

CARBON MECHANISMS REVIEW

ISSUE 2 | 2014
CARBON EXPO SPECIAL

The Next Level

How a reformed carbon market can contribute to fighting climate change

**Standardised
Baselines:**
The decisive stepping
stone to new mechanisms?

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Carbon Expo Special



Photo: Bin Gu/UNFCCC photo contest

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editorial

Dear Reader,

Welcome to Carbon Expo and welcome to this year's special issue of the Carbon Mechanisms Review. This is yet another fair taking place in a time of crisis. With one and half years to go to agree on a future climate change architecture, a heavy workload is in front of the negotiators. The prospects for an ambitious international climate policy to ensure that the world stays below the agreed 2° C target are bleak. In this atmosphere, many do not see a role for the Carbon Markets. Yet market mechanisms have the power to make meaningful contributions to climate change mitigation; if carefully designed, they can even contribute to raising ambition, as our authors argue (see lead story on page 3).

We also report on Standardised Baselines, which many see as a bridge between the current Carbon Market mechanisms and future instruments such as NAMAs or New Market Mechanisms. Finally, we take stock of the activities of the Partnership for Market Readiness (PMR), which was launched four years ago. This 'only game in town' on further developing future market mechanisms, as it was dubbed by Christiana Figueres, is currently changing gear, i.e. some of the proposals are changing from the concept stage into the pilot phase. The PMR is currently considering setting up a fund which would buy certificates from these early pilots. In doing so it gives a decisive kick that will contribute to developing the bright future of the Carbon Markets we all hope for.

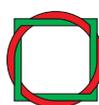
On behalf of the editorial team, I wish you an interesting read and a fruitful Carbon Expo!

Christof Arens



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and Energy

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Raising Ambition with Market Mechanisms

The story so far

by Silke Karcher, BMUB

The climate policy debate is currently shaped by the fact that emission reductions pledged by the Parties to the UNFCCC are nowhere near what is needed to stabilise the climate. More ambitious reduction proposals are needed if the 2 °C target is to be met.

In the past, market mechanisms have contributed to raising ambition in many ways. This is especially the case with the CDM, the key project mechanism under the international climate regime.

However, there has been a significant number of projects where additionality was somewhat questionable and which thus contributed to declining ambition elsewhere.

While much has been written about problematic CDM activities, little has been discussed about the intrinsic mechanisms which have contributed to raising ambition. Looking to the future and in the search for increased ambition, it makes sense to take a closer look at these aspects of the CDM:

- If, as it should be, the business-as-usual scenario is estimated conservatively (with the crediting baseline lower than the actual baseline), the difference amounts to (and is) an ambition-raising contribution achieved by the mechanism itself.
- In the current regime, at the time of issuance, two percent of the CDM certificates generated from each project are channelled into the adaptation fund. Similarly, revenue from the administration share of the proceeds was used to

finance the CDM Executive Board. While this channelling of funds does not necessarily increase total reductions, it does increase the amount of finance available for climate policy efforts – in this case for adaptation and for supporting the CDM related institutions. It is not proven but reasonable to assume that additional funding often leads to additional measures.

- The CDM contributed to climate financing at national level, too. For example in China, where certificates have been subject to – sometimes quite high – taxation. The tax rate was adjusted to the estimated profits made per certificate in the different project types. The tax levied for HFC-23 projects, for instance, was set at 65 percent of the selling price. The revenue was put into a climate fund, the Chinese CDM Fund, designed to foster low-carbon growth – among other things through investment programmes, supplementary financing of private investment and support for innovative economic and financing instruments. The Chinese CDM Fund estimates the annual reductions from these activities at seven million tonnes of CO₂e.
- CDM projects also contribute to ambition-raising when they are continued beyond their issuance life cycle and/or propagate a best-practice model for emission reductions in a specific sector. In the case of HFC-23 projects, the CDM has been the sole incentive: by destroying the extremely climate-damaging HFC-23 gas which is formed as



Photo: RWE Press Image

Closing the gap: All countries must contribute to raising ambition. A lignite excavator in Germany

a byproduct in HFC-22 production, these projects serve climate change mitigation exclusively. Facility operators gain no additional benefit if the gas is burned instead of being released into the atmosphere. The situation is similar with N₂O in the production of adipic acid and nitric acid. If, as is currently the case with some projects, the activities are conducted way past the time the certificates are saleable, a significant sectoral contribution to climate change mitigation is achieved.

- The CDM has persuaded the world and many carbon market players that climate change mitigation can be a lucrative enterprise. It is possible that this contributes first to raising ambition in people's minds and then to that ambition being put into action.
- Finally, by promising profit from climate change effort, the CDM fostered a boom in which more

projects were initiated, and thus more certificates generated, than the market had capacity for. The unsellable surplus of certificates – estimated at several gigatonnes of CO₂e – constitutes a huge, albeit involuntary contribution to net emission reductions amounting to hundreds of millions of tonnes. If and when projects are further continued even without the prospect of selling – or even generating – certificates, this is another net contribution to mitigation initiated by the CDM.

Climate change experts in the EU do not always view the CDM in a positive light. Use of the CDM and JI increased the overall amount of certificates available in the EU ETS, when the system was already over allocated as a result of factors such as the economic crisis. Thus CDM and JI certificates further contributed to the low prices currently seen in the EU ETS. With hindsight, the amount of certificates allowed for use under the CDM and JI was doubtless

set too high. The developers of subsequent emissions trading schemes, such as those in California in the U.S., Canada's Quebec and also in China, appear to have learned from this and have set lower quotas.

Over time, however, it is possible that the EU's pioneer role in the CDM and the global climate change effort it sparked more than compensate for the harm done by any temporary drop in carbon prices in the EU. While this is more than plausible from a policy perspective, it of course remains purely speculative in quantitative terms.

It is thus time to look at what comes next.

More ambition with market mechanisms: target 2030

With the right design, market mechanisms could continue to make a more systematic and more visible contribution to ambition-raising effort.

To be successful, market mechanisms depend on a certain level of demand for certificates. That demand can however only be generated if there is an adequate amount of ambition from the outset. In addition there is a need for willingness to use and promote the market mechanisms. As a driver of demand and innovation, the EU – once cart horse and torch bearer – runs the risk of fading away into the background.

Due to internal difficulties, there are hardly any proposals to generate demand from the EU. Similarly, when it comes to further development of the market mechanisms, the EU does not play the role it could and should do in the climate negotiations. The EU debate on setting the 2030 targets is currently shaped both by a strenuous tug of war in deciding reduction target that is at best only marginally adequate, and by the urgently needed revival of the ETS's incentive effect. Yet any EU reduction target for 2030 that falls short of a 40 percent reduction by the EU itself is generally thought too little to generate sufficient demand on the international carbon market.

Raising ambition via market mechanisms could rest on three pillars:

1. Intrinsic ambition-raising by way of ambitious baselines. In this regard, the success of the CDM reforms must show the way. As desirable as it might be for the climate change talks on CDM modalities and procedures to be concluded as quickly as possible in order to avoid holding up the broader negotiations on the new agreement, it must also be clear that any outcome that fails to mark a clean break with the largely offsetting nature of the CDM makes no sense for the EU and will thus not generate demand for developing countries (LDCs excluded).
2. Formalised ambition-raising via certificate cancellation. This would be a new, but extremely simple process: It could work analogously to surrendering certificates for use in the adaptation fund. Once certificates are issued, a certain percentage of the certificates generated by a project could be transferred to an international 'ambition fund' and cancelled. The percentage could be standardised or be host-country or project-type specific. A mechanism for formalised ambition-raising via cancellation of a percentage of certificates per transaction could also be considered for international emissions trading.
3. The third pillar comprises the non-quantifiable effects: releasing capital and sparking innovation in the private sector, best practices, technological advancement, and sectoral penetration with new technologies.

In the coming months, the international climate change talks and the design of EU climate change policy for the period up to 2030 will show whether the market mechanisms' vast climate change mitigation potential is to be exploited to the full or if the opportunity to do so will be passed up.

Disclaimer: This article is a personal contribution of the author and does not necessarily express the opinion of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

What could come next

How to make ambition raising happen

by Thomas Forth, Advisor to the German Federal Environment Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Market mechanisms are of great importance in the international climate change regime. They increase the chances of acceptance of more ambitious targets in two ways: first, they offer flexibility in attaining national compliance. Second, and this applies especially to the next generation of carbon market mechanisms, they enhance inherent net mitigation effects which will notably exceed the effects of the CDM as we know it today. In addition, future market-based mechanisms could play an important role for developing countries when it comes to undertaking own emission reductions as part of their own contributions. However, there is critical point of balance between net mitigation effects above binding emission reduction targets and the use of these mechanisms for the contributions of developing countries.

In the light of the global carbon market's current crisis and the status of the UNFCCC negotiations, the flexibility enhancing function of markets seems to have been lost in recent years. It is therefore useful to recapitulate on the advantages of different international climate cooperation channels even if this is redundant for the carbon market community: The market sets the price for emission certificates, and the price of those certificates can leverage emission reduction potential made viable via carbon pricing. The use of climate financing in sectors in which the market itself can contribute to climate change mitigation is inefficient and can result in windfall effects. On the one hand, public funding would be misused, and on the other it can never achieve the scale that the market is capable of achieving.

But then again, the carbon market is not a market in its own right. Unlike bread and water, emission certificates are not a

vital commodity. The market must first be created by policy-makers. Looking back, this occurred via the Kyoto Protocol and the emission reduction targets set out for the first commitment period. The carbon market only got off the ground thanks to the demand programmes introduced in certain industrialised states. And it really came into its own with the launch of the EU Emissions Trading Scheme (ETS).

That is history now. All the mechanisms introduced in this first phase (ETS, CDM and JI) have not only served their purpose, they have gone so far as to over-perform in generating certificate supply.

Public debate often talks of surpluses as if emission reductions and the underlying climate change mitigation investment were both dispensable. Also, the emissions gap – which is estimated at as much as an annual 12 gigatonnes of CO₂ for 2020 – is rightly highlighted in the public debate as a quantifiable indication of the failure of the international climate change regime. It appears that the two ends of the global climate debate have yet to meet. The problem is not that the supply of emission certificates is excessive. Rather, the level of ambition behind the reduction targets must be raised and the demand for certificates boosted.

This view does not yet appear to be gaining acceptance. Instead, there is a risk that given the complexity of the climate talks under the UNFCCC, the need for the use of market mechanisms will be called into question. The line of argument is clear: market mechanisms need ambitious emission reduction targets, and are not needed without them. Hence, if the emission reductions to be achieved are only marginal, they should ideally be conducted at home. This attitude is based both on



Photo: Sasol/mediaclubsouthafrica.com

Joining forces: If well-designed, Market Mechanisms can be of benefit for both developing and developed countries.

widespread scepticism regarding markets and, perhaps, a certain degree of resignation as to the level of ambition to be agreed at the 2015 climate change talks in Paris. It is an attitude that must be avoided, especially within the proactive UNFCCC negotiation groups.

