

Notes From The Field

Scaling-up carbon finance through CDM Programmes of Activities: Challenges for low-income household energy projects

Inka Schomer

e: inkaschomer@gmail.com

The University of Oxford, MSc Environmental Change and Management

This briefing is one of eight produced by Masters Students in receipt of CDKN Masters Award Funding and published on the CDKN Website. The Briefings can be found at www.cdkn.org.

Key messages

- The Programmes of Activities (PoA) approach could enable the increased use of carbon finance to scale up energy projects, going beyond the project-by-project approach of the Clean Development Mechanism (CDM).
- Despite its apparent benefits, the PoA is a difficult undertaking that requires action on financial, institutional, technical and informational challenges.
- Multiple stakeholders need to build the right environment for the PoA approach by creating an enabling policy framework and exploring funding options beyond carbon finance.

Programmes of Activities (PoA) are viewed as a new opportunity to obtain carbon finance, through Certified Emission Reductions (CERs), for projects that have been neglected by the traditional Clean Development Mechanism (CDM) approach.

PoAs allow a shift away from the normal CDM project-by-project approach towards aggregating individual projects into a broader programme that reduces the costly CDM certification process. Insights from research conducted on energy projects in low-income households show that the success of PoAs in developing countries depends on establishing an appropriate institutional framework, building local capacity, increasing institutional learning around project development, and harmonising the evolving carbon finance mechanisms. This policy brief demonstrates that the PoA concept has opened up new opportunities to implement CDM projects. It argues, however, that the approach is only effective where diverse stakeholders address the many challenges to scaling up carbon mitigation.

To date, climate change mitigation in developing countries has centred on the Clean Development Mechanism (CDM) established under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC). The CDM allows entities in developed countries to invest in projects in developing countries. As a project-based approach, it has two objectives: to reduce greenhouse gas emissions, and contribute to the host countries' sustainable development objectives.

