

# CARBON MECHANISMS REVIEW

ISSUE 4 | 2020

DECEMBER

## Managing the Interim

Carbon markets between delayed  
negotiations and piloting momentum

### First of its Kind

How the Peruvian-Swiss Agreement  
came about and how it works

# Content

December



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# editorial

## Dear Reader!

A prolonged interim, this is what the Covid-19 pandemic means for the Article 6 negotiations. Although the chapter on the Article 6 rulebook was meant to close at the end of 2020, the UN negotiations have now been postponed until next year – and it remains to be seen what shape the negotiations can actually take in 2021. But despite all of this, piloting and preparation for implementation of Article 6 continue to forge ahead.

In this issue of Carbon Mechanisms Review, we focus on a range of initiatives all dedicated to further developing the Article 6 landscape – from the joint Japanese-German research on CDM transition numbers, to the Peru-Switzerland cooperation agreement, to Tunisia's carbon market preparations to ensure Article 6 readiness in Asia-Pacific. And last but not least, we showcase experiences gained from REDD+ activities in the Democratic Republic of Congo over the past ten years and look at the lessons that can be learned for the design of future market-based forestry activities.

What these actions and initiatives have in common is a keen interest among a great variety of stakeholders to move forward, foster cooperative market-based climate action and boost the global mitigation effort. May this optimistic spirit help us through this difficult interim phase!

*Christof Arens*  
*Editor-in-chief*



Carbon Mechanisms Review (CMR) is a specialist magazine on cooperative market-based climate action. CMR covers mainly the cooperative approaches under the Paris Agreement's Article 6, but also the broader carbon pricing debate worldwide. This includes, for example, emission trading schemes worldwide and their linkages, or project-based approaches such as Japan's bilateral off-setting mechanism, and the Kyoto Protocol's flexible mechanisms CDM/JI. CMR appears quarterly in electronic form. All articles undergo an editorial review process. The editors are pleased to receive suggestions for topics or articles.

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# Getting the Numbers Right

## How many CERs can be transferred to the Paris Agreement?

by Thomas Forth, Advisor to BMU

The issue of pre-2021 CERs is a key component in transitioning the CDM to the Paris Agreement, one which could cause the climate change negotiations to reach a long-lasting deadlock. Emission reductions that make no contribution to achieving NDC reduction targets could simply be deducted from those targets and thus weaken their mitigation effects. Of course, the question is whether to consider CER transfer separately from other components of CDM transition, such as the existing CDM projects and the pool of CDM methodologies, or to make them part of overall ambition in using the market mechanisms to achieve the Paris Agreement goals. But since the quantity of the pre-2021 CERs has not yet been made clear in the climate change negotiations, there is first a need to compensate for that lack of information.

The policy-related conflict exists not only in terms of the quantity of pre-2021 CERs, but also in the fundamental issue of approving those certificates for use. In the climate change negotiations, the CDM was not assigned a role in the Paris Agreement. During the negotiations leading to the Agreement, many Parties would have voted against the Paris Agreement's Article 6 if it had meant a continuation of the CDM. That lessons should be learned from experience gained with the CDM was the only aspect on which Parties were able to agree. The CDM, one of the flexible mechanisms of the Kyoto Protocol, was designed to help industrialised countries in achieving their emission reduction targets and enable additional investment in climate change mitigation that would otherwise not have occurred. The legal framework of the CDM ends with the Kyoto Pro-

ocol's second commitment period, which does not provide for its further use. This means that there is no legal basis on which to use the CERs to achieve reduction targets contained in NDCs and thereby weaken the climate change policy ambition of those NDCs.

The negotiated reality is, however, different. The second and third version of the Presidency texts from COP 25 in Madrid set out draft rules for the pre-2021 CERs. The detailed rules proposed in the third Presidency text do not set out a quantity and thus demonstrate the need to take an empirical approach to the number of available CERs, cp. box on page 6.

The COP Presidency's proposed rules refer to setting a registration date for CDM activities to make issued CERs eligible for transfer. The date is to be set by the CMA. Use of these CERs in NDCs should be permitted until the end of 2025. In that period, the host country – as the CER seller – will be exempted from the obligation to make corresponding adjustments in the NDC emissions balance, whereas the buyer country will have to make corresponding adjustments to the NDC balance if the CERs are credited. All CERs not used by the end of 2025 should be placed in a reserve as a buffer to meet host countries' NDC targets. Without quantification of the CERs available for transition, it is difficult to assess the effect on NDC ambition.

The COP Presidency's draft rules have been rejected by many, but not all, Parties. From a climate policy perspective, the question arises as to why they should be allowed at all.



Source: Ibrahim/UNFCCC Photo Contest/CDM 834

*Reassortment required: The CDM ends with the Kyoto Protocol's second commitment period. CDM Brick Factory GHG Reduction Project in Egypt.*

## Who would benefit? Who would suffer?

Acceptance of CERs under the Paris Agreement would further weaken the as-yet inadequate reduction targets contained in NDCs:

- The demand for new reductions under Article 6 would be reduced by the same quantity of certificates. This would only serve to delay the use of Article 6.
- Also, with the certificates under Article 6.4, the CERs have no climate policy value because under the provisions of the Paris Agreement, Article 6.4 certificates should lead to a greater mitigation effect:
  - This is mainly due to the fact that baselines should be avoided where they allow crediting on a “business-as-usual” basis rather than taking account of the emission reduction contribution from the host country’s NDC.
  - In addition, a deduction must be made from the transferred certificates which, as a contribution to “overall mitigation in global emissions” (OMGE), cannot be used by a state or a company to achieve their reduction targets.
  - Last but not least, many Parties see little or no advantage in agreeing to CDM transition. This is due to the regional inequality in the distribution of CDM projects, which also results in an unequal distribution of CERs. This, for many countries, unfavourable trend in the

**Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement, Version 3 of 15 December 2019**

**XI. Transition of clean development mechanism activities and certified emission reductions**

**B. CER transition**

75. CERs issued under the CDM may be used towards the NDC of the CDM host Party or a participating Party in accordance with all of the following conditions:
- a) The CDM project activity or CDM programme of activities was registered on or after a date to be determined by the CMA;
  - b) The CERs were issued in respect of emissions reductions or removals achieved prior to or on 31 December 2020;
  - c) The CERs are used towards the NDC by no later than 31 December 2025;
  - d) The CDM host Party shall not be required to apply a corresponding adjustment consistent with decision X/CMA.2 (Guidance for cooperative approaches referred to in Article 6, paragraph 2 of the Paris Agreement in respect of the CERs identified as to be used by 31 December 2025 pursuant to (c) above;
  - e) The participating Party using the CERs towards its NDC shall apply corresponding adjustments consistent with decision X/CMA.2 (Guidance for cooperative approaches referred to in Article 6, paragraph 2);
  - f) The CERs shall be identified as pre-2021 CERs in the CDM host Party and participating Party's reporting in accordance with decision 18/CMA.1.
76. CERs that do not meet the conditions of paragraph 75 above are in reserve and may only be used towards NDCs in accordance with a future decision of the CMA.

CDM which occurred under the Kyoto Protocol would then continue under the Paris Agreement.

While these are good climate policy reasons not to allow the use of pre-2021 CERs to meet the Paris Agreement goals, the transition of CERs is nonetheless included in the negotiating text.

## Recap Madrid

In Madrid, very vague assumptions were made about the available CERs. This applied more or less to all negotiating groups. The information on the quantity of CERs, both overall and for individual countries, was often based on nominal values extrapolated for the decade to 2030 as if the CDM would simply continue as is. The figures



Source: Wenju/UNFCCC Photo Contest

*Bringing light into darkness: The joint Japan-German analyses provide an acceptable, neutral CDM transition dataset*

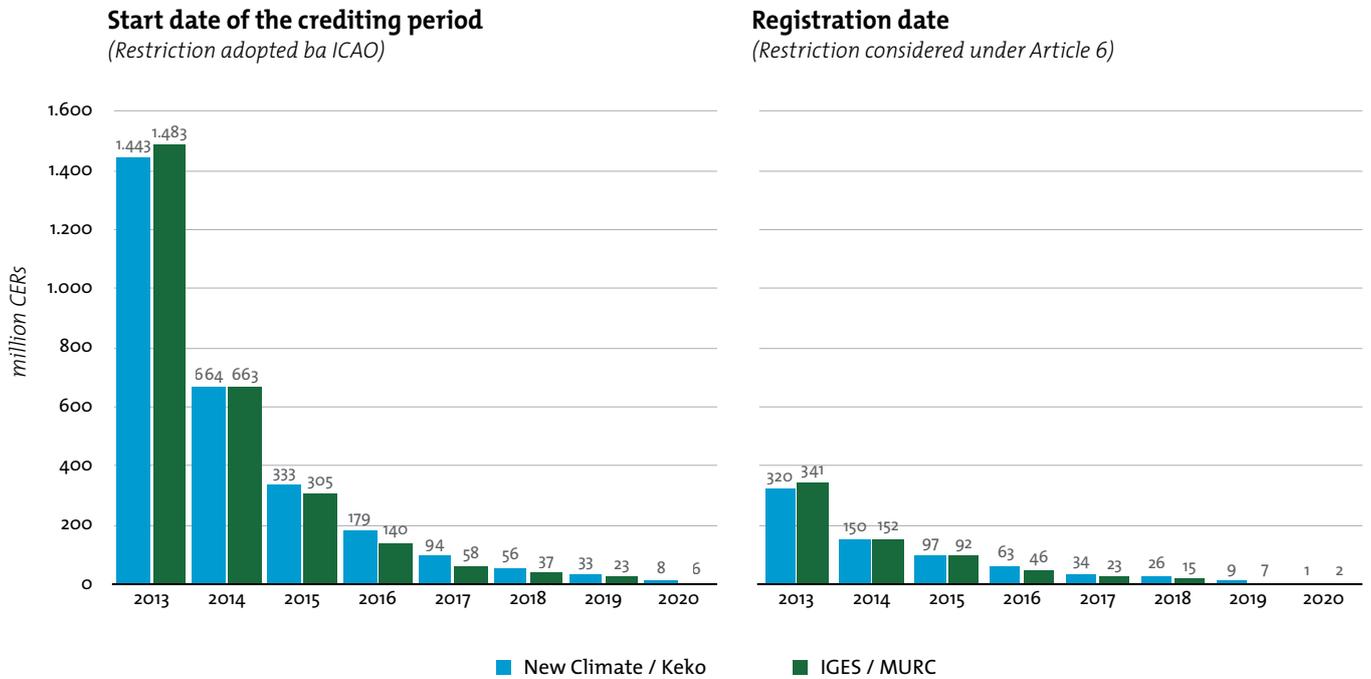
and projections for CER quantities far exceeded the existing reductions achieved under the CDM. Some Parties saw these quantities as a major threat to environmental integrity, while – driven by those huge quantities – the expectations of other Parties’ increased.

For those who negotiated Article 6 into the Paris Agreement despite being aware of the shortcomings of the CDM and the failed CDM reform, the threat posed to the new market mechanisms by old CERs is unacceptable. In addition to the consequences of undermining NDCs and delaying the use of Article 6 as outlined above, it would send a strong signal to “carry on” in the style of the CDM. However, the major dangers seen in Madrid in accepting CER transition were based on the same

speculative quantities from which the CER sellers found their motivation.

As a result, CER sellers and CER non-buyers were better positioned against each other than it would have been the case with realistic quantities. The question is, therefore, how to arrive at realistic quantities and how serious the outcome if the pre-2021 CERs were to be used under the Paris Agreement. Following COP 25, this was taken up analytically in Japan and Germany in order to create an acceptable, neutral set of data for all Parties to use. The joint publication by IGES, Mitsubishi URF, NCI and Öko-Institut, which was recently presented at the November Climate Dialogues, takes a significant step towards this goal.

## Cumulative CER supply potential under different restriction types and cut-off dates.



Source: Ishikawa et al (2020): CDM supply potential for emission reductions up to the end of 2020

### Outcome of the aggregated data analysis

The data analyses performed by both research groups are based on the most recent CDM reporting data provided by the UNFCCC Secretariat in October 2020. While they come to largely similar conclusions, the differences between the two analyses are mainly reflected in certain regional and country-specific data.

The most important statements can be found in the aggregated data for the crediting period and the registration data. The registration figures are lower as crediting usually begins later and the crediting figures include project preparations that have been underway since the start of the CDM, but for which crediting only started in 2013.

The cumulative potential from projects registered on or after 1 January 2013 is thus between 320 and 341 million CERs, of which somewhere in the region of 46 to 63 million CERs come from projects registered since 1 January 2016.

However, where the restriction is based on the start of a project's first crediting period, projects that start their first crediting period on 1 January 2013 could potentially deliver between 1,443 and 1,483 million CERs. This amount would cover the second commitment period with the new CDM activities. The overview shows high figures for 2013 and for 2014, both of which result from the surplus from previously-initiated activities during the CDM boom phase in the first commitment period.

As the publication contains no assessment regarding the suitability of limitation criteria and periods suitable for transition, the neutral character of the analysis is maintained and the data can be used by all Parties in deciding their positions.

