

# CARBON MECHANISMS REVIEW

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# Looking Back into the Future

Supporting projects at risk while  
paving the way for new schemes

**“CDM experience useful  
for developing INDCs”**

Interview with UNFCCC negotiator

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## Dear Reader!

The international carbon markets currently face a twofold challenge: currently operating projects suffer from the market crisis and many actually run the risk of being discontinued. At the same time, the future of the global Carbon Markets is being shaped in the UNFCCC negotiations. This is why we called this issue of the Carbon Mechanisms Review ‚Looking back into the future’: we take up both challenges and report, for example, on a research activity that mapped the current status of CDM projects, analysing a sample of more than 70% of the registered CDM projects. Moreover, we present the results of the first auction under a new World Bank facility which is supporting methane CDM projects at risk.

Regarding the future markets, we look at the latest round of negotiations in Bonn and present an outlook onto what is needed and what the next steps must be. What has been said in many fora these days, applies to the Carbon Markets as well: Paris will only be the beginning. This underlines the need of a well-balanced landmark decision text on markets in the Paris Agreement.

On behalf of the editorial team, I wish you an inspiring read!

*Christof Arens*



**Wuppertal Institute**  
for Climate, Environment  
and Energy

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# Radical Pruning Needed

## Climate change negotiations in the lead-up to Paris

by Thomas Forth

The ADP negotiations at the end of August and in early September were marked by the same long-winded negotiation process seen in previous climate change talks. The 'Co-Chairs Tool', the draft put forward by the ADP Co-Chairs at the end of July, still listed all the options the previous draft had contained. Progress was nonetheless made in that the Tool separated out issues to go into the new agreement and for supportive decisions to be taken at the climate change conference. A third section listed all the issues for which the Co-Chairs had so far failed to see a consensus with a view to proposing these either as part of the climate change agreement itself or for supportive conference decisions.

Unfortunately, the idea of providing negotiators with a kind of tool kit to help them focus purely on the difficult issues only worked to an extent. This can be apportioned to the negotiating style generally accustomed from international negotiations, although it could also be due to other reasons. What matters is that the process needs to be stepped up and there is little time left if a decision-ready text is to be drafted and well-founded supporting decisions formulated in time for Paris. The Co-Chairs now have until the beginning of October to present the new draft climate change agreement.

It is hoped that the last week of ADP negotiations will send the right signals to allow the Co-Chairs to prepare that draft. And it would be nice to see a marked reduction in the number of options still on the table. Many in-depth issues that could flow into conference decisions must be formulated in such a way as to avoid the actual work being postponed for (just) the years following Paris. For the period after Paris, clear directional mandates and work pro-

grammes are needed. The Co-Chairs are not to be envied. This kind of radical pruning takes courage. But therein lies both their chance, and ours. If they fail to do this now, they will have to find another way to speed up the negotiations. They need to put the pressure on if they want to build up steam.

## Make market mechanisms less complex

The market mechanisms were, unsurprisingly, addressed in the third section of the Co-Chairs Tool. In recent years, the opposing positive and negative standpoints and the differing calls for reform have been reflected in too many negotiation tracks under the SBI and SBSTA. On the one hand, long-term reform goals for the period beyond 2020 were pursued and on the other, changes and reforms under the Kyoto Protocol were fundamentally rejected with references to the Kyoto firewall, meaning the separation of industrialised and developing countries regarding their rights and obligations. And there was the ongoing criticism regarding an imbalance between market and non-market approaches – and this despite the fact that international climate change policy is dominated by non-market-based activities. The result was gridlock.

One issue that could be clarified at the Paris conference, therefore, is the extent to which the negotiation tracks that affect the new agreement could be limited to a single track on market mechanisms. It would help to strip out the negotiation tracks resulting in stalemate.



*A question of balance: Negotiations on market and non-market approaches should be streamlined.*

Separate talks on some negotiation items might, however, be useful if the new rules can be applied prior to 2020. This would be the case with the CDM if, in parallel, an agreement could be reached regarding the transferral of newly begun activities to the new climate change regime. This would call for a supporting decision to be taken at the conference, thus resulting in something like a prompt start or recognition of early actions as seen with the introduction of the CDM. Provided that the review of the CDM modalities and procedures is completed in time for the next SBI session, this decision could be taken at COP 22 next year. If a single negotiation track is introduced prior to Paris, the existing negotiation tracks could then be formally concluded after the conference.

## Obstacles to negotiations on markets

The role of the market mechanisms under the new climate change regime has yet to be defined. Obsta-

cles are in place which stem from past negotiations and these cannot easily be overcome:

### Timing the cut

The existing obstacles are possibly a result of the timing involved rather than the issues themselves.

Continuation of the Kyoto Protocol was questioned by the industrialised states at an early juncture. And when it comes to the market mechanisms, even before the first Kyoto commitment period commenced, a different approach aimed at earlier involvement of the developing countries was adopted. However, the new negotiation items put forward in Bali in 2007 did not give rise to any real progress. In the end, when looked at in negotiation terms, a high price was paid for the market-related decisions made in Bali. Apart from the development of new mechanisms, the equally justified issues of non-market-based approaches and the option to use certificates from market mechanisms outside the UNFCCC were also taken up. With hindsight, the hypothetical question arises as to whether an early



*Timing the cut: Negotiators need to reduce the number of options and shorten the negotiation text.*

decision on reform and further development of the CDM would have been a viable alternative.

The increased interest shown in market mechanisms since the Lima conference comes up against an extreme divergence and imbalance in the perceptions of and proposals put forward by the various negotiator groups, who in many cases spout a ritualised response. Thus, the question that all mechanism negotiators need to ask themselves is what is needed under the new climate change regime. This can best be answered in consultations and in setting out the market mechanisms work programme for the period after the Paris conference.

#### **International monitoring and equally effective solutions at UNFCCC level**

The issue of national independence in issuing internationally tradable certificates has again been placed in a critical light by

a Joint Implication study published by the Stockholm Environment Institute (see 'A Question of Integrity' elsewhere in this issue). The essence of the study is clear: without international monitoring by the UN, there is a risk that some countries will misuse carbon trading. This would have considerable relevance for the climate change negotiations on the Framework Various Approaches (FVA). A simple 'exchange' for different kinds of certificates from a range of different mechanisms would not be acceptable on its own and would not deliver transparency and comparability with regard to certificates.

It is, of course, clear that most countries wanting to use this option for their bilateral mechanisms would not be among the black sheep. But if their activities were to be monitored at international level, the advantage they see in nationally governed market mechanisms would completely disappear. A dedicated international monitoring instance is simply not the

way. But then, the potential users of a UNFCCC-controlled market mechanism question why they should be expected to bear the burden alone.

It appears highly likely that the current asymmetry of the burden involved in using the various mechanisms makes compromise impossible. The accounting rules could, perhaps, provide an alternative solution if they allow registry-based accounting that rules out double counting. A separate FVA that has no adequate monitoring and control function would be counterproductive. However, if it were possible to integrate the necessary functions into the accounting rules, the FVA with its associated risks could be done away with.

#### **Joint efforts: an opportunity not fully explored**

When discussing the mechanisms at the ADP negotiations, the Co-Chairs addressed the issue of joint efforts. Under Item 19 in section three of the Co-Chairs Tool, a list of possible synergies also offers an option for use of the market mechanisms. It lists the Kyoto mechanisms alongside non-market mechanisms (see <http://unfccc.int/awg/items/9176.php>). Cooperation activities in meeting targets under the new regime have to date been seen in the Parties forming a cohesive joint fulfilment community. At present, this only applies to the EU and Norway.

The question thus arises as to whether the Parties might enter into other forms of cooperation which are more limited in scope and depth than joint fulfilment. Joint efforts would be one way of enriching international cooperation and of achieving more binding reduction activity agreements between two or more Parties. While this idea has not yet been sufficiently thought through, the real issue is whether the political will exists to enable such forms of cooperation under the new climate change regime.

When it comes to using the market mechanisms, the joint efforts model could provide a robust cooperation opportunity if its use were to lead to mutual obligations. While the CDM is based solely on additional emission certificates that were not needed to meet reduction targets and for which no binding obligation was in place, actually achieving the aimed-for reduction would give rise to a completely different situation when reporting joint fulfilment efforts.

The agreement must be of a binding nature when it comes to reporting on meeting national reduction targets. Such effort



*Overcoming the obstacles: Exploring new forms of (market-based) cooperation.*

must be seen directly against the backdrop of participating countries' conditional or non-conditional INDCs/NDCs. Either the emission reductions would be conducted within such a legal framework to achieve existing, possibly conditional, reduction targets or they could also lead to increased ambition compared with existing agreements. Under a recognised NDC, these emission reductions would actually lead to a net emissions reduction compared with the previous situation. Until such time as INDCs/NDCs or, where appropriate, joint efforts are voluntarily reported at international level, the agreement remains a purely political issue between the participating states.

#### **Non-market mechanisms have long been accepted, but new proposals have lacked substance so far**

One problem that was again evident in Bonn is the lack of balance in the wording used to describe market and non-market approaches. Unless this 'pseudo-problem' is solved, general acceptance of market mechanisms is at risk.

But then, it seems that in the negotiations, little importance is placed on the fact that non-market-based climate change activities and mechanisms are given more weight. What is missing is mutual classification and limitation of the mechanisms to their functional sectors. The mechanisms are not a means in themselves, but a means to an end. A fitting exam-

ple involves the much debated issue of carbon pricing. Putting a price on the damage caused by greenhouse gas emissions affects both the market and the non-market and their respective management instruments – those already in place and those yet-to-be designed. This speaks in favour of interaction between those instruments. It also applies to the funding of international cooperation activities via climate financing and market mechanisms.

No-one can follow the argument of ethics and solidarity versus rationality and profit. Such juxtapositioning appears to ignore the attempt to use the market mechanisms to subordinate capital-based profit and acquisition interests as a necessity in climate change mitigation.

Looking at the rational core of the new non-market approaches, these are still at an extremely early state of development. This is the case with proposals for

new market mechanisms aimed at linking adaptation to reduction or sustainable development. At the moment, it would be extremely difficult to come up with a precise work plan for the period after Paris. Focusing on the mechanisms' scope of applicability would be a first step in which the interactions between the various mechanisms and the generation of synergies could be analysed and evaluated before pursuing further ideas and proposals for putting them into use.

Coming up with balanced wording for markets and non-markets that serves both the various activities conducted under the new climate change regime and definition of the work steps required is no mean feat. Nor is it something the Co-Chairs should have to shoulder alone. Those who are strongly in favour of non-market approaches should do their fair share of the work.

## “CDM experience useful for developing INDCs”

**Senegalese UNFCCC negotiator welcomes CDM reform process but does not see major role for market mechanisms in INDCs given the low CER prices.**

Currently, Parties to the UN Climate Convention prepare their contributions to the Climate Agreement to be decided upon at the Paris climate summit in November / December this year. Preparing the so-called Intended Nationally Determined Contributions (INDCs) is particularly challenging for Least Developed Countries where data availability is limited and climate policies are often still in the

development phase. Carbon Mechanisms Review spoke to El hadji Mbaye Diagne, who is involved in the UNFCCC negotiations on “Market issues” and “Technology” for the LDCs negotiating group and the African Group of Negotiators and is currently advising selected African countries in the preparation process of their INDCs, about his expectations and experiences so far.



## INTERVIEW

**El hadji Mbaye Diagne** is the director of *AFRIQUE – ENERGIE – ENVIRONNEMENT*, a consultancy firm in Senegal. He is an engineer, associated senior consultant and former President of the



Senegalese National Board on Climate Change, COMNACC. Member of the Senegalese delegation for the UNFCCC negotiations since 2000, he is the coordinator of the teams following “Market issues” and “Technology” for the LDCs negotiating group and the African Group of Negotiators. Mbaye was member of the Advisory Board of the Climate Technology Center and Network which is the technical arm of the Technology Mechanism under the UNFCCC from 2013 to 2014. He is currently supporting some African countries for the preparation of their Intended Nationally Determined Contributions (INDCs).

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**Malin:** Mbaye, you are coordinating the mitigation part of the INDC for Senegal. I think it might be very interesting for other developing countries to share some experiences regarding the whole process of preparing the INDC. So may I ask you some questions regarding your work of the last months. According to the Lima decision (1/CP.20) pertaining to the preparation of INDCs, developing countries could communicate their contributions to adaptation – including their efforts on loss and damage, mitigation and sustainable development. What have been the crucial steps in your country to coordinate the development process of the INDC?

**Mbaye:** The Senegal attaches great importance to the preparation of its INDC. Indeed, LDCs, African countries and all most vulnerable countries want to conclude in Paris with an ambitious, binding agreement covering mitigation, adaptation, finance, technology and capacity building.

