

The background of the cover is a photograph of a wind farm. Several wind turbines are visible, with the most prominent one in the foreground on the right. The sky is a mix of orange, yellow, and blue, suggesting a sunset or sunrise. A gravel path leads from the bottom center towards the turbines. The overall mood is clean, modern, and hopeful.

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The Dawning of a New Era

**Paris Climate Summit Agrees on Substantive
Package of Market Mechanisms**

Comment and Analysis

In-depth coverage of the
Paris Agreement

Content

March - April 2016



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A fresh start

The comprehensive market mechanisms package under the Paris Agreement



Source: obs/Schott AG

To the surprise of many, the negotiations at the Paris Climate Summit ended with a general agreement on the use of international cooperation mechanisms, enshrined in Article 6 of the Paris Agreement (PA). While not explicitly mentioning Carbon Markets, Article 6 enables market-based approaches in several ways, covering the needs of all Parties in engaging in international cooperation. One distinct new feature is that the cooperative approaches are open to all Parties for use on a voluntary basis.

This issue of the Carbon Mechanisms Review is going to describe and analyse the Paris outcome with

respect to its Carbon Market provisions. We will approach this task from different angles: right below, we present the original wording of Article 6, accompanied by a description and a first set of comments of the content. We will then take a look at specific aspects, p.ex. ways to operationalize Article 6.4. A Japanese colleague describes the way Japan intends to use its Joint Crediting Mechanism under Article 6.2. In our opinion column, we think about the way the Sustainable Development could be taken up under the new Paris market approaches. This is followed by an analysis of principles and safeguards ensuring environmental integrity of the new mecha-

nisms. Subsequently, the Paris Agreement and its Carbon Market provisions is reviewed by a voice from the private sector. Last not least, we present an analysis on how Article 6.4 could benefit from the lessons learnt from the CDM, and especially its programmatic approach.

The contents of Article 6

Article 6 of the Paris Agreement defines three specific paths to international-level cooperation:

- ‘cooperative approaches’ under Articles 6.2 and 6.3
- a ‘mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development’ under Articles 6.4 to 6.7.
- a further form of cooperation defined under Articles 6.8 and 6.9, which is explicitly not described as a market mechanism.

Overarching Principles

Article 6.1

Parties recognize that some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity.

Article 6.1 provides a broad framework for cooperation activities and a chapeau for subsequent provisions. It mentions mitigation and adaptation activities. Sustainable development and environmental integrity are defined as targets to promote and pursue. There is no restriction to market-based approaches.

The principle of environmental integrity is going to play an important role in subsequent climate change negotiations. Under Article 6.1, cooperation mechanisms are expected to contribute to increased ambition in the implementation and promotion of nation-

ally determined contributions (NDCs). The exact definition of the relationship between market mechanisms and NDCs will play a key role in the environmental integrity debate and must result in a new definition or enhancement of the additionality rules known from the CDM (see also ‘Ensuring integrity’ in this issue).

Promotion of sustainable development is mentioned as the second overarching principle for activities under Article 2. It is also explicitly mentioned in Article 6.2, Article 6.4 as well as Article 6.8, making it more prominent as compared to the Kyoto world. How to operationalise this requirement without repeating the tireless debates under the CDM will be subject to the negotiations to come (see also our opinion column elsewhere in this issue).

The cooperative approaches

Article 6.2

Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

Article 6.3

The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties.

The term cooperative approaches is largely open to interpretation. The Parties are free to conduct mitigation activities on a bilateral basis or in groups and to transfer the mitigation outcomes as agreed. Although cooperative approaches are cited as playing a role in achieving NDCs, that role is not defined.



Mission accomplished: the Paris Agreement is adopted.

Under the Paris Agreement, the cooperative approaches are not subject to any specific UNFCCC monitoring process. That said, as expressly stated in Article 6.2, the transactions take place within the yet-to-be-developed accounting system. In addition, importance is also placed on transparency in both the activity and the transfer. Guidance on these principles is to be drafted and adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). With regard to the central requirements for a robust accounting system, key objectives under Article 6.2 will include looking at how mitigation activities can be made transparent and how the cooperative approaches can contribute to higher ambition (see also 'Cooperative implementation' elsewhere in this issue).

A new central UNFCCC market mechanism

Article 6.4

A mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable

development is hereby established under the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Agreement for use by Parties on a voluntary basis. It shall be supervised by a body designated by the Conference of the Parties serving as the meeting of the Parties to this Agreement, and shall aim:

- (a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;*
- (b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;*
- (c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its nationally determined contribution; and*
- (d) To deliver an overall mitigation in global emissions.*



Weighing up the options: Laurence Tubiana, French ambassador to the negotiations, talks with the South African delegation.

Article 6.5

Emission reductions resulting from the mechanism referred to in paragraph 4 of this Article shall not be used to demonstrate achievement of the host Party's nationally determined contribution if used by another Party to demonstrate achievement of its nationally determined contribution.

Article 6.6

The Conference of the Parties serving as the meeting of the Parties to this Agreement shall ensure that a share of the proceeds from activities under the mechanism referred to in paragraph 4 of this Article is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.

Article 6.7

The Conference of the Parties serving as the meeting of the Parties to this Agreement shall adopt rules, modalities and procedures for the mechanism referred to in paragraph 4 of this Article at its first session.

One clear difference between Articles 6.2f and 6.4ff will be the differing degrees of regulation for the two mechanisms. Article 6.4 provides for governance under the UN, while Article 6.2 merely provides for guidance and transparency. Both mechanisms are to contribute to higher ambition by providing for robust accounting and environmental integrity.

The mechanism under Article 6.4, which some dub Sustainable Development Mechanism (SDM) as it was called in earlier drafts, is placed under UN supervision. A comprehensive set of rules, modalities and procedures is to be developed. This is strongly reminiscent of the requirements and implementation rules developed for the CDM – as is the intention to again allow private and public enterprises to participate in the SDM (see 'Built on Experience' elsewhere in this issue).

The accompanying decision text (FCCC/CP/2015/10/Add.1, para 37) tasks SBSTA with elaborating modalities and procedures for this mechanism until the first meeting of the CMA. The decision text names important principles in this context, namely that reductions must be „real, measurable and long-term“. Further, reductions must be additional, relate to yet-to-be defined 'specific scopes' of activities, and

be verified and certified by designated operational entities (DOEs) as known from the CDM.

Nonetheless, the SDM is essentially a new market mechanism. This can be seen in the nationally determined contributions for host Parties and the contributions to net emission reductions. The host Party NDCs are found in the additional mobilisation of national resources to facilitate international cooperation. Host Party contributions to net emission reductions occur, by way of contrast, either by means of explicit agreement or via the actual mitigation outcome of an activity which does not result in the issuance of tradable certificates.

Non-Market Approaches

Article 6.8

Parties recognize the importance of integrated, holistic and balanced non-market approaches being available to Parties to assist in the implementation of their nationally determined contributions, in the context of sustainable development and poverty eradication, in a coordinated and effective manner, including through, inter alia, mitigation, adaptation, finance, technology transfer and capacity-building, as appropriate. These approaches shall aim to:

- (a) Promote mitigation and adaptation ambition;*
- (b) Enhance public and private sector participation in the implementation of nationally determined contributions; and*
- (c) Enable opportunities for coordination across instruments and relevant institutional arrangements.*

Article 6.9

A framework for non-market approaches to sustainable development is hereby defined to promote the non-market approaches referred to in paragraph 8 of this Article.

In contrast to the cooperative approaches or the Sustainable Development Mechanism, the non-market approaches do not allow transfer of mitigation outcomes. What this means and how it might affect international cooperation is a topic for further analysis and consultation. While it would appear that transfers aimed at meeting targets and for use in emissions

trading are excluded, the extent to which the service functions of the market mechanisms are excluded requires further debate. This applies both to measurement, reporting and verification (MRV) and the accounting system. These are useful in identifying the mitigation contributions of specific activities and also serve as transparency tools.

In addition, many terms introduced in the two paragraphs have no international definition. This applies in particular to the term 'integrated, holistic and balanced non-market approaches'. For some time now, supporters of market and non-market approaches have had considerable problems of misunderstanding. This did not stand in the way of an agreement being reached in Paris. The cooperative approaches under Article 6 must be developed in relation to the NDC and thus to national strategies, policies and measures, providing a basis for dialogue on common ground.

Outlook

The Paris Agreement is a turning point in the international climate change negotiations. However, as was the case after the signing of the Kyoto Protocol in 1997, there is considerable follow-up work to be done before the new agreement enters into force.

Rules and guidance for the use of activities under Article 6 will have to be developed and adopted in follow-up negotiations. Against this backdrop, it would make sense for the Article's potential uses and scope to be further investigated and defined in order to better understand its requirements and also to maintain the momentum achieved regarding the cooperative approach. The task now at hand – even before the next meeting of the subsidiary bodies at the climate change conference in Bonn in May – is to develop practical ways of using these provisions and initiate dialogue between potential buyers and sellers.

The Editor

Next steps

How to make Article 6.4 of the Paris Agreement work

by Konrad Raeschke-Kessler

In its Article 6, the Paris Agreement contains provisions for mechanisms that could provide frameworks for markets, climate finance or other forms of coordination. This article focuses on the mechanism established under Article 6.4 and the issues that will have to be addressed in its further elaboration.