Supporting the debate on the quality of climate change projects, their sustainability aspects – and, more importantly, the additionality of the emission reductions for which tradable certificates are issued – is not a goal in itself. Thus, from a carbon market perspective, we should welcome the numerous proposals presented for CDM and JI reform, and for the development of new market mechanisms. We need a spirit in the UNFCCC decision making process such that decisions are made not for their own sake but with a view to ensuring that market mechanisms are actually used in practice. But as the international climate change talks continue, there are no signs of a consensus being reached on the most important of the new developments which comprise:

1. Market mechanism contributions to net emission reduction
2. Developing countries' own contributions towards their national climate change goals
3. Embedding emission reductions achieved by market mechanisms in the host country's climate change policy

Together, these three points contribute to the fact that emission reductions which generate certificates are both additional and better integrated into a host country's climate change policy. The net emission reductions which the mechanisms are designed to promote would help to ensure that emission reductions are achieved in amounts that exceed the agreed UNFCCC targets.

The line of argument thus far should not result in conflicts with market-focused developing countries, irrespective of their economy's maturity and the level of prosperity achieved. It is quite a different matter, however, to talk about developing countries' own

contributions to global climate change mitigation efforts and their commitments under the climate change agreement from 2020 onwards. Unfortunately, this debate tends to get lumped in with the market mechanisms' reform and further development. This hinders the advancement needed to serve the interests of developing countries. It would thus be helpful if all negotiating groups were willing to distinguish between the various dimensions of the market mechanisms.

Of course, developing countries' own contributions must be in line with their national climate change targets and with their commitments under the international climate change regime. It is evident that during a period in which the economically strong developing countries will be responsible for the lion's share of emissions, while those in industrialised countries are not only comparatively low but actually fall, the logic of responsibility which underpins the Kyoto Protocol no longer works. A trend in this direction is already starting to emerge and will come into its own in the period beyond 2020. Based on the Climate Convention's principle of common but differentiated responsibilities and respective capabilities (CBDR-RC), the capabilities of the participating countries must be included. As a result, the stronger developing countries and not just the BASIC group are required to accept their responsibility in mitigating climate change.

The problem, however, is that in the climate change talks, the developing countries refuse to consider such options and point instead to industrialised countries' failure to accept responsibility. This has led to the impasse seen since Copenhagen, for which countries that refused to commit to reasonable emission reduction targets in the second Kyoto Protocol commitment period are also accountable. This second period has seen more industrialised countries abstaining compared with the first commitment period. As a result, the debate on Kyoto Protocol commitments appears to hinder negotiations on a new climate change agreement. This double stalemate will only be broken if those who claimed to play a pioneer role in earlier global climate change effort are willing to continue in that role and accept the responsibility it brings.

The outcome is that during negotiations, the countries must express their own expectations more clearly, in more detail and in a more binding way. The CDM modalities and procedures provide an opportunity for real improvements in technical terms, with long-term, practicable modifications in the

form of the points outlined earlier on net emission reductions, own contributions and integration in national climate change policy. A hasty end to the talks on CDM modalities and procedures is not in the best interests of those who would like to see practicable market mechanisms that can be used in the longer term.

Because of a lack of input from the industrialised countries, developing countries still do not know whether market mechanisms bring benefits and so rightly point straight away to the lack of demand for emission certificates. The industrialised countries have yet to make clear policy statements regarding the scope in which they intend to use the mechanisms and the equally important question of how they intend to implement the measures involved.

As regards the benefits from the CDM, any reference to the growing national role of the host countries sets alarm bells ringing because although the sales potential and certificate prices remain unclear, the developing countries are required to invest in the development of measures under any new mechanism up front. This is not the way to motivate developing countries to take action at a level above their unilateral capability. In climate change mitigation, this unilateral area of activity can naturally be covered by national and regional market mechanisms, but it cannot provide for a level of ambition that could be achieved using international market mechanisms under the UNFCCC. The opportunities for international cooperation on climate change thus go unused.

The industrialised countries would be wise to think about introducing programmes that can only be implemented if the developing countries participate relative to their capabilities and if additional emission reductions result in net emission reductions and own contributions by developing countries. Both aspects would mean a significant change compared with the market mechanisms in the first Kyoto Protocol commitment period. The outcome would be far more than an offsetting-only regime.

Bearing this in mind, market mechanisms should not only be used as a flexibilisation instrument to effect a reduction in cost. Instead, they should be seen, developed and used as a means of fostering cooperation and raising ambition in efforts to mitigate climate change.



Photo: Bin Gu/UNFCCC, photo contest

Central oversight or loose cooperation? Views differ on the framework for various approaches.

Arguing the point: Does the FVA need centralised oversight?

A debate by Kazuhisa Koakutsu and Joëlle de Sépibus

The Parties to the UNFCCC have been discussing “various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions” for several years. While at COP 17 in Durban, Parties decided to establish a centralised new market-based mechanism (NMM), there is no decision to formally introduce the so-called “framework for various approaches” (FVA) to govern decentralised initiatives so far. The basic idea of the FVA is to integrate new market-based initiatives such as the Japanese Joint Crediting Mechanism (JCM) into the international

climate regime and receive recognition for GHG reduction achieved by these approaches.

The Carbon Mechanisms Review takes up this discussion and is glad that two experts from the field agreed to contribute to the Review’s debate series. Joëlle de Sépibus is a Senior Research Fellow of the World Trade Institute and an Assistant Professor of Law at the University of Bern, Switzerland. Kazuhisa Koakutsu is principal researcher, Climate and Energy Area, Institute for Global Environmental Strategies, Japan.

Is there the need to an international regulator for the FVA?

Kazuhisa Koakutsu: **NO**

What we need is not the “regulator for the FVA”, but the “facilitator for the FVA”, which in my view, is the role the UNFCCC has to play. What I mean by the “facilitator” is that the FVA is something that the UNFCCC cannot regulate. Rather, it requires the good facilitation of the process that each mechanism will elaborate different ways how to meet the “standards that deliver real, permanent additional and verified mitigation outcomes, avoid double counting, achieve net decrease and/or avoidance” laid out in the UNFCCC decisions so that the respective activities can be recognized and used as an approach to promote mitigation actions under the UNFCCC.

If so, what should be the competences and responsibilities of the regulatory body? At what level should it operate?

Kazuhisa Koakutsu: We do not need the body as such, however, the decision at COP on the FVA can provide the basis for each Party with the support of UNFCCC Secretariat to promote the use of market mechanisms using the FVA.

As for the level of operation, the FVA can be applied to processes under the UNFCCC such as the IAR (International Assessment and Review) for Biannual Reports and International Consultation and Analysis (ICA) for Biannual Update Reports with a set of guidelines and procedures related to the FVA. Again, the purpose is not to “regulate” all the processes and procedures including rules and guidelines, it aims to provide the understanding how each mechanism can meet the standards.

Joëlle de Sépibus: **YES**

The FVA needs an international regulator to ensure that the international community has a sufficient degree of control over the design of the mechanisms. If there is only a facilitator for the FVA, there is no guarantee for other Parties that the mechanisms provide effective safeguards regarding the environmental integrity of the generated credits.

Joëlle de Sépibus: The competences and responsibilities of the regulatory body will depend on the mode of governance adopted for the FVA. To play an efficient supervisory role, it will as a minimum have to be granted the power to verify whether the mechanisms set up by the Parties meet internationally agreed rules. This includes inter alia the competence to scrutinise the mechanisms and to put pressure on Parties to use reasonable standards. The effectiveness of this review will, however, be limited if it is not combined with a right of the regulatory body to ask Parties to remedy problems or/and to sanction violations.

The body should operate under the UNFCCC as it has an unrivalled degree of legitimacy and experience with greenhouse gas market mechanisms. Furthermore, the UNFCCC has put in place a sophisticated framework for technical implementation and is endowed with an infrastructure comprising a professional staff of experts.



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Should there be a common set of rules that all Parties need to adhere to? What aspects should these rules cover, e.g. on the question of double-counting of efforts, additionality and MRV?

Kazuhisa Koakutsu: A common set of rules would be difficult to agree on as each mechanism has a different system of rules. For example, the CDM will follow the CMP decisions and the rulings of the Executive Board. The New Market-based Mechanism (NMM) will follow the rules defined by COP. Each different mechanism operated and implemented by Parties (such as the linked ETS as well as the Joint Crediting Mechanism) will also follow different sets of rules and modalities decided by its authorities. The point is how to promote enhanced mitigation actions using the various approaches. In this case, allowing the bottom-up approach including its rules would be better, rather than top-down rule setting.

With respect to common rules, the most important aspect of the FVA in my view is to ensure that the standards set by the UNFCCC are met, i.e. (1) delivering real, permanent, additional and verified mitigation outcomes, (2) avoiding the double counting of efforts, and (3) achieving a net decrease and/or avoidance of greenhouse gas emissions. Understanding how each market mechanism can meet these standards is the first and the most important step. In my view, 1) and 3) can be ensured by the development of methodologies, and 2) will require certain rules and data. In order to achieve net emission reductions, there are three ways to achieve this: (1) conservative estimate of crediting thresholds, (2) conservative estimate of project emissions, and (3) cancelling a part of the issued credits. Double counting has several levels and applications, such as (1) double registration/issuance, (2) double selling, and (3) double usage. Avoiding double counting requires certain rules set by each mechanism and data to be confirmed. How to maintain the accuracy of the location data for the existing mechanisms (such as the CDM) will be the challenge.

Joëlle de Sépibus: As a minimum condition all parties must adhere to the standards that the negotiators have agreed upon so far. In addition, in order to ensure the tracking of units, a robust common framework for unit accounting, comprising inter alia common accounting rules for all countries, rules clarifying the “ownership” of international credits, and an international and national registry system comparable to the one under the Kyoto Protocol should be established. Furthermore, common rules would have to include inter alia eligibility criteria for Parties, rules on MRV, net decrease and/or avoidance of emissions, as well as additionality criteria when setting baselines and methodologies for crediting thresholds. This is important to reassure all Parties that the mechanisms meet certain minimal standards regarding the environmental integrity of the issued credits.



Measuring the results: In what way the FVA should have common standards on MRV is subject to debate.

How can the proposed solutions be evaluated as regards criteria such as effectiveness, environmental integrity, requirements posed by UNFCCC decisions?

Kazuhisa Koakutsu: For the environmental integrity, the methodology being developed and approved by each mechanism should ensure its effectiveness and anyone can have an opportunity to provide inputs at the time of public comment and during the IAR/ICA process. There will be a certain “check and review” process both at the level of the respective approach and the UNFCCC processes. In this context, the UNFCCC or COP can develop a broad set of criteria and procedures and utilize the existing reporting system (e.g. Biennial Report) to ensure its compatibility.