## Findings of the country-specific analysis

In addition to the globally aggregated figures, the analysis highlights some special characteristics in individual CDM countries. However, the growing participation of many developing countries during the second commitment period of the Kyoto Protocol is important in gaining a deeper understanding of developing countries' CDM transition needs. This is particularly evident with regard to crediting data. In the following, only the special characteristics of the 10 most important CER suppliers are listed, as they give indications as to their negotiating positions in the climate change negotiations:

### China, India, Brazil

In the analysis, these countries have large shares in the period after 2013. After 2016, India and Brazil remain significant, while China is busy refocusing its activities and has hardly any new CDM projects.

### Bangladesh, Bhutan

Both countries, especially Bangladesh (ranking in first place), have a large share of the CER quantities from 2016.

### Africa, South Africa, Ivory Coast

African countries were late in participating in the CDM. Nonetheless, Ivory Coast (2016) and South Africa (2013) are among the top 10. In regional terms, Africa ranks well behind Asia and Latin

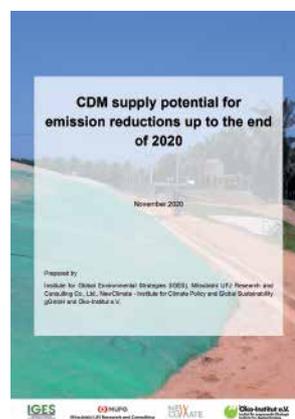
America, but its share in the crediting period increases from 2016.

The country analysis shows the extent to which interest in CDM transition is based on the country's level of participation in the CDM. However, the changes at country level must be put into perspective in view of the sharp drop in activity in the carbon market. The countries that have been active in recent years have, however, built-up their capacities and strengthened their structures ready for participation in the global carbon market, and this is likely to generate interest in the transition of CERs and the projects that are still underway. It is also evident that interest in the recently-generated CERs is linked to the prospects of the projects on which they were based. This is the point where isolated consideration of pre-2021 CERs hits a brick wall.

Further analyses of the true availability of old certificates and the ongoing projects with crediting post-2020 must be conducted with the respective countries and cannot be derived from the global datasets alone. It is thus to be hoped that the CDM host countries will show interest in embarking on this kind of joint approach.

### The study is available for download at:

<https://www.carbon-mechanisms.de/en/publications/details/cdm-supply-potential-for-emission-reductions-up-to-the-end-of-2020>



# First of its Kind

## The Peruvian-Swiss Article 6 Agreement: How it came about and how it works

by Veronika Elgart, Deputy Head of Section at the Federal Office for the Environment of Switzerland; Laura Secada, General Director, Directorate General for Climate Change and Desertification of the Ministry of Environment of Peru

In October 2020, the Republic of Peru and the Swiss Confederation signed an Implementing Agreement<sup>1</sup> on a novelty cooperation under Article 6 of the Paris Agreement on climate change. It is the first agreement of its kind worldwide. The cooperation will lead to reduced greenhouse gas emissions and promote sustainable development in Peru, financed by Swiss stakeholders, and allow Switzerland to achieve its climate targets partly abroad. The Agreement sets a robust framework for commercial engagements of private or public stakeholders across the two nations. The stipulated investments will not be accounted as international climate finance. The cooperation is set up to benefit Peru, Switzerland as well as the global climate.

**Why is this a novelty cooperation?** The cooperation between Peru and Switzerland marks the first time two states have agreed on the implementation of the cooperative approaches under Article 6 of the Paris Agreement. Most notably, the cooperation between Peru and Switzerland rules out double counting of internationally transferred mitigation outcomes (ITMOs) based on achieved emission reductions or removals. Until 2020, only developed countries had binding climate targets and, consequently, double counting has not been addressed by developing countries in the international carbon market. From 2021, the Paris Agreement marks a new era in the international climate regime. Each Party maintains a Nationally

Determined Contribution (NDC) under the Paris Agreement and avoidance of double counting is one of the requirements for a cooperation under its Article 6. Peru and Switzerland not only have agreed on how to go about that, but they also strengthen the social aspects in the carbon market and set strict rules concerning adherence to human rights. Finally, the Agreement between Peru and Switzerland is the first instrument that provides access to the voluntary carbon market to ITMOs under the provisions of the Paris Agreement.

In addition, this agreement is important because it represents a model at the international level of cooperation between countries on how to carry out the carbon market approaches proposed by the Paris Agreement. Therefore, it will serve not only to facilitate international negotiations on the carbon market to have a successful conclusion, but also to allow its rapid implementation, helping to accelerate climate action.

### Why is an Implementing Agreement necessary?

The Agreement establishes a legal framework for the recognition of transfers and use of ITMOs. The framework ensures compatibility between the national frameworks of Peru and Switzerland in this regard and also compliance with the multilateral rules set by the Paris Agreement. With such a binding framework, Peru and Switzerland enhance investment security in mitigation

<sup>1</sup> <https://cdn.www.gob.pe/uploads/document/file/1399893/Convenio%20en%20ingl%C3%A9s%20.pdf>



Source: Solar Panels by Julia Manzerova (<https://flic.kr/p/5CF214>) / Flickr / CC BY-ND 2.0 (<https://creativecommons.org/licenses/by-nd/2.0/>)

*Reaping the benefits of cooperation: Solar panels in Peru*

outcomes destined for the international carbon market and stipulate climate action.

**How does the cooperation function?** Under the Agreement, Peru and Switzerland set out the framework conditions for international transfers of mitigation outcomes. Each Party must authorize all transfers and requirements are set in regard to environmental integrity, sustainable development and the respect of human rights. Within these framework conditions, third parties -

i.e. public or private entities - can apply for recognition of transfers and benefit from a guarantee from Peru and Switzerland that double counting of the ITMOs is avoided. Thereby, the Agreement between Peru and Switzerland enables commercial engagement in selling and acquiring mitigation outcomes between public or private entities across the two nations, at the standard of the Paris Agreement (see Box 1).

**BOX 1. Operational steps in the cooperation between Peru and Switzerland**

**STEP 1: AUTHORIZATION** Upon request, Peru and Switzerland authorize the transfer and use of mitigation outcomes. The authorization is voluntary under the Agreement and the requirements and procedures of the authorization decision are governed in the national framework of each Party. Authorization is required by each Party and is issued through unilateral authorization statements. These statements form part of the Agreement once issued. Each authorization statement will include all applying conditions and define all activity-specific elements such as the crediting period length, the applied standard or baseline methodologies and the requirements for monitoring and verification reports. Through its authorization statement, the Party where the mitigation outcomes are achieved (Transferor) will also define the entity authorized to transfer the mitigation outcomes, i.e. the owner and seller of the mitigation outcomes.

Through the authorization, Peru and Switzerland guarantee the recognition of the international transfer of the mitigation outcomes and the avoidance of double counting, pending fulfillment of defined transfer requirements (see Step 3). If and when the mitigation outcomes are transferred remains at the discretion of the entity authorized to transfer.

**STEP 2: TRANSFER REQUIREMENTS** The entity authorized to transfer, submits to each Party monitoring and verification reports for approval. In addition, the Transferor examines the following transfer requirements: a) no double claiming of the mitigation outcomes under other national or international systems, b) no evidence of discrepancy with the provisions in the authorization statements and c) no evidence of violation of human rights or of national legislation of the Transferor in the implementation of the mitigation activity. Where the assessments are positive, each Party officially confirms the fulfillment of all transfer requirements.

**STEP 3: RECOGNITION OF TRANSFER** Consistent with a request of the entity authorized to transfer, the Parties publicly recognize an international transfer and the ITMOs in their registries. Each ITMO has unique identifiers clarifying its origin and underlying documentation. Where national units existed before the recognition of the international transfer, these units must be cancelled.

**STEP 4: AVOIDANCE OF DOUBLE COUNTING AND TRANSPARENCY** Each Party reflects all recognized international transfers in its assessment of NDC achievement under the Paris Agreement. The bilateral Agreement between Peru and Switzerland specifies the method for the so-called corresponding adjustment. Mitigation outcomes first transferred and ITMOs used towards NDC achievement will be added and subtracted, respectively, to the emission level covered by the NDC of each Party. For multi-year NDCs, the total sum of all such transfers and use will be reflected, while for single-year NDCs an average thereof will be applied to the NDC target year. In addition, each Party will report biennially towards the Paris Agreement on all international transfers and the emission balances resulting from the domestic emission development and the adjustments from the transfers.

**Who can sell or acquire ITMOs under the Implementing Agreement?** Any public or private entity can apply to be a recognized seller of ITMOs under the Agreement. Such application is to be conducted towards the Party where a mitigation outcome is achieved (Transferor). In accordance with its national procedures, the Transferor formally defines the entity authorized to transfer (seller) under the Agreement. The Agreement foresees various entities in this role as they will differ from one mitigation activity to another. The buyer, i.e. the entity acquiring ITMOs, is not defined by the Parties but chosen by the entity authorized to transfer.

**Are units issued under the Agreement and secondary transfers allowed?** Currently, no issuance of international units representing ITMOs is foreseen. Issuance of ITMOs requires further decision by the two Parties and a jointly used registry. In the absence of issued international units, the transfers and the ITMOs will be recognized by the two Parties through public accounting. In addition, each Party may issue in its national framework national units representing the recognized ITMOs. In case of their international transfer, such national units must be cancelled. Peru foresees to issue national units in its national registry, so called PERs, as a recognized mitigation outcome allowed by the government to be transferred internationally under the framework of article 6.2 of the Paris Agreement. Switzerland equally intends to issue national units based on ITMOs transferred to entities who hold an account in the Swiss registry. Secondary transfers are generally allowed under the Agreement and where units exist this may be easily conducted within the registries used.

**For what purposes can the ITMOs be used?**

ITMOs recognized under the Agreement between Peru and Switzerland may be used for NDC achievement or for other mitigation purposes of the Parties, of their public entities or of private entities domiciled on their territories, including for offsetting against voluntary targets. Independ-

ent of the use of an ITMO, the Transferor will reflect the transfer in its reporting under the Paris Agreement (through 'corresponding adjustments' as defined in the Agreement) and thereby ensure the avoidance of double counting of mitigation outcomes between NDCs as well as with other mitigation purposes. Correspondingly, the means for the acquisition of ITMOs will not be reported as international climate finance under the Paris Agreement, independent of the use of the ITMOs. The Agreement also sets out temporal guidance on the use of ITMOs. The ITMOs should be used during the NDC period in which they are achieved. This general provision will be specified on a case-by-case basis through the authorizations under the Agreement.

**How does the cooperation promote sustainable development?** Each Party is required to review an activity regarding its contribution to sustainable development before the issuance of an authorization. Such review is governed by the respective national frameworks. The Agreement sets out minimal criteria such as consistency with sustainable development and low emission development strategies, prevention of environment-related negative impacts, respect of national and international environmental regulations, prevention of social conflicts and prevention of violation of human rights. In addition, each Party may define activity-specific minimal requirements regarding sustainable development. Such requirements are monitored and verified and their fulfillment is mandatory for the recognition of the transfer under the Agreement.

**What mitigation outcomes are eligible under the Agreement? How is environmental integrity ensured?** The Agreement sets minimal criteria in order to ensure environmental integrity. Each Party may set out further requirements in its national framework. The provisions in the Agreement include that mitigation outcomes must be achieved in the year 2021 at the earliest; that they must be real, verified as well as additional and



Source: One of Many by Daniel Bachhuber (<https://flic.kr/p/5ZpzLC>) / Flickr / CC BY-NC ND 2.0 (<https://creativecommons.org/licenses/by-nc/2.0/>)

*Multiple benefits: Projects under the Agreement are to enhance global ambition and contribute to sustainable development in the host country.*

their permanence must be ensured. In addition, the activities from which they originate must not be based on nuclear energy and avoid locking in carbon-intensive technologies or practices, in particular the continued use of fossil fuels. Furthermore, conservativeness in baseline setting is applied, the activities must be additional to relevant existing and planned national policies and incentivize enhanced climate action.

## **BOX 2. How can a private or public entity participate under the Agreement?**

An entity seeking authorization of mitigation outcomes for an international transfer under the Agreement must request such authorization under the national frameworks of each Party. Currently, these procedures are in the build-up in both Parties.

**Peru** – Those interested in participating under this initiative can contact the General Directorate of climate Change and Desertification of the Ministry of the Environment to request information, through the following website <https://www.minam.gob.pe>

**Switzerland** – The Federal Office for the Environment will be the competent entity to grant authorization of mitigation outcomes for an international transfer based on the Swiss CO<sub>2</sub> Act. Detailed requirements for receiving an authorization will be laid out in the Swiss CO<sub>2</sub> Ordinance that will be published in the course of 2021. The KliK Foundation (see Box 3) has already launched a procurement process in order to identify mitigation activities that could be used to fulfill their offset obligation under the Swiss CO<sub>2</sub> Act. To learn more about this process, please do so via the KliK Foundation and follow the instructions on their website <https://www.international.klik.ch/processus-dacquisition/processus-dacquisition>. For Peru, a country-specific website is available at <http://peru.klik.ch> through which the procurement by the KliK Foundation is organized.