However, a brief look at the context of this mechanism may be useful: Article 6.2 enables the transfer of units from bi- or multilateral climate policies, while Article 6.8 enables optimization in the coordination of non-market approaches to sustainable development.

The rules regarding the cooperative approaches in Article 6.2 and for the work program for non-market approaches in Article 6.8 are fairly generic, but the provisions in Article 6.4 of the Agreement and the supporting elements in decision 1/CP.21, in particular paragraph 37, are more detailed than expected. Like the whole Paris Agreement, they represent a carefully balanced outcome in which each single element most likely reflects a priority for some Parties. The next challenge is to create a **robust and durable set of rules** on this basis which can be adapted or, optimally, will adapt itself to changing circumstances, in particular to increased ambition.

Besides the possible use of mitigation outcomes to fulfil nationally determined contributions of another party, it could also become an instrument for MRV (monitoring, reporting, verification) in public climate finance. It also presents an opportunity to contribute to the achievement of the sustainable development goals (SDGs). Even Article 6.8 could benefit from the use of Article 6.4 as a tool for enhancing the coordina-

tion and effectiveness of international cooperation, since Article 6.4 can serve as a tool for quantifying mitigation impacts and thereby assessing non-market activities in a comparable and consistent manner.

Of course, taking a more market-oriented view of Article 6.4, the philosopher's stone of any carbon market instrument would be a concept of how to predictably and reliably leverage the private sector over the long term. In other words, how to ensure the predictability of finance flows in the context of the overall objective of the Paris Agreement to make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development (cf. Article 2.1 lit. c PA).

This depends not least on the balance between the supply and demand sides of the markets. Currently, few buyers are on the horizon, while supply is expected to remain plentiful. It will be interesting to see how the implementation of NDCs and their progression will change this picture over time. The optimal effect of the mechanism could be **to increase the likelihood of raised ambition** by enhancing the capacity to identify and realize the full mitigation potential, while avoiding lock-in effects.

Familiar faces

Article 6.4 contains several concepts which are clearly inspired by the mechanisms of the Kyoto Protocol. Existing implementing rules could provide a first basis for further work. However, careful thought is needed as to whether and which modifications are necessary to reflect the context of the Paris Agreement.



Which orientation for the SDM? Mounting solar panels in Morocco.

An example of such changed contexts is the fact that the mechanism established by Article 6.4 requires promotion of **sustainable development**. Under the Kyoto Protocol, only the CDM was to assist developing countries in sustainable development – not JI. As the Sustainable Development Goals are now applicable to all countries, it is a logical choice to include the promotion of sustainable development as a requirement for all potential host countries. Options for implementation range from a mere communication of national criteria to using specific, internationally agreed indicators for the monitoring, reporting and verification of sustainable development (see 'Names do not matter' elsewhere in this issue).

The requirement of **host Party benefit from mitigation** activities will likely be interpreted quite differently, even though similar wording was contained in the Kyoto Protocol. In the new context of the Paris

Agreement, it raises many questions: NDCs will need to be reflected. Such a benefit could be enabled either by only transferring a portion of the units generated or by not generating units for a part of the reductions achieved. The latter option in turn could be achieved by discounting emission reductions or by using baselines below business as usual, in particular based on benchmarking.

But will parties need to identify beforehand how a class of activities contributes or does not contribute towards an NDC before crediting is possible, or will the assessment of additionality be sufficient? Will it be necessary to differentiate by type of NDC and to apply different accounting rules (sometimes called windows) adapted to different types of NDCs? In other words, will different rules be necessary for sectors with and without quantified targets? If so, two aspects (windows) of the mechanism might be usable in the

same country if some sectors are covered by quantified targets while others are not. Will crediting be possible for sectors covered by conditional targets, and if so, how?

The concept that **emission reductions can be used by another Party to fulfil its nationally determined contribution** is enshrined in Article 6.4. In this context, the registration of units is not explicitly foreseen, but may be necessary. In this case, decisions on issuance models, on a central or national registries and their coordination will be necessary.

The Paris Agreement also aims at incentives for and facilitation of participation in the mitigation of greenhouse gas emissions by **public and private entities authorized by a Party**.

Decision 1/CP.21 paragraph 37 also requires **real, measurable and long-term benefits** related to the mitigation of climate change. This is taken verbatim from the CDM provision in Article 12 of the Kyoto Protocol.

The decision also requires specific **scopes of activities**: In this or other contexts, the question will arise as to which **levels of aggregation of mitigation activities** (e.g. projects, programmes and sectors) should be included.

The concept of **additionality**, well-known from the CDM requirements and taken up in the Paris decision, 1/CP.21 paragraph 37, could need modification, in particular for sectoral activities, if they are allowed.

The **verification and certification** of emission reductions resulting from mitigation activities by designated operational entities could function either with a centralised or decentralised system for accrediting and supervising third-party reviewers.

New faces

Some elements in Article 6.4 of the Paris Agreement are new compared to the Kyoto Protocol. They raise a number of questions.

Article 6.5 addresses the **avoidance of double counting**, although in a slightly roundabout way: *“emission reductions resulting from the mechanism shall not be used to demonstrate achievement of the host Party’s nationally determined contribution if used by another Party to demonstrate achievement of its nationally determined contribution”*. New double counting arrangements will, first and foremost, need to be adequate for the transparency arrangements (accounting structure) of the Paris Agreement.

Beyond Offsetting

Another interesting feature is the **overall mitigation in global emissions** required by Article 6.4: This appears to indicate that the mechanism should not be a zero sum gain (pure offsetting). Such approaches could allow to quantify and verify mitigation that goes beyond the levels foreseen in NDCs. This was a feature that was explored in the context of the JI review, although no final consensus has emerged in the draft text regarding this issue. One of the options under discussion there would stipulate to “set requirements to provide for net atmospheric benefits from activities, taking into account relevant criteria, inter alia, the activity type and context and the objective of providing incentives for mitigation.”

Such an overall mitigation of global emissions would effectively raise the level of ambition beyond the sum of the domestic NDCs of the involved Parties. However, this issue is also linked to proper accounting (assuming that long-term ambition will be guided by quantitative approaches): The actual result for the atmosphere will be only positive if accounting is robust and the NDCs do not produce hot air. Discounts and cancellations would not be able to compensate negative effects if inflated baselines were used or if non-additional activities were credited.

Last but not least, the identity, composition and mandate of the Body designated by the Parties to supervise the mechanism must be determined.

Open questions

In the elaboration of rules, an **adequate level of centralization** (versus decisions on national level) will have to be determined. Given the problems experienced in some cases with JI Track 1 (where parties were eligible to verify reductions and issue ERUs themselves), a completely decentralized mechanism does not appear advisable.

It will be interesting to see if and under which conditions a **transition of activities under CDM/JI** towards the mechanism will be allowed. If the draft of the reviewed JI guidelines is any indication, it is likely that activities will only be able to continue under the mechanism if they meet its criteria, ensuring environmental integrity. Candidates are criteria for additionality, host country benefits and overall mitigation of global emissions. The latter two might make it necessary to update baselines. Such an approach could help to operationalise the new mechanism faster and provide a positive signal to the private sector, even though it would not address the fundamental question of where demand could come from. Regarding the voluminous CDM/JI legacy rule set (standards, procedures, tools, guidelines, clarifications), a mandate for the body to scrutinize the existing rule sets for usable elements, identifying elements that would have to be changed in the context of the Paris Agreement, could be a viable option.

A **pilot phase** could enable capacity building for MRV through learning by doing. It could build confidence in MRV procedures, could encourage early initiatives and speed up implementation of NDCs. Some member states also aim to maintain motivation for mitigation activities from the private sector by enabling a continuous positive signal (both carbon price-based and symbolic). However, such a pilot phase would require a decision by Parties.

The way forward

Condition for the entry into force of the Paris Agreement is the ratification, acceptance, approval or accession by at least 55 Parties covering at least 55 percent

of global greenhouse gas emissions. This could happen even before 2020. Therefore, the further elaboration of implementing rules is quite urgent.

However, the issues outlined above require further exploration of the different options for implementation. The primary source for informing negotiations are technical papers drafted by the UNFCCC Secretariat. Therefore, the SBSTA could envisage issuing a mandate to the Secretariat to draft technical papers on the main issues at its next session in May 2016. Another additional source of information that would be directly usable in the context of negotiations would be to invite submissions by Parties and potentially also by other stakeholders and observers.

Once these technical papers and potential submissions have been produced and digested by Parties (in time for the SBSTA session in November 2016 in Marrakesh), there are essentially two possible ways forward. The first would be to first achieve a consensus on key elements as a basis for a first draft of the rules, modalities and procedures. This draft would be provided by the facilitators or chairs of the negotiations, assisted by the Secretariat, and would be the basis for further negotiations by Parties.

Given that the rules for the mechanism established by Article 6.4 are already fairly detailed, the second option would be for facilitators or chairs to be tasked to directly produce a draft outline or even a first draft of the rules, modalities and procedures on the basis of the Paris Agreement, the decision and the technical papers and potential submissions as the starting point of negotiations. In a best-case scenario, this first draft could be available for negotiation by Parties as early as by SBSTA 45 (November 2016).