Therefore, an inclusive national process has been set up with the involvement of all stakeholders. A Steering Committee, set up by the Prime Minister, is chaired by the Minister of Environment and Sustainable Development and includes ministerial departments, the private sector, civil society, parliament and local communities. Some technical and financial partners

**Malin Ahlberg** has been working for ten years in the field of emissions trading and climate protection. Before she started to work for the Division ‘European Climate and Energy Policy, New Market Mechanisms’ at the German Federal Ministry for the Environment in October 2014, she worked for the German Designed National Authority for CDM (DNA) at the Federal Environment Agency. From 2010 until 2014 she was Co-Chair of the global DNA Forum of the UNFCCC. She is a director of the German Foundation “Future of the Carbon Market” established by the German Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety.



support the national experts in the preparation of this contribution.

This INDC has a mitigation and an adaptation component. The mitigation component includes an unconditional contribution to be made from resources of the country and a conditional contribution subject to the support of the international community in financial terms, technological and capacity building of stakeholders. Finally, the results of experts’ work will be subject to political approval at the highest level.

**Malin:** Annex I countries are expected to submit economy-wide GHG emissions reductions commitments in their INDCs. However, the INDCs of developing countries should cover the full range of its intended climate-related actions while countries may focus on specific sectors. What kind of actions are you planning in Senegal? Which sectors have you identified for mitigation measures?

**Mbaye:** As you know, developing countries have the possibility to base their contributions on specific sectors and LDCs and SIDs may be limited to the presentation of strategies, programs and measures that contribute to achieving the overall objective of the Convention. In Senegal, we are still in the preparation phase of the contribution. In the area of mitigation, we work in

all economic sectors (Energy, Agriculture and Forestry, Industry and Waste) to establish our future emissions projections and to identify potential emission reductions compared to future emissions. It is only after this exercise that a contribution covering the whole economy or only certain sectors or programs and / or specific projects will be decided upon taking into account the development priorities during the political validation.



*Exploring the options: conventional power generation is a major driver of GHG production. Thermal power plant in Ghana.*

**Malin:** I could imagine that the planning of the mitigation actions is very challenging as you need sequential emission data in order to be able to elaborate scenarios of the future - and then in a second step - calculate the scope of support needed in order to define a specific action in a certain sector. In the first commitment period of the Kyoto Protocol up to now, the Senegal has made experience with and built up institutional capacity for the CDM. Do you think that this experience has facilitated the process of the preparation of the INDC?

**Mbaye:** The preparation of the contribution in the mitigation sector is based on the experience of national experts in the preparation of national GHG inventories and knowledge of CDM methodologies for the assessment of GHG emissions. The provisions on MRV of CDM activities for projects and programs will also be very useful for the establishment of MRV of the INDC.

**Malin:** Market mechanisms like the CDM or other emerging international crediting mechanisms under the UNFCCC might be integrated in the INDCs as one option to achieve emission

reductions in a specific area. Which role will market mechanisms play in your mitigation actions? Have you identified certain suitable sectors for market mechanisms and are design elements of the CDM like PoA and standardized baselines relevant for the implementation of actions?

**Mbaye:** We think that African countries, LDCs and small countries have not benefitted from the CDM considering that the objective of this mechanism was, among others, enabling them to contribute to their sustainable development goals. But it is clear that a lot of effort has been made by the EB, the Climate Change Secretariat and other stakeholders for a more inclusive participation, particularly by a simplification of some of the procedures through the lines of standard references and positive lists. Some improvements are still possible and under negotiation. If it was not for the drastic fall in prices of CERs, these improvements would have led to greater participation of stakeholders from national and local governments, the private sector and NGOs in the implementation of this mechanism.

**Malin:** Assuming that Senegal will include market mechanisms in its INDC: Regarding standardization, there are many benefits for project implementation – simplification, improved efficiency and greater reliability. Which role does the concept of standardized baselines in the defined action measures play? Do you think that a standardized baseline has to be mandatory if it is linked to the INDC?

**Mbaye:** The simplification of some procedures including standardization and the expansion of the sectors to be included in programmes of activities as well as the implementation of simplification measures in the light of lessons learnt from the first PoAs will allow greater speed in the validation and implementation of projects. It will also allow for the involvement of a larger number of actors who often do not have the resources to carry out CDM projects based on standard procedures.

Now considering the efforts and resources for the implementation of standardized baselines, making standardized baselines mandatory can be considered. However, a number of conditions must be met, including avoiding penalizing project developers by having too conservative provisions, choosing a best choice of sectors to be included within countries and involving stakeholders in the development of the standardized baselines. It's only if these conditions are met that mandatoryness could



*Tapping synergies: Mitigation measures can also yield adaptation and sustainable development benefits. Harvesting tea leaves in Rwanda.*

be freely chosen by the country wishing to apply these standardized baselines.

But I repeat once again, to strengthen the credibility of the CDM and allow wider participation of stakeholders and maintain trust, a rapid solution must be found on a floor price of CERs, which could be defined by project type and the respective co-benefits in terms of sustainable development.

**Malin:** Where do you see synergies between mitigation and the other areas of actions like adaptation and sustainable development benefits? What kind of mitigation projects are most important with regard to these synergies?

**Mbaye:** There are very strong synergies between adaptation and mitigation projects which at the same time contribute significantly to the sustainable development of our countries in the renewable energy sector, given the low level of electrification especially in rural areas, in the agricultural sector to ensure food security through the provision of suitable seeds with appropriate cultivation practices and in the water sector, which constitutes a major challenge for many of our countries.

**Malin:** In the time up to 2020: How could Senegal be prepared for implementing the proposed actions? Could the CDM assist Senegal in building readiness towards the implementation of nationally determined contributions (NDC)? What kind of sup-

port would be most beneficial? Which sectors should be focused on?

**Mbaye:** Activities to be defined as part of the Senegalese contribution should be in line with national development policies and integrated into the national planning process. The actors responsible for the implementation of these activities are largely associated with the development of the contribution in their area and therefore sectoral strategies and their sector action plans will be based on these activities. Regarding the conditional contribution, it will be subject to the conclusion of a legally binding global agreement covering all pillars of Bali Action Plan and based on the support of the international community on financial terms, technology and capacity building of actors given its impact on the economy of our country.

**Malin:** Last but not least: Based on your experiences so far, what would you recommend to other developing countries for their INDC?

**Mbaye:** The main recommendation is to take time to have a real stakeholder ownership on the purpose of the contribution, to involve them in identifying options and build a strong political momentum to support the implementation of activities be considered.

**Malin:** Thank you very much for the interview.

# A Question of Integrity

## Has Joint Implementation reduced GHG emissions? Study yields lessons for future carbon markets

by Anja Kollmuss and Lambert Schneider, Stockholm Environment Institute

Joint Implementation (JI) has long been considered the small and unimportant brother of the Clean Development Mechanism (CDM). Uncertainty whether investors would ever see any credits was a major barrier for project development in some countries. In the EU, overlap with the EU ETS and other climate policies limited the potential for JI projects. The picture changed dramatically in 2012, when suddenly hundreds of millions of Emission Reduction Units (ERUs) mainly from projects in Ukraine and Russia swamped the market, contributing to a price collapse of both ERUs and Certified Emission Reductions (CERs) issued under the CDM. Overall, JI generated almost 872 million ERUs as of March 2015, corresponding to about one third of the Kyoto credits issued under both mechanisms so far.

While the CDM has been thoroughly researched, no publication has taken a comprehensive look at the quality of JI projects. A recent study by the Stockholm Environment Institute (SEI) fills this gap. The study was commissioned by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, the Ministry of the Environment of Finland, and the Federal Office for the Environment of Switzerland. Part of the research was also published in *Nature Climate Change*. Below we summarize key findings.

### Does environmental integrity of JI projects matter?

In theory, the environmental integrity of JI projects does not impact global GHG emissions. Joint Implementation projects are implemented in countries with emission reduction commitments under the Kyoto Protocol. Each country receives assigned amount units (AAUs) equivalent to its total emissions budget for the commitment period. For every ERU it issues, a host country must cancel one AAU. Thus, if a JI project is over-credited or not additional, in theory, the host country would have to make up the difference and engage in more mitigation action. Any transfer of ERUs is similar to trading of AAUs.

In practice, however, several countries had emissions targets well above their BAU emissions in the first commitment period, resulting in large AAU surpluses. In such cases, host countries can use surplus AAUs to cover their ERUs, and will not have to engage in additional mitigation action. It seems also unlikely that the countries could use their AAUs if they were not converted to ERUs, for several reasons: first, the use of AAUs from the first commitment period has been limited under the second commitment period; second, demand for international trade of AAUs has been limited and ERUs were mainly used in the EU ETS where AAUs are not eligible; and third, it appears unlikely that countries will be able to use their Kyoto AAU surplus to meet their INDCs under the Paris Agreement. In this situation, non-additional or over-credited JI projects in countries with significant AAU

surplus will lead to higher global emissions. In practice, about 95% of the total ERUs were from countries with a significant AAU surplus.

## Plausibility of additionality claims

The plausibility of additionality claims of JI projects was assessed through an in-depth review of a random sample of 60 projects, selected to be representative in terms of host countries, project types and project scale. Figure 1 shows that for 43% of the projects and 73% of the ERUs, the additionality claims were not plausible based on the available information. Another 12% of the projects reviewed had questionable additionality claims.

## Environmental integrity of key project types

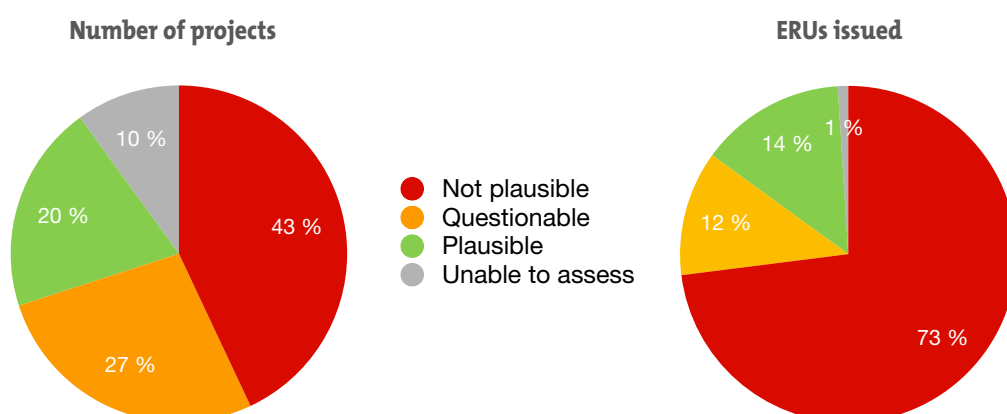
The environmental integrity of the six project types with the highest ERU issuance was also examined in detail. These project types represent 84% of the ERUs

issued and 53% of registered projects in the first commitment period. Table 1 summarizes the analysis. Of the six project types, only one – N<sub>2</sub>O abatement from nitric acid production – had overall high environmental integrity; for the rest, additionality seems unlikely or questionable, or unrealistic assumptions were used that significantly overestimate emission reductions. Overall, 80% of ERUs issued came from project types with questionable or low environmental integrity.

## Track 1 versus Track 2

Under the current rules, JI projects can be implemented under two tracks. Under Track 1, host countries can largely establish their own rules for approving projects and issuing ERUs, without international oversight. The host country can determine whether it deems emission reductions as additional. Under Track 2, the Joint Implementation Supervisory Committee (JISC) reviews projects and requests for ERU issuance and accredits JI auditors. To date, 97% of ERUs have been issued under Track 1. Figure 3 compares the environmental integrity of the two tracks

**Figure 1. Plausibility of the additionality claims of the sample projects**



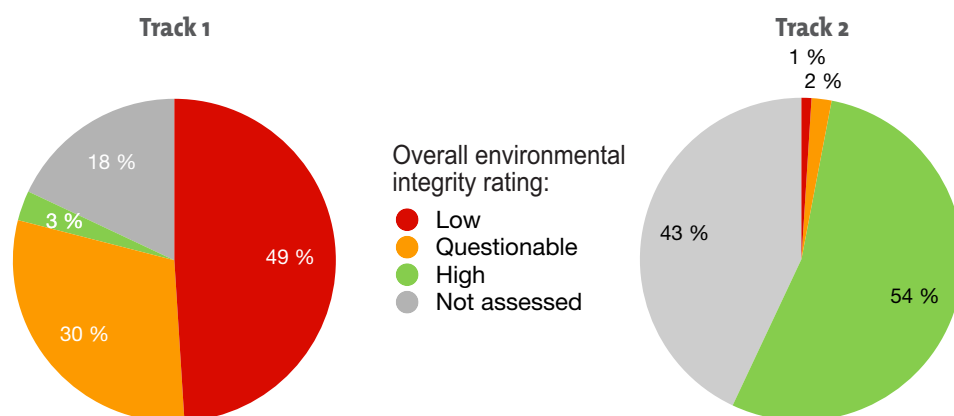
Data source: Random sample of 60 JI projects.

