

The experience of Practical Action with CO₂ offsetting in funding development activities for poor communities

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This article discusses the different alternatives for carbon financing, for community based household energy projects, from the perspective of an NGO working with communities on the ground

CO₂ offsetting as alternative funding

Since the Kyoto Protocol was signed in 1997 there has been a lot of discussion about climate change financial mechanisms and their contribution to sustainable development. A particular focus has been the Clean Development Mechanism (CDM) which is an arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction commitment (called Annex I countries) to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. The most important factor in a carbon project is that it would not have occurred without the additional incentive provided by emission reductions credits. CDM, therefore, has two main objectives: a) to reduce emissions and b) to support sustainable development in developing countries. Another much more recent regulated mechanism closely linked to the Kyoto Protocol is the European Union's Emissions Trading Mechanism (EU-ETS)¹, which has been set to help the EU meet its greenhouse gas emissions reduction target of 8% below 1990 levels

During the first decade of the CDM progress has been made in establishing the criteria and building institutions and national capacities to use the mechanism. Considerable North-South CO₂ transactions have happened, and their volume and value is growing. According to existing official information the total traded in 2006 was about US\$ 30 Billion, and the value of trading in 2007 is expected to rise to US\$ 60 Billion.

However there are some serious doubts about the equity of benefits of CDM. While large economies in transition led by China, India and Brazil have been taking great advantage of CDM, small countries with poor econ-



Figure 1. Improved cookstove, Bandarawella, Sri Lanka (photo Zul Makhida)

omies have got little or no access to the benefits of this mechanism. The main difficulties for small and poor economies are the lack of technical and institutional capacity and high transaction costs. These costs are upfront and fixed, and therefore become a barrier for small projects because they reduce the profit margin (if there is any margin). Projects tend to operate over long timeframes, and very bureaucratic processes are required to certify and verify emissions. A further problem of the poorest countries is the lack of opportunity for CDM projects due to the shape of their economies. The best opportunities for lucrative CDM trading are in the industrial sector, while the poorest economies are dominated by agriculture and primary resource extraction. The result is that CDM has not reached poor communities, or the poorest countries.

Voluntary markets and CO₂ offsetting

Voluntary carbon markets have been operating since 1989, but have grown rapidly in the last 5 years, with the number of organisations involved in trading CO₂ doubling between 2002 and 2006. According to Ecosystem Marketplace², during 2006 the voluntary carbon markets³ traded 23.7 MtCO₂ worth about US\$ 91 million. This is small compared with the overall regulated market but is significant compared with some sectors of the regulated markets such as the 'Joint

Implementation' and the 'New South Wales' mechanisms, which each traded less than that in the same period.

A significant issue is that the voluntary markets consist of individuals and organisations who voluntarily commit themselves to contribute to greenhouse gas emissions reduction without regulations. As a result, the most important characteristics of voluntary carbon markets are their flexibility, and very low costs compared with the regulated mechanisms. Also, voluntary carbon markets have funded smaller, experimental and community-based projects and contributed towards development in poor and isolated communities.

The experience of Practical Action (formerly ITDG)

Practical Action has been involved in a range of community-based projects and promoting a range of appropriate technologies across a wide range of sectors in different parts of the world. The main purpose of these projects has been to contribute to sustainable development of the poor. In the field of energy these projects have been on: energy efficiency in small scale enterprises; improved cook stoves; small scale renewable energies for decentralised energy generation using hydro, wind and solar, biomass resources; and fuel substitution.

In the last couple of years, Practical Action has been approached by several organisations from the voluntary carbon market sector, including corporate responsibility organisations, brokers and retailers, who want to partner with them to offset carbon emissions. Practical Action has taken time considering these offers in order to learn more about the markets and because there are several areas of concern to the organisation, including: (1) practical issues around verification; (2) reputational risk; (3) the relative merits of offsets funds as a source of project funding; (4) the risk of diversion from

Practical Action's main objectives; and (5) ethical issues.