Disclaimer:

This article is a personal contribution by Konrad Raeschke-Kessler and does not necessarily express the opinions of the German Federal Environmental Agency (UBA) or the German Emissions Trading Authority (DEHSt).

Cooperative Implementation

The Joint Crediting Mechanism (JCM) as an example of Article 6.2 activities

by Kazuhisa Koakutsu, Institute for Global Environmental Strategies (IGES)

In order to achieve the ambitious objectives of the Paris Agreement (PA), efficient and cost effective mechanisms to enhance the ambition of the Nationally Determined Contributions (NDCs) will be needed. Therefore, Article 6 of the PA will be of high significance for the actual implementation of the agreement. The Joint Crediting Mechanism (JCM) can be seen as an example of the cooperative approaches mentioned in Article 6.2. This article will review the relevant paragraphs of the Paris Agreement and apply to the latest developments of the JCM.

In implementing the PA and meeting its objectives, as defined in Article 2, the Parties will have to enhance their mitigation and adaptation actions beyond their currently submitted NDCs. Holding the increase in global average temperature to “well below 2 degrees above pre-industrial levels” and to “pursue efforts to limit the increase to 1.5 degrees” would necessitate significant financial sources and new ways of involving the public and private sectors. The Article 6 of the PA could provide a solution through the so-called “cooperative approaches” to allow for higher ambition and to promote sustainable development as well as environmental integrity.

The question for the articulation of the Article 6.1, therefore, is what kind of approaches and/or mechanisms would be available for the Parties to use in the implementation of their NDCs and its enhancement. Article 6.1 indicates that some Parties already started to initiate voluntary cooperation for the implementation of their NDCs and the subsequent paragraphs provide possible approaches to pursue.

Article 6 of the Paris Agreement basically consists of the three important components. They are namely, (1) Cooperative approaches (Article 6, paragraph 2 and 3), (2) A mechanism for mitigation and sustainable development (Article 6, paragraph 4 to 7), and (3) a non-market approach (Article 6, 8-9).

The JCM as a Case for Article 6.2

For the elaboration of Article 6.2, there are three important elements in the paragraph as follows (UNFCCC, 2015).

- (1) internationally transferred mitigation outcomes (ITMOs)
- (2) towards nationally determined contributions (NDCs)
- (3) apply robust accounting to ensure the avoidance of double counting consistent with guidance

The operationalization of the Article 6.2 will require the elaboration of such elements. As the JCM already is at the implementation stage, the JCM can be seen as a “real-life example” for the operationalization of this paragraph.



Photo: USAID/Foster/Wimrock Intl.

Diffusion of low carbon solutions: installing a solar array in Afghanistan.

The Current Status of the JCM

The basic concept of the JCM is to facilitate the diffusion of leading low carbon technologies, products, systems, and services while appropriately evaluating greenhouse gas (GHG) emission reductions or removals in order to use them to achieve Japan's emission reduction target under the UNFCCC. As of April 2016, there are 16 countries which have established the JCM¹ (Government of Japan, 2016).

Based on these, a Joint Committee (JC) consisting of representatives from both countries is established, rules and guidelines for the JCM are adopted,

methodologies are approved, and projects are registered. As of 1 April 2016, 19 JCM methodologies have been approved and ten projects have been registered (JCM 2016). In preparation for the issuance of credits, the development of the JCM registry from Japanese side has been completed as of November 2015² and the JCM registry in Partner country is now underway. With the adoption of the "Outline of Japan's JCM Implementation" the actual implementation of the JCM has been carried out (JCM Registry, 2016).

As of today, more than 70 JCM projects are in the pipeline supported directly through the finance program by the Ministry of the Environment, Japan.

¹ Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, and Thailand.

² JCM Registry System (<https://www.jcmregistry.go.jp/>)

How can ITMOs be Applied to the JCM?

The JCM is going to generate ITMOs soon, based on its rules and institutional arrangements. Based on agreed documents (e.g. Low Carbon Development Partnership, Memoranda of Cooperation), the institutional arrangements for the JCM including the “verified emission reductions or removals of GHG” can be used for internationally pledged mitigation efforts. Double counting of emission reductions or removals will be avoided by taking specific measures, see below³. ITMOs will be generated in the JCM based on the project cycle of the JCM, which includes robust MRV provisions (monitoring, reporting and verification), validation and verification by a Third Party Entity (TPE) and monitoring reports for the Joint Committee (JC), which registers the JCM project and issues the credit (ITMOs).

It is important that the final decision will be made by the JC for the generation of the ITMOs as this ensures the authorization of participating Parties as stated in the Article 6.3 (UNFCCC, 2015).

Use of ITMOs for the NDC in relation to the JCM

The JCM will utilize the ITMOs for the achievement of the NDCs (from both Japan’s and the host country’s point of view). The function of the JCM in Japan’s INDC is to enhance the ambition level of its INDC. For example, in Japan’s INDC, the reduction target of fiscal year (FY) 2013 was set at the level of a reduction of 26.0% compared to FY2013 (GoJ, 2015). According to the INDC, “the JCM is not included as a basis of the bottom-up calculation of Japan’s emission reduction target, but the amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan’s reduction.” (GoJ, 2015). In order to do so, the government of Japan will

undertake JCM programs within its annual budget to generate emission reductions amounting to 50 to 100 million tCO₂ (GoJ, 2015).

The JCM therefore is a way to enhance the ambition level of Japan’s NDC. At the same time, this will also be true for the Partner country, as many of them are mentioning the use of market mechanism for the achievement of their NDCs (IGES, 2016).

Avoiding Double Counting

The JCM could in fact provide a specific example for the development of robust accounting guidelines for the avoidance of double counting. In this context, it is important to take a deeper look into the meaning of “double counting” and ways to develop a set of measures to address the related issues.

There are four types of double counting: (1) double registration, (2) double issuance, (3) double usage, and (4) double claiming, cp. the article 'Ensuring Integrity' elsewhere in this issue. The following table summarizes the approaches taken by the JCM in relation to the measures and equivalent documents that will be used to address each type double counting.

Outlook

From next SB meeting, it is expected that the negotiations will start to discuss and elaborate the guidance on possible double counting of the cooperative approaches and the development of modalities and procedures for the mitigation and SD mechanism. It is planned that those rules will be adopted at the first meeting of the Parties to the Paris Agreement in 2020. The JCM experience can provide crucial insights for the international rule-making on environmental integrity and double counting for the market mechanisms under the Paris Agreement.

³ For the details of bilateral documents between Partner country and Japan, please see the JCM official website (<https://www.jcm.go.jp/>) and look for the bilateral document under the Rules and Guidelines.

Types of Double Counting	Measures to Apply	JCM in Practice
Double registration	<ul style="list-style-type: none"> • Minimum information regarding projects under each scheme should be made publicly available • An administrator of the mechanism should be required to check whether a proposed project for registration/issuance has not been registered/issued under other mechanisms before registration/issuance of the project. 	<ul style="list-style-type: none"> • Defined in Bilateral Documents • Rule of Implementation of the JCM • JCM Guideline for Validation and Verification
Double issuance		
Double usage	<ul style="list-style-type: none"> • By confirming the decrease of the amount of units in the transferring account of a registry and increase of the same amount on units in the receiving account of another registry. • By checking whether units to be transferred have not been retired or canceled before a transaction 	<ul style="list-style-type: none"> • JCM Registry • Outline of JCM Implementation
Double claiming	<ul style="list-style-type: none"> • Guidance to be developed under Article 6.2 and 6.3 	<ul style="list-style-type: none"> • N/A

Source: New Market Mechanism in CHARTS, 2015 and JCM Website

References

IGES (2015) "New Market Mechanism in CHARTS" (updated March 2015) http://pub.iges.or.jp/modules/envirolib/upload/3352/attach/new_mech_charts.pdf

IGES (2016) "IGES INDCs and Market Mechanism Database" (Updated February 2016) <http://enviroscope.iges.or.jp/modules/envirolib/view.php?docid=6147>

JCM Registry (2015) "Guidelines for the Implementation of the JCM in Japan (Provisional Translation)" https://www.jcmregistry.go.jp/contents/JP/Summary/guidelines_en.pdf

Government of Japan (2015) "Japan's Intended Nationally Determined Contributions (INDCs)" Available: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Japan/1/20150717_Japan's%20INDC.pdf

Government of Japan (2016) "Recent Development of the Joint Crediting Mechanism (JCM). February 2016, http://www.mmechanisms.org/document/20160203_JCM_goj_e_rev.pdf

United Nations Framework Convention on Climate Change (UNFCCC) (2015). Paris Agreement: FCCC/CP/2015/10/Add.1

“Sustainable development” - a few words on the main characteristic of Article 6.4

Names do not matter, when you know what you want

by Thomas Forth, Advisor to BMUB

Different interpretations of the mechanism spelled out in Article 6.4 of the Paris Agreement begin with its name or rather, the lack of it. The objective of this mechanism, to be a mechanism for sustainable development, is not defined in the Paris Agreement. To quote:

“A mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development is hereby established (...).”

