

# TAPPING INTO THE CDM PIPELINE

*A key piece in the jigsaw of scaled up Climate Action in Africa*



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*Gigawatt Global in Rwanda: the first large-scale grid-connected solar PV project in East Africa*

**Carbon Africa believes that for governments, development agencies, financiers and project developers the existing CDM pipeline in Africa has the potential to act as a key foundation in efforts to kick start scaled up climate action on the continent.**

As focus in African countries shifts from intention to the implementation of climate pledges under the Paris Agreement, main players are closely reviewing the state of play domestically with regards to mitigation actions. Within this context, existing CDM projects and programmes could prove to be a ready-made testing ground for informing and catalysing the deployment of new and scaled-up climate finance mechanisms while at the same time providing well-established building blocks for the development of sound and inter-linked monitoring, reporting and verification systems.

## THE PARIS AGREEMENT FRAMEWORK

In the aftermath of the historic Paris Agreement, African Governments and sector stakeholders are beginning to grapple with key questions regarding how: country level contributions can be delivered through implementing mitigation actions, ramped up climate finance can be disbursed and tracked and GHG emission reductions can be monitored and reported from the project to the global level.

## INCREASED AMBITION

Enhanced climate action sits at the heart of the much heralded and ambitious UNFCCC Paris Agreement, underpinned by the clear objectives of Article 2 "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels". Unlike its predecessor, the Kyoto Protocol (1997), the Paris Agreement does not establish

specific emission reduction targets for individual countries. Instead, the agreement is based around a bottom up system whereby each country can set its own goals inline with its specific circumstances contributing to the global objective. The goals and associated action plans are summarized in so-called nationally determined contributions (NDCs), with the overriding tendency being for them to be divided into two elements, non-conditional covered by domestically allocated resources and conditional with implementation dependent on support from the international community.

### SCALED UP AND DIVERSIFIED CLIMATE FINANCE

Access to scaled up climate finance is fundamental to these nationally led efforts with developed countries strongly urged to significantly increase their level of financial support, with a concrete road map to achieve the goal of jointly providing USD 100 billion annually by 2020. This being particularly relevant to the conditional elements of the NDCs. Against this backdrop, various methods for fund disbursement are emerging with market and non-market approaches leading to diversification and fragmentation.

The Green Climate Fund (GCF) has been established as the central global institution

Green bonds | Carbon Markets (Emerging Trading schemes, EU ETS) | GCF (grants, loans, guarantees, equity) | Bi-lateral schemes (Joint Crediting Mechanism) | Climate Funds (Results Based Finance, Sovereign CER funds) | Voluntary Carbon Market (Climate Neutral Now Initiative) | Auction facilities

with continued efforts to bring sharply into focus the importance of climate finance as a catalyst for a global paradigm shift to low carbon and climate resilient development pathways.

### ENHANCED MONITORING

In order to ensure that the overall global target of the Paris Agreement will be reached, NDCs are to be monitored and updated over time through five-year reporting cycles with baseline setting and emission reduction monitoring being governed at the national level feeding into an international transparency framework (Article 13). In conjunction, one of the key outcomes of the Paris Agreement is the establishment of cooperative approaches (Article 6) further linked to the conditionality of the NDCs that potentially allows the linking of emissions trading systems and development of a CDM like mechanism generating internationally transferred mitigation outcomes (ITMOs).