**Table 1: Environmental integrity of the six largest JI project types**

Project types	Registered projects	Share of ERUs	Main countries	Overall environmental integrity
<p><b>Spontaneous ignition of coal waste piles</b></p> <p>This project type avoids GHG emissions from uncontrolled fires from coal waste piles. Most JI projects extract coal from the piles, leaving bare rock which does not ignite, others extinguish the fires.</p> <ul style="list-style-type: none"> <li>• Additionality not plausible: The timeline of project implementation shows that almost all projects were registered in 2012 but were implemented at least four years earlier. Additionally is usually demonstrated by long chains of reference to a similar project.</li> <li>• Overcrediting likely to be very significant: Baseline emissions are overstated due to unrealistic assumptions. All coal waste pile JI projects together implicitly claim that they have produced around 30% of all coal in Ukraine. This is a highly unrealistic scenario.</li> </ul>	78	26%	all in Ukraine	low
<p><b>Energy efficiency in industry and power production and distribution</b></p> <p>This project type includes a large variety of energy efficiency improvement measures in diverse sectors, such as large industrial facilities, and power and heat plants.</p> <ul style="list-style-type: none"> <li>• Additionality questionable: Projects of this type are in many cases financially attractive without JI and JI may only have sped up implementation. The additionality claims do not seem plausible for the majority of projects, questionable for some, and plausible for a few.</li> <li>• Overcrediting not assessed: Because of the wide variety of technologies and sectors that make up this project type, we were unable to assess the overall validity of emission reduction claims.</li> </ul>	164	23%	mainly Ukraine and Russia	questionable
<p><b>Associated petroleum gas utilization</b></p> <p>This project type utilizes associated petroleum gas (APG) that would otherwise be flared at oil field operations.</p> <ul style="list-style-type: none"> <li>• Additionality not plausible: The timeline of project implementation shows that most projects, accounting for almost 80% of ERUs, were implemented 6–9 years before their auditing and were registered even later.</li> <li>• Overcrediting likely to be significant: The claimed reductions do not match Russia's GHG inventory data, suggesting overcrediting or inaccuracies in Russia's inventory: The JI projects implicitly claim that in their absence, Russian emissions from APG flaring in oil production would have increased well above any historical values observed since 1990.</li> </ul>	22	14%	all in Russia	low
<p><b>Natural gas transportation/distribution</b></p> <p>This project type involves reducing methane leaks from natural gas transportation and distribution or expanding natural gas networks in order to replace coal or oil.</p> <ul style="list-style-type: none"> <li>• Additionality not plausible: The project starting dates of the 30 projects located in Ukraine were between 2003 and 2006, while most projects received their Letter of Endorsement only in 2012.</li> <li>• Some overcrediting likely: The network expansion projects assume that they solely replace fossil fuels such as coal and heavy oil. But in rural areas newly available gas would also substitute biomass. The exclusion of the use of biomass may inflate the baseline emissions. For projects addressing methane leaks, the implied leakage rates in the absence of JI exceed historical emission rates reported in Russia's GHG inventory, which suggests that either in the absence of the JI projects Ukraine's emissions from this activity would have risen, or emission reductions claimed by the projects are overestimated.</li> </ul>	32	10%	mostly in Ukraine	low
<p><b>Abatement of HFC-23 and SF6</b></p> <p>These projects incinerate HFC-23 and SF6 waste gas streams in industrial facilities.</p> <ul style="list-style-type: none"> <li>• Additionality plausible: In the absence of regulations or other policies, this project type can be regarded as likely to be additional because plant operators do not save costs or generate revenues from the installation of abatement technology.</li> <li>• Overcrediting likely to be very significant: Two of the four projects initially implemented a conservative approach to calculate emission reductions. In 2011, safeguards to prevent perverse incentives were removed, leading to significant overcrediting. One project assumed a baseline emission rate by far exceeding common levels.</li> </ul>	4	7%	mainly Russia	questionable
<p><b>N<sub>2</sub>O abatement from nitric acid</b></p> <p>These projects abate unwanted N<sub>2</sub>O that is generated as a by-product in nitric acid plants.</p> <ul style="list-style-type: none"> <li>• Additionality plausible: In the absence of regulations or other policies such as the EU ETS, this project type can be regarded as likely to be additional because plant operators do not save costs or generate revenues from the installation of abatement technology.</li> <li>• Overcrediting unlikely: Ambitious emission benchmarks based on European regulations (1.4–2.5 kg N<sub>2</sub>O/t nitric acid) were used in Western Europe except Sweden. Higher values (4.3–13.5 kg N<sub>2</sub>O/t nitric acid) were used in Eastern Europe and Sweden.</li> </ul>	43	5%	EU	high

Source: Authors' analysis.

**Figure 3: Environmental integrity of project types under Tracks 1 and 2, by ERUs issued**



Data source: Evaluation of the largest six project types, applied to the portfolio of 642 projects registered under Track 1 and Track 2 as of March 2014

by the fraction of offsets from different project types (not evaluated types are shown in grey). The share of ERUs issued from project types with plausible environmental integrity was considerably larger under Track 2 than under Track 1.

## Accredited Independent Entities

Accredited Independent Entities (AIEs) have the key role of ensuring the compliance of the projects with JI requirements, including those related to environmental integrity. However, our findings call into question the ability of and incentives for the involved AIEs to perform their auditing functions appropriately. AIEs often failed to identify obvious mistakes, inconsistencies, questionable assumptions or claims, or post-registration changes to the project activity or monitoring plan. In many instances, validation and verification expert statements are very brief and do not specify how key requirements are assessed.

Most host countries rely on AIEs accredited under Track 2 to perform determination and verification

functions under Track 1, while their performance is only monitored and assessed by the JISC for functions performed under Track 2. For this reason, AIEs did not have to fear sanctions if they did not perform their functions appropriately under Track 1. Moreover, the fact that JI project participants select and pay their AIE may create an inherent conflict of interest.

One AIE, Bureau Veritas Certification Holding SAS, audited 357 projects – 56% of the total, generating 78% of total ERUs. Overall, Bureau Veritas audited more projects with low environmental integrity than other AIEs. In our sample, 77% of the projects determined by Bureau Veritas made additionality claims that were not plausible, and 17% had questionable claims, while only 12% of projects determined by other AIEs made implausible additionality claims, and 46% made questionable claims.

## Differences in host countries

The four countries with the highest ERU issuances – Ukraine, Russia, Poland and Germany – registered 439 projects and issued more than 800 million ERUs, accounting for 94% of ERU issuance. An assessment

of the project portfolio in each country indicates significant environmental integrity concerns for over 80% of ERUs from Russia and Ukraine, whereas the environmental integrity was rated as high for 70% of ERUs in Poland and 97% in Germany.

## Overall environmental implications

Our analysis indicates that at about three quarters of ERUs are unlikely to represent additional emissions reductions, and about 95% of the total ERUs were from countries with a significant AAU surplus. This suggests that the use of JI may have enabled global GHG emissions to be about 600 million tCO<sub>2e</sub> higher than they would have otherwise been. The implications for the European Union's Emissions Trading System (EU ETS) are particularly serious. As of April 2015, more than 560 million ERUs had been used in the EU ETS. JI may therefore have undermined the EU ETS emission reduction target by about 400 million tCO<sub>2</sub>.

## Lessons learned for the design of crediting mechanisms

A key finding of our analysis is that crediting mechanisms need to be very carefully designed to ensure environmental integrity. In particular, our evaluation of the environmental integrity of JI offers the following insights:

- **Crediting mechanisms should adopt project cycle procedures which ensure full transparency and make all documentation publicly available.** Lack of transparency is an important concern in some JI host countries, where key project documentation, such as project design documents (PDDs), monitoring reports, and determination and verification reports are not available or incomplete for a number of projects. To avoid this problem, crediting mechanisms need rules and enforcement to ensure timely and complete reporting. However, it is important to note that transparency, though crucial for ensuring environmental integrity, is not enough by itself. One host country, Ukraine, ensured a high degree of transparency but nevertheless issued mostly ERUs of very questionable environmental integrity.
- **Only internationally accepted methodologies should be eligible for use.** Many projects applied their own, JI-specific approaches for additionality demonstration and the calculation of emission reductions. In many cases, these projects used inappropriate approaches or assumptions which lead to overcrediting. Therefore only internationally accepted methodologies that have undergone thorough review by experts and were developed for specific and defined project types should be used.
- **Auditors should be fully accountable for all their activities to the authority regulating the mechanism.** Crediting mechanisms should adopt accreditation systems which continuously monitor the performance of auditors and which apply sanctions in the case of non-performance, including the suspension or withdrawal of accreditation. Merging the JI and CDM accreditation systems could further improve the oversight of the operations of AIEs.
- **Retroactive crediting should not be allowed.** Retroactive crediting of emission reductions has seriously undermined the integrity of JI. Current and future crediting mechanisms should avoid any retroactive crediting and provide for procedures which ensure that projects must be approved or pre-approved (e.g. through a letter of endorsement) prior to the decision to proceeding with their implementation.
- **Investors should have reasonable certainty:** In several JI host countries, project developers faced considerable uncertainty as to whether their projects would ultimately be approved and ERUs issued. This uncertain environment may have favoured projects that did not rely on ERU revenues, thereby also negatively affecting the overall environmental integrity of the project portfolio. A stable and predictable regulatory environment for crediting mechanisms should be established.

## Implications for market mechanisms under a new climate agreement

The evaluation of JI provides also important insights for market mechanisms under the new climate agreement. Our evaluation clearly shows that oversight of an international market





Photo: pixabay.com/drpepperscott30

*Questionable integrity: Projects utilizing associated petroleum gas at oil field operations are among the project types under criticism.*

mechanism by the host country alone is insufficient to ensure environmental integrity, in particular for countries with a significant AAU surplus which had no incentives to ensure environmental integrity. A new regime could create situations similar to those experienced with JI:

- **Unclear ambition of INDCs:** If INDCs are set above business-as-usual (BAU) emissions, host countries would not have incentives to ensure environmental integrity of units transferred internationally. A key challenge is that future (emission) developments are rather uncertain. An INDC which appears ambitious from today's perspective could turn out to be easily achievable due to unforeseen developments, such as an economic recession, new low carbon fuels becoming available, or technological developments.
- **Absence of international accounting rules:** If countries with mitigation commitments do not account for units transferred to other jurisdictions, they could sell credits without having to engage in additional mitigation action if these credits lack environmental integrity. An internationally agreed accounting approach is crucial to ensuring that international transfer of units does not lead to double counting of emission reductions, and that host countries have incentives to ensure environmental integrity of units.

- **INDCs not converted into multi-year emission targets:** If countries with single-year targets (e.g. a 20% reduction by 2025) did not convert their target into a multi-year emissions target and were allowed to transfer units issued for years up to the target year, they would have no incentive to ensure the units' environmental integrity. Accounting of international transfer of units towards commitments should indeed only be possible if countries take on quantifiable, multi-year emission reduction targets.

Ensuring that INDCs are ambitious and converted into multi-year emission budgets, and agreeing on international accounting rules, is therefore critical to avoid that the experience with JI is repeated under a new climate regime.

While international oversight is important, we also note its limitations. Information asymmetry between proponents and auditors or regulators remains a major challenge that is difficult to address, even with international oversight. Furthermore, international oversight can only be effective if countries do not hamper the strengthening of a crediting mechanism's integrity. CDM and JI reform efforts under the UNFCCC have shown that often no consensus can be reached to address and rectify environmental integrity shortcomings.

A broader question that remains is what the scope and role of crediting mechanisms can be in the longer term. The experience with JI shows that in countries with ambitious caps, the potential of a crediting mechanism may be quite limited. The EU, for example, had to limit the eligible project types considerably in order to avoid double counting and overlap with the EU ETS and other climate policies. Given the reduced potential of crediting mechanisms in a world where most emissions are covered under other mitigation policies, and given the general challenges of ensuring environmental integrity for crediting mechanisms, the use of crediting mechanisms for international transfer and compliance may be rather limited beyond 2020.

**Further information:**

The final report of the underlying research project can be downloaded at: <http://www.sei-international.org/publications?pid=2803>

### UNFCCC Monitoring Vital

Please also see the commentary by Thomas Forth, Chair of the Foundation Future of the Carbon Market, on consequences to be drawn from the SEI study. Find out more at <http://www.carbonmechanisms.de/en/2015/unfccc-monitoring-vital/>

# Innovation in Climate Finance

## The first auction of the World Bank's Pilot Auction Facility (PAF) – results, experiences, lessons learned

by Scott Cantor and Brice Quesnel, *The World Bank*

**On July 15, 2015, the Pilot Auction Facility held the first-ever auction of price guarantees for carbon credits from projects that reduce methane emissions. The auction attracted 28 bidders from 17 countries across the globe. There were 11 auction rounds. At the end of the auction, 12 bidders were left standing to purchase 8.7 million carbon credits worth of guarantees with a strike price of \$2.40.**

### The origin of an innovative facility

Urgent action is needed to limit climate change, reduce greenhouse gas emissions, help countries

build resilience and prepare for a world of dramatic climate and weather extremes.

Public resources are limited and the collapse of carbon prices has removed an important incentive which encouraged the private sector to invest in clean technology projects. It has also left many projects that reduce greenhouse gas emissions at risk of being decommissioned.