This is very close to the purpose of Article 12 of the Kyoto Protocol: Certified Emissions Reductions on the one hand as a supportive way to contribute to compliance for the Annex I countries in a cost-efficient manner; and on the other hand to deliver carbon investments for the developing countries, which are described as assistance in achieving sustainable development. Article 12.2 KP states that:

“The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and (...) to assist Parties included in Annex I in achieving compliance (...).”

The nucleus of the CDM in a nutshell: ‘flexibility versus sustainable development’. The underlying assumption was that the nucleus could build the basis of economic cooperation between developing and developed countries. If you compare the definitions of Article 6.4 PA and Article 12 KP you will find no substantial difference.

When you ask how meaningful the references to sustainable development are you will be disappointed, but only if you have expected statements or some evidence on the content of sustainable development. In both the Kyoto Protocol and the Paris Agreement, you will find nothing on this. There are good reasons for this. A global definition of sustainable development cannot meet the development interest of all countries. Any attempt to reach a common understanding will lead to endless debates in UNFCCC negotiations without anything of relevance being decided, even over the course of several years.

Under the Kyoto Protocol, the way to handle the objective of sustainable development has been decided in procedural dimensions. The Marrakesh Accords fixed the problem with the reference that this item will be defined in the sovereignty of the host country:

“Affirming that it is the host Party’s prerogative to confirm whether a clean development mechanism activity assists it in achieving sustainable development.”

This very strict definition was laid down in the modalities and procedures for a clean development mechanism at COP 7 in 2001. It would not come as a surprise if this definition also became the basis of the “rules, modalities and procedures for the mechanism” which is required under Article 6.7 PA to be decided at CMA 1 under the Paris Agreement.

For many people and groups, a solution similar to that seen under the CDM would have very negative connotations. They may want to see indicators to measure SD and/or to make a clear link to the SDG process. Even if this is a very serious issue, it cannot be part of the operative mode of a mechanism serving carbon markets. The inner functionality of the carbon market works on the basis of GHG emission reduction, which should be maximized to achieve the greatest cost-benefit ratio. Different objectives may function in sophisticated programs with climate finance money, but not for actors who must comply with their targets. These two worlds should be not mixed up in one mechanism.

However, this is only one of the answers to the challenge of sustainable development for the further UNFCCC negotiations. A second answer depends on the question of how use of the mechanism will keep in line with countries' emission reduction plans, as laid out in their nationally determined contributions (NDCs). Article 6.5 is the starting point here:

“Emission reductions resulting from the mechanism referred to in paragraph 4 of this Article shall not be used to demonstrate achievement of the host Party’s nationally determined contribution if used by another Party to demonstrate achievement of its nationally determined contribution.”

What this means is that the part of emission reduction allowed for international transfers and for trade has to go beyond the unconditional NDC. Evidently, the emission reduction activity may contribute to reaching the existing NDC of an implementing country and need not be performed completely outside the unconditional NDC. That calls for detailed analyses and definitions of areas for international cooperation, including the conditions for the use of Article 6.4. My assumption is that use of Article 6.4 requires the implementing country to have strategies for a clear contribution to and above the domestic climate targets described in the NDC. To work out detailed and transparent plans for the conditional part of the NDC will also be the prerogative of the implementing country.



Source: Schroder/NREL/Flickr.com

Use of Article 6.4 is so closely linked to the countries' climate strategies that the challenge of sustainable development will be mastered within the INDC/NDC process. Bearing this in mind, it would be highly appropriate for further negotiations on INDCs/NDCs to reflect cooperative approaches, including markets, in a systematic manner. This would assist the implementing countries in managing the considerable workload on this matter. In addition, implementing and supporting countries do not have to wait until the question of conditional and unconditional parts of the NDCs has formally materialized in notified NDCs.

On the basis of the nearly 80 Parties that indicated the use of markets in their INDC, one could elaborate concrete programs which fulfil the requirement of Article 6.5. Parties that have neglected markets in their INDC could make use of the cooperative approaches now, including market mechanisms.

Given this challenge from the carbon market side, it should be noted that within the CDM the concept of "Standardized Baselines" (SBLs) has been created in recent years. SBLs are already an advanced tool which could be adapted to the level and scopes of conditional NDCs. By doing so, the reference point of unconditional domestic action of the implementing country has to be identified. Both cooperative approaches/market mechanisms and domestic measures will become transparent.

At the same time, such SBLs create the necessary transparency on the question of the additionality of using cooperative approaches/market mechanisms even in the conditional part of an NDC. If such a level of elaboration and transparency of SBLs is reached, the implementing country could decide in a very convenient way, whether or not mitigation activities in the conditional part of the NDC support its sustainable development. This way of handling the prerogative on sustainable development by the host country contrasts with the simple statement in the letter of approval for a CDM project, which is required for the UNFCCC registration of a CDM activity.

Outside the negotiations, there are many options to strengthen the efforts for sustainable development. Among others, implementing countries will address more and more sustainable development issues in their climate-related policies and low carbon strategies. By doing so, they will be able to identify opportunities for cooperative approaches where policy-makers require government and industry to seek solutions to that end. Furthermore, emission reduction activities under Article 6 could be defined and prioritized for SDG targets.

Besides carving out territories for cooperation, which in any case is the job of policymakers outside the UNFCCC negotiations, the role of supporting Parties has to be placed at the centre of further considerations. With regard to the cooperative dimension of cooperative approaches, it should be stressed that it is not only the responsibility of implementing countries to work on the supply side for cooperative activities under Article 6.4.

It is also the responsibility of the more developed and rich countries to provide a quantifiable basis for the calculation of demand – one which implementing country actors could trust following the politically induced downturn in CDM demand. The readiness to deliver clear figures on demand belongs to the narrative of sustainable development. It appears that this is something Parties still have to learn. Most of the supporting countries have still to deliver. To achieve progress here in the near future would be quite helpful in relation to another essential topic, namely the requirement for an overall raising of ambition in Article 6 in general and very explicitly in 6.4, including the topic of net emission reductions.

In the event a consensus is reached in the UNFCCC negotiations on the procedural character of assisting sustainable development in implementing countries, the name of Article 6.4 will be of minor relevance. Of course, an acronym that can be spelled out would be nice to have.

Ensuring Integrity

Design options for reliable and thorough Paris market mechanisms

by Lambert Schneider, Associate to Stockholm Environment Institute and Stephanie La Hoz Theuer, University of Cambridge

International carbon market instruments aim to reduce the overall costs for mitigation. However, if not well designed, they can also undermine environmental integrity, leading to higher global GHG emissions. The ability of such instruments to contribute to cost-effectiveness whilst ensuring environmental integrity will strongly depend on the provisions Parties will adopt under the Paris Agreement in the years to come, as well as on how such provisions will be implemented. It is likely that Parties will have different interpretations of the Paris Agreement and different views on which rules should govern international carbon market instruments. This article explores key design issues for ensuring environmental integrity and provides an outlook on the negotiations and the possible start of carbon market instruments and international transfers under the Paris Agreement. Drawing on the important lessons learned from existing mechanisms, we focus our analysis on key requirements to ensure environmental integrity: what is needed to ensure that cumulative global GHG emissions will be equal or lower compared with Parties meeting their NDCs without the use of mechanisms?

Environmental integrity and its elements

Article 6 of the Paris Agreement includes several elements relating to environmental integrity: Article 6.1 refers to “promoting environmental integrity”; under cooperative approaches Parties shall “ensure environmental integrity”, while the Article 6.4 mechanism includes several specific provisions aimed at ensuring environmental integrity.

Whether an international mechanism provides for environmental integrity depends on several aspects (see Table 1 and further discussion below). This broadly includes the NDCs, the quantification of GHG budgets, emissions, and emission

reductions, and the arrangements for issuance, transfer and use of mitigation outcomes. These aspects can be regulated at varying levels (international/regional/national) and in varying forms (rules/guidance). Altogether, the elements form a package that should be enforced through a system (or systems) of eligibility and compliance, and overseen by robust governance structures. Moreover, it is important to note that all aspects are interlinked, such that the final impact in terms of environmental integrity depends on the combination of circumstances (Schneider et al 2015; Kollmuss et al 2015).

Article 6.2

Article 6.2 establishes provisions for Parties to engage in cooperative approaches that involve use of internationally transferred mitigation outcomes (ITMOs). The article lists the basic principles for such transfers, and mandates work on further guidance to be adopted by the CMA. Article 6.2 calls for Parties to “ensure environmental integrity”, and to “apply robust accounting” – yet these terms are not defined, and could therefore be interpreted and implemented in a multitude of ways. In future negotiations, a key question for Article 6.2 will be what can and should be regulated and overseen at international level, and how much can be decided by the Parties involved in international transfers. In many ways, Article 6.2 reminds us of the discussions about the Framework for Various Approaches (FVA), in which the same topics were approached and for which many possible solutions were proposed. In this section, we briefly discuss a few key design issues related to environmental integrity and accounting, drawing on Table 1 above.