For the double counting aspect, the issue is rather complicated. There are certain areas where each individual approach can address the issue, such as double registration and double issuance. However, the issue of double claiming/double use would require further discussions and decisions by the COP. At least the UNFCCC can improve data accuracy of the existing mechanisms (e.g. the CDM), and we need to develop procedures to address double claiming.

Joëlle de Sépibus: Internationally agreed rules, combined with a centralised approval process, offer three major advantages. First, they provide an effective counterweight to the inherent incentives of bilateral offset agreements to artificially inflate the number of credits generated. Second, common rules will have to be adopted according to a uniform procedure accepted by all Parties. Third, all Parties have to abide by a common set of rules, and in the case of violation they may be sanctioned.

While these characteristics provide valuable safeguards for maintaining a level playing field and the respect of fundamental principles of procedural fairness, centralised governance by itself does not constitute a guarantee of an environmentally sound outcome. Indeed, notwithstanding the “top-down” architecture of the CDM, the environmental integrity of many of its credits remains disputed. Hence, the scope of the rules, a robust institutional design, including the ability to carry out reforms to address unforeseen shortcomings, sufficient resources and the possibility to apply effective sanctions for clear violations by Parties will be crucial to ensure the environmental integrity of new mechanisms.

In essence, does the Framework for Various Approaches (FVA) need centralised oversight?

Kazuhisa Koakutsu: **NO**

The FVA is a process to accommodate different mechanisms, which involves the transfer of mitigation outcomes under the UNFCCC for the fulfillment of national contributions. Essentially, it is a bottom-up process and, therefore, it does not need the centralized oversight.

Joëlle de Sépibus: **YES**

Yes. The FVA needs central oversight at the level of the UNFCCC to reassure the vast majority of UNFCCC parties that the environmental integrity of new market-based mechanisms is ensured. This does, however, not exclude that some reasonable balance may be struck between centralization and flexibility.

Stepping Stones

Standardised Baselines: Paving the way for future mitigation effort

by Malin Ahlberg, German Emissions Trading Authority, Board Member of the Foundation Future of the Carbon Market

Setting baselines for the calculation of greenhouse gas emission reductions and defining additionality under the CDM have been a complex and cumbersome process to date. In a future climate regime, the challenges of defining a baseline which secures high environmental integrity will be similar to those in the CDM. Hence, when it comes to designing a new crediting mechanism, the profound knowledge and experience gained so far must be transferred to the new system. The Foundation Future of the Carbon Market was founded by the German Environment Ministry and the state-owned KfW development bank to facilitate innovative carbon market mechanisms and support the carbon market transformation process. The Foundation is currently engaged in the development of standardised baselines (SBs).

In the past, the CDM has been criticised for its potential to weaken environmental integrity, burdensome procedures and inequitable regional distribution of projects. To remedy these shortcomings, the CDM has gone through a reform process which has led to a long list of innovations. These include the introduction of Programme of Activities (PoA), the tool for defining micro-scale additionality, and the increased use of performance benchmarks and default values. In particular, standardised baselines are seen as an opportunity to reduce transaction costs, enhance transparency and regional distribution, and facilitate objectivity and predictability.

Standardised baselines: State of play

Since the Conference and Meeting of the Parties to the Kyoto Protocol in Cancún in 2010 (CMP6), the CDM Executive Board (EB) has approved a number of guidelines and procedures that

together constitute the framework for standardised baselines. However, in its work plan for 2014, the EB has put a focus on further improvement of that framework:

- Among others, the guidelines for the establishment of sector-specific standardised baselines and the quality assurance and quality control (QA/QC) guidelines will be revised to take in the lessons learned so far.
- For more clarity on data used to develop standardised baselines, EB 77 adopted the standard for coverage of data and validity of SBs at its meeting in February 2014. As a general rule, this standard stipulates that the data coverage period should amount to three years and the currentness of data to two in order to reflect national trends in the development of the sector. Recognising that data availability in a sector of a given country may be limited, the standard grants some exceptions for certain sectors and countries. Hence, this decision strikes a balance between requirements for high quality SBs and realistic circumstances in underrepresented CDM sectors and regions.
- At its 78th meeting, the EB decided that the use of a standardised baseline is left to the discretion of the host country's designated national authority (DNA). Accordingly, the DNA decides whether project activities covered by the SB may use approved methodologies instead. As this rule poses a potential risk to environmental integrity, the EB also agreed that in a case where the standardised baseline might be undermined by project activities using an approved methodology, the EB could reject the standardised baseline and work with the DNA to address the environmental integrity risk.

- Also, EB 78 decided to support the top-down development of three standardised baselines. Based on the interests of the DNAs and other criteria like mitigation potential, contribution to sustainable development and complexity in demonstrating additionality, the energy generation, waste management and efficient cooking stoves sectors were selected.
- Last but not least, the EB will decide on a methodological tool for standardised baselines in the transport sector during the second half of this year. This is surprising, as the transport sector is an underrepresented sector in the CDM which for methodological reasons has been explicitly excluded from the FSB so far. When it comes to climate change, this globally fast growing sector will play an increasingly important role. It can thus be assumed that this tool will be a standard-setter for other opportunities to calculate emissions reductions, e.g. for Nationally Appropriate Mitigation Actions (NAMAs) in the transport sector.

The advantage with SBs is that the baseline and the additionality of project activities in the respective country or region are

determined ex-ante. This in turn simplifies project development, reduces project-specific transaction costs and lowers the risk involved in project registration. Thus, an approved SB promotes project implementation in underrepresented sectors and regions, and unlocks new emission reduction potential. To date, the EB has approved four SBs and eight more have been proposed to the UNFCCC. However, given the lack of demand for carbon credits, the market is unlikely to produce many SBs in the near future.

Foundation Future of the Carbon Market objectives

The Foundation aims to support prospective project designs in developing countries which are assumed to play a key role in a future carbon market. With the SB approach and its Programme of Activities (PoA), the CDM is moving away from a project-to-project approach. By using both approaches, developing countries may even expand their mitigation activities beyond the CDM. Several components of this reformed CDM – project eligibility criteria, accounting tools for a sector and



Photo: A. Ferreira/UNFCCC/CDM Project 1051

The use of charcoal is indispensable in the short term for many least developing countries. Improving the efficiency of charcoal production and mitigation of GHG emissions in the production process is therefore an important project activity.

project organisation – may be used for a new scaled-up crediting or supporting mechanism in a future climate change agreement. In addition, the Foundation sees standardised baselines as an important step towards reducing barriers for PoA development as the transaction costs for project development are reduced. It thus provides start-up finance for programmatic approaches and supports the development of standardised baselines to facilitate the reformed CDM and gain experience with a scaled-up mechanism.

Against this backdrop, the Foundation has awarded a contract for the development of a standardised baseline for efficient charcoal production in West Africa. This sector was chosen as charcoal is a priority sector for sustainable development in many African countries. Wood can be used as is for cooking and heating, but a more efficient approach is to process it into charcoal and then use it as fuel. Charcoal is primarily produced in forested areas on the outskirts of urban centers: the wood is harvested from these areas and converted into charcoal in a batch-type process. Traditionally, earth or mound carbonisation kilns with relatively low energy efficiency are used. As a consequence, charcoal production for domestic use and direct use of wood biomass in households are the main drivers of severe deforestation in many African countries and thus lead to major socio-economic and environmental problems.

Since in the short term charcoal cannot be easily replaced with alternative, similarly affordable energy sources, efficient charcoal production technologies, along with other measures – such as efficient use of charcoal – are needed to help reduce the pressure on forests. So far, the ASB0002 Standardised Baseline: Fuel Switch, Technology Switch and Methane Destruction in the Charcoal Sector of Uganda has been approved for this sector. This SB provides the baseline emission factor and a positive list for fuel switch, technology switch and methane destruction in the charcoal production sector.

The purpose of the Foundation contract is to investigate how an SB may be transferred to other countries with comparable circumstances. There are many similarities between the countries in Africa in the way their charcoal sectors are structured. Thus, in the first step the contracted consultant, South Pole Carbon Asset Management Ltd., will assess the pre-conditions for transferring the approved SB to Senegal and estimate the technical effort needed to extend the SB to other selected countries in West Africa. If the assessment reveals that from a

technical standpoint, transfer of the SB to the other countries is easy and the cost and effort remain low, the SB should be developed for the region provided that the respective host country DNAs are interested in doing so.

To aid the study, the Foundation signed a Memorandum of Understanding (MoU) with the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat in order to jointly work on the development and promotion of a standardised baseline for efficient charcoal production in West Africa. The Foundation works in close cooperation with the UNFCCC's Regional Cooperation Centre (RCC) in Lomé, Togo. Active involvement of the relevant DNAs is vital for successful development of the SB, as they are ultimately responsible for its implementation and maintenance. Thus, collaboration with the UNFCCC is important since the RCC will support the initiative by liaising with the relevant DNAs and other local stakeholders. The RCC will also provide quality checks and guidance on UNFCCC processes related to the SB.

Further applicability of standardised baselines

The Foundation aims to support the development of a further SB in 2014, as it believes that a standardised baseline provides several opportunities for use in a future climate regime. For instance, if the generated credits of CDM projects in the respective sector are cancelled, the effort could be counted towards a national contribution of the host country. Depending on the donor, this could be announced as a unilateral or supported NAMA. In doing so, the host country would benefit from cost-effective, simplified implementation of projects and be able to build the NAMA on a sound and transparent measurement, reporting and verification (MRV) system. Another possibility for host countries to apply standardised baselines involves using credits in a national emissions trading scheme or a carbon tax system, which in turn could also be treated as a unilateral NAMA.

In line with the UNFCCC's survey on DNAs' interest in working with the EB to develop top-down SBs, some DNAs indicated their desire to use SB for activities such as setting up sectoral greenhouse gas inventories or developing a NAMA. The Foundation would like to explore ways in which CDM design features might be transferred to the new mechanisms and is



The transport sector is underrepresented in the CDM so far. A Standardised Baseline developed top down by the UNFCCC Secretariat is intended to alleviate this situation. Our image shows one of the few CDM transport activities: old Egyptian taxis are scrapped and replaced by newer, more efficient vehicles.

seeking to cooperate with a host country interested in taking on the task. The SB could thus be used to set up a sectoral PoA that could be developed into a NAMA. The SB would enable the host country to track emission reductions in the respective sector. Additional policy measures would, however, be needed to guarantee that the envisaged mitigation goal is met.

With the support of the EB and other international donors, several SBs will be developed and further lessons will be learned in the coming years. Since DNAs are responsible for maintaining the data management system and for implementing detailed SB quality control mechanisms (known as the quality assurance and quality control (QA/QC) system), projects must be implemented in such a way that the efforts of the DNAs pay off. Given prevailing political and market uncertainties, which act as key barriers to investments in new CDM projects, DNAs might be reluctant to establish relevant procedures or to build up institutional structures for the use of SBs.