The Pilot Auction Facility for Methane and Climate Mitigation (PAF) was created as a result of a report from the Methane Finance Study Group, an international group of experts convened in 2012 at the request of the G8 to review innovative financing



Photo: Wei Quingcao/Energy Systems International/CDM project 1135

*Stimulating investments: the PAF aims at supporting methane projects at risk of being decommissioned.*

approaches to methane abatement. In its design and development phase, the PAF also benefited from the support of Partners in the Climate and Clean Air Coalition.

The Methane Finance Study Group identified 1,200 methane projects that were at risk of being decommissioned due to a low price of carbon credits. At the same time, the additional revenue required to unlock these investments and to allow continued operations was found to be small. The Study Group estimated that, across all developing countries, methane-reducing opportunities could entail a reduction of as much as 8,200 million tCO<sub>2</sub>e at less than \$10 per ton in incremental cost financing.

The PAF aims to stimulate investments in these types of projects by providing a guaranteed minimum price for their carbon credits. This guarantee is backed by the resources in the facility, which is hosted in and managed by the World Bank Group. As of July 1st, 2015, the PAF had received \$53 million in

contributions from Germany, Sweden, Switzerland and the United States, and has a total funding target of \$100 million.

The PAF innovates by using an auction to set the level of its price guarantees and to allocate them. The competitive nature of the auction determines the minimum price required by the private sector to invest in climate mitigation projects, therefore maximizing the impact of public funds and achieving the highest volume of climate benefits per dollar. The winning bidders must pay a 'premium' to purchase the price guarantees, an important feature to make sure that they have "skin in the game," a financial incentive to deliver the carbon credits.

## A World Bank bond creates a price guarantee

The World Bank issues a special type of bond to deliver the price guarantee, with the premium being simply the bond purchase price. Under the terms of the bond, the bondholders

will have the right, but not the obligation, to sell the carbon credits generated by their climate-friendly projects to the PAF at the guaranteed price determined by the auction.

This option gives bondholders a choice: If carbon prices in international markets rise above the guaranteed price, bondholders will simply sell their credits to the market, and the PAF will have achieved its objective (to stimulate private sector investment in mitigation) at no cost to it.

If carbon prices remain low, the bondholders will sell their emission reductions (ERs) to the PAF at the price determined by the auction.

Another attractive feature of these bonds is that they can be freely traded after they are issued. This means, for example, that if the buyer of the bond has a project that is not generating the volume of carbon credits anticipated, he can sell the bond to another developer who thinks his project will generate eligible ERs and can make use of the price guarantee. This tradability maximizes the likelihood that the PAF will achieve its full potential to reduce emissions.

## The details of the first auction

The auction on July 15, 2015 was structured as a reverse auction, where bidders bid down the level of the guaranteed price, or strike price, while the premium is fixed.

A few months before, the PAF had announced the criteria which specified the types of carbon credits that would be eligible to be redeemed for payment of the price guarantee. The first auction focused on Certified Emission Reductions (CERs) issued from methane-reduction projects at landfills, agriculture and wastewater sites. Many of these projects are located in Brazil, India, Indonesia, Malaysia, Mexico and Thailand. Over the preceding nine months, the PAF team held several workshops in these countries, as well as webinars and informational campaigns, and maintained an active website, in order to ensure a strong and competitive participation in the auction.

The first auction had a budget of \$25 million. In other words, the auction could allocate a maximum of \$25 million worth of price guarantees (e.g. 5 million CERs at \$5 per CER). The auction offered a series of bonds to be redeemed annually over a five year period. To ensure multiple winners in the auction, bidders were not allowed to purchase more than 2 million

CERs worth of price guarantees. The starting price of the auction was set at \$8.00 per CER and the premium at \$0.30 per CER.

As the date of the auction was announced, 90 firms or individuals who had previously expressed interest received a Bidder Application Package to participate, and were given four weeks to return it completed. The PAF Secretariat received 33 applications before the June 25th deadline.

To ensure that only serious bidders would be qualified to participate in the auction, applicants were required to provide a \$0.06 per CER refundable deposit. The deposit, wired by the applicant, determined his maximum eligibility as a bidder. For instance, a firm depositing a bid deposit of \$60,000 was able to bid for a maximum of 1 million CERs. After the auction, these deposits were returned to the unsuccessful bidders, while the winners wired the additional required amount to buy the bond at its \$0.30 per CER price. The PAF also performed an integrity due diligence review of applicants to mitigate any reputational risk associated with them.

Of the 33 initial applicants, 28 firms from 17 countries were officially qualified to participate in the auction and started receiving training from NERA Economic Consulting, the auction manager. The training consisted of manuals, a webinar and a simulated auction during which bidders could familiarize themselves with the platform.

## The auction day

On July 15, 2015, an hour before the start of the auction, bidders were allowed to place a “proxy bid”, letting the software bid for them automatically after they had indicated up-front the minimum price they were willing to accept. This feature is useful for bidders who are not interested in bidding, or otherwise couldn’t participate in the live auction, perhaps because they live in a remote time zone.

The active bidding started at \$8.00 per carbon credit and bidders got 15 minutes to indicate how many put options they were willing to buy at that level of the price guarantee. Initial demand was robust, at over 22 million tons of carbon credits.

At each successive auction round, the auction manager announced a lower strike price, and bidders were prompted to indicate what quantity of CERs they were still ready to deliver



Photo: World Bank

*Incentivizing mitigation action: landfill gas projects reduce methane production*

at that current price. Bidders progressively reduced their demand or altogether dropped out as the price per CER went down.

It took 11 rounds to reach the end of the auction, where the demand of put options went just under the auction budget. Twelve bidders were left standing to purchase 8.7 million CERs worth of guarantees at \$2.40 per CER.

## Future auctions and scale up

The first auction shows that there is a robust and competitive demand for the price guarantees offered by the PAF. The PAF has already started working on its next auction, which could test a different approach, such as a forward auction where the premium is bid up and the strike price, or guarantee price, is set by the auction manager. This is consistent with the learning objective of the PAF, which is to test different approaches and share lessons learned.

These piloting auctions will showcase the potential of the PAF as an innovative climate finance mechanism. The World Bank Group is looking forward to the potential for major impact through replication and scaling up, including through the Green Climate Fund and other public funders. Scaled-up versions could, for example, reduce greenhouse gases like carbon dioxide and other climate pollutants. On a greater scale, this is a model can be used to incentivize any outcome that can be independently measured and verified.

### Further information:

[www.pilotauctionfacility.org](http://www.pilotauctionfacility.org)

# Where Do They Go From Here?

## Analysing the status quo of CDM projects

by Carsten Warnecke & Thomas Day, NewClimate Institute

**The Clean Development Mechanism (CDM) has become one of the world's most important carbon market instruments, diffusing carbon price signals worldwide, stimulating major private investments in climate change mitigation projects, and supporting the development of mitigation action in developing countries. The situation of project activities, and domestic and international capacities related to the CDM, have noticeably deteriorated following the recent decline of the market conditions. However, a major information gap exists regarding the actual status of individual CDM projects worldwide, as well as their current barriers and required means for the continuation of these projects. In order to close this gap, a large representative sample of projects were evaluated individually in a recent study to extract insights and lessons regarding national situations, technology-specific considerations, and the CDM as a whole.**

Despite its successes, the current situation of the carbon markets - and the CDM in particular - is characterised by a very low demand for international carbon credits. Due to the worldwide recession and the lack of an ambitious international climate agreement recognising flexibility mechanisms as a means to achieve targets, demand is no longer sufficient to provide monetary incentives for GHG mitigation projects in developing countries. A record low of CER prices, well below most forecasts, is the consequence.

The current low prices for CERs impact CDM project activities through various mechanisms. On the one

hand, projects already implemented may no longer be able to cover their operational costs. Furthermore, project owners may no longer find themselves able to pay transaction costs for registration, verification and issuance, as well as to finance CDM-specific monitoring activities. In the absence of any prospect for a price increase in the short term, many projects might go unimplemented, be shut down, or modified in a way that they no longer comply with CDM standards. For these projects, future continuation of the CDM projects and the mitigation activities in general might be dismissed or subject to specific conditions.

Limitations to CDM activities can also lead to market participants, such as project developers, verifiers, consultants and related financial institutions, exiting the market. This in turn leads to drainage of CDM specific expertise. Yet, this CDM-specific knowledge is considered to be very valuable in the development of carbon pricing approaches worldwide, including future market-based mechanisms and non-market-based approaches. As a consequence, future mechanisms might no longer be able to benefit from the "lessons learnt" of the CDM and might have to undergo time-consuming efforts to solve problems to which the CDM might have already developed solutions.

## Analysing the status quo

In reaction to these challenges, the German Federal Ministry for the Environment, Nature Conservation,

Building and Nuclear Safety (BMUB) initiated a research activity with the objectives to evaluate and analyse the implementation status of registered CDM projects, and to show to what extent projects have been affected by adverse CER market conditions. This covers, firstly, the circumstances under which projects are discontinued, and hence might fall back to their initial pre-CDM situation and resume baseline GHG emissions. Secondly, current barriers for CDM project initiation and continuation – including the described low demand situation – are explored, as well as the existing support provision and subsequent needs of stakeholders. A further focus is to assess the coverage and impacts of existing and emerging domestic and international support and policy schemes that offer alternatives to the CDM.

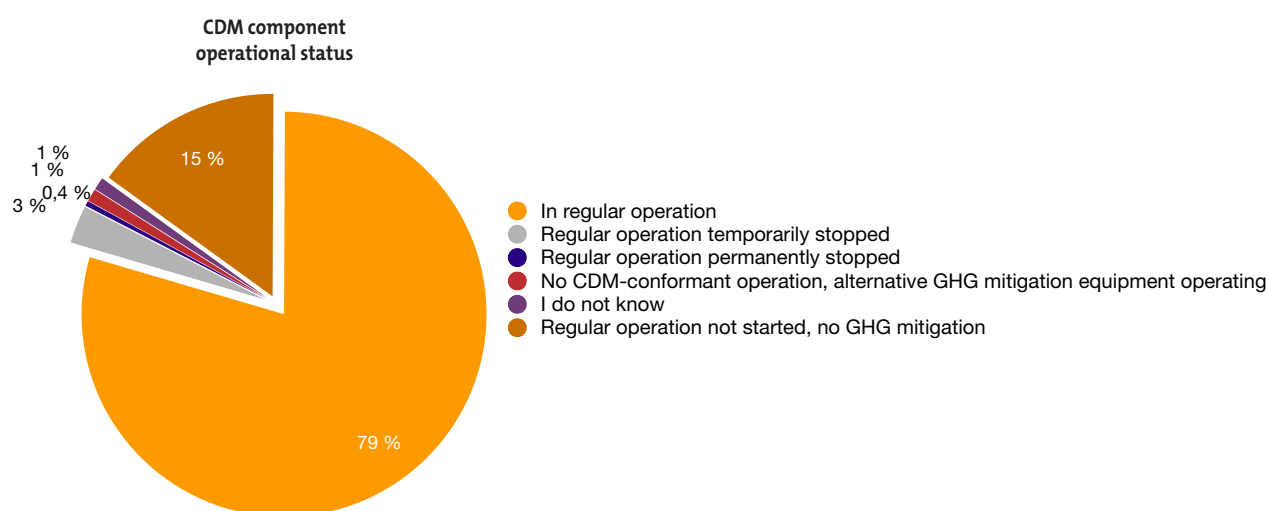
For this purpose, in the course of the year 2014 portfolios of CDM projects were systematically analysed to obtain information on the situation of various projects types in different host countries. The research activity defined a larger representative sample of more than 1300 CDM projects out of the overall population of CDM projects with a registration date in 2012 or earlier to be analysed. Due to the focus on

22 host countries and 26 project types the actually researched population covers >77% of the registered CDM projects. The identified project contacts were approached to gather project information and produce a database with up-to-date CDM-specific information. Interviews by telephone or personal meetings complemented email or web-based questionnaires. The generated database allows analysis of individual subgroups of projects, e.g. project types, countries or combinations of both, and holds great value both for answering the questions raised in the light of this research and in providing a potential source for further research. The statistically sound approach and the representativeness of the sample furthermore permits valuable conclusions to be drawn on the CDM as a whole and beyond just the projects contacted during this research.

## Project implementation and operation: status and outlook

Overall, the rate of implementation and operation of CDM projects is particularly high: Between 69% and 85% of registered CDM projects have full technical implementation, between 64% and 79% of registered

**Figure 1: Operational status of registered CDM projects**



**Table 1: Overview of evaluation results for implementation and operational status of registered CDM projects**

Project Type / Country	Proportion of projects where the CDM component of the mitigation activity is:		
	fully implemented	in regular operation	with operational monitoring system
EE own generation	96%	93%	80%
Fossil fuel switch	96%	81%	45%
Wind	93%	92%	81%
Coal bed/mine methane	86%	71%	50%
Solar	86%	80%	51%
Hydro	83%	81%	71%
Cement	82%	74%	72%
EE industry	82%	72%	52%
Biomass energy	81%	63%	52%
Methane avoidance	72%	48%	39%
HFCs	69%	69%	34%
Landfill gas	63%	54%	46%
N <sub>2</sub> O	62%	49%	25%
EE households	60%	58%	26%
South Korea	98%	73%	69%
Thailand	97%	71%	63%
China	91%	89%	77%
India	88%	81%	61%
Indonesia	76%	58%	42%
Brazil	75%	39%	29%
Vietnam	74%	73%	58%
Central America	70%	69%	47%
Malaysia	68%	58%	44%
Israel	61%	53%	39%
Chile	59%	55%	42%
Peru	58%	53%	29%
Colombia	55%	45%	26%
South Africa	52%	35%	32%
Sub-Saharan Africa	46%	36%	30%
Mexico	28%	26%	23%

projects have regular operation of the CDM component of the GHG mitigation activity, and the CDM monitoring system is in regular operation for between 39% and 67% of registered projects. Analysis of the non-evaluated projects indicates that the upper ends of the given ranges are more likely. Sum-

maries for project implementation and operational status are given in Figure 1 and Table 1.