Private or public sector entities wishing to seek authorization of mitigation activities for international transfer without going through the processes of the KliK Foundation can contact the Swiss Federal Office for the Environment at [swissflex@bafu.admin.ch](mailto:swissflex@bafu.admin.ch). Detailed authorization requirements will be laid out in the Swiss CO<sub>2</sub>-Ordinance that will be published in the course of 2021.

**How does the cooperation enhance global ambition?** Cooperation is at the heart of the Paris Agreement alongside ambitious domestic climate action. Peru is currently in the process of updating its NDC and continues proposing high ambition, presenting an absolute emission cap of 208,8 MtCO<sub>2</sub>eq by 2030, as its unconditional goal. Additionally, Peru could reach the limit of 179 MtCO<sub>2</sub>eq, conditioned to international funding and favorable conditions. This implies that Peru has raised its ambition from 30% to 40% compared to business as usual levels by 2030. The updated

NDC also indicates that Peru envisages its participation in the market cooperative approaches of the Paris Agreement in order to help increase the ambition of its NDCs, promote sustainable development and guarantee environmental integrity. The Swiss CO<sub>2</sub> Act for 2022-2030<sup>2</sup>, recently approved by parliament and currently passing through a referendum period, confirms Switzerland's NDC target of reducing emissions by at least 50 percent by 2030 (baseline 1990) and defines the minimal domestic share to three-quarters. The approved Act foresees stringent

<sup>2</sup> <https://www.parlament.ch/centers/eparl/curia/2017/20170071/Schlussabstimmungstext%201%20NS%20D.pdf>

domestic measures including a CO<sub>2</sub> levy on combustible fuels, such as heating oil and natural gas (motor fuels are exempt), ranging from currently CHF 96 to 210 per ton of CO<sub>2</sub>, a levy on flight tickets and a new “climate fund” stipulating domestic and international climate action. Furthermore, the approved CO<sub>2</sub> Act requires fossil motor fuel importers in Switzerland to compensate partly for the greenhouse gas emissions caused by transport. This compensation will be achieved partly abroad, through cooperation under Article 6. In summary, Switzerland’s NDC includes stringent domestic measures and enhanced ambition through cooperation under the Article 6 of the Paris Agreement.

The cooperation between Peru and Switzerland is additional to the existing and planned measures in Peru to reduce greenhouse gas emissions. The means for the acquisition of ITMOs will not be counted as international climate finance. Furthermore, Peru and Switzerland have agreed to authorize activities that promote enhanced climate action and safeguard against incentives for low ambition from both Parties.

Furthermore, by providing for the use of ITMOs for other mitigation purposes, the cooperation between Peru and Switzerland enables mitigation objectives other than NDCs to be achieved through mitigation outcomes beyond the Paris Agreement.

**What is the role of international carbon markets in the context of NDCs?** The international carbon market faces new questions regarding its complementarity and synergies with the NDC and the domestic activities of the Transferor. These questions go beyond the avoidance of double counting of mitigation outcomes. Therefore, it is important that the Transferor regulates from which activities mitigation outcomes may be internationally transferred. This enables strategic use of the international carbon market, complementing

and strengthening national climate policies and objectives. The build-up of such strategies is crucial to maximize the benefit from cooperation under Article 6. The international carbon market is well set to unlock investments for untapped mitigation potential. In the context of NDCs, the effectiveness of the international carbon market may be further strengthened.

**From which sectors or activities will the ITMOs be sourced?** The Agreement between Peru and Switzerland does not predefine sectors or activities for the cooperation apart from the exclusion of activities based on nuclear energy and locking in carbon intensive practices or technologies such as use of fossil fuels. Such requirements are to be determined in the national frameworks in order to incorporate updated strategies for the use of international carbon markets.

**What national frameworks are necessary to participate in the Peruvian-Swiss approach?** In the cooperation between Peru and Switzerland, national frameworks are key. For example, authorization requirements, procedures and decisions are governed by the national frameworks. This approach was chosen to allow for the national frameworks to evolve over time and to remain compatible with various international systems in the international carbon market. Indeed, it is likely that Peru as well as Switzerland will participate in more than one bi- or plurilateral cooperation and both countries are strongly in favor of operationalizing the multilateral mechanism under Article 6.4 of the Paris Agreement. Consequently, the bilateral framework was designed as flexible as possible to allow for its implementation in synergy with other initiatives currently being built up. For example, the authorization procedures are anchored in the national framework of each Party, rather than in the bilateral framework. This allows the Transferor to pursue the authorization procedures only once for each mitigation outcome regardless of whether it is eventually transferred

under the framework with Switzerland or another system.

With this strong role for national frameworks for Article 6.2 cooperation, these must respond to a number of functions. The following are the minimally-required functions arising from the Peruvian-Swiss Agreement.

- Firstly, the national frameworks must establish a procedure to receive authorization requests and to take authorization decisions. Ideally, authorization requirements are established and published in order to facilitate the development of activities eligible for Article 6 cooperation. In the context of NDCs, the relevance of the authorization decision is unprecedented. Mitigation outcomes for which international transfer is authorized must go beyond the emissions development under NDC implementation of the Transferor. The review of the authorization requests will likely require inter-ministerial engagement and a mandate to an entity of the government to coordinate the participation in Article 6 cooperation.
- Secondly, each Party must approve independent verifiers as well as assess and approve the consequent monitoring and verification reports. Moreover, the Transferor must ensure that a mitigation outcome is not claimed under another national or international system at the point in time of its international

transfer. Examination thereof is simplified in the existence of a national registry tracking mitigation outcomes and any associated units. Finally, the Transferor must examine that there is neither evidence of discrepancies with the provisions in the authorization statements nor of any violation of human rights or of national legislation of the Transferor. Each Party needs to set up procedures in its national framework to conduct such examination and confirm the fulfillment of the transfer requirements.

- Thirdly, each Party must define and use a registry for the recognition of transfers of mitigation outcomes under the Agreement. As long as no international units representing ITMOs are issued, the requirements for such registries deriving from the Agreement are minimal. The registry must be public and updated. It represents public accounting of the transfers recognized under the bilateral framework. No linking or interface between the registries is foreseen.
- Fourthly, each Party must possess the know-how and the resources to implement the above-mentioned tasks. In synergy with other tasks from the implementation of the Paris Agreement, the engagement in Article 6 should be self-sustaining and benefit the country. Currently, Peru and Switzerland participate in international programs addressing these capacities.

### **BOX 3. The Foundation for Climate Protection and Carbon Offset (KliK)**

The KliK Foundation is an organization which fulfills the obligation of mineral oil importers under the Swiss CO<sub>2</sub> Act to offset part of the emissions caused by the use of motor fuels. To this end, it procures mitigation outcomes from activities abroad in order to have these recognized under the Swiss CO<sub>2</sub> Act. Switzerland will account those recognized mitigation outcomes under the Swiss CO<sub>2</sub> Act towards its Nationally Determined Contribution (emission reduction target) under the Paris Agreement.

**How does Peru's national framework function?**

The Peruvian framework is linked to the procedure to apply to the National Registry of Mitigation Measures. The Registry was created by the bylaw of the Framework Law on Climate Change issued in December 2019. It is administered by the Ministry of the Environment and registers those initiatives that are for NDCs and those that will issue emission reduction units for international carbon markets under Article 6 of the Paris Agreement.

The procedure includes the guidelines to authorize international transfers of mitigation results. These guidelines distinguish a stage where the initiative is subject to a government evaluation to determine whether or not it is part of the NDC and if the initiative contributes to the sustainable development of the country. If it is determined that it is not part of the NDC, it is granted a letter of no objection so that it can participate in Article 6 carbon markets. This stage seeks to give certainty to the investor to continue investing in the development of the initiative under a standard for carbon markets.

After this stage, the initiative will have to go through the validation stage by an accredited third party to check if it meets the minimum requirements necessary to be able to issue carbon credits under a recognized standard. After this stage, if validation is obtained, the Peruvian government grants the authorization letter for the international transfer of mitigation outcomes for a specified time linked to the accreditation period of the respective standard.

**How does Switzerland's national framework**

**function?** Switzerland's national framework for the period from 2021 is currently being developed. The Swiss Parliament has recently approved a revised CO<sub>2</sub> Act (cp. above) which is currently passing through a referendum period. The Act requires ITMOs to be additional and any cooperation under Article 6 to contribute to sustainable development. An Ordinance will specify the requirements

and procedures for Switzerland's Article 6 activities and is expected to enter into force in 2022. Until the revised Act is in place, inter-ministerial bodies at executive as well as technical level are being consulted with regard to implementing the Agreement with Peru. The Federal Office for the Environment is the coordinating entity.

**How will future multilateral rules under the Paris Agreement be reflected in the cooperation between Peru and Switzerland?**

Peru and Switzerland remain strongly committed to the multilateral regime under the Paris Agreement and are calling for the adoption of a robust and complete rulebook at COP26 in November 2021. With the aim to catalyze climate action immediately, they will start their cooperation under Article 6 of the Paris Agreement in early 2021. In the event of divergences from the multilateral regime, the Agreement is to be amended, as necessary.

# Rolling up its Sleeves

## Tunisia is preparing for participation in international carbon markets

by Mohamed Ali Zouaghi, Technical Expert Global Carbon Market, GIZ Tunisia  
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Since the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, Tunisia has engaged in international climate policy. Driven by an increasing reliance on energy imports due to relatively limited fossil fuel resources and increasing energy demand (energy deficit around 52% in 2018), Tunisia embarked early on an energy transition process. Accounting for 58% of national emissions (see Figure 1 below), the energy sector is at the core of Tunisia's national climate efforts. The Tunisian Solar Plan (2012) aims to increase the share of renewable energy in elec-

tricity production to 30% in 2030, compared with only 4% in 2015, and to intensify the promotion of energy efficiency in all consumer sectors and for all energy usages. In addition, around 20 different energy efficiency actions have been included in Tunisia's nationally determined contribution (NDC), covering the entire industrial, building, transport and agricultural sectors.

Tunisia has been at the forefront in the region, demonstrating its climate commitment not only in terms of its reporting obligations (submission

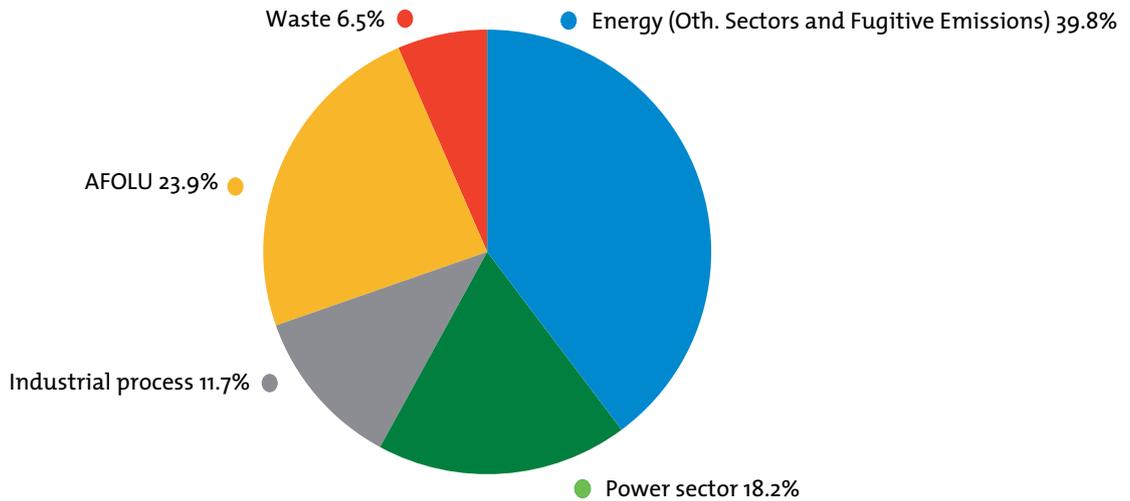


Source: Shutterstock

Target Energy Sector: Sousse Thermal Power Plant in Tunisia

**Figure 1: Distribution of Tunisia’s gross greenhouse gas (GHG) emissions by source in 2012;**

Source: 2nd Biennial Update Report (2016)



of three national communications and two biennial update reports (BURs)), but also with regard to the development of nationally appropriate mitigation actions (NAMAs) in several sectors. Tunisia additionally introduced a Monitoring, Reporting and Verification (MRV) system and submitted an ambitious Nationally Determined Contribution (NDC).

Tunisia’s NDC aims at reducing the emission intensity (CO<sub>2</sub> consumption per unit of GDP) by 41% by 2030 compared with 2010. In an effort to decouple economic growth from CO<sub>2</sub> emissions, 13% of emission reductions are allocated to national efforts for unconditional action. The remaining 28% of the NDC objective are based on international support. Tunisia’s NDC is expressed in terms of carbon intensity with the aim to decrease the ratio from 0.541 tCO<sub>2</sub>e/1,000 TND of GDP in 2010 to 0.320 tCO<sub>2</sub>e/1000 TND in 2030. To achieve its NDC, Tunisia will introduce comprehensive measures to reduce greenhouse gas (GHG) emissions in the energy, industrial processes, agriculture, forestry and other land use, and waste sectors.