Considering that all mitigation activities require robust and transparent MRV, synergies with SBs should

be exploited. When implementing standardised baselines, host countries benefit from the availability of a data management system since it helps to improve their experience in this field. Investment in projects based on a sectoral approach thus yields a multiple dividend. Hence, in the lead up to 2020, host and donor countries must join forces to maintain and further develop host countries' expertise in project implementation and use of data management systems. The Foundation will continue to foster the carbon market in these unstable times and will cooperate with partners in the reform of market instruments.

Disclaimer: This article is a personal contribution by Malin Ahlberg and does not necessarily express the opinions of the German Federal Environment Agency (UBA) or the German Emissions Trading Authority (DEHSt).

Standardised Baselines as a Tool to Foster Renewable Energy Deployment

Developing a Regional Grid Emission Factor

by Martin Burian, Independent Consultant for Low Carbon Development
 Joachim Schnurr, Director Competence Centre for Climate and Energy, GFA Consulting Group
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 Prof. Dr. Francis Yamba, Director of Centre for Energy, Environment and Engineering Zambia
 Francis Masawi, Director of Energy and Information Logistics, Zimbabwe

Standardized Baselines (SB) are an instrument first introduced at the 63rd CDM EB meeting in November 2011 following a CMP decision to open the CDM for standardised baselines on a regional, national scale or eventually covering several countries. An SB offers multiple opportunities for standardization: It may establish a baseline emission factor, automated additionality for specific technologies and/or standardized elements of an approved monitoring methodology.

A Standardized Baseline provides various direct and indirect benefits: First, it reduces the transaction costs of project or program development and hence removes barriers for the uptake of the CDM. Second, an approved SB eliminates substantial risks for an investor, e.g. as the volume of baseline emissions is known prior to project development. Finally, SB development strongly involves Designated National Authorities (DNAs) during the development stage as well as during the ongoing management and updating of SBs. This may improve the DNA's capacities and eventually allow for building a bridge from CDM to future instruments such as New Market Mechanisms (NMM) and Nationally Appropriate Mitigation Activities (NAMAs).

The Southern African Power Pool

The Southern African Power Pool (SAPP) was created in 1995 through an Inter-Governmental Memorandum of Understanding for the formation of an electricity power pool in the region. SAPP currently comprises 15 power utilities from the following 12 countries: Angola, Botswana, DRC, Lesotho, Malawi, Mozambique, Namibia, Republic of South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. The SAPP Coordination Centre (SAPP CC), based in Harare, not only facilitates regional electricity trades, but also fulfills regional coordination functions with respect to planning capacity additions and developing energy regulations and policies. As such, the SAPP CC was an important hub for the development of a regional grid emission factor.

Please note that Angola, Malawi and Tanzania are not connected with other SAPP countries and hence are not covered by the SB. However, these three countries are SAPP members in the anticipation of planned interconnection projects.

On behalf of the United Nations Environmental Program (UNEP) and with financial support from the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, the authors developed the Standardized Baseline 'Grid Emission Factor for the Southern African Power Pool' (ASB 001), which was the first SB to be approved by the CDM Executive Board (CDM EB 73, Annex 3). It is applicable for CDM-related activities in nine countries covered by the Southern African Power Pool (SAPP).

Overall, the Grid Emission Factor (GEF) is arguably the most important element in the CDM framework as it is the key parameter for the quantification of business as usual compared to project scenario emissions for many renewable energy project types as well as for demand and supply side energy efficiency activities. More than 70% of approved large-scale methodologies require the determination of the GEF.

Description of the Problem

A Grid Emission Factor typically covers national territory of the national electricity system. In larger countries such as China or Brazil the GEF is broken down to regions. The Southern African region, however, is characterized by a highly integrated grid, where some countries act as net importers, while others are net exporters.

Working in Swaziland and exploring the mitigation potential of renewable energy and energy efficiency activities in the sugar sector, we noted that a national approach did not allow for the consideration of emissions from electricity imports.

Table 1: Import to Demand Ratio for Selected SAPP Countries

Botswana	63.5%
Lesotho	28.5%
Namibia	52.0%
Mozambique	50.0%
Swaziland	59.0%

Source: Data provided by SAPP CC

This posed a major barrier for the development of renewable energy projects under the CDM in the country: Despite reducing the country's dependency on CO₂ intensive electricity imports from South Africa through the CDM project, it was not possible to generate any Certified Emission Reductions (CERs) considering the hydropower-dominated national electricity generation. Further investigations showed that Swaziland shared this problem with other countries in the region (please see Table 1).

Addressing the Barrier - Calculating the SAPP GEF SB

Against this background, GFA Consulting Group and the Coordination Center of the Southern African Power Pool (SAPP CC) developed a regional GEF which eliminates this barrier. The technical solution was identified by evaluating the interconnectivity of the electricity system:

- The tool for the calculation of the emission factor for an electricity system (EB63, Annex 19) allows for including those regions into a joint GEF, where no transmission constraints exist. Assessing the load factor of transmission constraints in the SAPP system demonstrated that electricity may be transmitted without constraints. Consequently, nine countries were integrated into one regional so-called 'Project Electricity System' (PES). The PES covers the nine SAPP member countries, interconnecting transmission lines as well as the related transmission capacities illustrated in Figure 1.
- The PES is the geographical area for which the 'Build Margin (BM)' and the 'Operating Margin (OM)' are determined. The BM reflects the trend of CO₂ intensity, whereas the OM reflects the average emissions of electricity generation. The GEF, also called 'Combined Margin' (CM), expresses the CO₂ intensity per unit electricity consumed/supplied. It is calculated as the average of the BM and the OM. The OM, BM and CM were determined based on an integrated electricity model for all nine countries, based on the operating data of all power plants over five years.

In practice, SB development as well as the underlying modeling is very data intensive. The electricity model covers five-year operating data (i.e. net electricity generation, fuel consump-

tion, Net Calorific Values and Emission Factors) for each of the 62 power plants. The total installed capacity covered by the electricity model amounts to

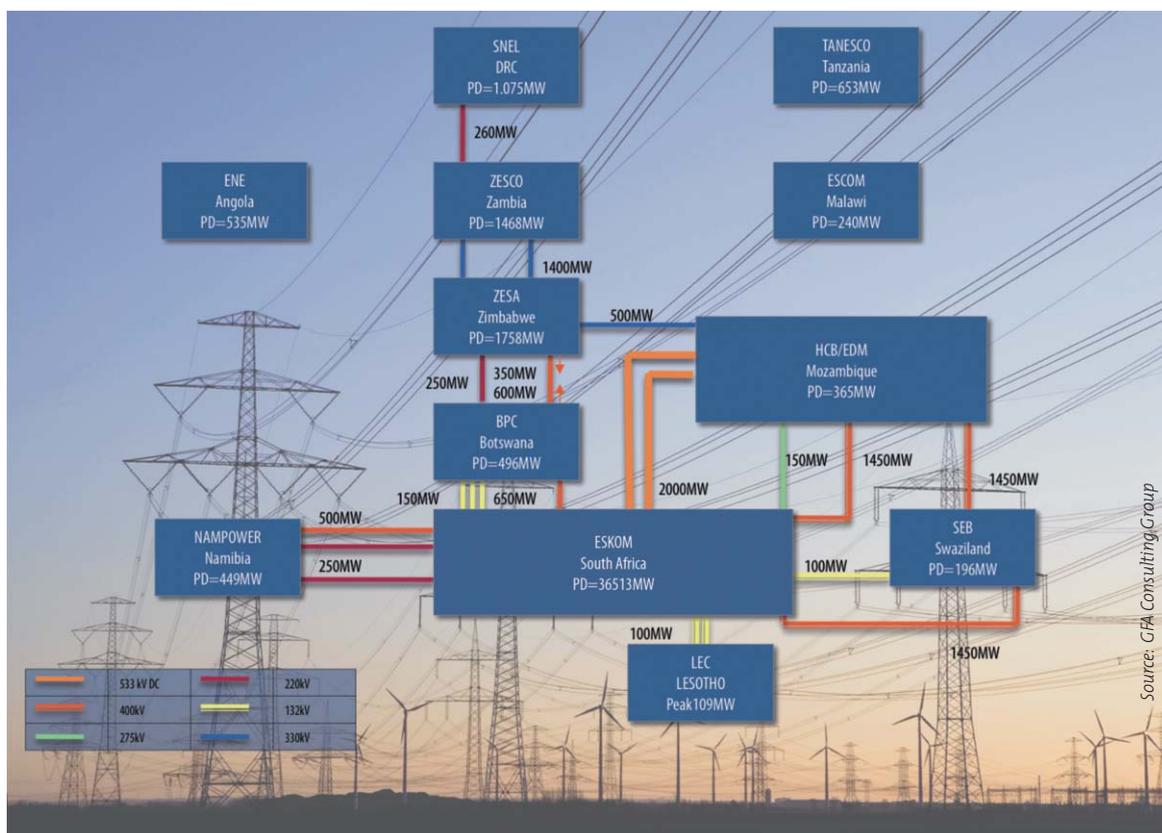
Table 2: Installed Capacity per Country

Utility Name	Country	Installed Capacity [MW]
BPC	Botswana	202
EdM	Mozambique	2,322
ESKOM	South Africa	44,111
LEC	Lesotho	72
NAMPOWER	Namibia	393
SEB	Swaziland	70
SNEL	Democratic Republic Congo	2,593
ZESA	Zimbabwe	1,905
ZESCO	Zambia	1,687

53,355 MW (please refer to Table 2). The success of this work is the result of strong facilitation by the SAPP CC and of direct working relations to the national power utilities. The involvement of regional energy experts disposing of comprehensive knowledge of the energy sector in the different countries, however, was the decisive factor for the success of the project.

Based on standard weighting of the BM and the OM, the SAPP SB determines the GEF at 0.9644 tCO₂/MWh (see Table 3). Guidance on alternative weights can be found in the 'Tool for the Calculation of the Emission Factor of an Electricity System' (CDM EB63, Annex 19, page 18f).

The SB was submitted to a Designated Operational Entity (DOE) located in South Africa, which validated the GEF and issued an assessment report. In the next step, the SB was signed by the DNAs from all nine countries and the DNA of Botswana submitted the SB on behalf of all nine countries to UNFCCC. In a final



Transmission lines between SAPP Members and power stations

Source: GFA Consulting Group

Table 3: Summary of the Regional SAPP GEF

OM Emission Factor (in t CO ₂ /MWh)	0.9958		
BM Emission Factor (in t CO ₂ /MWh)	0.9331		
	Weight of the OM	Weight of the BM	CM Emission Factor
Wind and solar power generation project activities for the first crediting period and for subsequent crediting periods	0.75	0.25	0.9801
All other projects for the first crediting period	0.5	0.5	0.9644
All other projects for the second and third crediting period	0.25	0.75	0.9488

step, the SB underwent a rigorous two-phased evaluation by the UNFCCC Secretariat and was finally approved in May 2013 in course of the EB's 73rd meeting.

