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## carbon finance for africa – an investors' guide

executive summary

# africappractice



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**“To leave Africa behind while the rest of the world takes advantage of the Development Mechanism would indeed be a tragedy.”**

Odin Knudsen, CEO World Bank  
Carbon Finance Business

**“Africa has not been the first address for Clean Development Mechanism projects until now. The CDM could make hundreds of millions if not billions of dollars available for the development of African energy structures plus chances for people to get a better life.”**

Klaus Toepfer, Executive Secretary of the  
United Nations Environment Programme

**africappractice** ([www.africappractice.com](http://www.africappractice.com)) is a communications and research consultancy working with governments, international organisations and businesses to enhance their commitment to African development. africappractice publishes Africa investor, an international magazine for Africa’s investment decision makers.

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*FRONT COVER IMAGE | MONWA BOOI STANDING  
OUTSIDE HIS NEW ENERGY EFFICIENT HOUSE  
KUYASA, SOUTH AFRICA | SOUTHSOUTHNORTH*

## acknowledgments

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**CD4CDM** – Capacity Building for CDM  
**CDM** – Clean Development Mechanism  
**CDSSA** – Capacity Development Sub-Saharan Africa  
**CER** – Certified Emissions Reduction  
**DNA** – Designated National Authority  
**ERPA** – Emission Reduction Purchase Agreement  
**ETS** – European Emissions Trading Scheme  
**GHG** – Greenhouse Gas  
**JI** – Joint Implementation  
**NGO** – Non-Governmental Organisation  
**ODA** – Overseas Development Assistance  
**UNFCCC** – United National Framework Convention on Climate Change  
**UNIDO** – United Nations Industrial Development Organisation  
**UNEP** – United Nations Environment Programme  
**VER** – Voluntary Emissions Reduction

Carbon Finance is a new and highly variegated form of international commercial and development project funding. Its fundamental purpose is to reduce the economic burden of mitigating global climate change derived from anthropogenic emissions of greenhouse gases (GHGs).

Driven by voluntary and mandatory regulatory structures, carbon finance enables countries, companies and even individuals to reduce their greenhouse gas emissions in a cost effective manner. The effect of these regulatory structures is to quantify and limit the right to emit greenhouse gases into the atmosphere. Countries and companies can trade these rights to emit through various emissions trading systems such as the European and International Emissions Trading Systems, with those in excess of their emissions quotas purchasing 'carbon credit' from those under their quota.

Carbon finance invested in GHG emissions reduction projects in developing and middle income countries comprises an important parallel market that feeds into emissions trading markets. It refers to the 'additional' finance for commercial or development projects provided specifically for the purpose of creating GHG emission reductions. In return, financiers receive not cash or profits but 'carbon credits' that are equivalent to the same 'rights to emit' bought and sold by emissions traders. Carbon projects or emissions reduction projects can result in two types of credits – Certified Emissions Reductions (CERs) and Voluntary/ Verified Emissions Reductions (VERs). The crucial difference between the two is that CERs are derived from Clean Development Mechanism projects, whereas VERs are a product of a range of verification systems and are usually created and traded by companies and individuals entering into voluntary agreements to reduce their emissions.

The Clean Development Mechanism is an official 'project based mechanism' of the Kyoto Protocol on climate change. All CDM project credits (CERs) have gone through the official UNFCCC verification procedures and can therefore be used to meet the Kyoto targets of Annex 1 (developed) countries. CERs tend therefore to be more valuable and more in demand than VERs.





### market size

Since the Kyoto Protocol came into force in February 2005, international emissions trading markets have matured considerably and are now witnessing the emergence of spot trades for CERs and hedged CER purchases.

To give an indication of the potential size of the global market in CERs alone, the World Bank 2004 publication entitled *State and Trends in the Carbon Market* asserted that:

*"...If half the emission reductions are achieved by OECD countries domestically, the 'compliance gap' to be met through trade with developing countries and transition economies through 2012 would be 2.5 billion tons – 10 times the current carbon purchase contracts. At a selling price of \$5- \$10 a ton, carbon payments to developing countries and economies in transition between now and 2012, could be worth between \$12.5 billion and \$25 billion."*

Research activities undertaken for the Investors' Guide were successful in identifying six key variables affecting Africa's share of the carbon market; (i) national capacity challenges (ii) the complexity, inefficiency and high transaction costs involved in registering a CDM project activity with the UNFCCC (iii) the poor investment climate in many African countries (iv) the slow growth in demand for energy in Africa, compared with Asia and Latin America (v) lack of information on new project opportunities and emissions profile of African industrial sectors (vi) lack of awareness or of the unique benefits of corporate/governmental association with such projects in Africa.