For Tunisia, participation in global carbon markets is an efficient way to achieve its NDC commitments in the longer term, with ambitious goals for conditional actions as well as encouraging investments in low-GHG emission technologies. In addition, carbon pricing mechanisms at the national level are meant to accelerate the transition towards clean energy, reduce the trade deficit related to fossil fuel imports, stimulate economic growth and create new jobs through greener investments. This way, Tunisia would be able to increase its ambition in the next rounds of NDC updates. To achieve these objectives, Tunisia launched various projects with the support of the World Bank’s Partnership for Market Readiness (PMR) Initiative and by means of cooperation with the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) via the Global Carbon Market project implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The carbon instruments mentioned in the following are still in the study phase. Currently, plans are being developed to integrate carbon instruments into three different sectors.

## Three sectors, three roads ahead for carbon pricing

The PMR project (with the UNDP as project partner in Tunisia) conceptualizes and designs carbon instruments for Tunisia in specific areas. Following a participative and multi-criteria process (see textbox “Methodological approach for the selection of the sectors”), three priority sectors were identified for developing carbon pricing/market instruments: the energy sector, the electricity sector and the cement sector. The electricity sector had been considered separately from the energy sector in order to have a separate and specific instrument for electricity.

### **Energy sector: The Energy Transition Fund (FTE) as a main lever for low-carbon transition**

In Tunisia, the energy sector is most promising in introducing a carbon instrument because of its readiness and the existence of a fund linked to en-

ergy consumption (indirectly to GHG emissions). The Energy Transition Fund (Fonds de Transition Energétique, FTE) is a key instrument in the implementation of the energy transition and a driver for low-carbon development in the energy sector.

Several financial resources streams are being mobilized by the FTE, such as tax revenues on different products (car registration, air conditioning appliances, incandescent light bulbs, import of engines, energy products consumed) as well as resources coming from the Funds’ activities, and donations and subsidies from natural and legal persons to the Fund.

### **Introducing carbon pricing in the energy sector**

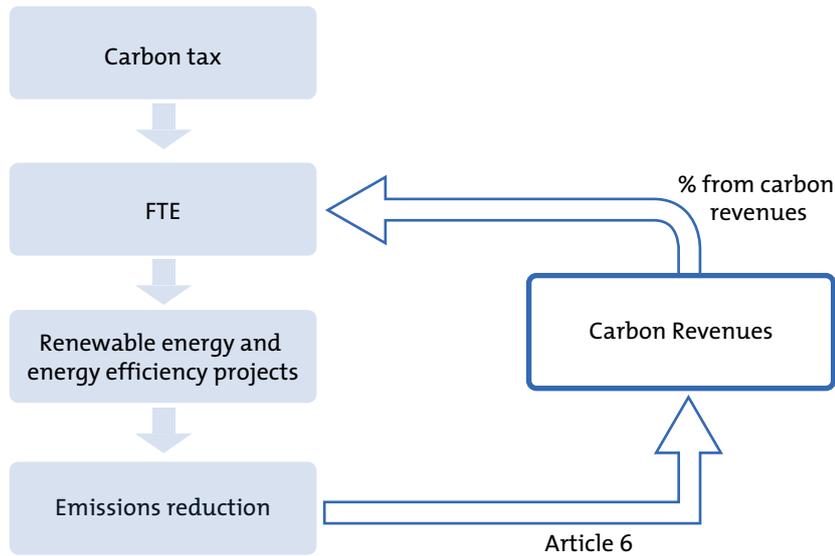
The introduction of a carbon tax in support of the FTE is a major instrument for implementing energy transition policies. Consequently, the FTE could become one of the main mechanisms of the low-carbon transition. Instead of taxing the use of energy, a tax is levied on GHG emissions. For

### **Methodological approach for the selection of the sectors**

To explore and identify the potential sectors for carbon instruments, a participative process was set up to select potential sectors. Consultation workshops were organized to define the approach for selecting the priority sectors. The group was composed of different ministries (Environment, Industry and Energy, Finance) and different sectoral stakeholders such as the National Chamber of Cement Producers, the Tunisian Company of Refining Industries (STIR), the Tunisian Company of Electricity and Gas (STEG), the National Agency for Energy Conservation (ANME), the National Agency of Waste Management (ANGED), the Tunisian Chemical Group (GCT), the Tunisian Bank Association, and the Deposit and Consignments Fund (CDC). After initial discussion, the group decided to establish a multi-criterion assessment approach.

The main project stakeholders selected five assessment criteria comprising a total of nine indicators (mitigation potential, economic, social and environmental co-benefits, feasibility of an MRV system, institutional readiness for a carbon instrument, prospects for integration into regional and international markets). Finally, the energy, electricity and cement sectors were selected for the application of carbon pricing instruments based on their potential for mitigation, maturity and ease of MRV implementation.

**Figure 2: Scenario of carbon tax transferred to FTE and the link with Article 6, a hybrid mechanism is under development (own depiction)**



the energy sector, the new carbon tax revenues collected would be channelled towards the FTE. Article 6 instruments would intervene to boost those revenues in Tunisia and scale up investments. These processes are explained in Figure 2.

**The new carbon tax would play a dual role:**

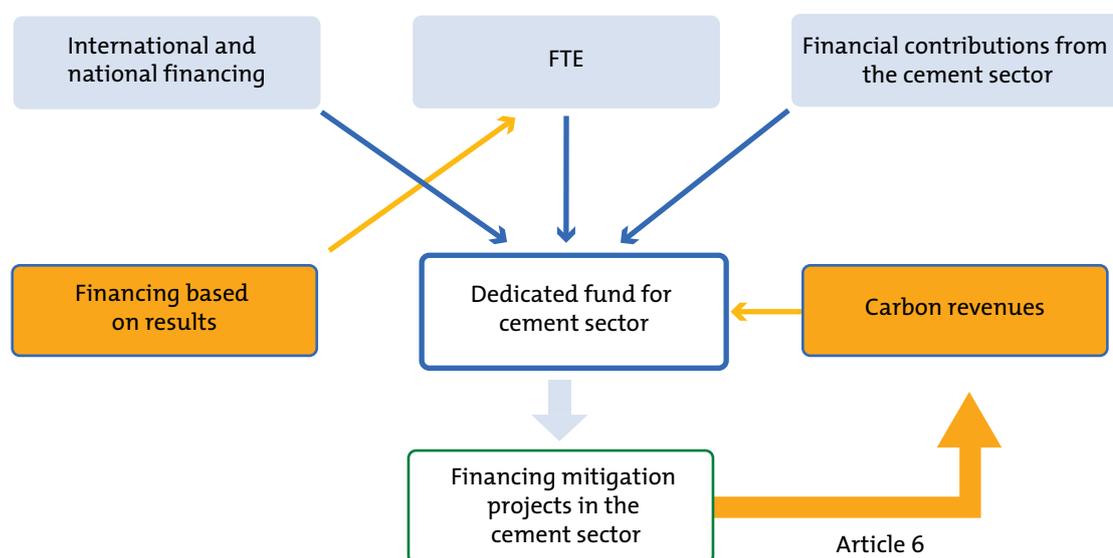
- Increase the financial resources of the FTE and thus strengthen its capacities to support the low-carbon transition and achieve the NDC objectives.
- Generate additional resources for the state budget and facilitate access to international financial support. These resources can be used in programmes to reduce fuel poverty by facilitating access to modern energy services (e.g. renewable energy sources, LED lamps, etc.).

**Electricity sector: The Tunisian Solar Plan, the basis for a carbon mechanism in this sector**

The Tunisian Solar Plan (TSP) aims at reaching 30% renewables in electricity production and increasing energy efficiency by 30% by 2030. The TSP has prepared the ground for the integration of carbon pricing instruments into the electricity sector. The TSP is being implemented by the National Agency for Energy Conservation (ANME) and includes the following strategies:

- Establishment of an appropriate governance framework
- Technical support and capacity building
- Implementation of adequate financial and incentive mechanisms
- Access to climate finance

**Figure 3: Carbon instrument in the cement sector (own depiction)**



A possible option for a carbon pricing instrument would be to promote results-based finance for the inclusion of renewable energy in the electricity sector. Results-based finance instruments involve allocating a financial payment conditional to the emission reductions induced by more ambitious targets in renewable electricity production.

Indeed, given the level of political and economic risk and the small size of projects developed by private electricity producers, whether for independent production or self-production, projects tend to have unattractive profitability rates, which hinders implementation of the TSP. By providing additional financial resources, results-based instruments (in terms of GHG mitigation) can improve the profitability of these projects and consequently help to accelerate and scale up implementation of the TSP.

### **Cement sector: Ready for carbon pricing**

The Tunisian cement sector has been selected as a potential sector for carbon pricing on account of its great mitigation potential, its well-established MRV system as well as its clear market structure, including nine cement plants, and a National Cement Chamber. GHG emissions related to cement production account for about 14% of the country's gross national GHG emissions. The cement sector is therefore at the core of the mitigation strategy as defined in Tunisia's NDC.

To create favourable investment conditions for GHG emission reductions in the cement sector, the ANME and the cement industry are currently examining carbon mechanisms to support four technical areas:

- Energy efficiency
- Renewable energy generation



Getting ready for the market: Carbon pricing workshop held in Tunis, January 2020

- The use of alternative combustion fuels (from waste)
- The reduction of the ratio clinker/concrete by promoting the use of low clinker cement

As a key prerequisite for decarbonization in the cement sector, authorities in Tunisia established a comprehensive MRV system with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) via the Global Carbon Market (GCM) project. The system is operational for all the nine cement plants in Tunisia for which GHG emissions are now better monitored, allowing for a potential introduction in the Article 6 carbon market.

### Carbon pricing in the cement sector/industry

One proposal for carbon pricing in the cement sector is to create a hybrid, circular instrument, including a dedicated fund for the cement sector

which would combine two types of financial sources:

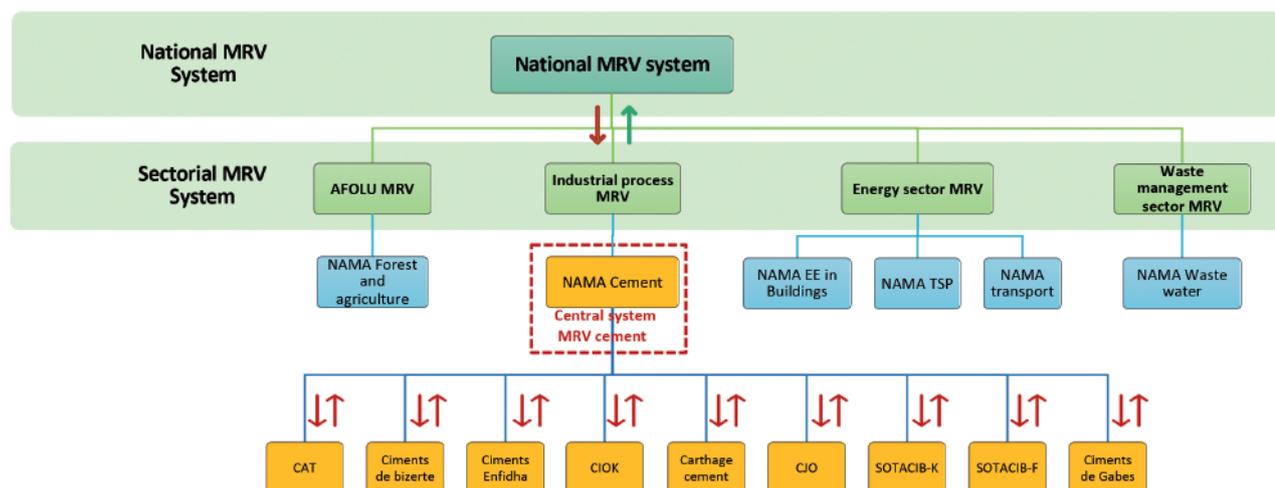
- A financial contribution from the cement sector indexed to GHG emissions (in a form to be determined)
- A results-based emission reduction financing system (crediting):
  - From the FTE (after benchmarking)
  - From Article 6 or other international carbon market (from the future standards)

### Activities in the cement sector

Given the strategic importance of the cement industry, several mitigation approaches were set up in recent years:

- Low-clinker cement could reduce sectoral emissions by up to 50% (estimated cumulated reduction of 7.1 MtCO<sub>2e</sub> until 2030). Feasibility

**Figure 4: National MRV system (own depiction)**



studies in progress demonstrated the viability of low-clinker cement in the construction sector and the necessity to remove regulatory barriers for its use

- Re-using alternative fuels (co-processing) in cement production enhances energy efficiency. The approach is to contribute to advance co-processing by supporting partners in their solid waste management strategy, preparing field tests and working towards a favorable regulatory environment with the Ministry of Environment and Local Affairs, the Ministry of Industry, Energy and Mines and the cement industry. A cumulated reduction of 6.3 MtCO<sub>2</sub>e until 2030 is estimated.