SBs and the transition phase from CDM to new market mechanisms

The SAPP GEF SB opens the door for grid-connected CDM project development in Southern Africa allowing for unlocking a substantial mitigation potential in the region (compare Arens et al. 2011). Still, the current CER supply and the limited CER demand result in low CER prices. These prices may not provide the financial incentives needed to tap the region's mitigation potential. Hence, removing this barrier comes late.

On the other hand, SBs facilitate not only CDM projects and Programme of Activities (PoAs). SBs can also support the development of next generation carbon finance instruments, such as NAMAs and Sectoral Mechanisms on the way towards the year 2020.

SBs are considered as national business-as-usual GHG scenarios, which may serve as baselines for innovative climate finance instruments. SBs may therefore build a bridge between the methodological approaches and procedures developed under the CDM and Sectoral Mechanisms and NAMAs.

Thus, the SAPP countries may harness the SAPP GEF SB for the establishment of project/program pipelines for the national and regional energy sectors, which in the end will allow them to meet the eligibility requirements of accessing international climate finance from various sources, e.g. through the Green Climate Fund (GCF).

Multilateral implementing entities (MIEs) to the GCF such as the African Development Bank (AfDB) have started their search for large-scale projects, which are contributing to climate-resilient and low-carbon development in the African energy sector. Emission reduction capacity will be a decisive factor for the selection of individual projects or programs to be proposed for GCF funding. In this respect, the SAPP GEF SB may provide the basis for the successful implementation of energy projects in Sub-Saharan

African countries, which could not adequately participate in the CDM in the past.

An example for such a possible application is outlined in a study on the Carbon Renewable Energy Feed-in Tariff (REFIT) for the SAPP region (Burian and Arens, 2012). Many African countries do not offer appropriate incentives for the promotion of renewable energy projects through a feed-in tariff. Usually, the revenues of Independent Power Producers (IPPs) are negotiated through Power Purchasing Agreements (PPAs). In those countries where a REFIT is available, as in South Africa, the feed in tariffs are subject to tendering processes, political debates and were changed in the past for several times. Both options, PPA and REFIT, may not offer the financial security to develop renewable energy projects with a lifetime of, say, 30 years.

A Carbon REFIT, as subsequently explored based on the SAPP GEF SB, may structure performance-based payments for the supply of renewable energy, which is directly linked to the CO₂-intensity of SAPP's electricity system. A financing institution, such as the GCF or any institutional off-taker of emission reductions, may structure payments based on realized emission reductions. Considering the shortfalls of existing PPAs and REFITs, such an activity's effectiveness may be bound to a long term commitment, e.g. ten years or more. Moreover, a positive list of eligible project types may be elaborated which may benefit from such a Carbon REFIT.

From all renewable energy sources, medium to large hydro power projects are considered to involve the lowest generation costs. Against this background, the study assessed the financial impact of a Carbon REFIT for a hydro power project with an installed capacity of 50 MW. The financial analysis employs a Levelized Electricity Generation Cost model of the World Bank and is based on regional capital costs and on a price of 10USD/tCO₂ reduction. In the 'without Carbon REFIT' scenario, the project's Internal Rate of Return (IRR) amounts to 10.90% and its Net Present Value, NPV) is negative. In CDM terms, in order to prove additionality, the project's IRR must be below a regional

Table 4: Hydro Power Plant (50 MW) - Financial Evaluation

	without Carbon REFIT	with Carbon REFIT
Internal Rate of Return [%]	10.90	15.70
Net Present Value [USD]	-3,995,979	3,766,217

benchmark of 12.88% (determined based on the average prime lending rate of the region). Hence, this model hydro power plant would qualify as being 'additional'.

The 'with Carbon REFIT' scenario shows a more favorable picture: the proposed project's IRR lies significantly above the benchmark and the project's NPV becomes positive. It is concluded, based on this conservative test case of a HPP, that a Carbon REFIT may significantly improve a renewable energy project's financial key parameters rendering the project financially viable.

The case of the Carbon REFIT is one of numerous possible applications where SBs may build a bridge between the wealth of methodologies developed under the CDM and the needs of future financing instruments such as NMM and NAMAs facilitating climate change mitigation and contributing to sustainable development.

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Bridging the Gap between Theory and Practice

Establishing a Standardised Baseline in Cambodia: Lessons learned

by Akiko Fukui, IGES, and Kamal Uy, Cambodian DNA

Background

The CDM Executive Board adopted the standardised baseline (SB) Technology Switch in the Rice Mill Sector of Cambodia in November 2013. It was established based on a joint proposal from the Ministry of the Environment of Cambodia and the Institute for Global Environmental Strategies (IGES). This article aims to share the experience gained and lessons learned in developing the proposal.

Cambodia's Designated National Authority (DNA) was established in 2003. Support provided by the DNA to enhance CDM project development includes organising workshops for awareness-raising and training, consultations, submitting proposals to the UNFCCC for mitigation requirements, disseminating guidelines, and publishing a default figure for baseline emissions (emission factor for electricity systems).

Despite the above-mentioned efforts, Cambodia had fewer than 10 registered projects by the end of 2010 and measures to accelerate access to the CDM were needed. The main barriers hampering CDM project development in Cambodia were:

- Lack of experts with a sound understanding of the CDM
- Lack of potential to develop large-scale projects
- Lack of data and information

It was expected that by establishing SBs, at least some of the barriers could be overcome – at its 6th session at the end of 2010, the CMP had introduced SBs into the CDM world. Therefore, in 2011, the Cambodian DNA Secretariat and IGES started research with the aim of developing an SB proposal.

The first step was to identify possible target sectors by reviewing promising project types and technologies in Cambodia, and then draw up a short list. Afterwards, site visits were conducted and a workshop was organised to collect comments from relevant officials and private sector individuals. Final sector selection was based on the the following criteria:

- Importance for Cambodia's economy and society
- Potential for GHG emission reduction
- Availability of a new technology to reduce GHG emissions with a low dissemination rate
- The need for specific research to identify a baseline scenario

Biomass use technology in the rice mill sector was finally selected because:

- Rice production significantly contributed to the Cambodian economy
- There was a policy of promoting rice exports with the aim of increasing the quantities of milled rice
- Rice husk for use as a biomass fuel was available as part of a process flow

Challenges in establishing the proposal

The research method used comprises a literature review and a sampling survey. Information on energy use in the Cambodian rice mill sector was found in some documents, but data for

identification of a baseline scenario and the baseline emission factor was not available from existing studies. Cambodia's Ministry of Industry, Mines and Energy has a department for supervising small and medium-sized entrepreneurs (SMEs), while the Ministry of Agriculture, Forestry and Fishery is responsible for agricultural production activity. However, neither possess statistical data on individual rice mill operations. The sampling survey approach was taken because there are more than 20,000 rice mills scattered around the country. Budget and time constraints made it impossible to conduct a full-blown sector survey.

The research identified three types of in-house energy generation technologies and one energy supply source from outside in the sector:

- Mechanical power (diesel engine)
- Mechanical power (dual mode engine with rice husk gasification)
- Electricity generated by a steam turbine with rice husk combustion
- Electricity supplied by rural electricity utility companies

Diesel engine-driven power is used in 90 percent of rice production and was thus selected as the baseline scenario.

Data collection

One of the challenges faced when conducting the research was trying to move forward at the same time as the regulatory framework for SBs set by the Executive Board was still being developed. There was thus a need to ensure consistency with guideline requirements that were either established or updated as the research work was underway. This was the case, for example, with the Guidelines for Quality Assurance and Quality Control of Data (QA/QC guidelines) used in the establishment of a standardized baseline, and the Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities.

The CDM Executive Board published its QA/QC Guideline in March 2012, when the sampling survey had already begun. The sampling survey plan was based on the available guidance at

the time, which did not have the level of detail in the subsequent QA/QC guidance. For example, the QA/QC guideline stipulates that DNAs should draw up a data delivery protocol and establish a quality check system.

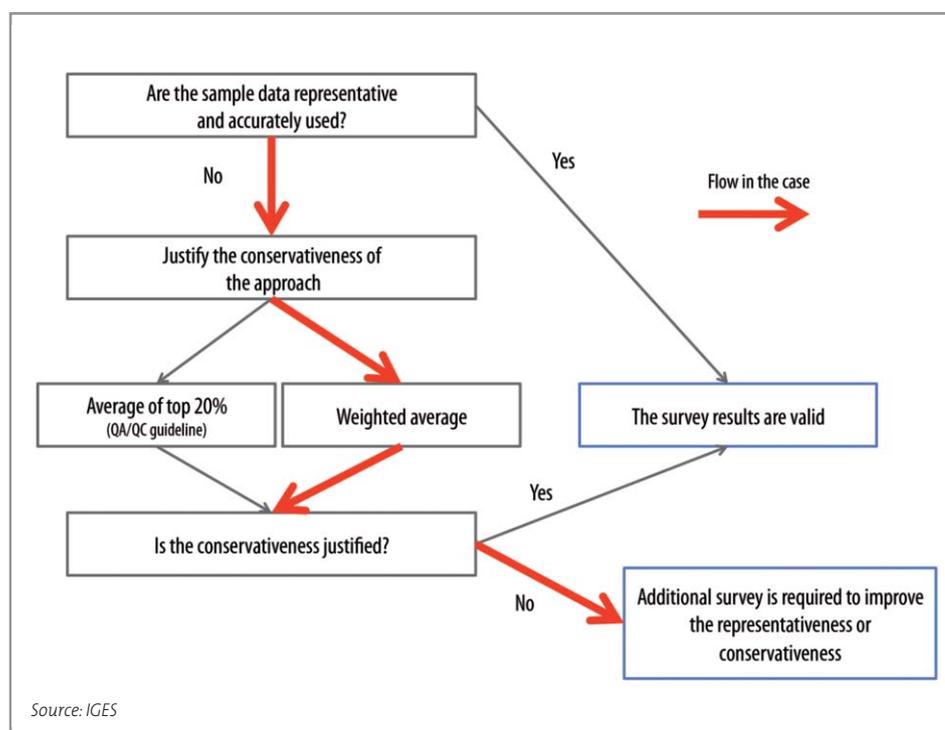
In the absence of a data collection system and reliable reference data, the survey result did not satisfy the requirements in terms of data vintage, accuracy and representativeness. The Cambodian rice mill owners were unable to provide three-year vintage data as required by the Guideline for the Establishment of Sector-specific SBs. Firstly, they all kept daily records on paper and failed to compile annual summaries, and secondly, some have no access to measurement devices. In a quality control process, the survey result was supported by reference to existing literature, stakeholder consultations and an additional survey.