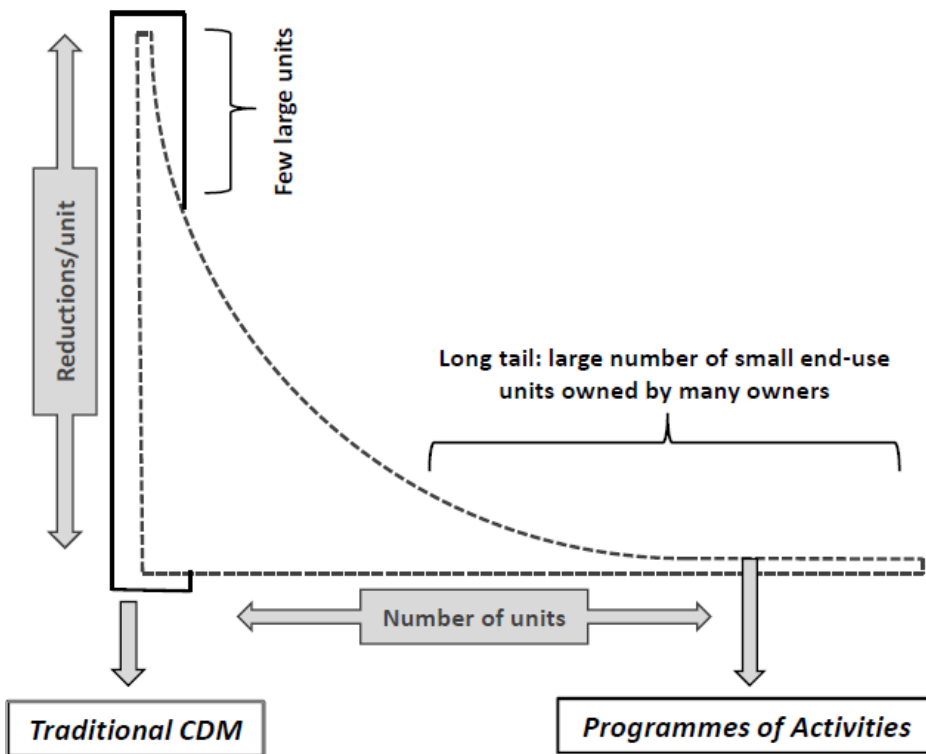
Key terms

- CDM** The Clean Development Mechanism is one of the [‘flexibility’ mechanisms](#) defined in the Kyoto Protocol and is supposed to enable developed countries (Annex 1) to meet their reduction commitments, while assisting developing countries (Annex 2) to achieve sustainable development.
- CERs** Certified Emissions Reductions are units issued through the CDM, which can be sold on the carbon market. Each CER is equal to one metric tonne of carbon dioxide equivalent.
- CPA** A CDM Project Activity is a single, or a set of interrelated measure(s), to reduce emissions within a designated area. A PoA may contain an unlimited amount of CPAs.
- DNA** The Designated National Authority is responsible for determining whether a proposed CDM project will assist the host country in achieving its sustainable development goals and providing a letter of approval to project participants in CDM projects.
- DOE** A Designated Operating Entity is an independent auditor who is responsible for the validation of a CDM project proposal and the verification of emissions reductions.
- NAMAs** Nationally Appropriate Mitigation Actions are actions proposed by developing countries that significantly reduce emissions below business-as-usual levels.
- PoAs** Programmes of Activities are voluntary coordinated actions by a private or public entity that lead to greenhouse gas (GHG) reductions that are additional to any that would occur in the absence of the PoA, via an unlimited number of CDM project activities.

While developing countries may have reduced emissions, there is a lack of tangible and direct sustainable development benefits in the CDM portfolio of projects and the geographical distribution of projects is uneven (Boyd et al., 2009; Olsen, 2007). This issue, in addition to the urgent need to scale up carbon mitigation initiatives in developing countries, has led to a shift in thinking away from a purely project-based approach.

One of the most promising approaches is the Programme of Activities (PoA). The UNFCCC Conference of the Parties (COP) in 2005 agreed to allow the implementation of PoAs under the CDM. In a PoA the normal project-by-project approval is aggregated into a broader programme that includes many individual actions of a similar nature. This programmatic approach aims to broaden the CDM field to include replicable projects with low and dispersed emissions (the long tail of GHG emissions), such as energy projects for low-income households (ClimateFocus, 2011) (Figure 1).

Figure 1: Addressing the long tail of greenhouse gas emission reductions



Source: modified from Figueres and Philips (2007: p.8)

Energy projects in low-income households

Energy projects in low income households, such as energy efficiency interventions and solar water heaters, create high sustainable development benefits as they reduce energy poverty. The technologies, however, are rather complex and difficult from a project development standpoint and the rate of implementation of such interventions lags well behind their potential. For example, demand-side energy efficiency interventions constitute only 4% of the entire CDM portfolio. This slow uptake is linked to the many inherent challenges surrounding such energy upgrade¹ projects (outlined in Figure 2) and the following challenges in particular.

Supressed demand:

The suppressed demand for energy services by the poor refers to a state where income and/or infrastructure constraints keep demand lower than it would be if these constraints were removed (Winkler and Thorne, 2002). However, if development does occur, the poor will increase their consumption of these energy services and emissions will rise. The inclusion of suppressed demand pragmatically in CDM methodologies would allow crediting of predictable (unsupressed) energy consumption and, therefore, allow CDM projects to avoid future increased net emissions from the outset.

1. 1 Energy upgrade interventions in this article refers mainly to the installation of energy-efficiency ceilings and low-pressure solar water heaters.

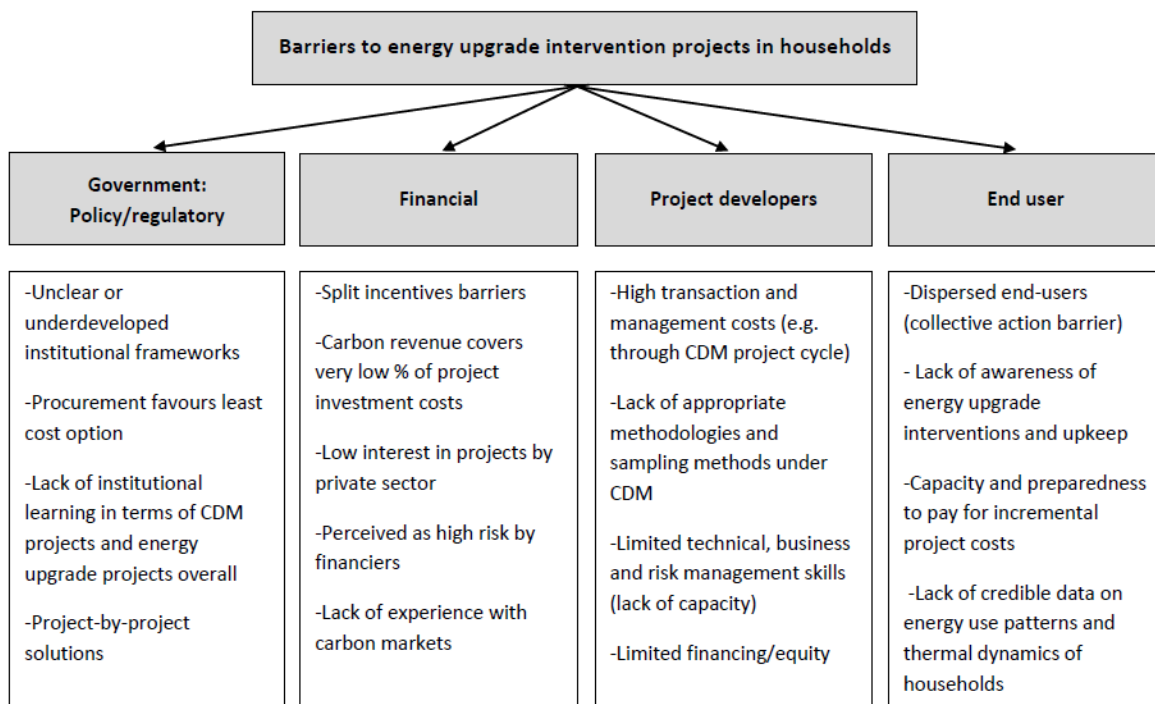
Methods and sampling:

There are limited available methodologies under the CDM for energy projects at the household level. There are, for example, no CDM methodologies for passive measures such as window placement. In addition, energy upgrade interventions such as energy efficient ceilings and solar water heaters, need to be monitored separately, which drives up costs. Many project developers advocate for performance-based methodologies that measure overall changes in thermal performance and carbon emissions of the household as a whole.

Split incentives:

The person making the project decisions is seldom the person affected directly by those decisions. The CDM can provide some incentive in the form of revenues from carbon credits, but this usually contributes only a small proportion of the overall implementation costs.

Figure 2: Barriers to energy upgrade intervention projects in households



Source: modified from Sarkar and Singh (2010: p.5562)

Beyond the stand-alone approach

The low uptake of projects under the CDM that offer real social development benefits to host countries (i.e. beyond mitigation) has stimulated renewed efforts to redress the balance. The PoA approach signals efforts to scale up projects that meet both mitigation and sustainable development objectives.

The framework PoA only needs to be registered once by the Executive Board of the CDM. Additional CDM project activities (CPAs) can simply be added at any later stage. Each proposed PoA must receive approval from the Designated National Authority (DNA) that checks it against sustainable development criteria.

Verification, certification and issuance of CERs are conducted by a Designated Operating Entity (DOE), usually outside the developing country.

Other mechanisms being proposed to scale up mitigation activities are Nationally Appropriate Mitigation Actions (NAMAs), which originated in the 2007 Bali Action Plan. These aim to enhance national action on mitigation and include actions by developing countries in the context of sustainable development, technology transfer, finance and capacity-building in a measurable and verifiable manner (UNFCCC, 2008). A focus on the progress of the PoA approach may produce lessons for NAMAs. Many lessons could be drawn from, for instance, effective monitoring and capacity-building at national level to handle large-scale carbon finance.

Implementation challenges

PoA implementation faces financial, institutional, technical and informational challenges that are often interlinked.

Financial challenges:

Although the PoA approach aims to reduce transaction costs and generate bigger revenues through larger economies of scale, certain issues and concerns remain. For example, project developers in developing countries rarely have additional financial incentives (such as government subsidies) to make a PoA a viable option. In addition, although the PoA approach shortens the timeframe for CER issuance, the up-front finance issue remains (see Box 1 for an innovative approach). A quick look at the PoA pipeline indicates that most are still funded through public grants, suggesting that little progress has been made in finding new funding sources. There is also uncertainty around market demand for CERs post-2012 and fears that CER ownership and management will become increasingly complex as multiple stakeholders engage in the PoA process.

It is vital, therefore, that stakeholders assume different responsibilities to overcome the financial challenges of PoA development (Table 1). PoA project developers, for example, should continue to explore alternative revenue sources as CERs cover only part of project development costs.

Institutional challenges:

Government leadership on housing and energy projects is crucial in the context of PoA development, as scaling-up leads to more interaction between government and project developers. Governments could, for example, act as independent knowledge brokers of information obtained in projects development, ramp-up coordination between the diverse entities dealing with energy issues, and lead the development of standards and regulations. In addition, the capacity of DNAs and DOEs must be increased to assess the impact of PoA on sustainability and mitigation.

Technical and informational challenges

Few appropriate methodologies and baselines take account of the realities confronted by projects in the low-income housing sector. Meanwhile, limited experience with conventional CDM projects in low-income households has resulted in a negligible transfer of project development skills and only a small number of best-practice case sites from which PoA project developers can draw. It is vital, therefore, that the Executive

Board encourages the development of PoA guidelines that are appropriate for energy projects in low-income households and that project developers set clear management rules around, for example, maintenance and education procedures. Governments could also support capacity building, as local skill-sets for PoA development are often inadequate.