## Getting Tunisia ready for Article 6

### From the CDM to new carbon market mechanisms

Tunisia is among the countries in the region that has developed the largest number of CDM

projects and programmes. Eight CDM projects and programmes were registered (with a total of 1.07 MtCO<sub>2</sub>e of mitigation potential) and five other projects (with a combined total of 1.09 MtCO<sub>2</sub>e) have reached the validation phase. Despite the relatively short time span (2006-2011), stakeholders made considerable progress. In fact, stakeholders took advantage of the CDM-related experience to understand the functioning of market mechanisms and to build capacities, in particular, regarding (i) methodologies for calculating and assessing emission reductions, (ii) MRV, (iii) additionality and (iv) external verification.

For Tunisia, global carbon mechanisms will play a critical role in achieving its climate targets in line with the Paris Agreement. The objective is to enable the Tunisian government to increase its mitigation efforts with ambitious objectives for the conditional part of the NDC in different sectors in the long term, while at the same time preparing for the new generation of market mechanisms under Article 6 of the Paris Agreement. Public and private decision-makers are currently creating the



*Scaling up: Tunisia aims at reaching 30% renewables in electricity production.*

necessary structures and processes to successfully implement Article 6 of the Paris Agreement once it is finally negotiated.

### Article 6 activities

The Tunisian group of stakeholders mentioned above (five different ministries and agencies) is leading the way in the country for Article 6 activities which aim at enhancing its readiness and fostering Tunisian positioning at the international level. The main activities, supported by the BMU-funded GIZ project Global Carbon Market Tunisia, include:

- Improving dialogue between national stakeholders and international groups, strengthening the institutional capacities through trainings, technical inputs, publications and communication work.
- Establishing a project portfolio to identify the potentials of market mechanisms. The related

study will also provide recommendations on how to reflect these potentials in the updated Tunisian NDC and the Tunisian Long-term climate strategy.

- Preparing the ground for participation in bilateral or multilateral cooperation for carbon market mechanism with a pilot project.

## Achievements and next steps

Tunisia has made substantial progress regarding global market mechanisms at the national level: stakeholders' capacities for carbon market mechanisms have been reinforced through trainings dedicated to the public and private sector with the support of the BMU-financed Global Carbon Market project implemented by GIZ. Awareness among public decision-makers, the private sector and civil society for Article 6 and carbon mechanisms has been raised. GIZ has supported the



Source: GIZ

*Calculation exercise: Cement sector MRV workshop in Tunisia, September 2020*

government in considering Article 6 as a priority and in its active participation in negotiations at international level by means of regional dialogue.

Generally, carbon markets represent an attractive instrument for Tunisia to strengthen its mitigation actions, bring its own national low-carbon transition process forward and leverage climate finance. By familiarizing stakeholders with carbon market mechanisms, Tunisia is getting ready for early participation in Article 6 mechanisms.

The next steps are to strengthen the involvement of the private sector in the process and to define which scenario of carbon mechanisms would fit the social, political and economic situation in the country. The review processes on the current NDC and preparation of the 2050 long-term strategies are well under way. One important challenge remains the In-/Out-NDC considerations on which basis the country needs to decide both the projects eligible for participation in carbon markets internationally and the emission reductions

that are part of the unconditional effort. After this phase of strategic design and coordination, Tunisia will be able to implement global carbon mechanisms in the three sectors of energy, electricity and cement.

Right now, the country is facing a severe economic recession as a result of the pandemic crisis and the resulting nationwide shutdown. Whilst presenting Tunisia with enormous socio-economic challenges, the current Covid-19 crisis could also be an opportunity to build back better and to integrate green recovery measures in the economic recovery plans. Public private partnerships may help to design low-carbon projects that in the future may be eligible to participate in global carbon market mechanisms.

# Creating Momentum

## Article 6 Piloting in Asia and the Pacific

by V.K. Duggal, Asian Development Bank

There is significant potential for carbon markets to contribute to sustainable development of the economies of countries in Asia and the Pacific while simultaneously contributing to addressing the global climate mitigation burden. There has been a lot of focus for the past few years on the need to finalize the Paris Rulebook for Article 6 as a key next step that is necessary for harnessing that potential. In 2020, the focus of attention and resources shifted to a large extent to the role that low-carbon development can play in ensuring a green recovery from the economic crisis caused by Covid-19.

In both the Paris and post-Covid-19 contexts, the transformation of the energy sector through investments in renewable energy and energy efficiency is imperative. It is critical that the political will as well as momentum toward stimulating such investments – primarily from the private sector – are enhanced significantly in the near term.

### No time to waste

With two rounds of failure to successfully negotiate and approve the guidance and rules required for Article 6 (at the 24th Conference of Parties (COP) in Katowice and COP25 in Madrid), the earliest possible timing of the finalization of the Rulebook is November 2021, at COP26 in Glasgow. Cooperative approaches under Article 6.2 can be developed with full guidance from the United Nations Framework Convention on Climate Change (UNFCCC) only after COP26. The governance and

operational frameworks for implementing Article 6.4, on the other hand, will likely not be in place until late 2022 at the earliest.

There will be a gearing up period that requires institutionalizing roles, responsibilities and procedures on both the supply and demand sides of carbon markets, designing, negotiating and implementing new forms of cooperation (particularly under Article 6.2), generating demand, and convincing the private sector to engage. The good news is that this gearing up period can start now and make significant strides in parallel with the negotiation process. Pilot actions can contribute to the Rulebook negotiation process and, in parallel, support the build-up of capacity and readiness of countries that intend to participate.

### Energy and greenhouse gases in Asia-Pacific

The Asia and Pacific region offers fertile ground for such piloting efforts. Developing economies in the Asia-Pacific region are expected to account for almost two-thirds of global energy demand growth between now and 2040.<sup>1</sup>

The Asia Pacific Region has considerable renewable energy potential. But taking Southeast Asia as an example, renewables currently meet only around 15% of the sub-region's energy demand (excluding the traditional use of solid biomass). Hydropower output has quadrupled since 2000 and the modern use of bioenergy in heating and transport has also increased rapidly. Despite fall-

<sup>1</sup> IEA (2019): Energy Security in ASEAN +6



*Tapping the potential: The Asia Pacific Region has considerable capacity for renewable energy use.*

ing costs, the contribution of solar PV and wind remains small, though some markets are now putting in place frameworks to better support their deployment.<sup>2</sup>

The mitigation financing needs expressed in the Nationally Determined Contributions (NDCs) of Asia and Pacific amount to USD 884 billion, but it should be noted that this information is only available for nine countries.<sup>3</sup> (Note also that implementing only the unconditional targets of the current NDCs will result in temperature levels far above 2 degrees C.) Another estimate points to an investment need in the range of at least USD 4.8 trillion for ADB's developing member countries (DMCs) to meet the targets set out in the NDCs.<sup>4</sup>

### **Piloting carbon markets in Asia and the Pacific**

The Asia-Pacific region is a natural locus for testing design and implementation of mitigation actions. However, there is an immense need for technical, policy development and institutional capacity building in the region, and the slow progress on the Rulebook for Article 6 is not making it any easier. Requirements for participating in Article 6 will be demanding for developing countries, with possible exemptions in requirements for LDCs and SIDS.<sup>5</sup>

Countries in Asia and the Pacific have a considerable breadth of experience related to project-based mechanisms, including the CDM and

<sup>2</sup> IEA (2019): Southeast Asia Energy Outlook 2019

<sup>3</sup> <https://www.iges.or.jp/en/pub/iges-indc-ndc-database/en>

<sup>4</sup> Yongping Zhai, Lingshui Mo, and Madeleine Rawlins (2018): The Impact of Nationally Determined Contributions on the Energy Sector. Implications for ADB and its Developing Member Countries. ADB Sustainable Development Working Paper Series. No. 54.

<sup>5</sup> UNFCCC (2019): Proposal by the President: Draft CMA Decision on Guidance on Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement. Madrid. Section D, para. 16. [https://unfccc.int/sites/default/files/resource/DT.CMA2\\_111a.v3\\_o.pdf](https://unfccc.int/sites/default/files/resource/DT.CMA2_111a.v3_o.pdf)

the JCM. Approximately 80 percent of all CDM projects and 90 percent of all JCM projects are hosted in Asia and the Pacific.<sup>6</sup> This means that in several countries, there is a deep understanding of the carbon finance concept and solid technical experience. In those countries, once a basic national framework is in place there will be existing capacity and competence that can be tapped into for use in developing methodologies, implementing monitoring protocols, and validating and verifying mitigation outcomes. However, participation in Article 6 will require additional capacity. Countries will need to expand their expertise to include, among other things, collaborating in the design and composition of forms of international cooperation at the national level, creating, maintaining and operating national registries, negotiating and operating bilateral or plurilateral cooperative agreements, and creating an operating national regulatory regime.

Piloting of mitigation actions can be used to test the frameworks that are needed to implement cooperative approaches of Article 6.2 of the Paris Agreement and can play an important role in preparing the Asia and Pacific region to participate. Piloting can show the way forward for carbon markets under Article 6.2, creating momentum and setting individual countries – and the region – on a trajectory that is aligned with the Paris Agreement and the SDGs. However, there are challenges.

### Dealing with the Rulebook delay

Given the open design of Article 6.2, if countries bilaterally agree on a cooperative approach, they can work with the last draft of decision text from COP25.<sup>7</sup> Using draft text means, for example, that the requirement to make corresponding adjustments is known,<sup>8</sup> even though it has not yet been established how to technically implement the requirement. This information is sufficient for initiating cooperative approaches: countries know that subtractions or additions have to be made to their emission balances so that mitigation outcomes are not counted twice. Alternatively, Parties can agree bilaterally on standards and approaches under which to work together. For instance, several countries have decided to go ahead under the guidance of jointly established principles (the San José Principles).<sup>9</sup>

The JCM is an example that fits well within the framework of and can be considered a pilot for cooperative approaches to market-based mechanisms under Article 6.2. The governance approach, guidance, rules and standards for the JCM are largely determined on a bilateral basis and would continue to be so under Article 6.2.<sup>10</sup> The JCM already incorporates key Article 6 principles of cooperation, including environmental integrity, contribution to sustainable development and conservativeness in baseline approaches. Adapting the JCM to the Paris Agreement will likely only require that both the investing country, Japan, and the host country incorporate and perform corresponding adjustments as per Rulebook stipulations under Article 6.2.

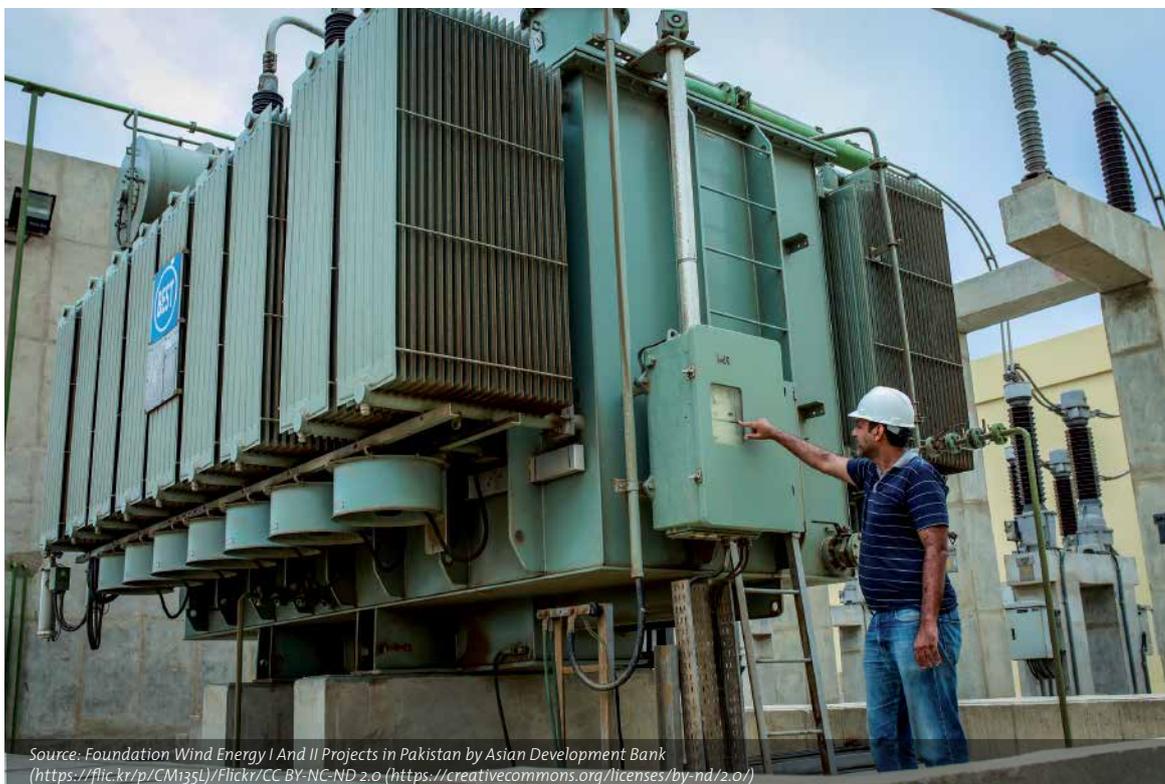
6 UNEP DTU Partnership n.d.; Institute for Global Environmental Strategies (2019): Joint Crediting Mechanism Database. 26 July. <https://iges.or.jp/en/pub/iges-joint-crediting-mechanism-jcm-database>. (accessed 4 February 2020).