A first important issue relates to the scope of NDCs. Robust accounting of international transfers requires the establishment of emission budgets (Lazarus et al 2014; Kreibich & Ober-

Table 1: Key issues impacting the environmental integrity of international carbon markets

Topic	Specific issues	Key aspects to address to address environmental integrity
NDCs	<ul style="list-style-type: none"> Type and scope of NDCs (geographical, sectoral, temporal, greenhouse gases) Ambition of NDCs 	<ul style="list-style-type: none"> An NDC that renders itself to quantification in a multi-year emissions budget, expressed in tCO₂e An ambitious NDC that would not lead to the international transfer of "hot air"¹
Quantification of GHG budgets, emissions, and emission reductions	<ul style="list-style-type: none"> Determination of GHG budgets Quantification of GHG emissions (inventories) <p>For crediting mechanisms:</p> <ul style="list-style-type: none"> Assessment of additionality² Quantification of emission reductions 	<ul style="list-style-type: none"> Rules to appropriately quantify multi-year GHG budgets, including the consideration of conditional targets Rules for accurate GHG inventories and reporting, including ensuring that mitigation outcomes are "visible" in the inventory³. <p>For crediting mechanisms:</p> <ul style="list-style-type: none"> Rules to ensure additionality Rules to quantify emission reductions against a baseline
Arrangements for issuance, transfer and use of mitigation outcomes	<ul style="list-style-type: none"> Avoiding double counting of emission reductions, including double issuance, double use and double claiming Vintage, metrics, and permanence of international transfers Achieving an "overall mitigation" (for 	<ul style="list-style-type: none"> Rules for the issuance of internationally tradable mitigation outcomes, including provisions to address double issuance Rules for adjustments of reported GHG emissions for international transfer, addressing double claiming of mitigation outcomes Infrastructure to track international transfers, addressing double use of mitigation outcomes Rules to prevent the international trade of hot air Rules for accounting for the vintage, metrics⁴ and permanence of mitigation outcomes Definition of and rules to achieve an 'overall mitigation' (for Art. 6.4)

¹ Hot air is understood as a surplus of units caused by inflated GHG emission targets, such that actual GHG emissions fall below the target without the need for mitigation action. Note that this could also be addressed via rules for transfers of mitigation outcomes.

² i.e. whether the mitigation measures are implemented due to the incentives from the mechanism.

³ In the case of CO₂, reductions in GHG emissions are usually automatically reflected in GHG inventories, while for non-CO₂ gases simple methods (e.g. Tier 1 methods with default values) may not reflect the GHG emissions implemented through a mechanism.

⁴ i.e. expression of reductions in tCO₂e and using the same GWPs.

gassel 2016). A key challenge is that so far most countries have only specified mitigation targets for single years. If a country would account reductions achieved over several years to meet a target in a specific year, this can lead to higher cumulative global GHG emissions compared to achieving the same target without international transfers (Prag et al 2013; Lazarus et al 2014). Similarly, accounting for early emission reductions towards achieving NDCs in later years could provide for incentives for taking early action but also lead to cumulative higher emissions (Schneider & Ahonen 2015). Measures are also needed to take into consideration the evolution of NDCs over time, such as conditional elements and the updating of the targets every five years. If Parties have targets expressed in metrics other than GHG emissions, robust accounting can be challenging (Hood et al 2014), as it requires the translation of non-GHG targets into GHG emission budgets.

A further difficult – and controversial – question is whether international oversight is needed on what (and how much) Parties transfer (Prag et al 2011; Prag et al. 2013; UNFCCC 2012). A key aspect for ensuring environmental integrity is avoiding international transfers of hot air, where unit surplus is generated without mitigation action. To avoid the generation or accumulation of hot air, inter-temporal provisions (banking and borrowing of units across trading periods) also play an important role. Transferring and using units from hot air towards NDCs increases global GHG emissions, and past experience with JI Track 1 shows that this risk cannot be underestimated (Kollmuss et al 2015). Ambitious targets do not generate hot air, but some NDCs are not ambitious (Climate Action Tracker 2015). Moreover, the ambition of an NDC is subject to uncertainties in economic growth, technological development, among others. Quantitative limits in international transfers were proposed to avoid transfers of "hot air", but could make the linking of emission trading schemes more difficult. Some advocate coordination through smaller regulation and coordination fora (often called 'carbon clubs'), but their success in addressing the problem is, inter alia, dependent on the overall ambition within the club. In the case of crediting mechanisms, robust rules on additionality and quantifying emission reductions could help avoid the transfer of hot air.

The avoidance of double counting is explicitly mentioned as an objective under Article 6.2. Double counting of emission reductions can only be addressed effectively if the Parties

involved apply the same approach. To avoid double counting, Parties should adjust their reported GHG emissions for internationally transferred mitigation outcomes, as foreseen by paragraph 37 of the text. If Parties exporting mitigation outcomes add transfers to their reported emissions and importing Parties subtract them, double claiming is largely addressed. Double use of units can be addressed by appropriately tracking and documenting such transfers. Double issuance requires appropriate oversight by regulators of carbon market mechanisms; this might be left to those operating mechanisms, as long as international guidance and review ensures that carbon market mechanisms actually check for double issuance (Schneider et al 2015).

Article 6.4

Article 6.4 establishes provisions for a mechanism, under the authority and guidance of the CMA, to promote the mitigation of GHG emissions while fostering sustainable development. The mechanism resembles several elements from the CDM and JI Track 2, such as a UN body overseeing the mechanism and requirements to ensure additionality. The reference to "emission reductions" and "additionality" indicates that the mechanism may evolve as a crediting mechanism.

Article 6.4(c) specifies that the emission reductions "can also be used by another Party to fulfill its NDC", which implies that the mechanism could involve international transfers of emission reductions. If international transfers are involved, a key question is whether such transfers automatically fall under the scope of cooperative approaches (Article 6.2) or whether they would occur under separate provisions. Article 6.5 includes provisions to ensure that emission reductions resulting from the mechanism shall only be used by one Party towards NDCs, thereby addressing the issue of double claiming. It also implies that the emission reductions could occur within the scope of NDCs in the host country (similar to JI), which raises the question of whether the mechanism also addresses emissions that do not fall within the scope of NDCs (similar to the CDM).

Which type of mitigation activities will qualify under the mechanism could have considerable impact on environmental integrity. The available research suggests that under the CDM and JI the likelihood of providing additional emission reduc-



Source: ADP/Flickr

What level of oversight for the Paris mechanisms? The Control room at a combined cycle power plant.

tions varied strongly by project type (Schneider 2007; Spalding-Fecher 2012; Kollmuss et al 2015). We argue that the mechanism should target:

- Mitigation activities that have a high likelihood of additionality: assessing additionality has proven difficult in practice due to information asymmetries and limitations of standardized approaches. We recommend to credit mitigation activities where carbon revenues significantly impact economic feasibility, and to exclude others.
- Specific projects and programmes rather than policies: crediting policy makers for implementing policies, or crediting entire sectors, raises practical issues and environmental integrity concerns. In contrast, exposing private sector entities to a carbon price can help identify new mitigation opportunities and foster innovation.

- Mitigation activities that facilitate a long-term transition towards a low carbon and sustainable economy. This means focusing on technologies that will be required in the long-run, rather than rewarding and locking-in carbon intensive technologies, such as fossil fuel infrastructure.

Finally, the mechanism should deliver an "overall mitigation in global emissions". This is another provision which could be interpreted in many ways and is reminiscent of earlier terminologies, such as a "net decrease and/or avoidance of global GHG emissions" (UNFCCC 2014). We understand this principle to mean that global GHG emissions should be lower when the mechanism is used compared to a situation where Parties would achieve their NDCs without using the mechanism. Robust accounting will be key in achieving this objective. Using conservative baselines or discounting emission reductions when issuing units will not be sufficient to achieve this

objective. An overall mitigation is only achieved if robust accounting rules are in place that ensure that the two countries together only account for a part of the reductions achieved through the mechanism.

Getting mechanisms started

Market participants might find themselves wondering when Article 6 of the Paris Agreement will be enacted such that business could begin. The Paris decision established mandates for further work on the regulation of Article 6, requesting guidance (for Article 6.2); rules, modalities and procedures (for Article 6.4); and a work programme (for Article 6.9). The timeline for adoption by the CMA is November this year, yet in reality negotiations – and, by consequence, the timeline for their operationalization – are likely to take significantly longer.

The first round of negotiations will likely focus on what issues should be addressed in these future CMA decisions. In this context, a contentious issue could be the scope of discussions of Article 6.2. The paragraph is ambiguous in terms of the applicability of the “guidance” to be developed by the CMA: it could refer only to accounting issues or to all principles listed in the paragraph.

The regulatory development work under UNFCCC will also be influenced by how much the three articles (6.2, 6.4 and 6.9) are regarded as a political package or as interlinked, inasmuch as Parties demand that progress be achieved equally under the three streams. The articles vary significantly in terms of nature, scope and starting point, and Parties' definition of 'progress' could also vary.

