoe)

*Renewable energy has been the largest benefactor of CDM finance, critical technologies required to solve climate change.*

**Renewable energy constitutes more than 70% of the investment leveraged by the CDM.** Hydropower, wind and biomass are the most common clean energy technologies.

**Figure 2: No of CDM projects by technology**



Source: UNEP Risoe

**Financing large scale renewable energy is critical in slowing emissions growth.** To tackle climate change, we need to decarbonise the global power sector. In China and India over 75% of electricity is currently produced from coal. Achieving a transition towards renewable energy in these economies is arguably the most important challenge the world faces in tackling

climate change. CDM is playing a role in putting China and India on a lower carbon trajectory.

**Innovative new technologies have also been developed under the CDM.** Cutting edge technologies have been transferred to developing countries. The CDM has led to pioneering coal mine methane capture projects that both reduce emissions and improve mine safety. Fuel efficient cookstoves and solar-based water purification systems result in a fall in GHG emissions, a slowdown of deforestation, and a reduction in indoor air pollution, in some of the world’s poorest countries.

**The number of household level projects has grown rapidly, with the introduction of PoAs (programme of activities).** After a slow start, there are now more than 900 PoAs under development (UNEP Risoe), with the majority of projects at household level. Solar lighting, cookstoves and domestic manure biogas are particularly popular PoA project types.

*The CDM is also a mechanism for industrialised countries to lower the cost of meeting their climate mitigation targets. The CDM has helped save Annex I over \$3.6bn.*

**The CDM results in significant cost reductions for developed (Annex 1) countries.** Given limited resources available to pay for climate change mitigation throughout the world, it is critical to reduce emissions at the least cost possible. An emission reduction in Tanzania has the same impact as a reduction in Germany. CDM delivers international emission reductions where they are least expensive.

**Annex I countries saved \$3.6bn in their use of the CDM.** By end of 2012, 1.1-1.2bn CERs will have been issued since the start of the CDM. According to the CDM Policy Dialogue the lower bound of estimated savings for Annex I countries through the CDM is €3.6bn (CDM Policy Dialogue, 2012).

## SECTION 2: CDM's unprecedented institutional capacity

*CDM has to date had a positive impact on global climate change mitigation institutions. In developing countries, CDM introduced explicit carbon pricing, and built the networks and institutions required to monitor, report and verify greenhouse gas emissions. On a global level, the CDM has developed the norms, processes and infrastructure required for future mitigation initiatives, which rarely could have developed by purely voluntary schemes.*

*Capacity building and changes in policy thinking resulting from the CDM has led to the introduction of domestic emission reduction policies in developing countries.*

### **The CDM has built the regulatory institutions required for low carbon development.**

Emerging economy bureaucracies have strengthened their internal domestic carbon measurement and auditing capability to meet the tough requirements of the CDM. Thanks to the CDM, most major economies have published grid emission factors; essential in establishing baseline emissions for any emissions trading scheme or carbon tax.

**An industry of environmental consultants and auditors has emerged to monitor, report and verify greenhouse gas (MRV) emissions.** The major international environmental auditing organisations have all established greenhouse gas verification offices in the large emerging markets. These firms are able to verify emissions to international auditing standards.

**Major energy firms in developing countries now have in depth expertise on emissions trading.** In all major developing countries, the largest power companies (e.g. Tata, Datang and Petrobras) have implemented CDM projects, giving experience of development of renewable

projects, as well as how to deal with explicit carbon pricing and emissions trading, as well as international standard MRV.

**Learning from the CDM, China will begin a series of pilot emissions schemes in 2013-14,** which collectively will be the world's second largest trading scheme in the world. The offsetting component of the pilot schemes explicitly uses CDM methodologies and norms.

**Emission trading schemes are emerging in South Korea, Brazil, Thailand and Vietnam.** All major beneficiaries of the CDM are launching their own trading schemes. The South Korean scheme is scheduled to start in 2015. The Brazilian metropolises of Sao Paulo and Rio de Janeiro will also be launching pilot emissions trading schemes. India's energy efficiency PAT trading programmed launched in 2012.

*At the international level, the CDM has led to the development of rules and frameworks.*

**More than 170 methodologies have been established under the CDM.** From anaerobic digestion to water purification, the UNFCCC has approved procedures to measure the carbon impact, prove the additionality, and monitor emissions from a wide range of environmental action. All future mechanisms will rely on CDM approaches, and the current methodologies already influence schemes elsewhere, such as

the Carbon Farming Initiative in Australia and the Californian Emissions Trading Scheme and of course, the voluntary schemes. The latter do not have the institutional capacity and the backing of the international community to develop internationally accepted methodologies.

**The UNFCCC CDM Executive Board and secretariat architecture has been established to assess finance for emission reduction projects.** The Secretariat staff has grown from a hand-full to over 100 professionals and can handle large volumes of project cases at any given time. Moreover processes have been refined, with reductions in timelines over the CDM's lifetime. Compared to that the voluntary schemes do not have the capacity to overview and develop the same number of projects.

**The CDM created a network of environmental verifiers, the Designated Operational Entities (DOEs).** These entities (typically major audit and certification firms) provide third party validation of all CDM projects, and have grown in their expertise and quality over the last decade. By training thousands of verifiers in carbon management, DOEs have diffused environmental auditing skills in both the developing and developed world. Again, voluntary schemes do not have the capacity to oversee accreditations and control the verifiers in the same way the UNFCCC does.

**Project developers provide expertise and link together investors, project owners and technology providers from around the globe.** A new type of company, the CDM project developer, has emerged to act as the oil between the cogs, by finding emission

reduction opportunities and technologies, arranging finance, and entering into BOT contracts to build and operate projects before handing them over to host country participants.

*Other climate regimes, such as New Market Mechanisms, the Green Climate Fund, and credited NAMAs will be able to build on the experiences and architecture of the CDM.*

**New Market Mechanisms (NMM) should build on the experience of CDM.** Any NMM will face the same complex issues that CDM projects face; establishing a baseline, determining additionality, ensuring stakeholder involvement and sustainable development. Indeed several studies (e.g. KfW 2012) have pointed out how a CDM PoA can be turned into an NMM or credited NAMA.

**The Green Climate Fund (GCF) can also learn from the CDM.** The Green Climate Fund held its first meeting in late 2012 and aims to efficiently manage the flow of funds towards mitigation action in developing countries. This allocation of funds will require very similar expertise and involve similar challenges to the CDM and the GCF can study and use the CDM architecture.

**Other mechanisms will take too long to deal with the climate crisis if they are built from scratch.** The CDM took 14 years to mature to the scale it is today after significant teething problems, particularly in the early years. If NMMs and the GCF fail to build on the CDM, they will take a similarly long time, too slow to tackle required emission reductions, which requires drastic action now.