7 UNFCCC (2019): Proposal by the President: Draft CMA Decision on Guidance on Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement. Madrid. Section D, para. 16. [https://unfccc.int/sites/default/files/resource/DT.CMA2\\_111a.v3\\_o.pdf](https://unfccc.int/sites/default/files/resource/DT.CMA2_111a.v3_o.pdf)

8 See decision 1/CP.21, Paragraph 36

9 <https://cambioclimatico.go.cr/press-release-leading-countries-set-benchmark-for-carbon-markets-with-san-jose-principles/>

10 ADB (2019): of the Paris Agreement: Drawing Lessons from the Joint Crediting Mechanism. Manila, Philippines: Asian Development Bank. <https://doi.org/10.22617/TIM190555-2>.



Source: Foundation Wind Energy I And II Projects in Pakistan by Asian Development Bank (<https://flic.kr/p/CM135L>)/Flickr/CC BY-NC-ND 2.0 (<https://creativecommons.org/licenses/by-nd/2.0/>)

*Trial implementation: Piloting can test the frameworks that are needed for cooperative approaches under Article 6.*

## National strategies for trading ITMOs as a prerequisite to piloting

Because under the Paris Agreement developing countries have mitigation commitments expressed in NDCs and have to track progress toward their achievement, the unregulated transfer of mitigation outcomes to other countries cannot continue as under the CDM. Before allowing international sales of domestic mitigation outcomes, each country must assess what that trade will mean with respect to achieving its own NDC.

This new situation for developing countries requires their governments to adopt strategies for how to approach Article 6. Having national

mitigation commitments means that the stakes are higher and as a result, host country governments will play a much stronger role in regulating trade under Article 6 carbon markets than they did under the CDM. Since mitigation outcomes are an asset that the host country may need for achieving its NDC targets, the host country could be reluctant to authorize transfer of mitigation outcomes out of the country. In economic terms, there is an opportunity cost when exporting a mitigation outcome.<sup>11</sup> Thus, a strategy for avoiding overselling is an important part of any national Article 6 strategy.<sup>12</sup>

Another aspect of adopting an Article 6 strategy involves determining the extent to which Article 6

<sup>11</sup> World Bank. "State and Trends of Carbon Pricing 2020" (May), World Bank, Washington, DC. Doi: 10.1596/978-1-4648-1586-7. License: Creative Commons Attribution CC BY 3.0 IGO

<sup>12</sup> Spalding-Fecher, R. A. Kohli, J. Fuessler, D. Broekhoff and L. Schneider (2020): Practical strategies to avoid overselling. Carbon Limits. May 2020

cooperation will be allowed in different sectors. A country preparing to use Article 6 and participate under Article 6.2 or Article 6.4, or both, should consider in what sectors to use the mechanisms and for what objectives. Planned policies and measures that are an explicit part of an unconditional NDC commitment may reduce options and the scope for carbon crediting, since mitigation outcomes occurring under a sectoral policy will be expected to be counted towards the country's NDC.

Experience with and expectations from carbon markets are partly reflected in NDCs. Many developing countries, including about half of developing countries in Asia and the Pacific, have communicated an intention or consideration of using market-based mechanisms in their first NDCs. Most of these countries have provided commitments in their NDCs that are conditional (fully or partially) on international support and cooperation under Article 6 could be part of that support. However, in most cases, the NDCs do not provide enough information to understand how international support – including possible cooperation under Article 6 – will be used to undertake mitigation actions and achieve conditional targets. The link between the use of carbon markets and conditional targets is not very well elaborated.<sup>13</sup>

Several countries in the region, including Vietnam and Indonesia, have started to look more closely at how they can use Article 6 to stimulate investment in sustainable energy solutions. The NDC updates due this year provide an opportunity to clarify this. However, updating NDCs to include a clear role for market-based mechanisms under Article 6 requires that countries have a strategy and a plan for using Article 6 to achieve or exceed the targets in their NDCs.

### **Governments' commitment to and support for trading mitigation outcomes**

Government commitment to allowing the export of mitigation outcomes is necessary for stimulating early private-sector engagement in carbon markets, which may require an upfront bilateral agreement between governments. Negotiating terms between governments can be more complicated and take more time compared to the situation where two companies negotiate a purchase agreement. Piloting can be used to gain experience. The open design of Article 6.2 implies that mitigation activities can be tailored specifically to national needs and circumstances, making host countries' participation more attractive. This may be particularly important in the context of the Covid-19 pandemic, because host countries may want to support specific technologies, sub-sectors or projects that facilitate green Covid-19 recovery.

The JCM has demonstrated how a bilateral cooperative approach can be flexible to accommodate the varying interests and needs of partnering countries. One way this is achieved is that each partner country is able to establish additional rules or variations in the rules and procedures to ensure that JCM projects are in line with its national interests. Compared with a global mechanism, it is easier to adjust the design, scope and setup of a mitigation action if these elements can be decided bilaterally.<sup>14</sup> With the experience from the JCM, the Asia-Pacific region (home to 11 of 17 JCM partner countries) is well placed to launch further efforts to jump-start carbon market mechanisms under Article 6.2.

### **The role of acquiring countries**

A few governments and national organizations (such as the Klik and Climate Cent Foundations)

<sup>13</sup> ADB (2020): *Achieving Nationally Determined Contributions through Market Mechanisms in Asia and the Pacific*. Sustainable Development Working Paper Series. No. 64.

<sup>14</sup> ADB (2020): "Article 6 of the Paris Agreement: Drawing Lessons from the Joint Crediting Mechanism." Manila, Philippines: Asian Development Bank. <https://doi.org/10.22617/TIM190555-2>.



Source: View of Bangkok from King Power MahaNakhon rooftop by Nathan Rupert (<https://flic.kr/p/2hmQr6F>)/Flickr/CC BY-NC-ND 2.0 (<https://creativecommons.org/licenses/by-nd/2.0/>)

*Doing the groundwork: Governments preparing to use Article 6 should consider the sectors they want use the mechanisms in and for what objectives.*

are actively attempting to contract mitigation outcomes and some countries have pooled resources into World Bank initiatives.<sup>15</sup> The incentive for more buyer countries to test the waters of Article 6.2 through piloting should be strong. Under cooperative approaches, the purchasing counterpart can achieve greater involvement in the selection of mitigation actions developed, potentially even being involved in the design of mitigation actions and the selection of technologies.

The optimal model for piloting mitigation actions under a cooperative approach involves an ITMO sale/purchase agreement between the host country and the buyer country, creating a strong

commitment from both Parties to the piloting efforts. One alternative that would enable piloting efforts but avoid the issue of the lack of rules and procedures for performing corresponding adjustments would be to implement pilots that are supported using the “purchasing” Party’s climate finance commitments, but without actually transferring mitigation outcomes. In this case, mitigation outcomes would be counted towards the host country’s NDC.

Another alternative that would provide experience through piloting and support the strengthening of host country NDCs would be cooperation through which acquiring countries agree to

<sup>15</sup> Greiner, S. et al. (2019):. Moving Towards Next Generation Carbon Markets: Observations from Article 6 Pilots. March. <https://www.climatefocus.com/publications/moving-towards-next-generation-carbon-markets---observations-article-6-pilots>.

cancel certificates for emission reductions achieved that are covered in the unconditional NDC of the host country. The Nitric Acid Climate Action Group (NACAG) initiative launched by Germany is one example of how climate finance accounting can be used as an incentive for a carbon market solution.<sup>16</sup> The NACAG focuses on fertilizer production. N<sub>2</sub>O abatement is a low-cost measure, a low-hanging fruit, which should be covered by the unconditional NDC of the host country. Germany is using the carbon market framework but will cancel all certificates when a host country takes the opportunity to strengthen its NDC. In Asia, Indonesia, Vietnam, Pakistan and Thailand have signed the NACAG Declaration. Approaches like this would enable host countries to enter into piloting agreements to gain experience with new market-based cooperation without assuming the risks associated with prematurely committing to the export of mitigation outcomes.

### Seizing piloting opportunities and avoiding pitfalls

Article 6 pilots developed in sectors which the host country has identified as potential sources for export of mitigation outcomes is likely to be easier to implement and more likely to result in actual transfers of mitigation outcomes. Pilots in those sectors could also function as models for additional mitigation actions in the sector, i.e. be replicated to a smaller or larger extent.

In addition, there is an opportunity to use pilots to explore high-hanging fruit within sectors as potential areas for focusing cooperative approaches to stimulate mitigation actions. Overachieving sectoral commitments could allow for the export of mitigation outcomes and revenue generation for the government. Pilots could test how such scaled-up initiatives can work under Article 6.2 and how sectors can benefit from a combination of domestic carbon pricing and baseline-and-crediting approaches resulting in the export of mitigation outcomes. In addition, piloting can be used to explore when a sectoral approach to promoting mitigation can work and when single project-based mitigation actions work better. For the former, piloting can play an important role in testing approaches

to baseline methodologies for sector-level mitigation actions.

### Piloting as a way forward

As noted above, in both the Paris and post-Covid-19 contexts, the transformation of the energy sector through investments in renewable energy and energy efficiency is imperative. Carbon markets have significant potential to support developing countries in achieving that transformation.

Piloting efforts can contribute to the Rulebook negotiation process and, in parallel, support the build-up of capacity and readiness of countries that intend to participate. Clearer formulations in NDCs of expectations with regard to international support and Article 6 can contribute to a better understanding of what types and scales of pilots would be useful for increasing readiness to use Article 6.

The increased role of developing countries in the governance of market-based mechanisms under Article 6.2 requires their governments to adopt strategies for how to approach Article 6. It also offers opportunities to tailor mitigation activities specifically to national needs and circumstances, making participation more attractive.

The time is ripe to intensify bilateral and regional dialogue on the development of national strategies for Article 6 participation. Furthermore, incorporating investment into strategies for “building back better” is not only a way to bring about a “green” Covid-19 recovery but is also critical for ensuring that the diversion of funds required to respond to the pandemic doesn’t result in a browning of investments in energy. The Asia-Pacific region offers a particularly strong environment for this type of action, particularly with respect to cooperative approaches under Article 6.2. Moving forward with such preparations now is critical in keeping to a timeline that is compatible with the goals of the Paris Agreement and of Agenda 2030.

<sup>16</sup> <http://www.nitricacidaction.org/about/introducing-nacag/>

# Employing nature-based Solutions

## Challenges, possibilities and lessons learnt from DRC's FCPF REDD+ Program

by Martin Burian and Joachim Schnurr, GFA Consulting Group

Hassan Assani, Coordinateur CN-REDD

Carine Mauwa, WWF DRC

### Large-scale landscape program in sub-Saharan Africa

Along with the growing awareness of deforestation and forest degradation significantly contributing to total global GHG emissions, Reducing Emissions from Deforestation and Forest Degradation (REDD+) became a prominent topic in climate change negotiations. Options for reducing national GHG emissions through mitigation activities in the LULUCF sector (Land Use, Land-Use Change and Forestry) are actually an essential component of many NDCs submitted by developing countries.

While it has often been stated that REDD+ activities provide low abatement costs (Stern 2007, Eliasch 2008), practical experiences indicated that the costs of successfully implementing sustainable REDD+ programs is not as cheap and straightforward as commonly assumed. Performance-based REDD+ carbon payments need to compete with financial revenues provided by other land uses. Adding respective opportunity cost, implementation, transaction and institutional costs shows that REDD+ activities are in many cases quite expensive.

The success of REDD+ as an instrument to cost-effectively reduce GHG emissions may depend, among other things, on whether REDD+ programs manage to channel payments for emission reduc-

tions as investments into alternative, low carbon land use activities. The Democratic Republic of the Congo (DRC), for example, not only hosts one of the world's largest forest carbon stocks (15.676 M t C in Above Ground Biomass, FAO 2015), but also features low opportunity costs. The REDD+ program and its related financing strategy discussed subsequently explores how to structure carbon payments as investments into alternative land use activities assuring the overall sustainability of mitigation measures.



Source: WWF DRC

Community-based land-use planning in DRC's Mai Ndombe Province

As part of a global response, the international community established a large-scale REDD+ Fund, called the Forest Climate Partnership Facility (FCPF), managed by the World Bank. The FCPF features a total funding volume of approximately USD 1.1 billion, with USD 0.42 billion allocated to the 'Readiness Fund' and USD 0.68 billion allocated to the so called 'Carbon Fund', paying for emission reductions (ERs) generated by Emission Reduction Programs (ERP). The uptake of REDD+ programs, i.e. activities going beyond project scale, is however slow.