It can safely be asserted that in the foreseeable future, Africa's market share will not match that of wealthier countries around the world. Yet the developmental benefits accruing to Africa if it increases its share of this new source of capital would be significant.

The overall objective of the Carbon Finance Investors' Guide is one that is shared by africapractise and project supporters to encourage greater levels of foreign direct investment and sustainable growth in Africa to help meet the Millennium Development Goals. More specifically, the Investors' Guide aims to:

- Introduce banks, funds, corporations, environmental technology companies and other parties to the theory and practice of carbon finance.
- Stimulate debate around the policies and measures that need to be implemented to foster the growth of this important new source of sustainable development project finance.
- Explore the opportunities for investment in new CDM and voluntary offset projects in Africa.
- Provide a connection between the buyers and sellers of carbon credits via a comprehensive business directory.

The main message conveyed by the Investors' Guide is that the Clean Development Mechanism of the Kyoto Protocol, whilst imperfect in its current form, has the potential to become a driving force behind the emergence of an environmentally and socially sustainable industrial and energy infrastructure in Africa. africapractise and the other sponsors of the guide therefore urge parties to the Kyoto Protocol to deepen their support for project-based emissions reduction mechanisms, to pass measures to ensure that the CDM is made easier (and cheaper) to use and to strengthen its sustainable

development component so that poorer countries in Africa may be better served.

Consultations undertaken during the research phase of the guide also indicate that there is a huge potential for small-scale VER projects across the continent. Companies and individuals seeking to reduce their carbon footprint can invest via specialist providers in small development projects that have an emissions offset element. In return investors can help create sustainable livelihoods for people in Africa living under the poverty line, whilst ensuring their own operations or lifestyles become carbon neutral.

The Investors' Guide is a timely initiative first because the carbon project market is still in its infancy, giving an opportunity to raise awareness and ensure African countries get a foothold in this new market. Second because in the absence of a CDM regulatory framework post-Kyoto (which expires in 2012), projects need to get underway as soon as possible to maximize the amount of CERs they deliver by the end of the first commitment period since buyers of CERs are currently unwilling to offer a good price for CER delivered post 2012. That said, africapractise would like to underline the importance of fostering continued growth in the carbon project market and to ensure that it plays integral role of any binding climate treaty made in the future.

ABOVE LEFT | GAS FLARES, NORTH AFRICA | H.HAKIM

ABOVE | PHOTO-VOLTAIC PANELS INSTALLED NEXT TO ZULU HOUSES, SOUTH AFRICA | PARALLAX

A range of qualitative research methods were used to inform the Investor's Guide, conducted over a six-month period between April and October 2005. These include:

- A special seminar/focus group held in London on July 5th and attended by emissions trading, CDM and voluntary offset project development experts.
- 6 Interviews with key stakeholders in South Africa and Uganda
- A participatory workshop with 14 Ugandan project developers
- Participation in a UNEP Risøe CD4CDM workshop for countries in Sub-Saharan Africa
- Analysis of secondary sources: published research, news and conference materials
- Informal consultation with experts in the field on technical and legal issues.

In addition, the Investor's Guide contains approximately twelve first-hand opinion pieces by acknowledged experts in the field. The subject of these contributions concern issues ranging from the legal challenges of the CDM facing governments to opportunities for large-scale CDM projects in North Africa. Developments in Francophone Africa are also covered in detail, as is the potential for voluntary offset projects across the continent.



The theory behind carbon finance and the different systems for investing in carbon projects are clearly laid out in the Investors' Guide. Prospective CDM project developers, investors and buyers of CERs will also benefit from an introduction to the CDM project cycle, advice on small-scale projects and project bundling. Reference is also made to more specialised CDM toolkits and other means of assistance for first time investors.

### new opportunities and unique benefits

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Among African Kyoto signatories, there are a group of CDM leaders that have emerged in Africa, mostly within the wealthiest economies including South Africa, Egypt and Morocco. Each of these three countries has established DNAs and has a handful of high-quality large-scale CDM projects in the (lengthy) pipeline. Other developing, industrialised economies are rapidly switching on to the opportunities presented by the CDM for some large-scale plant upgrades within the oil and gas infrastructure. Reduction of gas flaring in the oil and gas fields of Nigeria and North Africa, for example, has the potential to reduce tens of millions of tonnes of CO<sub>2</sub>, whilst reducing smoke pollution, improving safety and bringing cheaper energy to surrounding communities.

An important difference that emerged between least developed African countries and the wealthier ones was the relative availability of carbon finance from local banks, corporations and venture capitalists undertaking unilateral CDM project activities.