Demand for international transfers would be a strong driving force in incentivizing regulatory development and mobilizing private sector action. With regard to credits, many countries are interested in selling units and very few in buying them. Yet other sources of demand are also possible: in particular, a key issue is if and how the International Civil Avia-

tion Organization will be able to use units generated under the Article 6.4 mechanism to achieve its emission reduction targets. Another important question is whether selling countries will be willing to engage in international transfers. According to Mansell (2016), several potential credit supply countries might have lost interest in selling units internationally now that it has become clear that such sale would prevent the host country from using the emission reductions towards its NDC. In consequence, Parties' preferences could shift towards financing mitigation through results-based finance schemes instead of unit transfers. With regard to linking, a few international linkages have been established (Quebec/California, EU/Switzerland/Norway), which may provide incentive to resolve international accounting issues under 6.2.

Another interesting question is as of when mitigation outcomes may be transferred. This question is closely related to how countries convert their NDCs into multi-year emission paths, enabling the adjustment of reported GHG emissions for international transfers. For countries participating in the second commitment period of the Kyoto Protocol, 2021 would be a logical starting point for a multi-year emission budget up to 2030. For other Parties, similarly, it could be argued that overlap with Cancun pledges is avoided if the NDCs cover the period from 2021.

Conclusions

Parties will begin in May this year to discuss the regulatory work that will elaborate and operationalize the provisions of Article 6. Environmental integrity is and has to remain a primary concern in Parties' work, and can only be ensured through a robust set of rules, alongside eligibility and governance provisions. Key issues to be tackled for Article 6.2 are the expression of NDCs as multi-year GHG emission budgets, provisions to avoid the international transfer of hot air, and the avoidance of double counting. The balance of international versus national governance and regulation will also be key in ensuring environ-

mental integrity and facilitating cost effectiveness. For Article 6.4, a key issue is to clarify the relationship with Article 6.2 in terms of accounting provisions, as well as the relationship between the mechanism and host country NDCs. Parties also need to decide what type of mitigation actions they want to encourage with the mechanism.

References

- Climate Action Tracker (2015): 2.7°C is not enough – we can get lower. Climate Action Tracker Update, 8 December 2015.
<http://climateactiontracker.org/publications/briefing/251/Climate-pledges-will-bring-2.7C-of-warming-potential-for-more-action.html>
- Hood C et al (2014): GHG or not GHG: Accounting for Diverse Mitigation Contributions in the Post-2020 Climate Framework. Organisation for Economic Co-operation and Development and International Energy Agency, Paris
- Kollmuss A et al (2015): Has Joint Implementation reduced GHG emissions? Lessons learned for the design of carbon market mechanisms, Stockholm Environment Institute Working Paper No. 2015-07,
<http://www.sei-international.org/publications?pid=2803>
- Kreibich N & Obergassel W (2016): Carbon Markets after Paris. How to Account for the Transfer of Mitigation Results? JIKO Policy Paper No 01/2016
- Lazarus M et al (2014): Single year mitigation targets: Uncharted territory for emissions trading and unit transfers. Stockholm Environment Institute Working Paper 2014-01. <http://www.sei-international.org/publications?pid=2487>
- Mansell A (2016): What's ahead for carbon markets after COP21? BIoRES volume 10, number 1.
<http://www.ictsd.org/bridges-news/biores/news/what%E2%80%99s-ahead-for-carbon-markets-after-cop21>. February 2016
- Prag A et al (2011): Tracking and Trading: Expanding on Options for International Greenhouse Gas Unit Accounting after 2012. Organisation for Economic Co-operation and Development and International Energy Agency, Paris.
<http://dx.doi.org/10.1787/5k44xwtzm1zw-en>.
- Prag A et al (2013): Made to Measure: Options for Emissions Accounting under the UNFCCC. OECD/IEA Climate Change Expert Group Paper No. 2013(1). Organisation for Economic Co-operation and Development and International Energy Agency.
<http://dx.doi.org/10.1787/5jzbb2tp8ptg-en>
- Schneider L (2007): Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement. Öko-Institut, Berlin, Germany, 5 November 2007
- Schneider L & Ahonen HM (2015): Crediting early action: options, opportunities and risks.
https://www.researchgate.net/publication/276353433_Crediting_early_action_options_opportunities_and_risks?ev=prf_pub
- Spalding-Fecher R et al (2012): Assessing the impact of the Clean Development Mechanism. Report commissioned by the High-Level Panel on the CDM Policy Dialogue.
http://www.cdmpolicydialogue.org/research/1030_impact.pdf
- United Nations Framework Convention on Climate Change (UNFCCC) (2012): Various Approaches, Including Opportunities for Using Markets, to Enhance the Cost-Effectiveness Of, and to Promote, Mitigation Actions, Bearing in Mind Different Circumstances of Developed and Developing Countries: Technical Paper. FCCC/TP/2012/4
- United Nations Framework Convention on Climate Change (UNFCCC) (2014): New market-based mechanism. Technical Paper. FCCC/TP/2014/11

Time for Pilots

A private sector view onto the Paris Agreement

by Jeff Swartz, International Emissions Trading Association (IETA)

After four years of negotiations, a new global climate change agreement was adopted on 12 December in Paris, with actions to be undertaken by all countries. The 12-page Paris Agreement establishes a framework for a new era in climate action and lays the foundation for future cooperation amongst countries on carbon pricing. It was a diplomatic success at the highest level of magnitude, sending a strong signal to the global community that climate change is real and governments are motivated to decarbonise their economies.

The Paris Agreement sets a long-term goal of 2°C with effort towards 1.5°C, and emissions neutrality in the second half of the century. Once implemented, the Agreement could help countries unleash new investment flows and drive innovation through new mechanisms for emissions trading and new climate finance funds.

The Agreement enhances cooperation amongst governments on climate change mitigation through market-based

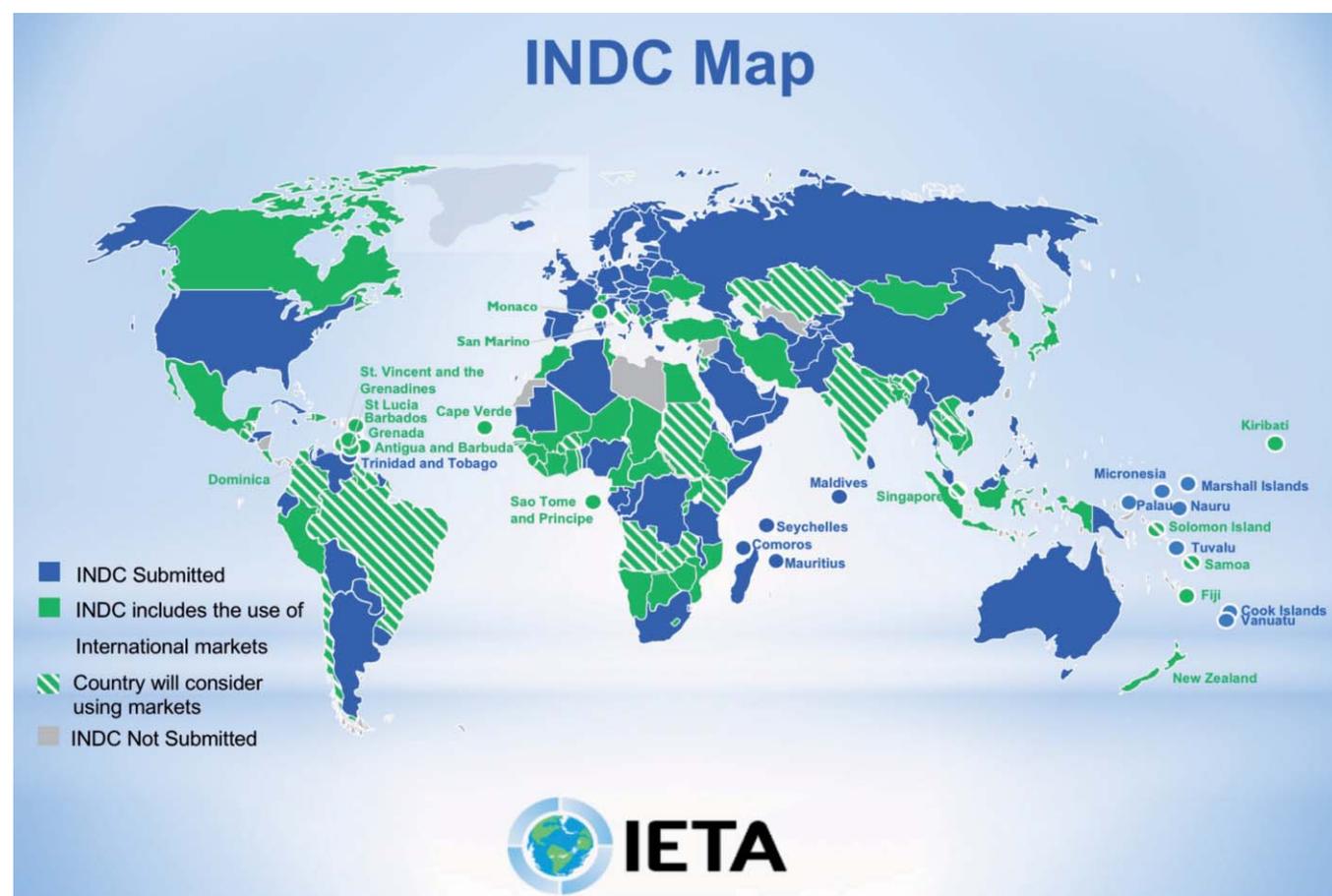


Figure 1: Carbon Markets and INDCs. Map provided by IETA's INDC Tracker.