## WHAT ROLE FOR THE AFRICAN CDM PROJECT AND PROGRAMME PIPELINE?



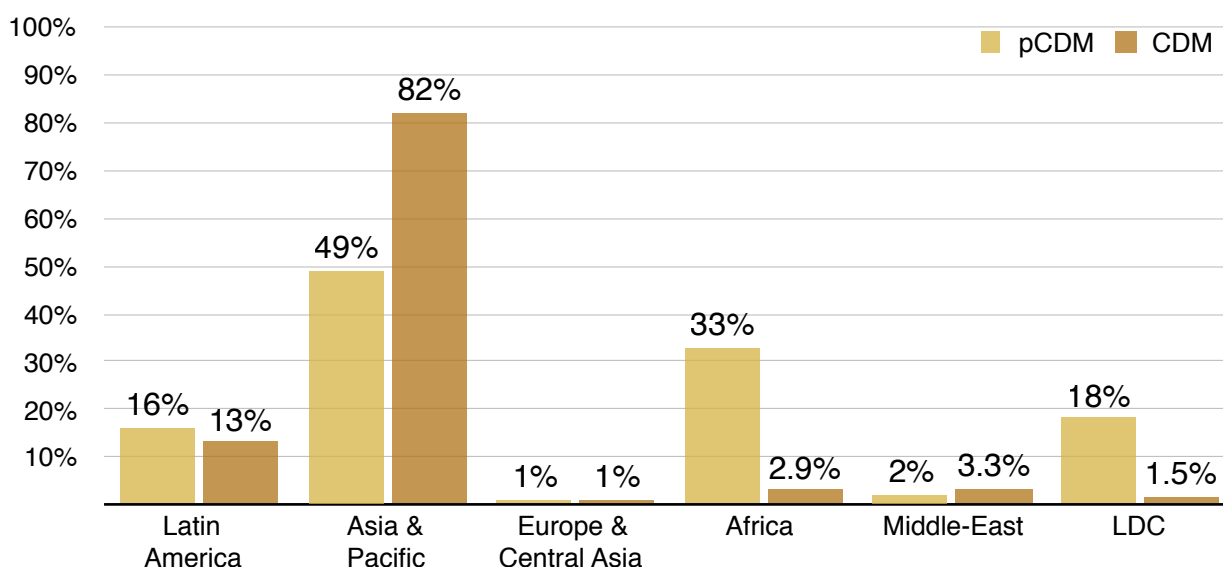
As countries are looking towards implementation of their NDCs, the prospective contribution of instruments such as the CDM cannot be underestimated. The mechanism has delivered an internationally recognised GHG monitoring system, previously a route to finance via the carbon markets

and critically an existing pipeline of mitigation actions with 8000 plus initiatives globally in over 100 countries leading to the issuance of over 1.6 billion certified emission reductions (CERs).

Within Africa, the CDM portfolio covers a broad sectoral and geographical range though it can be argued that it only took off towards the end of the first commitment period of the Kyoto Protocol (2008-2012), with global participation rates increasing from under 3% to over 30% as the move from project to

programme interventions took hold (**Figure 1**). Of the top ten countries in terms of submitted component project activities (CPAs) under PoAs, Africa has three representatives including Kenya (34) and Uganda (28). These activities fundamentally address some of the most pressing development issues on the continent such as access to energy and clean water, with developments ranging from large scale grid connected power plants to household level interventions through programmatic approaches (**Figure 2**).

**Figure 1: Percentage comparison of Project and Programmatic CDM at the regional level**



Source: UNEP DTU CDM Pipeline accessed April 2016

With over ten years of bottom up and hands on experience of mitigation action development and implementation, the CDM portfolio marks one of the good starting points through which scaled up climate finance flows can be shaped and project and programme level contributions to NDCs can be consolidated. In addition to considerable country level institutional capacity and established approval frameworks, CDM projects and programmes are:

- Early movers that have already shown years of commitment to low carbon

development on the ground with significant resources having been invested;

- Experienced with or aware of baseline setting, emission reduction calculations and MRV systems;
- Approved at the national level (Letters of Approval via Designated National Authorities -DNAs);
- Generating internationally recognised emission reductions with cancellation procedures in place.