Box 1: PoA implementation in South Africa

There are tensions in South Africa between development and climate mitigation objectives. Meanwhile, the CDM is seen as an innovative way to integrate these dual objectives. In 2002, the non-governmental organisation SouthSouthNorth Africa (SSNA) approached community leaders with a CDM project proposal that would install solar water heaters, insulated ceilings and energy-efficient lamps in 2,309 low-income homes in Kuyasa, Cape Town. Before this intervention, residents used kettles and paraffin cookers to heat water, increasing the risk of indoor fires and lowering indoor air quality.

Building on the example of this project, SSNA is developing a PoA for all low-income housing in South Africa to generate Kuyasa-type interventions in existing and future housing developments. Cosmo City, a housing development in Johannesburg, has been chosen as the show-case for CDM Project Activities (CPAs) and the project is funded by the Danish International Development Agency.

SSNA is also engaged in long-term planning to make finance available for these projects and has developed the concept of a Sustainable Settlement Facility. The aim is to provide up-front finance to cover the overall cost of implementation for developers through a revolving fund that draws on numerous finance streams. The three primary finance inputs are envisaged to be:

- carbon finance, through the proposed PoA
- government subsidies
- bridging finance (potentially through NAMAs).*

Source: based on Walsh et al. (2011) and Schomer (2011)



(Source: www.southsouthnorth.org)

*Recently, the Sustainable Settlements Facility has been reconsidered as a NAMA under the UNFCCC. The NAMA is planned to be Gold Standard compliant, making use of PoA elements.

Table 1: The roles and responsibilities of the various stakeholders in facilitating PoA development

	Financial challenges	Institutional and policy challenges	Technical and informational challenges
Government	<ul style="list-style-type: none"> • Create suitable financial frameworks to ensure appropriate financial incentives for private sector participation in the PoA • Increase governmental awareness and capacity to deal with carbon finance 	<ul style="list-style-type: none"> • Align policies with mitigation and sustainable development goals • Coordinate across relevant departments and design a conducive policy framework • Increase DNA capacity • Support and use PoA experiences to inform future NAMAs 	<ul style="list-style-type: none"> • Support local capacity building around monitoring and verification procedures • Invest in the research and collection of emission baselines for low-income households for use in different regions and income groups.
PoA project developers	<ul style="list-style-type: none"> • Clarify CER ownership • Continue to explore alternative revenue sources and financial models with other stakeholders 	<ul style="list-style-type: none"> • Continue to involve stakeholders from business, NGOs and local/regional governments • Continue to foster institutional learning and the application of best-practice methods 	<ul style="list-style-type: none"> • Set clear management rules e.g. maintenance and educational procedures • Make clear agreements with DOEs on response times and define internal responsibility with diverse stakeholders
CDM Executive Board and Parties to the Kyoto Protocol	<ul style="list-style-type: none"> • Foster the development of market mechanisms for the future viability of CERs from PoA • Pioneer models on how carbon finance and public funding can scale-up low-carbon development 	<ul style="list-style-type: none"> • Provide more guidance to DNAs on sampling approaches and sustainable development evaluations • Provide opportunities for South-South transfer of PoA experience • Foster compatibility of mechanisms such as PoAs and NAMAs 	<ul style="list-style-type: none"> • Foster the development of standardised baselines and the integration of suppressed demand in CDM methodologies • Allow the use of performance-based methodologies • Assess the potential to develop other indicators of success beyond carbon mitigation

Source: Adapted from Schomer (2011)

Recommendations

This policy brief has outlined key challenges for the use of PoA in energy projects in low-income households and identified the key stakeholders to address these challenges: government, PoA project developers, members of the CDM Executive Board and Parties to the Kyoto Protocol. Table 1, which illustrates their roles and responsibilities, is not exhaustive but allows initial mapping of the key steps to be taken for a successful PoA approach.

The following actions are important for the successful scaling-up of carbon finance through the PoA approach:

- Multiple stakeholders will have to act in unison to enable the effective use of the PoA approach. It is up to these stakeholders to create an enabling environment by, amongst other things, establishing a supportive policy framework, exploring alternative funding models and implementing appropriate methodological and monitoring approaches for PoA projects.
- Further research is needed to provide insights into effective PoA implementation, allowing PoA project developers and governments to learn from the experiences of others. It is not possible to anticipate all the challenges PoAs may face, but key lessons from case studies will help. Lessons learnt will bolster the currently limited body of research on the enhancement of mitigation approaches in developing countries.
- The long-term vision for mitigation actions needs to be addressed. Currently the PoA approach is one options for scaling-up carbon mitigation, but in the medium term it must be linked to the on-going discussions on NAMAs to avoid a mismatch of approaches. In addition, the experienced gained and lessons learnt from PoA implementation will be vital to prepare for broader mitigation mechanisms, such as NAMAs.

Acknowledgements

CDKN and Inka would like to thank Steve Thorn and Carl Wesselink, South South North, for acting as a mentors and the host for this MSc research.

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