The relatively high rates of project implementation and operation, especially in host countries with a longer history of participation in the CDM, indicate that in its early years, under stable market condi-



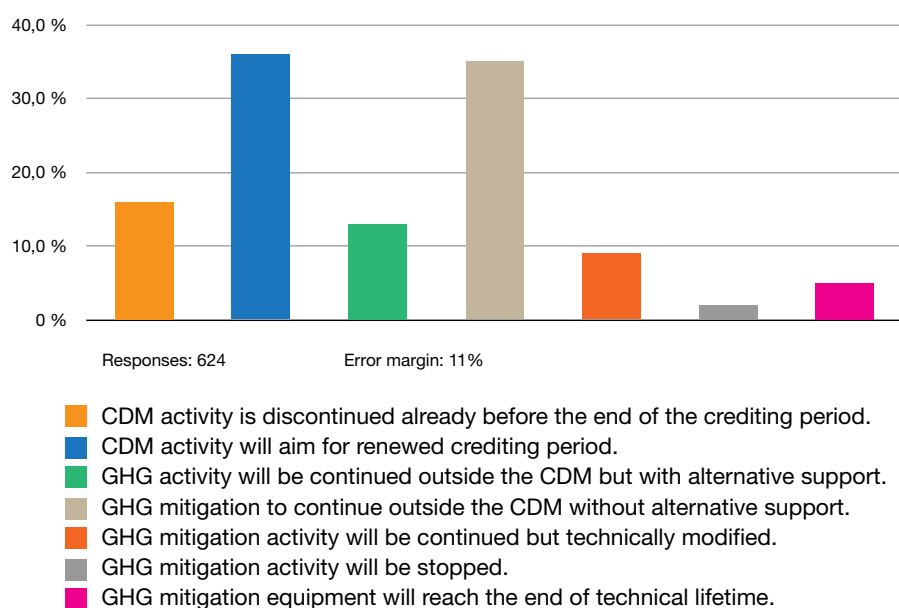
tions, the CDM was very successful in sending price signals for carbon and building momentum for mitigation. However, as Table 1 shows, the aggregated data masks considerable regional variation on the implementation and operational status of projects. In particular, the high rates of continued project operation in China and India, the two most major CDM host countries, alter the perceived global trend considerably. Excluding China and India, between just 45% and 53% of registered CDM projects are in regular operation. Regional variations are expected to converge somewhat in the near future, as Asian countries tended to forecast a decline in the number of operational projects over the 12 months following the evaluation period, whilst other regions still forecast an increase. However, evaluation data from projects in Africa and Latin America indicate that it is highly unlikely that these regions will reach a comparable level of success to their Asian counterparts under current conditions.

Despite the high rates of current project operation, Figure 2 shows that just 36% of projects intend to aim for renewal at the end of the current crediting period. This is a reflection of the finding that between just 10.4% and 16.6% of registered CDM projects continue to operate because of the ongoing benefits of the mechanism, financial or otherwise. Approximately half of registered CDM projects indicate that they will continue mitigation activity outside the CDM, either supported or unsupported. Many projects indicated an interest to convert the project to alternative project schemes. 56% of all projects reported that they would consider a cancellation of the CDM registration in case this is a feasible option and in case this is required to receive support or participate in alternative project schemes.

## Barriers, costs and support

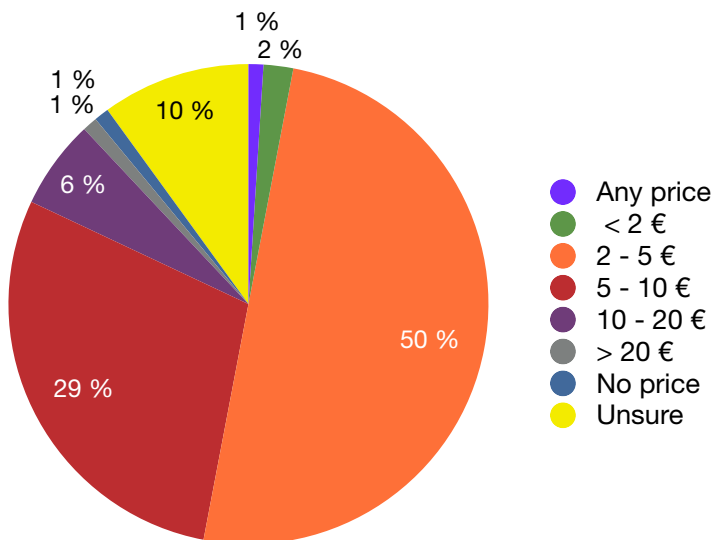
The most important barrier for the continuation of the majority of projects is the current market situa-

**Figure 2: What is expected to happen to the CDM project after the end of the crediting period?**



1) Mexico's low percentages in this table are explained by the influence of a large number of dismantled small-scale methane avoidance projects. The data for Mexico does not deviate far from the average if this project type is not considered.

**Figure 3: Required CER price for project continuation**



tion for CERs and the unpredictable outlook in this regard. Figure 3 shows that most projects are built on business plans based upon reasonable market prices: 82% of registered projects could continue with a CER price off less than € 10, and a price of less than € 5 would be sufficient for more than half of all projects. However, market conditions deteriorated far beyond most forecasts, and less than 3% of projects report that they still continue operation due to sufficient CER revenues. This barrier is widely recognised and discussed in the broader literature.

Aside from this, the most commonly identified barriers were the complexities, uncertainties and costs entailed by the CDM's procedures and regulations. Figure 4 shows that these barriers were considered far more important than technical or knowledge barriers. However, this is also related to the market conditions, since these issues did not prevent the successful implementation of projects under stable conditions in the CDM's early years. The complications of CDM procedures are therefore a burden that must be mitigated rather than a prohibitive barrier.

The evaluation results also confirm that support is mostly sought to address financial and procedural

barriers, rather than to build capacity; over 40% of projects require support to identify international programmes and a third of projects would like to receive support for direct CER marketing, whilst fewer than 3% of projects identify a need for capacity building. This trend varies slightly across regions according to the experience of project developers in each region.

In general terms, two different types of support needs are identified. Firstly, in all regions, there is a significant and immediate risk of project discontinuation and the irreversible loss of the valuable capacities and institutions that have developed. Here, broader support must be provided in the short-term through the cooperation of a coalition of credit-purchasing countries to restore conducive market conditions and rebuild trust amongst project owners and investors. Such market signals are needed to avoid the forecast loss of mitigation activity under the CDM in Asian countries, as well as to encourage the continued development of project implementation in many Central American and African countries, where activities have somewhat stalled.

Secondly, some specific countries and project types demonstrate a need for more targeted support, as shown by the variable rates of project success in Table 1. Such support appears to make a profound difference, as there is a notable improvement in the rates of regular operation for project types with higher levels of external support in Africa. In contrast, some project types that are considered to be less in need of support due to their success in other regions – such as wind and hydro – are particularly unsuccessful in Africa. This highlights an important gap in the current provision of support to the region. The research data shows that credit purchase facilities – to give an example of a possible support mechanism – have successfully targeted some of the most vulnerable regions and technologies. While significant gaps remain and the volume of such activities is very modest, these programmes nonetheless have demonstrated great potential for short- to mid-term

impact. These efforts, however, need to be replicated, built upon and scaled up.

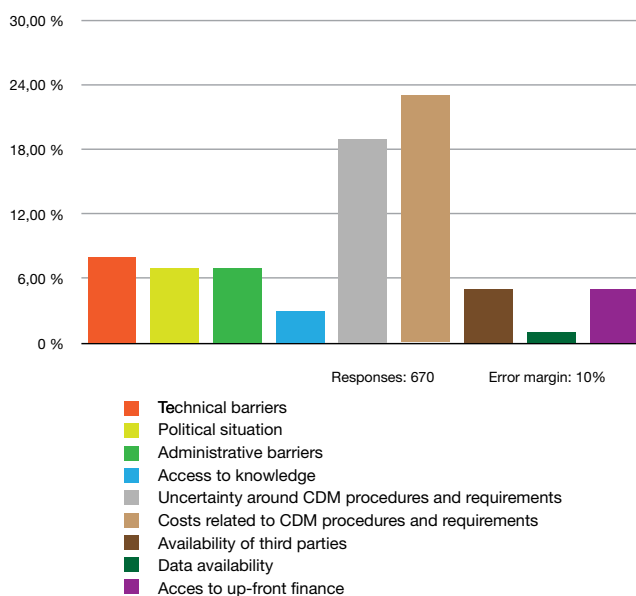
## Conclusions

The highlighted quantitative findings in combination with other qualitative sources has revealed a number of insights with important policy implications. Whilst some of these findings reflect and confirm the existing understanding of the market situation, others present unexpected results which require new avenues of domestic policy and international support to be pursued.

- In its early years, under stable market conditions, the CDM was very successful in sending price signals for carbon and building momentum for mitigation.
- The current benefits of the CDM do not provide sufficient incentive for the continuation of mitigation activities.
- There is a great risk of substantial reduction in mitigation activity, as well as the irreversible loss of institutions and knowledge.
- CDM processes and regulations must continue to be streamlined, but not to the extent of compromising environmental integrity.
- Broad support is needed to restore market conditions and trust.
- Targeted support has been shown to have a profound impact and should be replicated and scaled-up.
- There is great potential impact from targeting international support to the continuation and expansion of activities under the umbrellas of existing PoAs.

The results of this research demonstrate a strong need for both broader and targeted support for the continuation of mitigation activities under the CDM, and highlight areas where such support may have the greatest impact: project types with more easily

**Figure 4: Which barriers still exist that hinder project implementation or operation?**



*Note: Low CER prices was selected by nearly 70% of projects, but is excluded from this chart*

reversible investments and limited sources of non-CER revenues or cost savings are at great risk of discontinuation in most regions; on the other hand, the high levels of continuation amongst capital intensive projects shows that short- or mid-term market-based financing can have a particularly large long term impact for these project types. Until high international mitigation ambition is restored, a wider coalition of demand-side market participants must cooperate to substantially improve mid and long-term market conditions and restore trust amongst potential project developers. The same coalition of market participants could build-upon, replicate and scale up the commendable efforts of existing credit purchase facilities to provide short-term targeted support to specific countries and technologies, including some technologies that have not yet been considered a major target for support; for example, some project

types that are considered to be less in need of support due to their success in other regions – such as wind and hydro – are particularly unsuccessful in Africa despite their large potential.

International support could also be targeted to the continuation and expansion of activities under the umbrellas of existing PoAs. The PoA modality successfully played a role in the development of projects in underrepresented regions, but PoAs have generally not yet matured enough to fully achieve the objectives of the approach. This is largely due to the slow inclusion of CPAs under PoAs; PoAs with multiple CPAs report a much lower burden in terms of transaction costs and a higher resilience to low market prices. Now that a critical mass of PoAs exists in many countries, more effective support could be provided by targeting the mitigation potential under these umbrella PoAs and supporting the creation of new PoAs only as a secondary priority.

### Further Information

The findings presented in this article are based on an ongoing research project which is financed by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB). The research is conducted by NewClimate Institute with Ecofys and TÜV-SÜD. The opinions expressed in this article are those of the authors and do not necessarily reflect those of the BMUB. The authors would like to thank all experts that provided their expertise to the research during the methodology development, the data gathering process, the interpretation of the analysis results and during the review process. Further details about the research results are made available through the following publication: “Analysing the status quo of CDM projects - Status and prospects” available at:

<http://newclimate.org/2015/05/16/analysing-the-status-quo-of-cdm-projects/>

# The Moment of Truth

## The true-up period for the purpose of fulfilling commitments under the first commitment period of the Kyoto Protocol

by Karsten Karschunke, German Emissions Trading Authority/Federal Environment Agency

The first Kyoto Protocol commitment period ended on 31 December 2012. In 1997, the Annex I states (the industrialised countries) had agreed to either reduce their greenhouse gas emissions or at least restrict their increase in the period 2008 – 2012. A 5.1 percent reduction based on emissions in 1990 was agreed overall. The EU, with its then 15 member states, agreed to an eight percent reduction. Under the EU’s burden sharing agreement of 1998, this meant a 21 percent reduction for Germany (see Table 1).