And most significantly, it could be argued, the activities within the portfolio (**Figure 3**)

**Figure 2 – Consolidated overview of PoA sub-types in selected countries in Eastern/Southern Africa \***

Efficient electricity distribution	1
Lighting/ Solar lamps	7
Stoves	25
Geothermal electricity	1
Solar & wind &/or hydro / Run of river	5
Manure/Domestic manure/	4
Afforestation	1
Water purification/ Solar PV water disinfection	4
Solar PV	1
Connection of Isolated grid	1
Landfill composting	1
Gasification of biomass	1
Biomass briquettes	1

\* Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Sudan, Tanzania, Uganda, Zambia

contain a wealth of experience and information on the utilization and subsequent impact of climate finance on overcoming barriers within underlying business and project models. This is

potentially invaluable data in informing how to structure new financial instruments, through application within the context of diversified sources of climate finance.

**Figure 3 – Cross section of the CDM activities within the African Pipeline**



**Gigawatt Global ASYV 8.5MW Solar PV Project | Rwanda**

First large-scale grid-connected solar PV project in East Africa producing 15,000 MWh of electricity per year resulting in emission reductions of approximately 10,000 tCO<sub>2</sub> per year.



**Project Gaia Cookstove Programme of Activities (Ethiopia, Djibouti, Haiti)**

Award winning household level cookstove distribution programme that includes refugee camps. The improved stoves are ethanol based and the project covers the development of a sustainable supply of the fuel. Emission reductions are a projected (approx.) 200,000+ tCO<sub>2</sub> per year.



**Lake Turkana Wind Power Project (Kenya)**

Large-scale grid-connected 310 MW wind farm with a projected net electricity output of 1,248,624 MWh per year resulting in emission reductions of approximately 700,000+ tCO<sub>2</sub> per year. The carbon credits played a critical role in reaching a mutually acceptable tariff arrangement.



**MPG (Kenya)**

Geothermal PoA for which the first underlying activity is the 35 MW Akiira Power Plant the first solely privately financed geothermal plant in Kenya (including the drilling phase0 with a net electricity output of 280,000+ MWh per year resulting in emission reductions of approximately 146,000 + tCO<sub>2</sub> per year.



**Nuru Lighting Projects (Uganda, Rwanda, Kenya)**

Award winning off grid light distribution project, that is build around an innovative business model focused on bottom of the pyramid customers by mimicking unit prices with the household energy expenditure patterns, characterised by low periodic purchases of kerosene. The project is expected to generate approximately 90,000+ tCO<sub>2</sub> per year.

**Offsetting Transaction costs**

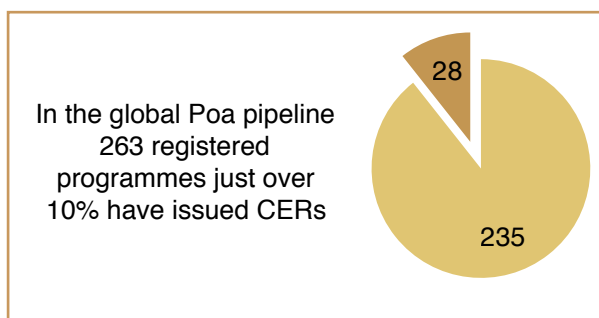
*Registration of CDM activities and ultimate issuance of internationally recognised certificates of mitigation outcomes involves transaction costs. Outgoings that given the current lack of clarity regarding future pay back remain prohibitive. Since being launched at the African Carbon Forum in Addis Ababa, 18 -20 April 2012, the CDM Loan Scheme has presented one option for overcoming this barrier with over 70 CDM loans being approved for various projects in different countries of the world. Even though it might still be too early to evaluate the exact success of the CDM Loan Scheme, from a project developer's point of view it can be easily concluded that the scheme has been fundamental in de-risking the CDM-related development costs. Within the post Paris context it would be prudent for policy makers to consider how best to utilise this existing vehicle, for example existing loans could be converted into grants to ensure that planned mitigation actions are implemented as first movers and moving forwards loans could be redesigned in order to also cover the costs of repackaging climate finance applications. <http://cdmloanscheme.org/projects>.*