Even within least developed countries (LVC's) such as Uganda, Mozambique, Tanzania, Kenya, Nigeria, Senegal and Mozambique there is a good understanding among government and the private sector about the CDM process and an eagerness to engage with buyers and negotiate ERPA's. Project developers in each of these countries have devised a number of mainly small-scale projects to a PDD stage that are ready for investment. For more details of these opportunities, readers should consult the regional overview in the business directory.

In spite of the considerable obstacles that still need to be overcome before many African countries can participate in the CDM, projects originating from Africa have some unique commercial and developmental advantages over those from larger industrial economies already undertaking project activities (e.g. in South America or Asia). These include:

## portfolio diversification

Carbon funds, like all investment funds, require a diverse range of projects in which to invest. Seeing as most CDM projects are in developing countries or economies in transition, investment risk for any CDM project is relatively high meaning that a wide spread of projects across different geographical regions can help to offset some of that risk. For example, South Africa's long term foreign currency rating was recently raised by Standard and Poor to BBB+, higher than many middle income countries around the world. Local currency rating is an impressive A+.

## low hanging fruit

As the CDM gets off the ground, the most attractive projects for financiers will be those that create the largest amount of CERs for the lowest investment – the so-called 'low-hanging fruit'. HFC and methane abatement can be included in this category due to the high CO2 equivalency rates of these gases. In better established markets (perhaps with the exception of China) most of the projects have already been scoped by CDM project developers. In Africa on the other hand, there are number of counties with large industrial complexes that have only barely been explored for project potential.

## low prices

A distinct advantage of African CERs, as voiced by one Ugandan project developer, was the fact that sellers were willing to offer lower prices than those elsewhere. Naturally, the price will already be discounted due to the additional risk of investing in a developing country. Nevertheless the demand in many African countries for foreign currency is so acute that investors are likely to receive good deals on ERPAs.

## reduced currency risk

A critical variable for almost all investors in Africa is local currency risk. With the exception of South Africa, Egypt, Tunisia and Morocco, exchange rates tend to be more volatile than those in large, diverse, industrialised economies with large depreciations or appreciation of exchange rates having serious negative effects on the rate of return from investments. Carbon credits on the other hand are traded internationally and have proved relatively stable since their inception meaning that returns from CDM projects in developing countries are more secure than other forms of project finance in Africa.

## the development dividend

CERs and VERs from Africa offer the project developer and/or the credit buyer additional value because of their significant contribution to sustainable development – termed by UNDP as the 'development dividend'. Indeed, in a continent with over 40% living below the absolute poverty line of \$1 per day, the relative economic benefits of even small quantities of additional project finance are large. For example a new landfill gas capture project in Durban, South Africa will provide clean and cheaper energy for local populations whilst a share of revenues from both the CERs and the sale of the methane gas will accrue to resource constrained local authorities. The CDM 'Gold Standard' is a specially devised certificate awarded to projects that make exceptional contributions to sustainable development. Although governments are not permitted from using ODA for purchasing CERs, national carbon funds have the potential to help Africa meet the Millennium Development Goals whilst simultaneously fulfilling their obligations under the Kyoto Protocol. Similarly, private corporations and carbon funds can gain significant profile for showing that their projects are sensitive to the local population and will provide lasting developmental benefits.

## trade not aid

For developed economies working to shift the flow of development assistance toward 'trade not aid', supporting the creation of a new commodity (emissions reductions) for export between developing countries is a highly innovative means of working towards this objective.

## bundled small scale projects

Shrewd project developers can accrue large quantities of CERs by 'bundling' together a collection of small-scale CDM projects for simultaneous registration by the CDM Executive Board. Africa is an ideal destination for small-scale projects in areas such as off-grid renewable energy, energy efficiency and small afforestation/reforestation. A recent guide to bundling CDM projects can assist project developers go through the process correctly.

Turning now to the voluntary or retail market for emissions reduction credits (VERs), carbon finance experts meeting in the UK in July (2005) were in all in agreement that Africa could and should become a prime destination for VER projects. Three reasons were given for this: (i) high transaction costs and lengthy time lags within the CDM project cycle and (ii) lack of capacity and awareness within many African countries for CDM projects (iii) the steady increase in demand for small parcels of carbon offset credits from companies, event managers and individuals wishing to offset their emissions from air travel.

Furthermore VER projects are attractive to companies and countries outside the Kyoto Protocol such as the USA and Australia. If popular or state-led pressure for emissions caps and emissions trading in the United States continues to increase, Africa could become a key beneficiary of offset projects.