Based on the overall reduction target, each country has an ‘assigned amount’ of allowed emissions for the total commitment period. This assigned amount is subsequently compared with a country’s actual emissions over the five-year commitment period. The emissions are recorded in an annual emissions inventory and reported to the UNFCCC for analysis by international experts. At the end of the commitment period, all emissions must be covered by retiring the respective quantity of emission allowances (AAU)

**Table 1: Emission reductions in Annex I states and under EU burden sharing in the first Kyoto Protocol commitment period**

Australia	108	Austria	87
Bulgaria	92	Belgium	92.5
Canada	94	Denmark	79
Croatia	95	Finland	100
Czech Republic	92	France	100
Estonia	92	Germany	79
Hungary	94	Greece	125
Iceland	110	Ireland	113
Japan	94	Italy	93.5
Latvia	92	Luxembourg	72
Liechtenstein	92	Netherlands	94
Lithuania	92	Portugal	127
Monaco	92	Spain	115
New Zealand	100	Sweden	104
Norway	101	United Kingdom	87.5
Poland	94		
Romania	92	European Community	92
Russian Federation	100		
Slovakia	92		
Slovenia	92		
Switzerland	92		
Ukraine	100		
USA	93		

from the national holding account to provide transparency regarding whether and how the emissions reduction target has been achieved. A five-year commitment period allows for better balancing to take account of fluctuations that occur in specific years due to extreme weather events or economic conditions. It also documents the reduction pathway by highlighting the emission reduction rates achieved on the way to meeting the target.

The assigned amount can be supplemented by means of various measures. Emission allowances can be bought from other countries (assigned amount units, AAUs) and emission reduction certificates can be acquired in a limited amount via the flexible CDM and JI mechanisms (Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs), respectively). Also, in the land-use, land-use change and forestry sector (LULUCF), credits can be generated domestically by activities involving the removal of

carbon by sinks (Removal Units, RMUs). Certificates generated via CDM activities conducted in developing countries have had an extraordinarily positive impact with regard to these countries developing their own climate change policies, leading to broad awareness and capacity-building. Thanks to the positive experience gained in the resulting technology transfer, climate change mitigation is now seen as beneficial and no longer perceived as a burden. However, to comply with the complementarity principle, at least half of the emission reductions achieved must be achieved domestically.

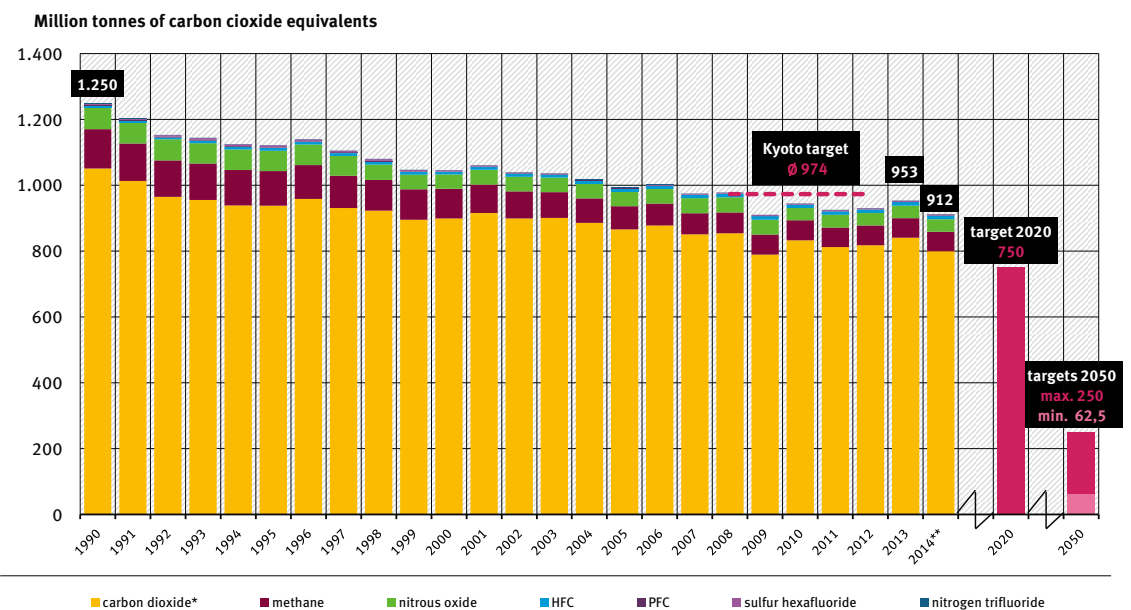
The period for calculating the overall emissions and performing the transactions needed to balance emissions holding accounts is known as the 'true-up' period. It begins at the end of the first commitment period and ends 100 days after completion of the review of all emission inventory reports submitted by the Parties. The last UNFCCC inventory review report was published in July 2015 and, in line with a decision made at CMP 10, the 100-day period began on 10 August and will end on 18 November. The Parties can

use these 100 days to make up any shortfall in compliance by purchasing emission allowances or credits and retiring them from the national registry.

On 30 September, the UNFCCC Secretariat will begin informing the Parties on a regular basis regarding the status of their holding accounts before freezing all Kyoto Protocol registry accounts on 18 November. The Parties then have 45 days in which to report on whether they have met their targets from the first commitment period. Once these reports have been reviewed and the Parties have had an opportunity to respond to the outcome, the first commitment period will officially come to an end at the beginning of April 2016.

That the industrialised states are expected to meet their Kyoto targets sends a positive signal for the Paris climate change conference in December. It is there that the reduction targets for the coming decade will be agreed and this time, all large emitters will be included in the process.

**Greenhouse gas emissions in Germany since 1990 and targets for 2008-2012 (Kyoto Protocol), 2020 and 2050 (Federal Government)**



\* w/o carbon dioxide from LULUCF  
\*\* first estimate for 2014

Quelle: Federal Environment Agency 2015, National Greenhouse Gas Inventory 1990 to 2013 and first estimate for 2014 (as of: 03/2015)

## The situation in Germany

In the first commitment period, greenhouse gas emissions in Germany amounted to 4.707 billion tCO<sub>2</sub>-e. This is below the original assigned amount of 4.868 billion tCO<sub>2</sub>-e and can be seen as a success attributed to German climate policy operated since 1990. The figure does, however, contain emission reductions arising from the demise of heavy industry in former East Germany following German reunification. The economic and financial crisis of 2009 also contributed to undercutting the target. Land-use, land-use change and forestry (LULUCF) activities conducted in Germany have also generated additional reduction units in a net amount of 40 million tCO<sub>2</sub>-e.

With full integration of German industry into the EU Emissions Trading Scheme (EU ETS), a large number of emission allowances were traded between various countries during the commitment period. Until mid-2012, the transfer of EU allowances (EUAs) between operators and traders was directly linked to the transfer of deposited AAUs. These transfers were later decoupled, giving rise instead to a net carbon offset between giver and receiver states (known as clearing). Operators covered under the EU ETS received free emission allowance allocations. Additional quantities of emission allowances were regularly auctioned to enable operators to meet their obligations.

Apart from using emission allowances acquired either by allocation or trading on the market, in meeting their reduction targets operators participating in the EU ETS have made extensive use of the opportunity to use certificates generated from CDM and JI activities. Some 169 million CERs and 133 million ERUs were acquired by German operators and, subject to the quotas allowed, used to meet their reduction targets. Almost 14 million ERUs were issued to project developers for JI projects in Germany. And to enable emissions trading in the aviation sector, airline operators were also allocated emission allowances to be used for compliance according to the reported emissions. These combined

activities conducted under the EU ETS resulted in a net injection of a further 27 million Kyoto units into Germany's holding account.

Thus, at the end of the first Kyoto commitment period, Germany is expected to have accrued a surplus of some 228 million AAUs. It is up to policymakers to decide how this surplus should be dealt with.

For 2020, Germany announced a voluntary emissions reduction target of 40 percent. This demonstrated significantly greater ambition than that formally agreed for the second commitment period of the Kyoto Protocol (2013 – 2020) and laid down in the EU Effort Sharing Decision (Decision No. 406/2009/EC). Germany does not, therefore, require these surpluses to meet its target – in fact a further surplus of AAUs can be expected. Also, there are no plans to transfer emission allowances from the Kyoto Protocol to the new climate change agreement for the period beyond 2020. Thus, from a climate policy standpoint, voluntary cancellation of the surpluses would seem the best solution.

## Transition into the second commitment period

The second Kyoto commitment period began on 1 January 2013, seamlessly following the first. New reduction targets and supplementary rules were decided at CMP 8 in Doha. These have so far been ratified by 40 countries, but it requires 144 Parties for them to enter into effect. While German ratification occurred with the German Act on the Doha Decision of 8 December 2012 Amending the Kyoto Protocol of 11 December 1997 with regard to the UNFCCC Framework Convention on Climate Change (Doha Amendment to the Kyoto Protocol) of 6 March 2015, the EU and its member states are to submit joint ratification instruments to the UNFCCC.

Only when the second commitment period enters into force can Annex I states be allocated new AAUs



Photo: pixabay.com/ZephyrIwero

*Great transformation required: Kyoto achievements are only a first step towards decarbonisation.*

commensurate with their reduction targets. And only then can the issuance of certificates from JI activities be resumed because the ERUs received for the emission reductions achieved are created by deducting AAUs from host country holding accounts. The emissions to be achieved via an emission reduction project activity must be listed in the inventory to prevent the host country suffering a shortfall. By way of contrast, CDM project activities could be continued into the second commitment period without interruption because the associated UNFCCC infrastructure remained in place, thus ensuring the necessary procedures for project validation, certification and issuance of certificates.

At the end of the first commitment period, countries' unused AAUs from that period are transferred to a national reserve – the Previous Period Surplus

Reserve (PPSR) – and can be used as needed to meet new reduction targets in the second commitment period. They could, theoretically, be sold, but purchase of AAUs from other countries' PPSRs is subject to restriction for all Parties.

Rather than making use of this option, Germany is currently considering the idea of cancelling its surplus emission allowances as a contribution to global climate change effort. Also, further surpluses will be prevented by annual cancellation of unneeded national emission allowances for sectors not covered by the EU ETS as of 2016.



## Evaluating the CDM Sustainable Development tool

# A blueprint for future market instruments?

by Florian Mersmann, Christof Arens (Wuppertal Institute) and Karen Holm Olsen (UNEP DTU Partnership)

**The year 2015 sees two of the most important milestones in the international effort to achieve sustainable development on a global scale. In September, the United Nations General Assembly launched the post-2015 development agenda. Central to the document are 17 Sustainable Development Goals, which have the potential to significantly raise the ambition of global development, including priorities for low-carbon development options. In November, the United Nations Framework Convention on Climate Change (UNFCCC) is set to reach a decision on a new climate agreement, which will likely be strongly influenced by the wider UN sustainable development process and therefore be more strongly focused on achieving the ultimate goal of the Convention through sustainable actions.**

It is widely agreed that mitigation objectives in developed as well as developing countries can often be achieved most efficiently through carbon pricing instruments. This was also acknowledged by UN Secretary-General Ban Ki-moon at last year's Climate Summit, where a wide coalition of national and regional governments as well as business representatives was formed to strengthen carbon pricing initiatives around the globe.

The CDM as the largest international carbon pricing mechanism is in a unique position to act as a basis for any future international market-based instrument that will be agreed in Paris. To counter recurring arguments that the CDM has focused too much on mitigation and too little on the sustainability of

the actions taken, the CDM Executive Board introduced a Sustainable Development (SD) tool as a means to better highlight SD impacts of CDM projects. However, questions remain if the tool in its current form reaches its potential to act as a blueprint for sustainable impact assessments in future market-based instruments, or even more broadly for mitigation actions within the UNFCCC domain.

Based on research by UNEP DTU and the Wuppertal Institute conducted for the German Environment Agency (UBA), this article briefly outlines the current state of play of the CDM SD tool and recommends four improvements that would make the tool significantly more useful to the CDM than it is in its current state. It touches upon more in-depth enhancements that could transform it into an approach which could also be applied beyond the set-up of the CDM itself and gives an outlook into possible future developments for SD assessments under future market instruments.

## The CDM SD tool: state of play

As it is now, the "Voluntary tool for describing SD co-benefits of CDM project activities or programs of activities" (CDM SD tool) was approved by the CDM Executive Board at its 70th meeting in late 2012. As stated in the name, the tool is used by project developers of CDM projects or PoAs, who would like to report on positive impacts their project or PoA brings



*More than mitigation: especially small-scale carbon projects yield a number of sustainable development benefits. Installing solar power panels in Afghanistan.*

about. The use of the tool is voluntary and it can be used at any time in the lifetime of the respective CDM activity. This can also include an update in case co-benefits change; however, the tool does not comprise any requirements to monitor or verify the identified benefits for SD during project implementation or at project closure.