**THE CDM PORTFOLIO: A READY MADE TESTING GROUND**

Despite the positive statistics in terms of the mitigation contribution potential contained within the CDM pipeline, following the collapse of the Carbon Market post 2012, many activities have not moved to issue CERs and have failed to access international climate finance through the carbon markets. In the global PoA pipeline of 263 registered initiatives just over 10% have issued CERs (28), for Africa the figures are 99 registered Programmes, with over 14,000,000 potential CERs on the books (until 2020) with only 12% having issued a total of 337,000 tCO<sub>2</sub>. It is also prudent to highlight that due to the nature of the programmatic approach these figures do not represent the full mitigation potential held within the

pipeline as there is prospective for scalability and replication.

**Figure 4: Global PoA pipeline issuance rate at the programme level**



UNEP DTU CDM Pipeline accessed April 2016

The failure of these first-mover CDM African initiatives to tap into this critical

climate financing has slowed down implementation, reduced opportunities for scaling up and in certain cases jeopardised the financial viability of the projects and programmes themselves. The question now is how countries can best leverage this mitigation potential within the context of their broader NDC with the aim of attracting new international flows of climate finance. Against this backdrop it is recommended that the existing CDM pipeline is thoroughly analysed to address the following key questions:

- How can the CDM pipeline be repackaged to access new sources of climate finance?
- How can CDM MRV systems inform and be embedded within national reporting under the NDCs?
- How can the CDM pipeline be linked to accounting of ITMO's and domestic contributions?

### **HOW CAN THE CDM PIPELINE BE REPACKAGED TO ACCESS NEW SOURCES OF CLIMATE FINANCE?**

In order to maximize the leveraging of the CDM portfolio, a thorough screening exercise should be carried out to identify common barriers and challenges around which climate finance mechanisms could be built and designed. This clustering and repackaging of the existing CDM projects and programmes could primarily be based on similarities in financing needs, though a full range of key factors for consideration could include thematic approaches (e.g.

household energy access), project types (e.g. large scale renewable energy), geographies (e.g. country specific, regional), scalability, business approaches (e.g. last mile access, commercial, social enterprises) and ownership models (e.g. open source PoAs). These efforts could tap into the CDM pipeline bottom up securing direct financing lines for individual activities, or top down building for example credit line applications around successful approaches proven under the CDM (proof of concept pilots). Workable financing instruments could be established and further developed for example through interaction with relevant accredited entities under the GCF.

The use of the existing CDM portfolio as a starting point will have the double benefit of providing (1) a ready made portfolio for climate financiers against which they can structure financing mechanisms and instruments that are tailored towards the needs of the projects and programmes on the ground based on many years of experience; and (2) a new opportunity for existing projects to get access to climate finance with the added benefit that the instrument can be tailored to the specific needs of the project/programmes and not just be based on ex post payments upon delivery of CERs. The end result could be a number of fit for purpose financing instruments with an example set out in the Box 1 below. It would be expected that through identifying barriers and climate finance solutions for the existing pipeline that these could then be applied to support further scaled up interventions.

### Example Box 1: CDM repackaging

As per figure 2 above, there are over 30 programmatic vehicles that sit within the CDM pipeline that aim to facilitate the distribution of Improved cookstoves and solar lighting systems. These actions reduce GHG emissions but more critically for the host nation deliver fundamental development benefits such as reducing health impacts caused by existing lighting and cooking methods. Access to capital at the household level for purchasing more expensive efficient technologies remains a barrier to up take. Against that backdrop Climate Finance can and has played a significant role in increasing penetration rates of the latest technologies. Traditionally funding has been sourced through the niche voluntary carbon market though through the emergence of a broader range of financing tools the scope for scaled up intervention may be enhanced. In countries where nascent market based approaches are beginning to yield results, micro credit lending lines at concessional rates could further facilitate consumer purchasing power. In addition for means tested members of society where it is proven markets are unlikely to offer a workable solution, funds released against results based financing frameworks can be potentially be deployed.