Validity of the survey result

The first assessment by the Secretariat was conducted in accordance with new QA/QC Guideline and, after further clarification, took in the baseline scenario technology and validity of the survey result. The sample data was not regarded as representative because sample allocation differed from the reference data. The reference data was not properly updated and contained inconsistencies, thus there was no way to demonstrate representativeness. Figure 1 is a flow chart used in checking the validity of the survey result based on the Secretariat's guidance and taking the necessary conservative approach. Regarding data vintage, one year of activity data was allowed to be used for this case as well as in a specific case officially in the Standard for Determining Coverage of Data and Validity of Standardized Baselines.

Conservative approach

While the initial intention was for the SB to cover all rice mills in Cambodia, it was finally limited to small-scale rice mills. The survey result showed there was a wide range of emission factors (t CO₂/t-rice, volume of CO₂ emissions per one tonne of rice produced) using the same technology as the baseline scenario. It also showed a correlation between rice mill size and emission factors. This made it difficult to identify the baseline emission factor in a conservative manner.



Flowchart used to check the validity of the survey result

Several options were considered in determining the value, such as weighted average, lower limit value in 95 percent confidence interval, 80-90th percentile value of output aggregated from a high value emission factor, average value of top 20 percent performance and the lowest value. Taking too conservative an approach could discourage project developments due to the low volume of emission reductions achieved with the projects (Figure 2). In this case, a conservative value from a large-scale rice mill with highly energy-efficient operation would not be appropriate for small-scale rice mills. Since in Cambodia, only the top ten percent of large-scale rice mills account for 60 percent of rice production, the question of representativeness arises if the value from a minority of large-scale mills is applied.

In the end, the 80th percentile values in three different-sized base groups were chosen. This was done using yet another additional sampling survey to complement the sample size. The additional survey did not take in the large-scale rice mill group, because the effort involved in collecting that data was not commensurate with the small number of mills, and our main priority was the barriers that stand in the way of project

development in the small-scale group. Given the difficulties in identifying an adequate baseline emission factor for such a broad scope, the SB provides two emission factors for different-sized rice mills.

Figure 2: Comparison of baseline emission factor calculation methods for the Cambodian rice mill sector

Lessons learned

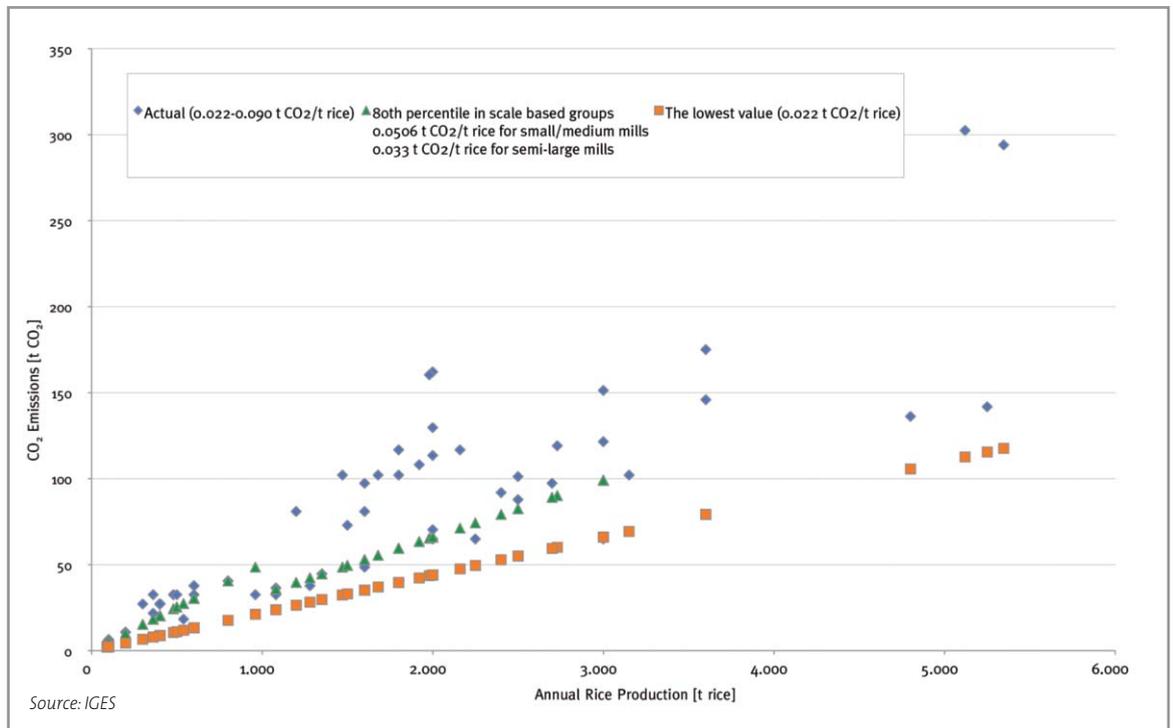
Since the adoption of the SB framework, the CDM Executive Board and the Secretariat have gained a great deal of experience in approving a number of SB proposals. This was reflected in the revision of several guidelines. Those revisions included mitigating requirements with specific conditions and the introduction of best practices with practical data. There are, however, some open issues regarding interpretation and cases of non-applicable rules. On the other hand, the CDM has always been implemented by means of a learning-by-doing process, and thanks go to the Executive Board and the Secretariat for their flexibility in interpreting the rules of an evolving framework.

While the Cambodian DNA has not decided to develop another SB, it will be necessary to update the grid emission factor for the Phnom Penh electricity grid. In doing so, the Cambodian DNA will look at the following issues to ensure improvement:

Outlook

While the Cambodian DNA has not decided to develop another SB, it will be necessary to update the grid emission factor for the Phnom Penh electricity grid. In doing so, the Cambodian DNA will look at the following issues to ensure improvement:

- The role and responsibility of coordinating/facilitating low-carbon development activities in various sectors
- Developing national measurement, report and verification (MRV) systems which include data base management



Comparison of baseline emission factor calculation methods for the Cambodian rice mill sector

- Identifying policy/regulation on the development and implementation of low-carbon initiatives and, where appropriate, more detailed activities regarding the new carbon market mechanisms.

In developing its new Climate Change Strategic Plan (CCSP) 2014-2023, the Cambodian government invited all stakeholders – including line ministries – to participate in the long process of designing both the CCSP and the sectoral climate change action plan, which is part of the strategic plan and identifies potential adaptation and/or mitigation options. In the course of this process, the mitigation actions were extended to take in various sectors and sub-sectors. National-level development of NAMA capacity is currently under way, and the Joint Crediting Mechanism (JCM) was recently adopted by Cambodia and Japan.

Although a number of mitigation options were listed in Cambodia's second national communication to the UNFCCC, very few mitigation activities, such as CDM projects, have materialised as a result. At the

time of writing, only one option for the rice mill sector has been selected and considered for PoA development. Greater knowledge and information sharing is needed among key stakeholders before further action can take place.

In addition, action related to future carbon market mechanisms requires the existence of a specific mechanism. It also requires a procedure to assist interested stakeholders in developing both GHG mitigation projects and programmes for use in implementing new mechanisms.

CDM Reform

Streamlining Project Cycle Procedures

Harikumar Gadde & Affouda Leon Biaou, The World Bank Group

The CDM has matured considerably and as a result of a change in demand requirements for offsets in the EU ETS, it is finally finding its place in Africa. This is particularly welcome given that the CDM in this region can significantly contribute to and promote projects with high developmental benefits. Yet in spite of its significant achievements, notably guidance on standardized baselines, automatic additionality and top-down simplification of methodologies, there are still bottlenecks that are hindering the development of CDM projects in Africa. These bottlenecks include several rules and procedures that do not always take realities into consideration, a long time to market due to double checks by both DOEs and the Secretariat and high upfront transaction costs due to heavy data requirements are causing delays with the project registration process.

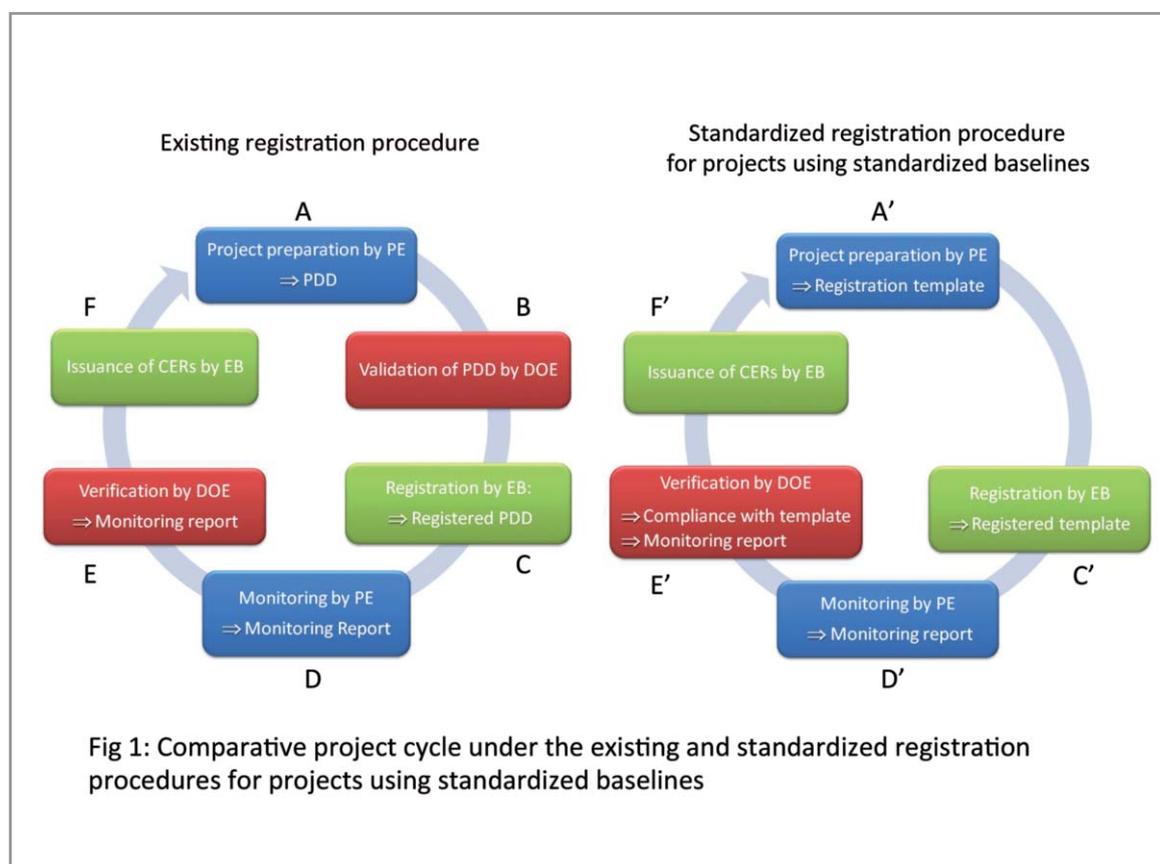
Double checks by both the DOE and Secretariat during the validation process and during completeness check is not necessarily improving quality, rather they introduce a certain degree of subjectivity which can result in delays and additional costs. In spite of past procedural improvements, the time required for registration from the starting date of the global stakeholder consultation remains considerable, amounting to over 500 days. This long time to market, among other reasons, is preventing some project owners, especially those targeting small scale distributed systems like solar home systems, cook stoves, solar lanterns and biogas digesters, from considering CDM as potential driver for the project.