approaches. The Agreement sets out several levers, all in Article 6, that will allow for carbon pricing and carbon markets to hopefully flourish in the years ahead:

1. **Provisions to facilitate cross-border transfers** (Article 6, paragraph 2): These will allow for governments to transfer emission reduction units across international borders. This can help countries who already have a price on carbon to enter into bilateral and plurilateral forms of cooperation on carbon pricing. In turn, it will allow those countries to increase their climate ambition by participating in a larger market (and economy) than national, domestic efforts. Transfers of emissions reductions from one country to another will help expand the map of countries participating in a carbon market or carbon pricing policy as it will help create a fungible, international, price on carbon (which the Agreement did not address directly). Governments will be challenged by the inclusion of the sentence in Article 6.1 of the Agreement that ‘measures should lead to higher ambition in the implementation of nationally determined contributions.’ This sentence means that there would potentially be more than one tonne of emissions exchanged in each transaction as the host country may be required (depending on future UN negotiations) to reduce an additional tonne for each tonne that is transferred internationally. This could pose challenges from an accounting perspective as well as potentially increase transaction costs. Other bilateral emissions trading systems or crediting systems (such as Japan’s Joint Crediting Mechanism) could work in parallel to these rules, and this could help foster a more globally-connected and linked carbon market than the fragmented carbon markets which currently operate independently.
2. **Robust carbon accounting rules and measures** (Article 6, paragraphs 2 and 5): These will help ensure that a tonne of carbon that is reduced in one country equals another tonne being reduced in another country. The UN has not yet been able to agree on universal rules for monitoring, reporting, and verifying emissions reductions. These rules and measures will go a long way in making sure that countries account for emissions’ reductions in a transparent and universal manner by not double-counting units. The private sector hopes countries can forge ahead with piloting rules and standards on carbon accounting rules

and measures outside of the slow UN negotiating process, and that those policy experiments could then feedback into the negotiations. Governments should focus on ensuring that the UN process can foster the most transparent and environmentally ambitious rules on emissions unit tracking and accounting, but without it leading to high transaction costs.

3. **A new crediting mechanism** (Article 6, paragraph 4): This will help all countries (both developed and developing) increase their climate change mitigation by generating emission reduction units while also addressing sustainable development. What role and criteria sustainable development will play will be an important negotiating issue going forward in the UN negotiating talks on carbon markets. The private sector would want to help with contributing to sustainable development activities in a new UN crediting mechanism – but with an eye towards pragmatism and cost-effectiveness.

The Agreement will enter into force once at least 55 countries accounting for at least 55% of total global greenhouse gases are covered have deposited their instruments of ratification, acceptance, approval or accession. This could happen as soon as this year (2016) or in the years to follow.

There are clear references in the Agreement to carbon markets and carbon pricing through Article 6, and much of the hard work to create a global market will soon begin in the upcoming negotiating sessions. The private sector believes countries should move ahead now by implementing carbon market and carbon pricing policies that help achieve their respective emission reduction targets. Countries that are already leading on carbon markets should not be hamstrung by the relatively slow pace of the UN negotiating process, and should begin developing their own rules and standards for international carbon markets irrespective of the UN negotiations. The private sector believes these countries (for example the 18 countries which signed the New Zealand Ministerial Declaration on Carbon Markets) could test out and pilot rules and standards on emissions unit tracking and accounting and then those lessons could be transferred to the UN negotiating process on this topic.

Much of the interest in carbon pricing and carbon markets began with the Intended Nationally Determined Contributions (INDCs) submitted during 2015 to the UNFCCC. To date, 158



Tackling emissions: carbon pricing is spreading worldwide.

countries have submitted their INDCs, as represented by the map below. Several countries state in their INDCs that the level of commitment they are putting forward is conditional upon having access to international carbon markets in the 2015 Agreement. Overall, 90 INDCs mention the use of markets. The UNFCCC's INDC Synthesis Report, released on 30 October, also highlights the fact that over half of the INDC's submitted to date plan to use or are considering the use of market mechanisms.

Some countries already have a long history of successful carbon pricing policies. Most of the frontrunners began modestly and improved their systems over time. The early examples inspired others to follow with systems tailored to their unique needs. The following section looks at the state of play of carbon pricing worldwide. An increasing number of jurisdictions are implementing climate policies to create economic value in reducing greenhouse gas (GHG) emissions. To date, 40 jurisdictions have implemented policies to put a price on carbon. Nearly 40% of global GDP¹ now operates under an emissions trading system.

Market-based mechanisms and linked carbon markets attract investments where emissions reductions can occur at the lowest cost. This can accelerate clean energy investment at the scale needed to hold the average global temperature increase to 2°C as outlined in the Paris Agreement. Carbon market linkages allow for cost efficiencies in emission reduction activities

to be identified beyond borders, and assist in the implementation of an international framework for climate action. The provisions in Article 6 of the Paris Agreement can help countries cooperate on carbon pricing in order to meet their mitigation commitments, and increase their ambition over time.

Linkages and crediting mechanisms enable greater net emissions reductions than if governments attempt to achieve their targets in isolation. Access to markets could therefore enable countries to go beyond their INDC commitments – and at a lower cost. An effective international carbon market 'club' could achieve a greater outcome than the mere sum of the individual contributions. Therefore, the transfer (internationally transferrable mitigation outcomes) provision in Article 6 of the Paris Agreement will help countries achieve the greatest achievable climate outcome at the lowest possible cost. Of the 90 countries which seek access to an international market mechanism, many of them may decide it is technically easier and more cost-effective to join existing carbon markets in operation or adopt similar policy architecture from existing markets (see the case of China and Korea, following that of the EU ETS).

What the Paris Agreement lacks is a framework that will allow for an international carbon price to emerge in the future. Whilst the Agreement encourages countries to cooperate on carbon pricing (vis-à-vis the internationally transferrable mitigation outcome provision), it does not set up or establish pro-

¹ ICAP Status Report 2015

visions for international carbon pricing. One concept that could be the solution for this, is that of the ‘carbon market club.’

Carbon market clubs could emerge when a particular group of countries come together to set up an exclusive recognition of club member’s carbon markets and respective reduction units. The club would produce harmonised standards on accounting and MRV which would allow for companies across club member countries to freely trade and exchange units with each other. As costs for complying with club member countries decline as a result of greater participation by companies in the club, more ambition and action could be reflected at the international level. A carbon market club could work in parallel to or outside the UNFCCC, though there would be specific criteria to join such an arrangement.

Conclusions

The Paris Agreement is a boost for the growth of global carbon markets and will, over time, provide tools for countries to accelerate and link their respective carbon market and carbon pricing policies. INDC’s can be strengthened over time by increasing their reduction target once they are linked to a broader carbon market – this is possible through more cost-effective participation in a global carbon market rather than in a fragmented domestic-only approach. Carbon market ‘clubs’ may be one novel way for countries to achieve a more positive outcome for the climate than the sum of individual contributions. Article 6 is a good first step in this regard, but much more work is needed to operationalise a potential carbon market club.

Built on Experience

How to transition from the CDM to the Sustainable Development Mechanism under the Paris Agreement

by Axel Michaelowa and Stephan Hoch, perspectives climate change

In the run up to the Paris Conference, the supporters of market mechanisms feared that the Paris Agreement (PA) would at best feature a passing mentioning of transfers of emission units. It thus came as a real surprise that an entire article of the PA deals with market mechanisms, and the accompanying Paris Decision (PD) already specifies critical principles of these mechanisms.

Article 6 defines two kinds of market mechanisms: a centralized mechanism “to contribute to the mitigation of greenhouse gas emissions and support sustainable development” (Art. 6.4) as well as decentralized “cooperative approaches” (Art. 6.2 and 6.3). Given the cumbersome official name of the mechanism under Article 6.4, the term “Sustainable Development Mechanism” (SDM) appears to be universally accepted.

The first Conference and Meeting of the Parties to the Paris Agreement (CMA) that is likely to be held in 2018 or 2019 is to agree on modalities and procedures for the SDM. These have

to be elaborated in the coming years. What role can the CDM, and in particular programmatic approaches, play in these rules (see the discussion in Michaelowa 2012)?

1. Using CDM-related institutions for the SDM

In many aspects, the SDM builds on institutions that have been developed over many years under the CDM and JI. According to Article 6.4, the SDM is supervised by a body designated through the CMA. Here, it would make a lot of sense to design that body on the basis of the lessons learned with the CDM Executive Board (CDM EB) or even to designate the CDM EB to become the SDM EB. Compared to other institutions in international climate policy, the CDM EB has performed well and has been sufficiently versatile to learn from on-the-ground experience with CDM implementation. Another advantage of this approach would be that the accu-

mulated budget surplus of the CDM EB could be utilized for designing a future mechanism instead of financing activities that are not always of the highest priority.

Article 6.4b requires that private and public entities participating in the SDM need to be authorised by their governments. The established structure of the Designated National Authorities (DNAs) of the CDM could be used for this process. In order to prevent the current erosion of DNA capacities from continuing, an early decision on the role of the DNAs in the SDM is needed.