A good example of a voluntary project can be found in Southeast Madagascar, a region characterised by extreme poverty and population pressure on its unique forests. The project involves the distribution of and instruction in the usage of charcoal efficient stoves. The carbon-offset element is significant because the stoves reduce the amount of charcoal used for cooking by approximately 40%. At the same time, the uptake of stoves helps create a more sustainable natural resource base for poor communities, reduces the amount of time spent by villagers collecting wood, teaches them how to build and repair their stoves (a valuable new skill set) and preserves the endemic biodiversity of the region.

In the interim period before African governments have established DNAs, voluntary offset projects can assist local NGOs and small businesses come to grips with the concept of the emissions offsets, paving the way for more lucrative CDM projects once the market becomes economically and politically viable. VER project must however ensure that their GHG emissions reductions are verified in a thorough and transparent manner, preferably using independent assessors and adopting the same rigour of analysis as would befit a CDM project. Forestry projects are most at risk from miscalculation of carbon offsets due to scientific uncertainties about sequestration capacity of forests and difficulty obtaining accurate measurements of forest growth.

There are already a host of companies and NGOs working in the voluntary offset market in Africa, brokering deals, funding and managing projects. Information and contact details of these companies are provided in the business directory accompanying the Investors' Guide.

RIGHT | MINERAL PROCESSING PLANT, JOHANNESBURG  
SOUTH AFRICA | AFRICAPRACTICE

Research undertaken by africapractice, the Wuppertal institute and a number of international development agencies (UNIDO, UNEP, World Bank, EU) shows that many African countries require additional capacity building before they can become effective players in the new but already competitive market for CERs.

In some cases, one of the fundamental pre-requisites for attracting CDM projects – acceptance and/or ratification of the Kyoto Protocol – has yet to be achieved. As this executive summary went to print 36 out of the 54 countries in Africa had completed this step. Fewer countries still have established functioning Designated National Authorities (DNAs) although many are making credible efforts to do so. As evidenced from a special workshop conducted by UNEP in Uganda, one of the reasons that Africa has been slow to tune in to in to the opportunities presented by the carbon market is because governments remain to be convinced of the developmental/financial benefits of the CDM especially when compared to the opportunity costs of diverting scarce resources away from more immediate development priorities such as education and healthcare.



This position can be further justified by the fact that, at the time, there was not a single project from Africa registered by the CDM Executive Board. In the time following the workshop however, one project from South Africa has been successfully registered with more on the way. It is hoped that by showcasing the financial gains made from this and ensuing CDM projects, African governments will begin to increase their interest in the CDM.

Further capacity challenges for the CDM in Africa have been identified by UNIDO and the EU CDSSA project. They were grouped into technical, legal, administrative, financial challenges all of which are covered in some detail in chapter 2 of the Investors' Guide.

Many of the leading international development agencies are working hard to resolve the disconnect between Africa and the rest of Annex 2 (developing) countries. This is good news for investors. The World Bank CF Assist, UNEP CD4CDM and the UNIDO initiative for Francophone Africa are each covering a handful of African countries, working hard to increase the number of CDM projects originating in Africa and the capacity of national governments to approve and monitor them. They are working with legal and regulatory institutions as well as the private sector to improve awareness of carbon finance options and to develop quality projects ready for investors/CER buyers.

On a more general level, donors should continue to work on improving the African investment climate through initiatives such as the IFC Investment Advisory Service.

There also needs to be better, more readily available information for buyers and project developers looking to Africa for new projects and CERs.