### HOW CAN CDM MRV SYSTEMS INFORM AND BE EMBEDDED WITHIN NATIONAL REPORTING UNDER THE NDCS?

CDM possesses an internationally recognized baseline setting, emission reduction accounting and MRV system that has been tried and tested for over a decade at the project and programme level. This has led to the development of skills and knowledge on the fundamentals of project and programme scale GHG accounting at the activity through to government official level. There is great potential for this CDM portfolio to act as a testing ground for exploring method linking and integrated the layers of MRV systems. Significantly the CDM has continued to

expand its monitoring range beyond GHG emission reductions, with further developments in relation to the sustainable development indicators that given the new SDG framework could prove a useful asset. The CDM framework also provides examples of management structures applied for the monitoring of impacts that can be adjusted and replicated in similar activities. Countries in enhancing their baseline setting and emission reduction monitoring should analyse the existing CDM pipeline to better understand what currently exists and could be applicable at the national context such as standardised baselines that may have the potential to reduce the need to reinvent the wheel entirely.

### Example Box 2: Application of standardized baselines

Of 24 globally approved standardized baselines, over half are from Africa impacting 15 plus countries. This standardization reduces resource impacts on host countries and developers in removing the need for exhaustive data collection exercises. In terms of sectors 15 countries already have a standardised baseline for the power sector (i.e. a Grid Emission Factor), 3 for waste, 2 for cookstoves and 1 for charcoal. Countries and interested stakeholders would firstly be encouraged to analyze how easy it would be to replicate this exercise from country to country within the same region. Secondly, and perhaps more importantly, through the process of generating the final standardized figures extensive efforts are undertaken in terms of enhancing local capacity, identification of key stakeholders and establishment of institutional data collection methods. It is this foundation that countries should be looking to leverage in undertaking work on baselines setting, emission reduction calculations and monitoring of impacts under the NDC framework.

## HOW CAN THE CDM PIPELINE BE LINKED TO ACCOUNTING OF ITMO'S AND DOMESTIC CONTRIBUTIONS?

According to studies under taken by International Emission Trading Association

90 INDCs submitted pre Paris expressed interest in using carbon markets to reach their emission reduction targets (**Figure 5**), as can be seen Africa is certainly open to considering use of markets and in many cases intends to.

**Figure 5: Carbon Markets and INDC**



Source: IETA INDC Tracker

The aforementioned new climate agreement's article 6 refers to use of cooperative approaches (read as markets and carbon trading) and internationally transferred mitigation outcomes (read as carbon credits). The exact modalities are yet to be fleshed out, however the CDM infrastructure and pipeline has the potential to play a significant role. Sector and ministry level discussions are soon to be activated at the country level in order to ascertain potential contributions towards the national level emission reduction delivered under the Paris Agreement. At the project and programme level the CDM

possesses years of experience with proving the role of climate finance within business models through additionality assessments often based on financial/investment analysis. As interested parties start to explore ways in which national emission reductions can be wholly or partially transferred on the international stage, the CDM pipeline has the potential to act as an operational testing ground. Shedding light on how designed mechanisms may actually play out on the ground in terms of facilitating the implementation of real climate action.



## ABOUT CARBON AFRICA

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Carbon Africa Limited, established in 2009, is a climate change and clean technology advisory company headquartered in Nairobi, Kenya with representation in Ethiopia, Mozambique, Rwanda and the Netherlands. The firm assists governments, multilateral organizations, development agencies, financing institutions and the private sector to realize low carbon development pathways and green growth. The company's international and multi-disciplinary team of more than 20 carries out engagements from the policy level down, with the emphasis on supporting the development and implementation of clean technology projects in Africa through climate finance instruments.



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