The tool uses the three basic dimensions of sustainable development, i.e. environmental aspects, as well as social and economic ones. In order to balance standardization and flexibility, the taxonomy functions as a menu of generic dimensions, criteria and indicators that project participants may choose from. Criteria and indicators that are not relevant to a project can

be skipped and aspects of SD that are not included in the taxonomy can be added using an 'other' indicator. This allows for a transparent, inclusive and objective approach to SD assessment. From the data input into the tool, a declaration report is generated and made public on the CDM website, <http://cdmcobenefits.unfccc.int>.

In other words, the current user base of the tool is severely limited, which may be due to a number of reasons - among them the tool's voluntary nature, but also possibly its limited usefulness both to host and buyer countries and project developers in its current form.

## How could the tool be improved?

In order to determine which attributes for the determination of SD impacts could improve the tool, the Wuppertal Institute and UNEP DTU took a two-step approach.

In a first step, four certification standards (including two CDM certification standards, two approaches within the broader UNFCCC context, and two multi-lateral development bank safeguard standards) were assessed and classified in order to determine different good-practice options for sustainability assessment in a climate financing context.

In a second step, project developers as well as host and buyer country representatives were interviewed on their views of the necessities of SD assessment, and their recommendations for improving the tool with a view to make it fit for future market-based instruments. The findings of both steps were synthesised in a comparative matrix to determine recommendations from both the perspectives of feasibility and desirability.

On this basis, the study identifies two consecutive levels of possible changes, firstly improving the tool itself while keeping true to the logic of the CDM, and secondly enhancing the tool with a view towards transforming it into an assessment instrument for SD applicable for a broader UNFCCC-wide use. The second step, however, would require a strong commitment by all UNFCCC Parties to implement, and is therefore less likely to surface in the short to medium term. This article therefore concentrates on first-level improvements.

## Introduce no-harm safeguards

At the moment, there is no provision to include information on potential negative impacts of CDM activities in the SD tool.

A common procedure to do a no-harm assessment that could also be applied to the SD tool is the declaration of risk levels of an activity according to a catalogue of general safeguard principles. Such general safeguard principles may include:

- Human rights,
- Good labor practice,
- Environmental protection,
- Anti-corruption,
- Land rights,
- Other activity-related impacts

As the introduction of no-harm safeguards was already proposed to be included in the first draft of the SD tool, taking up the original proposal again could be a starting point. The proposal could be revised in order to accommodate for concerns raised by CDM Executive Board (EB) members, who argued against the inclusion of safeguards at the 68th session of the EB and decided upon the design of the tool, as it stands today.

Introducing safeguards also comes with additional benefits, e.g. project proponents can use safeguards for their project planning in order to demonstrate responsibility and increase local acceptability for the project. Buyers may use the safeguard assessment as part of their due diligence reporting. Guidance on the introduction of no-harm safeguards also has the potential to increase the capacities of Designated National Authorities (DNAs) towards structured and systematic SD assessment approaches.

## Develop monitoring and reporting guidelines

In its current form, the SD tool solely foresees the notification of assumed SD co-benefits (SDCs) in a single report. There is no requirement for following-up on the identified co-benefits over the project lifetime. This means that changes in SD effects over time do not have to be reflected in the current form of the SDC report.

At its 82nd session, the EB decided to make monitoring and reporting of SD impacts an option. Yet, there are no guidelines for monitoring and reporting, which would allow for a standardized, comparable and credible follow-up of the SD benefits claimed in the SDC reports. Such guidance by the EB would assist project developers and Coordinating Managing Entities (CMEs) of PoAs to monitor and report on SD impacts during implementation.

As a first step, existing guidelines developed by other mechanisms could be taken as blueprints for a voluntary application in the SD tool. As an example, the Gold Standard, as well as the other certification mechanisms, provides detailed guidance on monitoring and reporting of SD co-benefits, tailored towards the use within the CDM.

The EB could therefore adjust them with relative ease to fit the SD tool's specifics, and publish them as guidance for Project Participants (PPs) and CMEs in their voluntary reporting of SD co-benefits in a more continuous fashion.

To keep the SD tool voluntary and flexible to use, monitoring and reporting of SD co-benefits should be clearly separated from GHG reduction monitoring requirements, and be included in regularly updated SDC reports.

## Set up modalities and procedures to assist third party validation and verification of SD claims

The SD tool's lack of monitoring and reporting requirements also means that no procedures have been defined for the validation and verification of SD claims made in SDC reports. Without any validation or verification by third parties, the reports only have limited credibility to SD claims made. Third party validation and verification is also a prerequisite for SD benefits to be priced in the carbon market, mainly in the premium segment.

At its 82nd session in February 2015, the EB has begun to strengthen optional monitoring and reporting of SD co-benefits. This process could be widened to authorize Designated Operational Entities (DOEs) validate and verify SD claims made in the SDC reports. DOEs already cover validation and verification of GHG reductions, which puts them in an ideal position to also cover SD co-benefits.

Modalities and procedures concerning SD claims should be clearly separated from those for GHG reductions. While the latter are a basic requirement for the functioning of CDM, the former should account for the SD tool's voluntary nature and allow maximum flexibility in their use. However, if PPs choose to report on SD co-benefits, the validation and verification of their claims by DOEs following modalities and procedures established by the EB would greatly enhance the credibility of SDC reports. This would add considerable value to credits generated by those projects reporting on SD co-benefits of interest to the premium segment of buyers.

## Linking enhanced stakeholder requirements to the CDM SD tool

The SD tool in its current form does not contain requirements for stakeholder involvement. However, stakeholder involvement at global and local levels is seen as an important means to enhance acceptance of the project and to ensure transparency. Furthermore, it complements other risk-minimizing strategies like no-harm safeguards and assessments in order to mitigate potential negative impacts of projects, to increase local acceptability and respect for human rights generally.

Linking enhanced stakeholder consultation requirements to the CDM SD tool would be a necessary step in order to implement a meaningful SD assessment. In addition, the introduction of a grievance mechanism for CDM projects to address potential negative impacts of projects/programs would be advisable in



Photo: KfW-Bildarchiv / photothek.net

*Assessing the impacts: the SD tool in its current form solely foresees the notification of assumed SD co-benefits at a given point of time. Woman using a solar-powered lamp in Burundi.*

order to be prepared for a transparent resolution of conflicts.

The development of the CDM's stakeholder consultation processes has been difficult over the years. It might therefore be advisable to shift this discussion to the review of the modalities and procedures of the CDM. As shortcomings are not only caused by vague rules but also by a lack of national capacities, direct support to countries with best practice guidance is needed including strengthening the role of civil society organizations and local communities to be involved in data collection for monitoring of co-benefits and social safeguards.

## Steps beyond improvements

In our report, we then go one step further, proposing options to further enhance the tool, transforming it into a credible assessment and reporting system that could go well beyond the current CDM mandate and logic. In a nutshell, if the above recommendations were carried out, this would lay the foundations for the CDM's SD assessment to be certifiable in a similar fashion to what is being done by existing market based certification schemes today. Such a UNFCCC based certification system with clear rules and requirements could then pave the way for creating a global standard for the quantification of SD co-bene-

fits that would not only be applicable to the CDM, but to the wider world of market-based mechanisms in general.

## Quo vadis Sustainable Development? Future Market Instruments

The CDM's SD tool in its current form is too specific to the CDM to be directly useful to future carbon market based instruments. However, SD assessment experiences by both host country DNAs and CDM project participants indicate that an enhanced CDM SD tool could serve as a blueprint for harmonizing reporting on SD efforts across mitigation mechanisms such as Nationally Appropriate Mitigation Actions (NAMAs), a New Market Mechanism (NMM), Framework for Various Approaches (FVA), Reducing Emissions from Deforestation, Degradation and Conservation (REDD+), Low Carbon Development Strategies (LCDS) and Intended Nationally Determined Contributions (INDCs). It would be useful and a simplification to have a uniform SD reporting format across countries for all CDM projects and beyond to actions and policies for mitigation and development incentivised by other mitigation mechanisms.

A key starting point for harmonization across mechanisms is the SD tool's international definition of SD criteria and indicators that enables a uniform SD assessment report in a transparent, inclusive and objective manner across projects and countries, while maintaining the prerogative of Parties to define their national SD priorities.

National and global SD benefits of climate instruments drive transformational development pathways towards low- or zero-carbon societies necessary to keep global warming below 2 °C of warming. Mitigation measures can have additional health, social, environmental, macroeconomic as well as equity aspects. With the prospect of the post-2015 sustainable development agenda and the new 2015 climate change agreement on the horizon, many developing

countries have begun installing and refining their climate policies for SD goals. SD benefits in CDM and new market mechanisms actually have the potential to match developing countries' needs with regard to both SD and climate mitigation measures. Therefore, the prospect of enhanced SD assessments could not be more timely.

### Further information:

The report "Reforming the CDM SD Tool - Recommendations for improvement" as well as preceding work package reports of the project can be downloaded at [www.carbon-mechanisms.de/en/SD\\_tool\\_recommendations](http://www.carbon-mechanisms.de/en/SD_tool_recommendations)

### Acknowledgement

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# Supporting Market Access for LDCs

## New tool facilitates development of standardized baselines

by Stephan Hoch and Stefan Wehner, Perspectives GmbH

Although the Clean Development Mechanism (CDM) has enabled a large number of mitigation projects, these activities are not equally distributed (cp. Figure 1). In the past, the CDM's regulatory framework has favoured project types with large emissions reduction potential and limited risks. In all least developed countries (LDC), there are currently 90 registered CDM project activities and 29 in the validation process, as well as 48 registered Programme of Activities (PoA), and 19 in the validation process. These have generated about 3.4 million CERs, which - compared to the world's more than 1.6 billion issued CERs - underlines the minor participation of LDCs (all figures from UNEP DTU Partnership, August 2015).

In order to address these shortcomings, the Conference of the Parties, serving as the Meeting of the Parties to the Kyoto Protocol (CMP), has continuously mandated the CDM Executive Board (EB) to enable more equitable access to the CDM, which has led to innovations including PoA, micro-scale projects, the CDM loan scheme, suppressed demand, and the standardization of various elements of the CDM methodologies. First success can be observed as the comparatively large number of PoAs in Africa and LDCs as well as the technologies supported by PoAs demonstrate.

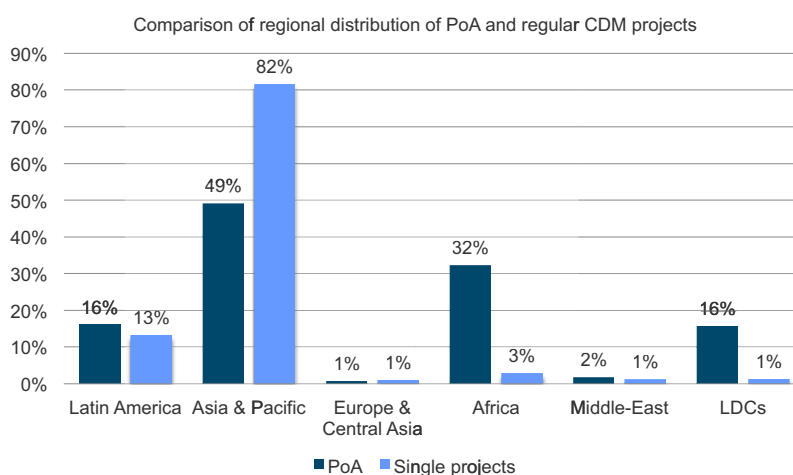
Standardization of the CDM's methodologies is seen as a particularly important avenue to advance these reform efforts further. Standardized approaches and SBs are key elements of efforts to broaden access to the

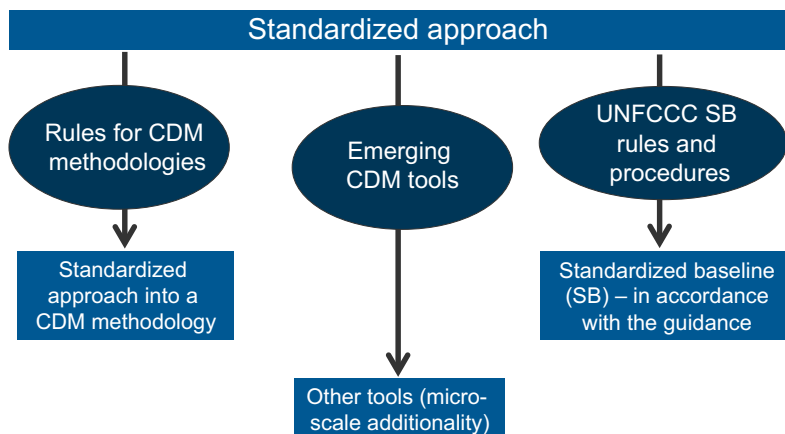
CDM, and also carry relevance for future mechanisms, as they shift the CDM away from the 'project-by-project' approach. Elements of standardization include baseline determination, additionality demonstration (e.g. positive lists), project emissions, monitoring and calculation of leakage. In addition, CDM methodologies themselves may standardize additionality, or emissions factors. An example is AM0070, which uses a benchmark approach for energy efficient refrigerators. Figure 2. provides an overview over different standardization approaches.