### questions of politics

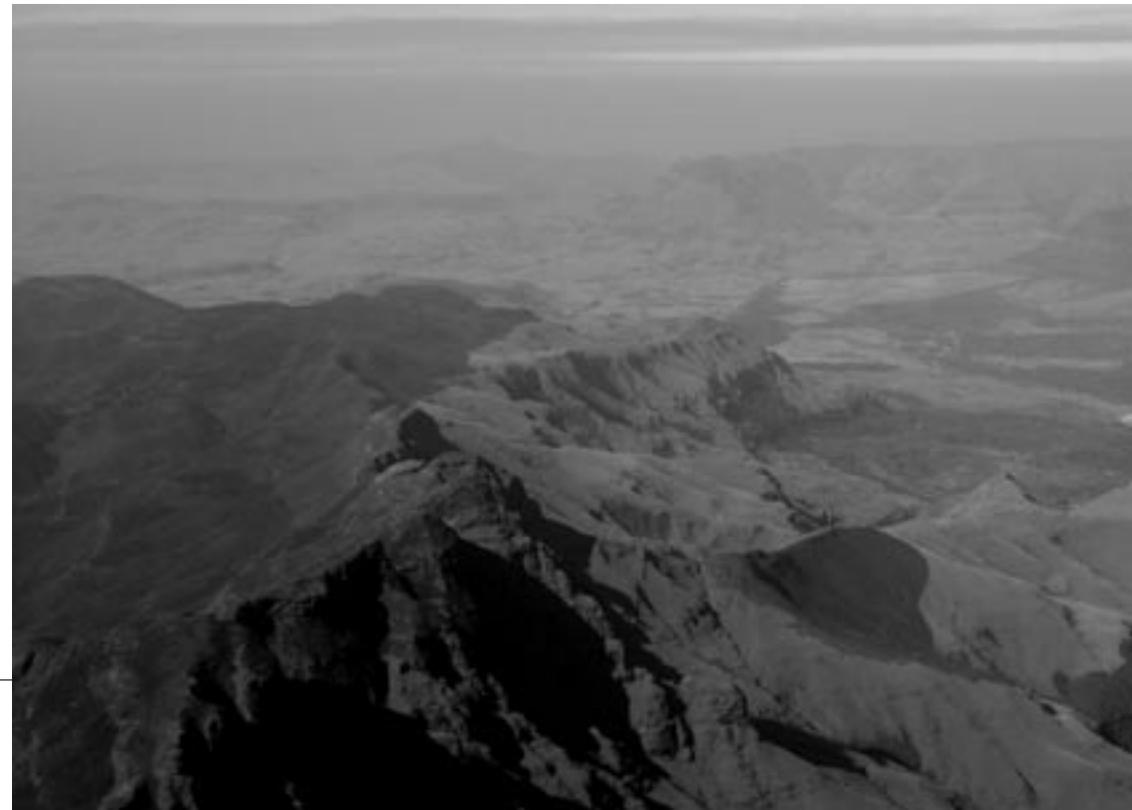
With the volume of projects largely determined by a country's expected energy needs and business climate, Africa already stands at a disadvantage to other regions of the world. As a project-based mechanism for bringing sustainable development to all Kyoto signatories, parties to the Protocol must seek to remove the legislative and policy barriers that prevent greater participation of African countries in the CDM. Small-scale project transaction costs for example remain high and procedures for bundling are overly complex. The complex national level procedures for approving CDM projects may also need to be re-examined.

Renewable energy, transportation and afforestation/reforestation projects hold great potential for Africa and yet they require a crediting period of ten to fifteen years to become economic. Greater certainty or guidance is required of Parties as to the validity of CERs post Kyoto. Donors must also work to instil confidence in the CDM project market and reduce bottlenecks in the registration procedure by providing adequate funding for the CDM Executive board.

The final section of the investors' guide contains a business directory of funds, companies and NGOs active within the CDM and voluntary offset market in Africa. It also proffers a region-by-region overview of the capacity of African countries to take on CDM projects, focussing on the emissions reduction potential of different economic sectors (industry, transport, agriculture, forestry) and the status of African DNAs and climate change focal point. Data for this section is mainly derived from a continent-wide survey conducted by africapractice and the Wuppertal Institute on Climate in Germany. There is a special section of the directory focussing on South Africa, the largest economy in Africa and the most active in this exciting new market.

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LEFT | VIEW FROM CATHEDRAL PEAK,  
DRAKENSBERG MOUNTAINS, SOUTH AFRICA.



# conclusion

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The Investors' Guide to carbon finance shows that there are enormous opportunities for new investments in CDM and voluntary offset projects in Africa. What is more, it shows how these investments can bring unique economic benefits and heightened profile to project developers and purchasers of African carbon credits.

It also makes a call for public and private investors to consider the wider implications of choosing Africa as a destination for part of their CDM or voluntary project portfolios.

In terms of its impact on the environment, the economic development of Africa stands at a crossroads. Either the continent can replicate the growth path of the 'developed' world with potentially disastrous consequences for the local and global environment or it can set an example to other countries around the globe by harnessing new technologies and developing in a clean and sustainable manner for the benefit of future generations. carbon finance can help ensure it chooses the latter.

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The Carbon Finance for Africa Investors' Guide is available free on request. Copies will be sent out in the end of November. The full guide will also be published on the africapractice website (<http://www.africapractice.com>).

africapractice are working to construct a new, dynamic, accompanying website that contains regularly updated information on new CDM projects looking for investors, the status of Designated National Authorities to the Kyoto Protocol and links to organizations looking to source both CERs and VERs from Africa. The site will contain summaries of and links to all the latest news, research, and policy developments affecting this new and exciting market.

Organisations interested in supporting this initiative should contact africapractice.