Despite these concerns, Practical Action wanted to learn more about emission reductions from their own projects, in terms of what is involved in engaging with carbon trading, and how offset funds might be used effectively for small-scale development projects. They therefore initiated a small number of pilot projects. The first of these was a project on the 'Dissemination of Efficient Cook Stoves in Bangladesh', funded by Climate Care. Under this 2-year (2004-2005) project, Practical Action committed to disseminate 2,500 efficient cook stoves in rural areas of Bangladesh.

Practical Action has just finalised an agreement with Carbon Aided. Under this agreement, Carbon Aided will negotiate Practical Action's carbon credits for a range of projects: a bundle of 40 micro hydro schemes, and substitution of wood fuel for rice husks in a bundle of 28 small brick making enterprises, both in Peru; a bundle of 750 family biogas systems in Sri Lanka, and 5000 efficient cook stoves in Bangladesh. Under this agreement Carbon Aided will negotiate on behalf of Practical Action and will charge a percentage over the credits sold, Practical Action knows the source of CO₂ to be offset and retains the ultimate decision on the acceptance of the contract.

The third and most recent project is an implementation project in Sudan on switching fuels from charcoal and wood to LPG. This project has just been signed with Carbon Clear and started in November 2007. The main purpose is to disseminate LPG stoves and cylinders for cooking to 5,000 families in Al Fasher, Darfur through the implementation of a credit scheme managed by the local Women's Association. It is a three-year project and includes a credit scheme, training activities, the promotion of better standards on the commercialization of LPG in Sudan, and the strengthening of local organisations to ensure sustainability.

Designing these projects requires some different and additional knowledge and skills. Some of the practical challenges Practical Action have faced include:

- Pricing – what is a fair price to charge? What should be included in the budget in terms of additional M&E mechanisms?
- Additionality – Does the project show environmental additionality? Could the project happen without the contribution of carbon credits income (which requires additional information about a range of issues regarding energy sources, consumption and sustainability of the sources, and more rigorous analysis on the financial viability)?
- Competing objectives – the priority for the poor is not reducing in greenhouse gas emissions. What happens when the best stove for them in a project, is not the one that reduces emissions enough to satisfy the donor?
- Verification – training of own staff in making sure they report / test accurately, and collection of additional information on technical performance of the systems, levels of consumption by the users and others. For example a 100kW micro hydro scheme can have different amounts of carbon credits depending on the load factor (proportion between energy used/total capacity of the plant)

It is expected that through these activities and participation in networks and conferences, Practical Action will come to a much clearer view about carbon offsetting, finding ways or mechanisms that allow them to take advantage of the voluntary carbon market to support development of poor communities in the south without falling on ethical conflicts.

There are also some ethical questions that still remain. There is a need to make sure that carbon offsetting will not exploit the poor by using their 'carbon credits' to allow industrial compa-



Figure 2. Woman trained in making improved cookstoves in Bangladesh, under Climate Care Project (photo Zul Makhida)

nies and carbon buyers to bypass their responsibilities with regard to emission reductions. They also need to reduce emissions in order to have a real impact on climate change. There is also the question of ownership of the 'carbon' and who has the right to decide to whom it should be sold and how to use that revenue. Such questions are being debated and analysed within Practical Action.

Notes and References

1. <http://www.defra.gov.uk/environment/climatechange/trading/eu/what.htm>
2. <http://ecosystemmarketplace.com/documents/acrobat/StateoftheVoluntaryCarbonMarket17July.pdf>
3. As measured by volumes in OTC (Over The Counter) and CCX (Chicago Climate Exchange) trading

Profile of the author

Teodoro Sanchez works as Energy Technology and Policy Advisor, Practical Action, Rugby, UK. He is an expert on Energy and Development, having worked for nearly 30 years on design and promotion of small scale energy technologies in developing countries. He is a Peruvian, and a Mechanical Engineer, with an MSc in Renewable Energies, and a PhD on "The Critical Factors for Stand Alone Energy Systems"