Standardization in CDM tools and methodologies, however, does not generally involve DNAs or country-specific assess-

**Figure 1: Regional distribution of PoAs**

Source: adapted from UNEP DTU CDM/JI Pipeline Analysis and Database, August 1st 2015



**Figure 2: Standardized approaches under the CDM***Source: Perspectives*

ments. For this reason, this section focuses mainly on the SB procedures and guidelines as they relate to DNAs. A core idea of SB development is to shift transaction costs from project developers to DNAs and the UNFCCC. Yet, this also raises new challenges, as SBs are intended to benefit those countries with less practical experience and sometimes insufficient data quality. In addition, the regulatory framework for SBs is relatively new, not yet well-tested.

## Advisory Tool for Standardized Baseline Development

A key output of the research project ‘Strategies for carbon market development in African Least Developed Countries’, commissioned by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), is an advisory tool, which seeks to break down the technical complexity of the official UNFCCC rules for standardized baseline (SB) development for decision-makers and practitioners in underrepresented CDM host countries.

The SB advisory tool intends to contribute to the broader objective of simplifying the CDM’s methodological toolkit, in particular those aspects relevant for underrepresented countries. It provides an overview of the regulatory framework for CDM standardization, both including top-down and bottom-up SB

development. The tool also explains important changes in the role of DNAs that are specific to SB development and draws attention to the potential applicability of CDM SBs for new carbon market and climate finance instruments such as Nationally Appropriate Mitigation Actions (NAMA) and the New Market Mechanism (NMM). Finally, it comprises two self-assessment matrixes, which are intended to provide practical guidance for DNAs in evaluating the potential and feasibility of developing SBs for a broad range of sectors, as well as the institutional capacity required to do so. The following sections will provide an introduction to the regulatory framework of SBs and the key elements of the advisory tool. The final version of the SB advisory tool will be published later this year.

## Top-down standardization

In late 2013, the EB agreed to establish a top-down process for SBs to complement the bottom-up process that had been previously used for SBs. This means that the UNFCCC Secretariat develops the standardized element itself, in collaboration with the respective DNA. This follows earlier efforts such as the simplified approach to calculate the fraction of non-renewable biomass (fNRB) for LDCs, SIDS and Parties with 10 or less registered CDM activities. In February 2015, the EB approved a work plan for further simplification and of the CDM, expanding standardised approaches to additionality (e.g. positive lists), simplified rules for PoAs, and possible digitization of forms and processes. Until August 2015, the EB had initiated six top-down SBs: forestry in Namibia, brick making in Peru, clinker in Peru, and cook stoves in Burundi, Malawi and Kenya. These will be developed by the UNFCCC secretariat with input from the DNAs supported by UNFCCC Regional Collaboration Centres (RCCs).

## Bottom-up standardization

This case refers to country-specific SBs, which need to be submitted by the host country DNA, with special provisions for LDCs. In contrast to traditional CDM methodologies, the



responsibility for preparing the SB submission rests with the DNA, which places significant responsibility and capacity requirements on DNAs or entities authorized by the DNA.

So far there has been a concentration on few sectors (power, methane avoidance), for which SBs are proposed and approved. As of August 2015, 30 CDM SBs have been proposed from 22 countries. 15 SBs have already been approved, of which seven are in the power sector (i.e. Grid Emissions Factor - GEF), five in the waste sector (i.e. landfill gas destruction), two in agricultural sector (rice mill and rice cultivation) and one for charcoal production. Others have been proposed for cement, industrial energy efficiency, cook stoves and rural electrification. This distribution of SBs means that in practice the SB guidelines so far have been mainly used to calculate parameters within an existing tool or methodology, rather than creating more innovative sector-specific baselines that simplify additionality, baseline selection and baseline emissions factors more fundamentally.

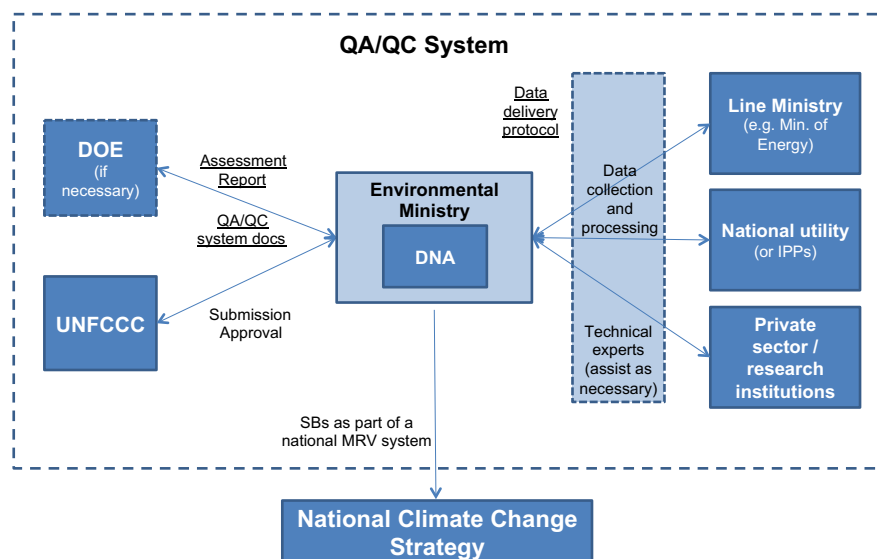
## New roles and requirements for the DNA

CDM standardization assigns DNAs a more central role than in the established CDM project cycle. As the simplified applicability of SBs requires robust checks, DNA-related procedures go further than previous responsibilities. The previous role of the DNA was the approval of CDM activities in the country and to ensure that they contribute to sustainable development. When engaging in SB development, however, DNAs need to adopt a more active role in establishing key methodological parameters, submitting the SB to the UNFCCC Secretariat and interact with Designated Operational Entities (DOEs) and line ministries.

Still, much of the technical work is likely to be carried out by technical experts under agreement with the DNA. Environmental integrity of an SB needs to be ensured with sufficient rigor. This is to a large extent the responsibility of the host

**Figure 3: Role of the DNA in SB development**

Source: Authors



country DNA, which needs to establish a Quality Assurance and Quality Control (QA/QC) system. This system requires the most comprehensive involvement of the DNA that coordinates the actions of technical experts, data owners (e.g. ministries), the UNFCCC, RCCs, and DOEs. The quality control aspect defines quality principles for data gathering. Quality assurance defines a data quality management system, and remains relevant even after submitting the SB. Figure 4 provides an overview of the roles in these processes.

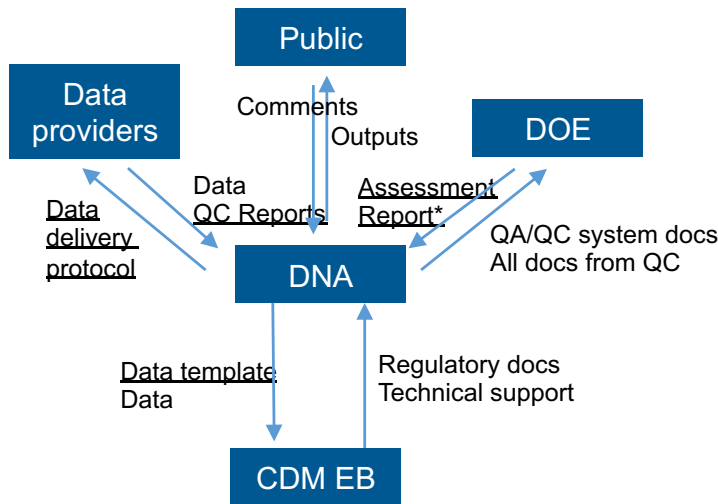
As the figure illustrates, the DNA is the mediator between the various parties involved. This indicates that significant efforts are required for SB development, which may be difficult in the currently uncertain market and policy environment.

## The role of international support

At least for the first SBs, external support should help the DNA in navigating complex technical procedures and for establishing a QA/QC system. Besides the initiatives of bi- and multilateral development partner agencies, the UNFCCC's CDM Regional Collaboration Centres (RCC) have established partnerships with regional institutions and can help DNAs develop SBs. For Africa, there is currently one RCC in Lome, Togo, and another one in Kampala, Uganda. Further RCCs have been established in Bogota, Colombia, and St. George's,

**Figure 4: Overview of QA/QC roles and responsibilities for SB development**

Note: adapted from UNFCCC 2014a; underlined documents have formal definition in UNFCCC regulations



New market mechanisms will also require establishing “ambitious reference levels (crediting thresholds and/or trading caps) for the periodic issuance of units based on mitigation below a crediting threshold” (FCCC/CP/2012/8/Add.1, para. 51). Such reference levels, if agreed, could exist at sector, national and/or international level in the form of standardized baselines. Therefore, SBs are relevant both for simplifying access to the current CDM, as well as for the mechanisms that will be key in the new climate agreement.

Grenada, for Latin America and the Caribbean, respectively. In addition, the UNFCCC Secretariat’s DNA Help Desk provides DNAs with advice and assistance with the submission of proposed standardized baselines, automatic additionality, and grid emission factors (GEF).

### SB potential for NAMAs and new market mechanisms

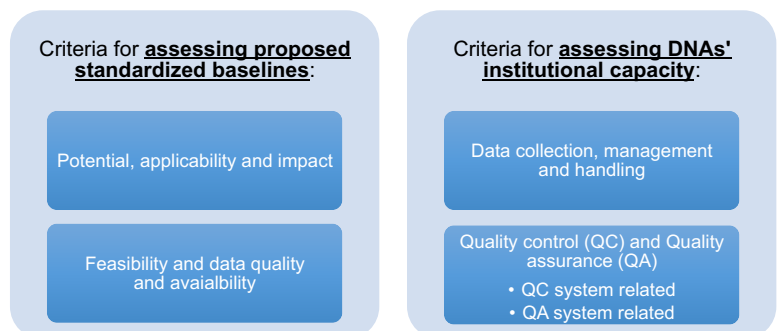
Both the standardized baselines themselves as well as the SB-related procedures can also have long-term benefits as building blocks of emerging future climate finance and carbon market mechanisms. Nationally Appropriate Mitigation Actions (NAMA) differ from CDM mainly as being actions at policy or programme level, whereas the CDM is a project and programmatic mechanism. Still, both require a deviation from a baseline. However, this will not necessarily need repetition for each mitigation project, for instance by determining a benchmark for the baseline e.g. energy consumption of households. The CDM can thus serve as an MRV Toolbox for NAMAs using existing methodologies, which could be adapted to the NAMA circumstances through standardization (e.g. default values, SB).

### SB Self-Assessment Matrix

The Self-Assessment Matrix of the SB advisory tool shall assist DNAs to enhance their capability to develop and assess proposed standardized baselines. Using this Self-Assessment Matrix will support DNAs to

- Better understand the key requirements and required processes that a DNA might be exposed to, and identify good practice.
- Estimate the resources needed to implement gap-closing actions

**Figure 5: Criteria for SB assessment**



What data and information should the SB provide? (Good practice)	Comments and clarifications	What status does the proposed SB have?	What needs to be done to until submission?
Definition and scope of the „sector“ are clearly determined	<b>Applicability:</b> the development of a SB should facilitate the implementation of emission reduction projects. Are the purpose and the potential applicability clearly described and reasonable?		

In our view interactions between top-down and bottom-up approaches should be pursued. More top-down standardization of methodologies and MRV procedures can facilitate their application, and can then be adopted and further standardized to country level circumstances. This can further lower transaction costs for country-specific SBs. Top-down standardization should prioritize those activities with high SD benefits for underrepresented countries. With regards to bottom-up SB development, further streamlining the procedures and reduce administrative complexity will be supportive for SB proponents and DNAs.

DNAs should actively reflect their new role and explore opportunities of cooperating with RCCs and the UNFCCC Secretariat to help them identify SB potential and access financial and technical resources. For being able to do so, however, additional funding both for DNAs as well as further efforts by the Secretariat would be necessary. This will also help to further raise awareness for the benefits of CDM tools such as SBs for future mechanisms such as NAMAs and NMM.

The evaluation matrix focuses on two primary topic areas:

The Self-Assessment Matrix is not intended as a replacement for a more detailed review of CDM regulations, but shall help to simplify technical UNFCCC documents. The matrix is a living document and is thus expected to grow, both in scope and content, as experience in SB implementation is growing. Table 1 provides an excerpt from the tool.

DNAs should perform self-assessments critically and complete the corresponding tables as transparently as possible. To perform this exercise, they can refer to the comments and clarifications column provided. This will assist DNAs in estimating the costs of closing gaps in relation to good practice and the benefits obtained from making changes.

## Conclusions and recommendations

The SB advisory tool is intended to serve DNAs in understanding and implementing the UNFCCC regulatory framework. As experience develops, the rules begin to mature, but are still rather complex. Additional barriers consist of political uncertainty regarding the future relevance of a reformed CDM in the new global climate change agreement. Yet, there are a number of resources available to DNAs – international capacity development and technical assistance programs, the RCCs and the UNFCCC Secretariat DNA Helpdesk.

### Further information:

A collection of studies and research reports on carbon market development in African Least Developed Countries can be found at <http://www.carbon-mechanisms.de/en/ldc>

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# CARBON MECHANISMS REVIEW



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