The high upfront costs of validation and verification are putting especially small projects at risk. High upfront transaction costs are also increased by the heavy data requirements at validation and verification to establish baseline, demonstrate additionality, and calculate the grid emission factor, etc. This puts a significant burden on individual project developers, in particular where such data is not readily available and accessible, notably in LDCs.

Standardized baselines, procedures for the simplification of additionality demonstration and methodologies for certain categories of projects can provide solutions to many of the problems noted, though early activities on behalf of the CDM EB have not alleviated all the bottlenecks described. This is because these simplifications, on their own, cannot fully address the issues of high transaction costs and double checking delays without reform of the project cycle procedures.

Optional standardized registration procedure and standardized inclusion procedure

Standardized baselines, which allow baseline determination and additionality demonstration upfront for certain categories of projects, could facilitate simplification of the current project cycle when



complemented with a standardized registration procedure. This standardized process would allow project developers to register their projects within a shorter time period, as the revised procedure would effectively combine validation with verification.

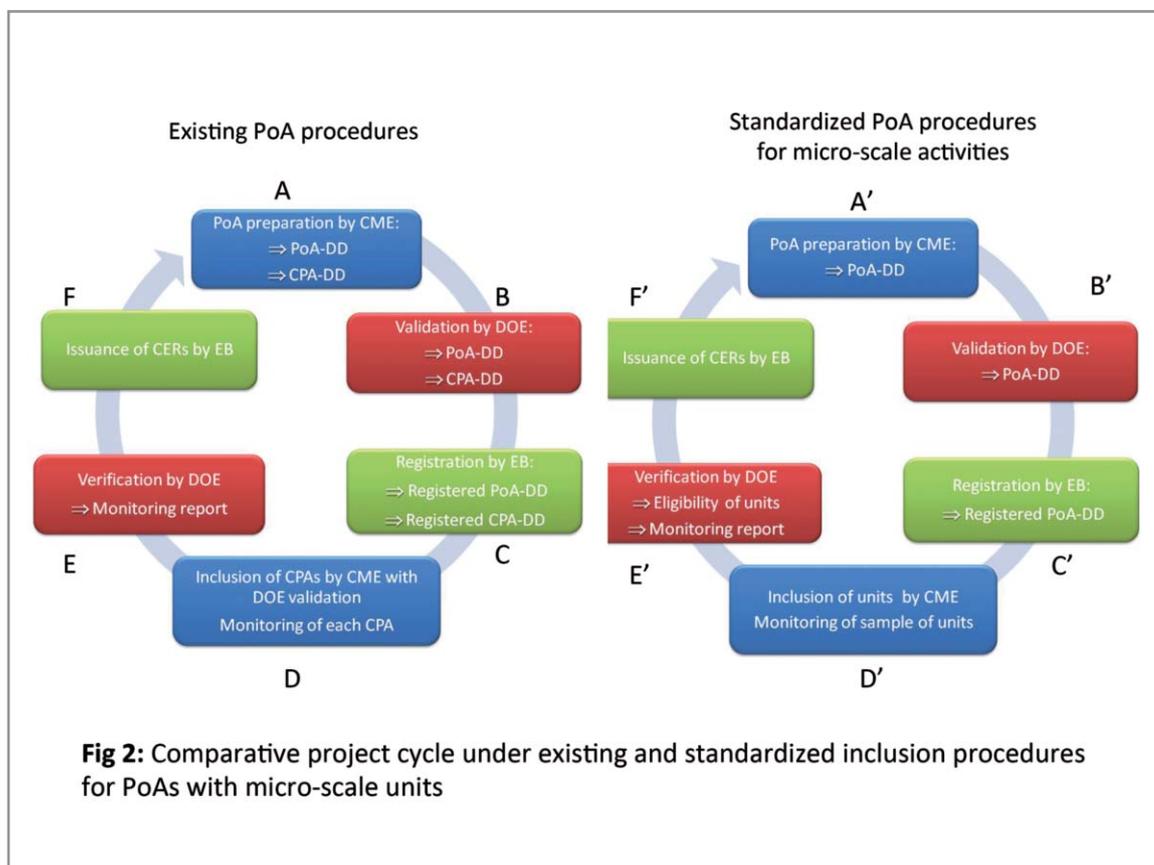
The standardized registration procedure (SRP) for projects using standardized baselines (baseline setting and positive list for additionality) as proposed by the World Bank (Fig 1) has three main elements:

(i) **A check-list based template** developed for a sector or for a specific technology fulfills the function of the traditional project design document (PDD). The template will have been approved by the EB before being used. In effect the template presents the information from a project design document structured as a check list. The aim of the template is to collect all key information regarding:

- Technology(s) and methodology(s) applied;
- Compliance with the applicability conditions set for the use of standardized baseline;
- Confirmation of stakeholder consultation process and environmental impact assessment.

A local stakeholder consultation can be implemented during the development of standardized baselines. The consultations, for example, at the PoA level have been already implemented for PoAs involving CFLs, solar home systems, cook stoves, etc. and this approach is applied under the Gold Standard for certain categories of projects.

(ii) **Automatic registration** is triggered by the submission of a successfully completed check-list based template. The templates are designed so that a non-eligible project could not complete the template. The completed template will be sub-



mitted to the Secretariat for a regular completeness check and information reporting check process, following which the project will be registered without a current EB review process. The host country DNA shall notify the EB on the types of project activities using specific technologies or measures that are eligible for using a standardized checklist under the SRP. The template can be developed either by the DNA with the support of DOEs in their advisory roles, project developers or UNFCCC regional collaboration centers. The SRP template will be submitted by the DNA for EB approval. The automatic registration may be accompanied by a completeness spot-check, but validation is not undertaken at sites where GHG mitigation will be achieved prior to registration.

- (iii) **Verification** occurs after project implementation. The verification requires the DOE to first confirm the compliance of a project with the require-

ments defined in the check-list based template and then to verify the actual emission reductions generated by the project (i.e., credits are only issued after confirmation of compliance).

Eligible projects under the standardized registration procedure could be registered within 3 - 6 months if all criteria in checklist are met. This shorter standardized registration procedure is more predictable and increases the impact and value of the carbon revenues for projects with short lifetimes and quick realization of needed early revenues for projects with front loading needs.

The standardised procedure should only be introduced as an option for project developers to apply. Additionally, this procedure can only be applicable to projects that: i) apply standardized baselines and ii) where the eligibility criteria can be transformed into a checklist format (i.e. the checklist based template);

and iii) for which a stakeholder consultation at the level of the SB submission addresses any “potential environmental and social issues”. The transparency of the local stakeholder consultation can be ensured, for example, by limiting the applicability of these procedures to the types and categories of projects where the stakeholder consultations can be carried out during the development of standardized baselines or at the PoA level and for those project categories where environmental and social issues are negligible.

A similar standardised project cycle procedure can be used for inclusion of component project activities (CPAs) into a programme of activity (PoA) with individual unit size that satisfies the micro-scale activities thresholds. No restrictions are put on the number of units to be added in each CPA. The units can be included either individually or in an aggregated manner, to accommodate PoA implementation arrangements and minimize associated transaction costs. In the proposed (Fig 2) standardized inclusion procedure (SIP), a PoA is validated by a DOE and registered without a specific CPA (only the PoA-DD is validated). The CPA inclusion into the PoA is undertaken by the coordinating and managing entities (CMEs) and project developers using a pre-approved SIP template based on a checklist “yes/no” approach to include CPAs without any involvement of a DOE until the verification stage. The currently established CDM verification procedure would apply with the addition of an ex post confirmation by the DOE of CPA compliance with the registered checklist. The SIP is recommended initially for homogenous, replicable projects such as households/community level renewable energy and energy efficiency activities such as CFLs, solar home systems, solar lanterns, cook stoves, biogas digesters in LDCs.

Perceived risks

Since the World Bank introduced the idea of a standardized registration procedure some two years ago, stakeholders have raised several issues, notably how stakeholder consultation, sustainable development criteria and environmental impact assessment can

be ensured if conformance of project compliance is checked at the point of verification only.

As noted above, the standardized project cycle for single projects and for CPAs is only relevant for project activities where a local consultation can occur at the level of the standardized baseline development or the submission of the PoA design. This approach is already applied for micro scale technologies PoA e.g. cooking stoves, CFLs etc.

To mitigate any potential risk of damaging impacts on local communities and the environment by registered activities, approaches such as the Host country system approach could be applied. Such an approach would ensure that the DNA decides which projects can apply the standardized project cycle, since the DNA would make a request to apply the standardized project cycle or CPA inclusion procedures. The DNA could therefore ensure that activities comply with national legislation. Furthermore a liability approach could be developed by EB in consultation with host country DNAs in the event that any damage to local communities or the environment occurs by suspending a request for issuance of credits until the identified damage is remedied by the project participants and such remedy is confirmed by the host country DNA.

For the targeted types and categories of projects, sustainable development impacts are typically assessed and demonstrated at the time of development of standardized baselines or registration of the PoA. For example, sustainable development benefits have been demonstrated for micro-scale activities such as solar home systems, cook stoves, bio-digesters, etc. Also, under current CDM rules for PoAs, no letter of approval is required to confirm that each CPA is meeting sustainable development criteria prior to its inclusion in a registered PoA. Similarly, a program-level sustainable development impact assessment can also be used under the SIP procedure given a homogenous and highly replicable nature of the eligible types and categories of project activities. For single projects, the sustainable development benefits can also be assessed and confirmed as per currently

established domestic criteria and procedures through issuance of the letter of approval (LoA), as well as during the development of new standardized baselines by a DNA.

Further concerns have been raised regarding the procedure for eliminating the commercial risk any buyer might have for purchasing credits. The commercial risk of the project depends mainly on the robustness of the business model adopted. The CDM process is a necessary but not sufficient factor of success. Project validation and registration are not always followed by a successful issuance of credits. About 70% of current registered projects are yet to get issuance of credits. The primary objective of the proposed standardized project cycle for single projects and the standardized inclusion process for CPAs under a PoA is to minimize the regulatory risk and provide more predictability of the registration process. This will facilitate the generation of creditable emission reductions without regulatory delays and minimize any loss of credits at the time of registration for projects which are already commissioned and performing.