This article aims to share some experiences and lessons learnt from the development and implementation of the Mai Ndombe Province (MNDP) ERP, located in the Democratic Republic of the Congo (DRC). Feasibility studies for mitigation measures of the program, development- and road testing of proxy payments, advice on the financing strategy, but also carbon accounting aspects such as a national carbon stock map allowing for the determination of emission factors were developed under the 'Carbon Map and Model project' implemented by WWF, KfW and GFA and funded by the German Federal Ministry for the Environment.

The ERP aims to reduce emissions from deforestation and forest degradation in the province, which covers approximately 12.7 M ha (corresponding to 35% of the land area of Germany). It was one of the first ERPs to be approved by the FCPF's Carbon Fund. The MNDP ERP features a total funding volume of approximately USD 135 M. It consists of a USD 55 M component for the purchase of 11 M ERs. Respective payments are strictly performance-based, i.e. they will only be made once MRV has proven that activities actually led to emission reductions. The second component provides upfront investments through two Forest Investment Programs financed respectively by World Bank and the Central African Forest Initiative by means of DRC's national REDD+ Fund 'FONAREDD' to begin implementation of miti-

gation actions. The Emission Reduction Purchase Agreement was signed on 21st September 2018 between the WB and the DRC government (World Bank 2018), however it has not yet entered into force.

Approximately 10 years after MNDP program development began, the program is still not yet fully operational and many stakeholders are disappointed in the slow processes at national and international level. Some of the delays are related to repeated updates of the reference emission level and the corresponding delays for the finalization of the program's benefit sharing plan. At the same time, the program's financing strategy is partially being implemented by the two Forest Investment Programs, which are well received and show good performance.

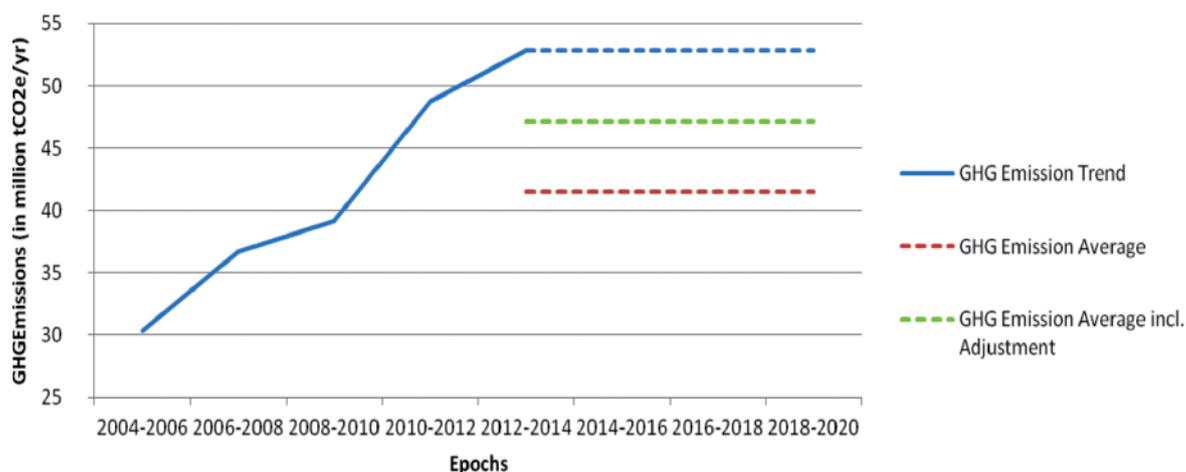
## Reference emission level update – 10 years of back and forth

Ever since the development of the REDD+ program began, the Reference Emission Level (REL) has been an issue of concern. During the development period of the so-called Emission Reduction Project Identification Note (2011-2013), no methodological guidance was available from the FCPF. This led to several attempts to quantify the business-as-usual emissions from deforestation, leading to a lot of back and forth. Once the FCPF finalized its Methodological Framework (MF 2013), the MF requires the determination of the REL by calculating a historic reference emission level over 10 years (2004-2014), also offering the option of an upward adjustment, which is however capped to 0.1% per year of the volume of carbon stocks (cp. FCPF 2016, Indicator 13.4).

With DRC coming out of the Great African War (1996-2006), the province's emissions exhibited a steep increase. The capped adjustment is not

**Figure 2: Results of the adjustment compared to the adjustment cap**

Source: ERP, 2016



sufficient to compensate for the increase, cp. Figure 2. Considering this historic trend, future emissions seem likely to exceed the 2012-2014 emission level (i.e. 53.94 million tCO<sub>2</sub>e/yr). If future emissions correspond to those of 2012-14, this means that the historic average emissions (i.e. 41.55 million tCO<sub>2</sub>e/yr) underestimate future emissions by 27.2% (11.30 million tCO<sub>2</sub>e/yr). This means that the Emission Reduction Program would have to reduce 11.30 million tons CO<sub>2</sub>/yr before it could claim a first emission reduction payment.

Considering this situation based on the evidence of changes in national circumstances, the ERP is designed to account for the maximum allowable adjustment of 5.61 million tCO<sub>2</sub>e/year. This still requires a huge effort by DRC to reduce emissions under the adjusted REL and the country's own contributions remain significant, ambitious and very challenging.

The ERP comprises a VCS-approved REDD+ project with a historic reference emission level of 5.7M tCO<sub>2</sub>e for 248,000 ha of forests, which is expected to become (cp Box 1). The nesting requires the harmonization between the high project specific-REL and the comparably low regional REL. The existing nesting procedures did not allow moderation of the nesting process to the satisfaction of all related stakeholders and in the end required political negotiation, thus slowing down the overall process. Following the political negotiation process, the VCS project was allocated 4 M tCO<sub>2</sub>e as a reference emission level. To date, the VCS project developers are still considering whether they should accept a capped allocation of the regional historic emissions or abandon the nesting approach and continue to operate under the project-specific baseline and sell emission reductions to the voluntary market.

**Box 1: Nesting REDD+ projects**

The concept of the so-called ‘nested approach’ was introduced by Pedroni et al. (2009). It refers to the idea that a national or regional REDD+ program may include or ‘nest’ individual sub-projects, which may be owned by the private sector. The nested projects may benefit from performance-based payments, to some extent independently from the performance of the national/regional REDD+ program. This may incentivize the private sector to invest in forest-based mitigation activities. On the other hand, this i) requires additional accounting procedures and ii) poses additional challenges if nested projects use a different approach for the REL setting.

Both the trend and the ambition to nest the VCS project call for a high reference emission level, as this will reduce the requirements for the ERP to over-perform. The work on the REL hence included not only the quantifications of emissions for deforestation, but equally the reduction of carbon stocks in remaining forests. Quantification of the activity data for use in determining the emissions from degradation, however, is challenging and produced weak results.

The initial REL amounted to 43.5 M tCO<sub>2</sub> gross emissions from deforestation, 70.45 M tCO<sub>2</sub>e gross emissions from forest degradation (61.8% of total gross emissions) and 11.1 M tCO<sub>2</sub> of annual removals.

The quantification of uncertainty of area change estimates is a complex question. A change estimate is based on at least two observations (e.g. forest in period 1 and non-forest in period 2). The simple aggregation of uncertainties of estimates of forest and non-forest using the IPCC GPG guidance on uncertainty is commonly considered as inappropriate and misleading. Good-practice

guidance for estimating the accuracy of change estimates and resulting, adjusted area estimates were published towards the end of the MNDP development phase (Olofsson et al. 2014).

Considering the Olofsson approach and adjusting activity data for uncertainty significantly reduces the REL. Following this approach, the emissions from deforestation of dense forest was estimated at 12.75 (+/-3.89) M tCO<sub>2</sub>e, deforestation of degraded forests at 12.06 (+/-3.77) M tCO<sub>2</sub>, while degradation contributes to 19.0 (+/-7.78) M tCO<sub>2</sub>e. It is noted that degradation was perceived as a significant source (44% of total emissions) but also involves a high level of uncertainty.

Against this background, the REL is being reviewed with the technical support of the University of Maryland (UMD). The current approach uses Global Forest Watch assessment tools (developed by UMD, cp. Hansen et al 2013.) for stratification combined with visual interpretation of individual samples using FAO’s ‘Collect Earth’ tool. The current estimates (not validated) result in approximately 10.2 MtCO<sub>2</sub>/yr (+/-1.5) deforestation of dense forest, 13.8 MtCO<sub>2</sub>/yr (+/-4.4) deforestation of secondary forest, 5.1 MtCO<sub>2</sub>/yr (+/-1.2) forest degradation and -2.2 MtCO<sub>2</sub>/yr (+/-0.7) from forest gain. The current REL estimates amount to 26.9 MtCO<sub>2</sub>/yr (+/-4.8), exhibiting significantly fewer uncertainties than previous estimates. The current figures may be subject to further changes in the course of validation.

**The Financing Strategy – Pro-poor investments with emission reductions as a “by-product”**

The MNDP’s financing strategy aims to go beyond a simple concept of maximizing carbon revenues from selling emission reductions. Basically, it aims to resolve a constrained maximization problem: How to maximize development impacts, while assuring that enough emission reductions are generated to honor the contract with the FCPF CF

(i.e. making sure that sufficient financial resources are available for re-investing and scaling up). The financing strategy aims to achieve this by applying a simple two-step approach.

In a first step, the sustainability of mitigation measures needs to be assured. This is done by funding a mix of measures that in the mid and long term generate more income from alternative land use than from current slash and burn agricultural activities. For example, the implementation of agroforestry or cultivation of cash crops (such as palm oil) in the savannah enables households to generate higher incomes compared to the revenues from traditional, yet unsustainable slash and burn, which destroys the forests.

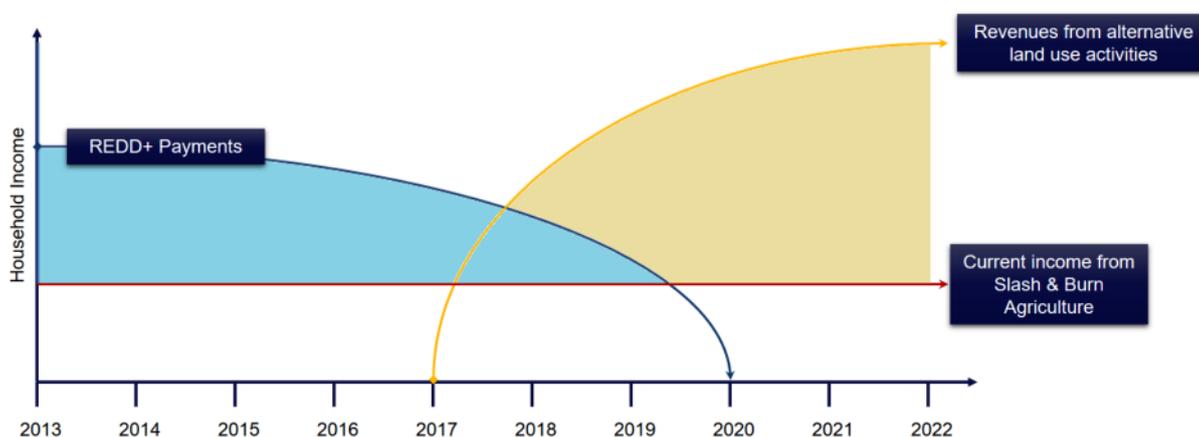
For a period of five years, the ERP offers REDD+ payments that provide financial incentives for avoiding GHG-intensive land use change activities. The payments are structured in a way that the sum of payments per ha for mitigation measures increases the revenues from one hectare slash and burn. These payments aim to provide sufficient financial incentives in the short term for investing in long-term sustainable land use practices.

This creates win-win situations, combining i) the reduction in emissions from land use change while, ii) increasing the incomes of rural households. Considering that the ERPA term is five years, it is essential to make sure that the revenues from alternative land use activities exceed slash and burn revenues after five years.

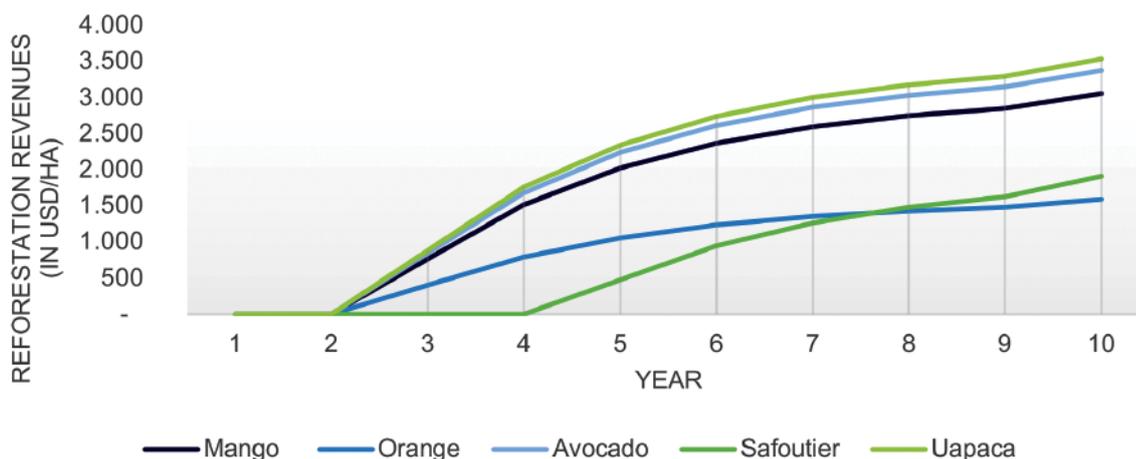
At the same time, the ERP does not constrain the concept of 'development' to an increase of monetary income. Even if the ERP tries to put a price on the environmental services/externalities, other 'dimensions' of development need to be considered. Hence, in a second step, the ERP assesses the development impacts of mitigation measures and aims to maximize them, not necessarily the amount of the emission reductions nor the monetary income effects. The ERP achieved this by using a multi-criteria analysis to guide the allocation of financial resources to different mitigation measures.