Paragraph 37e states that Designated Operational Entities (DOEs) are to verify and certify emission reductions under the SDM. Here, it would be important to directly grant DOE status to all DOEs accredited under the CDM. As in the case of DNAs, this could stem the loss of DOE capacities.

An adaptation tax is levied on transactions under the SDM (Art. 6.6); the procedures applied under the CDM could directly be applied.

2. Building on CDM principles in the design of the SDM

In the Paris Decision, key principles of the CDM are applied to the SDM. The SDM shall be voluntary (para 37a PD). It is to generate “real, measurable, and long-term benefits related to the mitigation of climate change” (para 37b PD). This means that CDM baseline and monitoring methodologies can generally be applied to the SDM. Given that the SDM may also credit mitigation policy instruments, the methodology standardization efforts of recent years need to be assessed for their robustness for calculating mitigation achieved by policy instruments.

Moreover, the principle of additionality is defined in Paragraph 37d. Here, the CDM’s additionality tests need to be developed further. Highly aggregated approaches to mitigation on a sectoral level or involving cross-sectoral policy instruments are challenging when it comes to additionality testing. For example, the role of co-benefits in the introduction of mitigation policies needs to be taken into account to ensure high environmental integrity of SDM credits. Rational policy makers would introduce policy instruments if the overall societal benefits exceed the costs. So even if there are positive mitigation



Success story PoAs: rural electrification in Bhutan.

costs, the policy could not be seen as additional if it generates co-benefits that exceed the mitigation costs. Here, the different characteristics of Nationally Determined Contributions (NDCs) play an important role – countries with weak baselines in their NDCs should not be enabled to generate more credits under the SDM than countries with stringent ones. A policy instrument that is part of the baseline in a stringent NDC would not get any credits while the same instrument that is part of the measures under the NDC would be credited.

An explicit statement that the experience gained with the Kyoto Mechanisms shall be applied in determining SDM rules is found in Paragraph 37f. This provides an anchor to bring in experience gained in those fields that so far has not been mentioned in the Paris texts. For example, special rules for certain technologies and scales of their implementation, as well as country groups, need to be scrutinized carefully regarding their appropriateness under the SDM. Should the SDM be less stringent regarding policy instruments that mobilize micro-scale technologies? Should it accept all policy instruments in Least Developed Countries regardless of their additionality?

3. Learning from programmatic approaches

The programmes of activities (PoAs) under the CDM are the only component to have survived the market crash after 2012



Checks and balances: a geothermal power plant in Indonesia.

to any great extent. PoAs have achieved high sustainable development co-benefits due to their appropriateness for dispersed, small-scale technologies. Therefore, credit buyers have been willing to pay substantial premiums for PoA credits. Nevertheless, PoAs have never been able to demonstrate their advantages in an environment of high credit prices.

The lessons learned from upscaling PoAs can be very helpful for the SDM, which aims to upscale mitigation beyond single projects. Increasingly, Nationally Appropriate Mitigation Actions (NAMAs) are built around PoAs. Given the challenge of finding finance for NAMA implementation, revenues from SDM credits could play the key role in making such approaches viable.

4. SDM features beyond the CDM

Given that all countries are to submit NDCs under the Paris Agreement, it is crucial to prevent double counting of emissions achieved through the SDM reductions by the seller and the buyer country. Therefore, it is imperative that the emission reductions achieved are allocated between these two countries (Art. 6.4c and 6.5). This is more complex than it might seem. While the SDM should not have any problems in preventing double issuance, double claiming is more difficult to address, as it requires full international oversight over national emissions inventories. This is necessary to allow consistent tracking and reporting on units (see Schneider et al.

2015, and 'Ensuring Integrity' in this issue). Whether the SDM EB will be able to exercise such oversight remains doubtful, as it would require the authority to scrutinize how countries set up and manage their emissions registries.

The SDM's level of aggregation needs to be defined (para 37c PD). If it allows crediting of mitigation policy instruments or NAMAs, a number of questions arise (see Dransfeld et al. 2015a). Incentive structures need to be sufficiently attractive for emitters to achieve mitigation. The revenue from credit sales actually needs to reach those actors that make the decisions to operate mitigation technology. If it was retained by government institutions, emitters would not react unless the government provides carrots to emitters for mitigation or wields sticks against them (see Michaelowa 2012).

According to Article 6.4d, the SDM is to achieve a reduction in global emissions. The most transparent way to achieve this would be to discount the number of emission credits compared to the emission reductions achieved: alternatively, credits could be retained by the SDM EB and cancelled. The use of stringent baseline methodologies would indirectly achieve a global emission reduction. However, it is difficult to generate a level playing field across mitigation technologies and policy instruments.

The crediting period of activities under the SDM has not yet been specified. Given that governments usually change every few years, the lifetime of sectoral approaches and policy instruments is likely to be lower than that of mitigation technologies. On the other hand, a transformative policy instrument, such as fuel taxes, can have a lifetime lasting many decades.

5. Competition between the SDM and the Cooperative Approaches

Many observers assume that the "cooperative approaches" (CAs) under Article 6.2 and 6.3 allow countries to define bilateral market mechanisms generating "internationally transferred mitigation outcomes" (ITMOs) without relevant international oversight. The PA is much less specific on the CAs than on the SDM; it only mentions that CAs should satisfy environmental integrity and transparency. If CAs are not sufficiently controlled, they could generate ruinous competition for SDM

credits. This risk is exacerbated by the possibility of using ITMOs before 2020 (para 107 PD). Given that the fragmentation of carbon markets since 2009 has not really benefitted anyone (as foreseen by Michaelowa 2011), the lessons learned from this troubled period should not be overlooked. The desired reduction in transaction costs has not really been achieved and prices for emissions credits are both intransparent and vary by several orders of magnitude. Therefore, we call upon governments to ensure that CAs cannot undercut the SDM in terms of environmental integrity and international oversight.

6. Combining climate finance and the SDM

The CDM was unable to harness climate finance due to an overly rigid definition of the Global Environment Facility (GEF) regarding use of GEF funding for CDM projects. Now, blending of climate finance with market mechanism revenues is becoming generally accepted. Obviously, additionality needs to be respected but there are ample opportunities for blending, particularly when it comes to overcoming the investment barriers linked with insufficient trust that a national mitigation policy instrument will prevail in the long term. Here, the key challenge will be to create guarantee systems that enable the trust deficit to be overcome.

Furthermore, the direct use of SDM credits by climate finance institutions could prevent that these institutions “reinvent the wheel”. Initial experience with the Green Climate Fund (GCF) highlights the risk of vague and lenient mitigation assessments by climate finance institutions. This could be prevented by using the SDM, even before 2020, to generate mitigation outcomes that are credible. A fragmentation of mitigation assessment methodologies must be prevented at all costs as it would lead to a further lack of trust and jeopardize long-term mitigation ambition.

7. The future of the Paris mechanisms

In a similar way to the development of detailed modalities and procedures for the Kyoto Mechanisms in the Marrakech Accords after the Kyoto Protocol was signed, the coming years will be crucial in deciding whether the Paris Mechanisms will

play a role that is comparable to the CDM in its heyday between 2005 and 2009. As CDM rules have been substantially reformed and streamlined over the “doldrum years”, they form an excellent basis for developing the SDM rulebook. Achieving a balance between environmental integrity and transaction costs is decisive. In order to achieve a smooth transition between the Kyoto and Paris Mechanisms, it would be highly desirable to use the CDM as the core of the SDM and to translate the CDM portfolio into the SDM. A provision on early action for the SDM could play a key role in making it competitive against the CAs and generate trust among governments and market participants.

With the increasing role of climate finance mechanisms like the GCF, the linking of the Paris Mechanisms with climate finance streams will also become critical, especially until the NDCs kick in in 2020.

References

- Dransfeld, Björn; Hoch, Stephan; Honegger, Matthias; Michaelowa, Axel (2015a): Developing Sectoral Mechanisms in the Transition Period towards a New Climate Treaty, Climate Change 01/2015, UBA, Dessau
- Dransfeld, Björn; Kachi, Aki; Tänzler, Dennis; Hoch, Stephan; Ruthner, Lena; Michaelowa, Axel (2015b): Practicability of transitioning from CDM to future climate policy instruments, Perspectives, Zurich
- Fuessler, Juerg; Herren, Martin; Wunderlich, Alexander; Michaelowa, Axel; Matsuo, Tyeler; Honegger, Matthias; Hoch, Stephan (2015): Market Mechanisms: Incentives and Integration in the Post-2020 World, Zurich
- Michaelowa, Axel (2012): Strengths and weaknesses of the CDM in comparison with new and emerging market mechanisms, Paper No. 2 for the CDM Policy Dialogue, Bonn
- Michaelowa, Axel (2011): Fragmentation of international climate policy – doom or boon for carbon markets?, in: UNEP Riso Centre (ed.): Progressing towards post-2012 carbon markets, Roskilde, p. 13-24
- Schneider, Lambert; Kollmuss, Anja; Lazarus, Michael (2015): Addressing the risk of double counting emission reductions, in: Climatic Change, 131, p. 473-486

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