Conclusion

The idea to develop a standardised project cycle has gained a lot of traction from various stakeholders. The CMP requested the CDM Executive Board to look into opportunities for streamlining project cycle in its Guidance relating to the clean development mechanism during CMP 8 in Doha and CMP 9 in Warsaw. Standardization alone cannot resolve all the regulatory and governance issues of the CDM in promoting development of CDM projects in Africa. Yet the proposed standardized project cycle in combination with standardised approaches developed by the EB would improve consistency and objectivity of the regulatory project assessment, and would reduce the length and the transaction costs associated with the CDM project cycle. Conservative baselines and additionality thresholds at the sectoral level, combined with clear eligibility requirements integrated into the proposed registration and inclusion templates, could help



Tailwinds for the CDM reform?

Photo: Photodisc

ensure environmental integrity of the standardized registration and inclusion procedures. With the help of these reforms the CDM could finally develop into a mature mechanism.

Further information:

Full details on the World Bank proposal can be accessed at: http://www.ci-dev.org/sites/cidev/files/documents/CDM_Reform_2012.pdf

The New Markets Conveyer Belt

Four years' Partnership for Market Readiness: Past achievements, future plans

Miriam Faulwetter, Advisor to the German Federal Environment Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

The World Bank's Partnership for Market Readiness (PMR) supports developing countries and transition economies in the introduction of new carbon market instruments. Launched at COP 16 in Cancún, Mexico in 2010, it takes the form of a multilateral World Bank Trust Fund and Dialogue Forum. A little more than three years on, and again in Mexico, members of the PMR came together in March, this time in their capacity as the PMR Steering Group.

Much has happened since that first meeting, both internationally and in the PMR's 17 implementing countries. The German Federal Ministry for the Envi-

ronment, Nature Conservation, Building and Nuclear Safety (BMUB) is a founding member of the PMR, providing 10 million from its International Climate Initiative by way of support.

Developing new market-based mechanisms

To date, nine PMR countries have presented detailed strategy papers or Market Readiness Proposals. These differ just as much as the countries from which they originate: from emissions trading in China, to plans

Towards emissions trading in Thailand

Thailand's Market Readiness Proposal provides for the introduction of energy-efficient certificate trading and a national offset mechanism. The government plans to launch its Energy Performance Certificate Scheme (EPC) and its Low Carbon City Program (LCC) in 2017. The EPC aims to improve the energy efficiency of energy-intensive industrial facilities and commercial buildings. The Low Carbon City Program enables cities, towns and municipalities to develop emission reduction projects and then use these to generate certificates for use in a voluntary national carbon market. Both programmes are designed to help meet Thailand's 2030 target of reducing energy intensity by 25 percent compared with levels in 2010. Planning, implementation and evaluation of the EPC and LCC will pave the way for a full-blown national emissions trading scheme. The period up to 2020 will thus be used to create the technical and policy conditions needed for the scheme, which would not enter into force before 2020. The PMR supports the project with funding in the amount of USD 3 million (approximately EUR 2.2 million).

For more information see: <http://www.thepmr.org/country/thailand-o>

in Morocco to improve measurement, reporting and verification (MRV) systems for use in sectoral crediting approaches, to a voluntary carbon market in Costa Rica designed to make the country carbon neutral. In the early months after the PMR was launched,

Mexico relying on market mechanism mix

Back in March 2013, Mexico received the go-ahead for PMR funding in the amount of USD 3 million and was thus among the first four PMR member countries to present their Market Readiness Proposal. The Mexican government plans to develop credited NAMAs – sectoral crediting mechanisms – for the transport and refrigeration sectors, as well as at multisectoral/city level. These mechanisms are part of Mexico's climate change policy which also includes other types of NAMAs. These will not, however, be implemented via the carbon market, but instead by means of national and international financing. The Mexican climate change target aims to reduce emissions by 30 percent by 2020 compared with business-as-usual levels and by 50 percent by 2050 compared with levels in 2000. In the meantime, however, the Mexican carbon market has developed further again. In autumn 2013, the introduction of a carbon tax was announced whereby certificates from offsetting projects could additionally be used to meet the tax burden. And at the start of 2014, the Mexican energy minister announced plans to introduce emissions trading in the energy sector. How these different instruments are to be linked remains to be seen. Although PMR funding is available for the development of credited NAMAs, recent developments highlight the dynamic trends in Mexico's carbon market. At the PMR meeting in Mexico in March, the Mexican delegates expressed interest in detailed PMR consultations, partly to discuss these new policy options.

For more information see:

<http://www.thepmr.org/country/mexico-o>

it was difficult to predict which instruments the members would pursue alongside the obvious emissions trading and sectoral crediting. Now, it is clearly evident that, among other things, the PMR is a forum which inspires creativity and innovation. Based on existing approaches like the Clean Development Mechanism (CDM) and Joint Implementation (JI), but also economic instruments such as carbon taxation and regulatory approaches like emission standards, the PMR members are developing new market-based mechanisms to combat climate change. While it is difficult to assess the technical and political challenges the countries will face in implementing these new and in some cases complex ideas, the PMR is sparking internal decision-making and capacity-developing processes which could well be described as 'no regrets' measures.

PMR Membership

The PMR countries present their proposals and ideas to the PMR Steering Group and the Partnership Assembly – receiving expert support and advice from the former, and applying to the latter for funding in amounts of USD 3, 5 or 8 million for use in implementing the measures contained in their Market Readiness Proposal. Apart from the necessary exchange between funding and implementing countries, there is increasing exchange between the implementing countries themselves: they are often confronted with the same or similar issues and can learn from one another in meeting the technical and political challenges they face.

The Assembly meeting is supplemented by a technical working programme comprising workshops, working group meetings and webinars. These focus on the respective country proposals and priorities, and bring renowned international experts together under one roof. Issues addressed so far have included national offsetting schemes, the technicalities of emissions trading, communication between policy-makers, and modelling approaches and tools. These formats have seen the PMR advance to become a key institution in global carbon market development.



Source: Isabel Hagbrink/World Bank

Supporting future carbon mechanisms: the PMR.

The PMR and its role in climate change talks

Although the PMR acts as a government-level forum, it by no means works in isolation. It also feels the effects of political uncertainty regarding the global carbon market and the international climate change regime. Although the member countries demonstrate great commitment and a desire both to develop the market mechanisms and test new approaches in such uncertain times, there is still the question of whether and to what extent the international climate regime will generate the necessary global demand for emission certificates.

Some PMR implementing countries that had initially wanted to introduce sectoral crediting mechanisms are now revising their plans. They are now looking for ways to design instruments which could function without that global demand. Colombia, by way of example, has presented a package of market-based

mechanisms for the transport sector. Alongside credited NAMAs, the package provides for the introduction of a carbon tax whose revenue will be used to finance transport-related climate change activities. The two could be linked to allow combined national and international financing. Colombia also plans to further develop an approach in which vehicle emission standards are to be made tradable, making the vehicle market more climate-compatible.

What the events of recent years have shown is that the decision-making processes in implementing countries are complex and that in many cases staffing capacities must be boosted if they are to manage the new instruments. As a result, many countries are not yet in a position to implement pilot projects straight away. Their readiness must first be improved. And while the political uncertainty only adds to the complexities of the internal decision-making and approval processes, practical experience is urgently needed if the debates on the new market mechanisms and the Framework for Various Approaches are to advance in the climate change talks.

Strategic course for the future

One issue currently being addressed by the Partnership Assembly is the strategic approach the PMR should adopt going forward. At the meeting in Mexico, the attendance of high-ranking members and the fruitful strategic debates highlighted the PMR's role in advancing ideas on carbon market instruments which are increasingly being integrated into broader emission reduction policy.

Worthy of note in this respect is the extremely high visibility and political importance the PMR enjoys in the implementing countries. This is partly due to the fact that the presentation of a Market Readiness Proposal follows a detailed national consultation process involving high-ranking decision-makers from a wide range of government ministries. In many PMR countries, the finance ministries take the lead in PMR activities – they ensure that their country's proposal

is more than a 'mere' strategy paper, but in doing so, they cause certain decision-making processes to take far longer than others.

Promoting policy and scenario analyses

The PMR attempts to use this role to effect greater integration of market-based instrument development into the overarching climate change strategies. In March, the Partnership Assembly adopted a program which provides up to \$ 10 million to support yet-to-be-designated countries in detailed calculation of emission reduction scenarios. By conducting an Upstream Policy Analysis (UPA), the countries will analyse the potential climate change effects of differing market-based instruments and also their interaction with other policies such as those on energy efficiency and renewable energy use. Of key importance when following this approach is to avoid repeating work already done in existing low emissions development studies and instead to generate specific new research findings on the carbon market and carbon pricing. An added bonus would be for these to be used in reduction target talks at international level. Both Costa Rica and Mexico had already expressed their interest at the last PMR meeting in wanting to receive UPA support.

A Carbon Fund for sectoral emission certificates?

The Partnership Assembly is also looking at options for countries planning to develop sectoral crediting approaches. Given the current lack of demand on the global carbon market, some PMR countries are hesitant to go beyond any more than implementing sectoral crediting 'readiness' – actual pilot projects are not ventured into. This is problematic in that the PMR wants to test the new instruments, both for readiness and beyond. The World Bank has thus proposed the creation of a Carbon Fund for sectoral emission certificates. The idea is not to substitute demand in

the period up to 2020, but to provide incentives to enable pilot projects to go ahead. This would give rise to financial incentives for sectoral reductions as called for with results-based financing. Talks on how a carbon fund of this kind can be institutionally linked to the PMR or how it might operate independently have already begun. To aid this process, the World Bank has established a non-PMR working group to address these and other questions with financing and implementing countries who have expressed interest in the idea.

Greater cooperation with the private sector

Private-sector dialogue is also to be intensified in 2014, among other things with a high-ranking business forum as a side-event at this year's Carbon Expo. Back in 2012, the International Emissions Trading Association (IETA) announced the establishment of a Business PMR (B-PMR) which will support stakeholders in the decision-making process in countries planning to introduce emissions trading schemes. The more detailed the country strategies, the more important the private sector role – and not just at national level. Private sector dialogue can serve to foster the international ambition and market mechanisms debate.

CARBON MECHANISMS REVIEW

Quo vadis Africa? New Policy Paper

This JIKO Policy Paper explores the current status of the African carbon market. It presents quantitative analyses as well as the buyers' perspective based on interviews. Download at www.jiko-bmub.de/1388

CDM/JI Country Profiles

This section of the JIKO Website provides information on potential CDM/JI host countries, with brief country profiles, relevant agreements and decisions, and helpful links. Find out more at www.jiko-bmu.de/471

Glossary

All CDM/JI-specific terms and abbreviations are explained in detail in the glossary on the JIKO website. You can view the glossary here: www.jiko-bmu.de/459