As a first criterion, the efficiency of different carbon measures was assessed. For example, the promotion of agroforestry has a minor carbon sequestration impact, but is comparably costly. One hectare of agroforestry requires an investment of approximately USD 365/ha, but generates

**Figure 3: Stylized financial revenue stream under the MNDP Intervention strategy**



**Figure 4: Financial revenues from MNDP agroforestry fruit-growing activities in the mid and long term**



only 35 tCO<sub>2</sub> over a period of 10 years. The resulting carbon revenues therefore amount to only USD 149/ha. As a consequence, investing one USD in agroforestry results only in 0.1 ER/USD 0.41 carbon revenues, featuring a negative balance. However, the activity offers excellent alternative income streams (considered as a second criterion), an average USD 1,509/ha, over a period of ten years.

**It is obvious that**

- such activities are important in establishing a sustainable low carbon land use system, but
- have to be ‘cross-subsidized’ by carbon revenues from other mitigation measures.

For example, ‘assisted natural regeneration’ requires an investment of approximately USD44/ha, but generates carbon revenues of USD 117 over ten years. Investing one USD in assisted regeneration allows to generate 0.61 ER/USD 2.66 of carbon revenues (positive balance). The household revenue stream from assisted regeneration is limited, but investing in ‘assisted natural regeneration’ enables generation of a surplus for cross-subsidization. The carbon efficiencies of the ERP’s mitigation measures are presented in Table 1.

Please note, based on the results of the feasibility studies, the increase in household income will exceed the carbon payments. This means that, based on the intervention design, the ERP exhibits negative marginal abatement costs.

Table 2 assesses the development impacts of MNDP’s mitigation measures. Combining the criteria ‘carbon efficiency’ (mapped as ‘CO<sub>2</sub>’) and ‘household income’ (mapped as ‘ECO’) is important, but the MNDP ERP’s financing strategy’s definition of ‘development’ equally considers i) environmental- and ii) social-development impacts.

Considering development impacts in all four assessment categories allows the ERP to target an integrated form of development/wellbeing. The overall ranking shown in Table 2 guided the overall allocation of funds of the MNDP ERP, while ensuring that at least the sellable quantity of ERs needed to serve the ERPA are generated.

The above considerations allowed for the allocation of financial resources in the ERP’s financing strategy, leading to the key question of how to efficiently involve communities. The Mai Ndombe province has an average population density of 13 persons/km<sup>2</sup>, little infrastructure and approximately 1,112 villages administered by traditional

Table 1: Assessment of carbon efficiency of MNDP's enabling- and mitigation measures

Strata	Activity	Average costs (USD/ha)	tCO <sub>2</sub> generated / ha	Carbon revenues (USD/ha)
		1 USD - > 0.01 tCO <sub>2</sub> , negative balance		
UNDEF	01 Agroforestry	365	35	149
UNDEF	02 Agricultural intensification - Commercial cropping	1	0	0
UNDEF	03 Agricultural intensification - tree crops (cocoa, coffee, palm oil)	50	0	0
UNDEF	04 Community conservation concessions	15	4	16
UNDEF	05 Community controlled logging	10	0	0
UNDEF	06 Protected area management	3	0	1
		1 USD - > 0.61 tCO <sub>2</sub> , positive balance		
A/R	07 Assisted nature regeneration of savannahs - for conversion to forests	44	27	117
A/R	08 Assisted nature regeneration for charcoal production	44	26	109
A/R	09 Reforestation for timber production	49	39	164
A/R	10 Reforestation for charcoal production with intercropping	129	44	187
A/R	11 Production of rubber on degraded land			
PDEG	12 Reduced impact logging including HC VF set aside	200	85	361
PDEG	13 Conservation concessions	12	4	18

chiefs. The ERP implements mitigation measures using the following approach.

Investments in communal mitigation activities are structured using a simple performance-based proxy-payment scheme, which enables transaction costs to be minimized (e.g. for MRV). This scheme is guided by the following principles:

- **Performance Aspect:** Communities implement mitigation actions and are rewarded, if and only if the mitigation action performs. This the performance-based character of the ERP (FCPF Carbon Fund will pay only if the ERP performs) to be replicated at village level.

- **Proxy Aspect:** According to 'Free Prior Informed Consent' principles, one community selects from the list of mitigation activities (i.e. 1-13, see tables above) those mitigation measures that should be implemented on their territory. GHG emission reductions accruing within the 5-year ERP period for each activity selected are estimated on a proxy basis and are added together. This determines the total ERP carbon revenues available for one community.

In practice, this approach allows the structuring of simple and robust payments depending on the performance of a mitigation activity in a specific village (e.g. agroforestry: are the trees alive, well weeded, and a fire breaks around

**Table 2: Assessment of development impacts of MNDP's mitigation measures**

	ENV	SOC	ECO	CO2	Sub Total
13 Conservation concessions	5	4	4	5	18
o8 Assisted nature regeneration for for charcoal production	5	4	5	4	18
12 Reduced impact logging including HCVF set	4	4	5	4	17
o4 Community conservation concessions	5	4	2	5	16
10 Reforestation for charcoal production with intercropping	3	4	5	3	15
o9 Reforestation for timber production	3	4	5	3	15
o6 Protected area management	5	2	3	5	15
o1 Agroforestry	3	5	4	3	15
o7 Assisted nature regeneration of savannahs - for conversion to forests	5	3	1	5	14
11 Production of rubber on degraded land	1	3	4	4	12
o5 Community controlled logging	2	4	4	1	11
o3 Agricultural insentification - tree crops (cocoa, coffee, palm oil)	1	3	4	3	11
o2 Agricultural Intensificatoin - Commercial cropping	1	3	5	1	10

the plantation in place?). Proxy payments are possible, as accurate carbon accounting is achieved on the level of the whole province (using remote sensing imagery) and hence it is not necessary to measure the exact carbon impact of all mitigation measures in each village.

Payments are always made to local community development committees, which are always governed by three elected representatives. The payments are always earmarked as investment in low carbon community development activities. Being already implemented by the two Forest Investment Programs (providing the upfront investments in the ERP), the proxy-payment scheme is considered to work well overall.

## Conclusions

DRC's REDD+ program in the Mai Ndombe province has in many respects been a front-runner (first ER PIN approval, first ERPD approval, etc.). However, after ten years of development, the ERP reference emission level (3rd version) still needs to be finalized and complete its benefits sharing plan, this being the FCPF Carbon Financing Parties' precondition for the official program start. Many of the delays incurred were due to a lack of guidance in the early development stage (e.g. FCPF methodological framework, treatment of accuracy for land use change estimates, political discussions around the possible adjustment of the historic reference emission level and its cap).

For the government (e.g. ministry of forests/environment) and key stakeholders like forest management companies, it is essential to have a clear pathway and guidance for the development with reasonable lead times. Without this, stakeholders lose trust in multilateral processes as promised payments are delayed. This is important not only for the FCPF carbon fund, but also in hindsight for other financing instruments, including possible Article 6 activities.

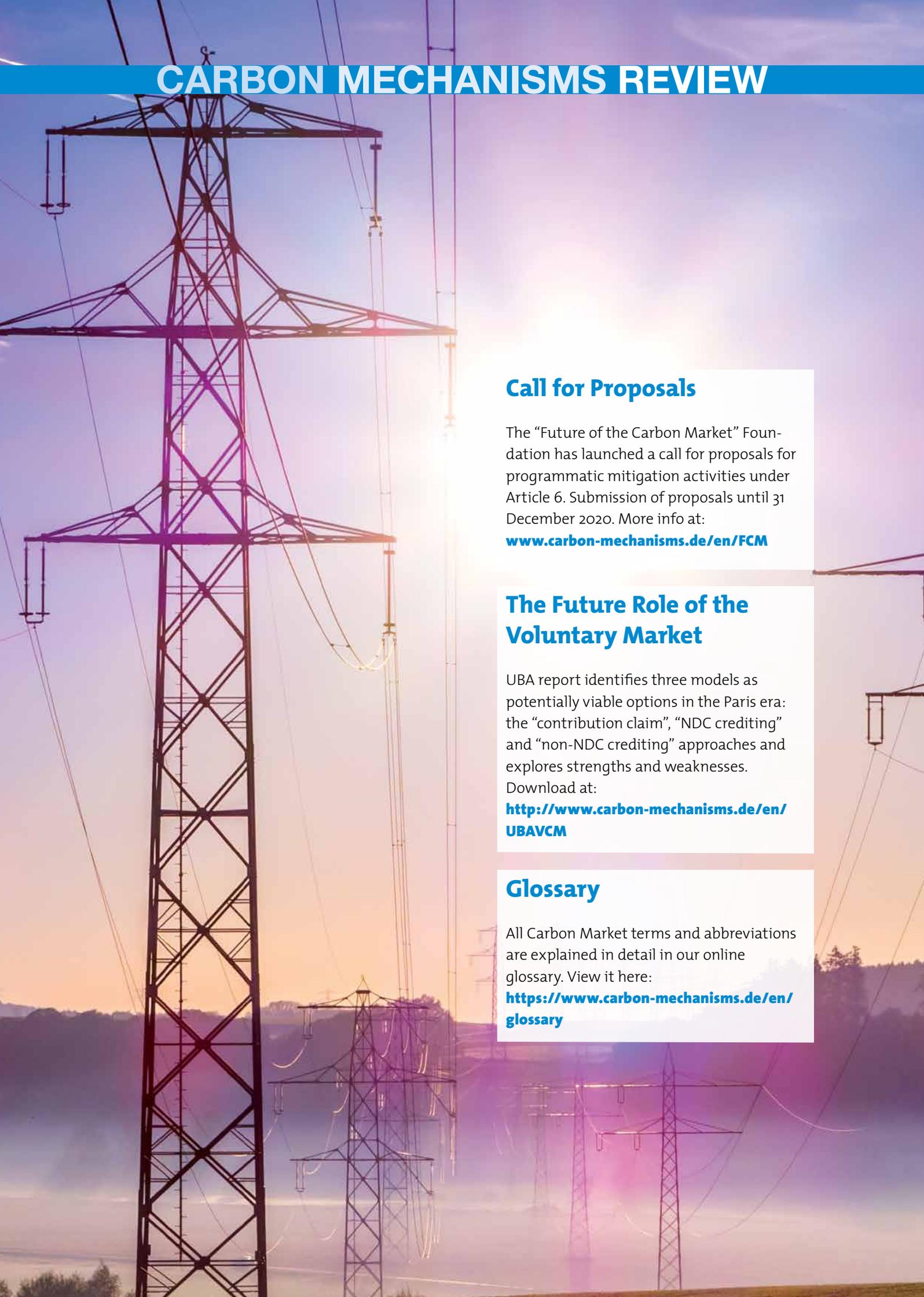
The successful performance of the MNDP ERP has yet to be demonstrated. However, the experience gained shows that it is possible to structure large landscape programs where the increase in household incomes outweighs the investment costs (i.e. carbon payments), exhibiting negative marginal abatement costs and contributing to overall economic development.

Considering the social-economic framework conditions in DRC (e.g. commercial interest rate above 20%, in rural areas no access to banking, limited road access, low electrification rate, etc.), it is a prerequisite that carbon financing instruments for nature-based solutions are tailored to the local development status of program regions. Hence, nature-based solutions require a robust and practical approach in offering performance-based incentives, such as the carbon proxy-payment scheme developed under the DRC's REDD+ program.

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# CARBON MECHANISMS REVIEW



## Call for Proposals

The “Future of the Carbon Market” Foundation has launched a call for proposals for programmatic mitigation activities under Article 6. Submission of proposals until 31 December 2020. More info at:

[www.carbon-mechanisms.de/en/FCM](http://www.carbon-mechanisms.de/en/FCM)

## The Future Role of the Voluntary Market

UBA report identifies three models as potentially viable options in the Paris era: the “contribution claim”, “NDC crediting” and “non-NDC crediting” approaches and explores strengths and weaknesses.

Download at:

<http://www.carbon-mechanisms.de/en/UBAVCM>

## Glossary

All Carbon Market terms and abbreviations are explained in detail in our online glossary. View it here:

<https://www.carbon-mechanisms.de/en/glossary>