

CARBON MECHANISMS REVIEW

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Market-based instruments as a building
block of a climate change policy mix

Providing Impetus

New strategic dialogue
on Carbon Markets

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editorial

Dear Reader!

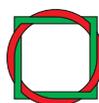
The long-awaited Paris climate summit is at our door and many in the carbon market community are asking what the conference will achieve in terms of market-based instruments. Some elements of the current draft texts point to concrete possibilities. These include the Sustainable Development Mechanism, which is to be built on the current CDM, that is a proposed element of the mitigation part of the new agreement. Other vital issues, be it the accounting rules or MRV provisions, remain vague.

This issue of the Carbon Mechanisms Review thus looks at the bigger picture – the role that markets can play and the prerequisites for meaningful use of market-based instruments. Our authors comment on selected elements of the negotiations texts and weigh up the various options. We also provide a comprehensive analysis of the role that markets play in INDCs and look at the factors that make private sector involvement possible. And finally, we assess the situation in China, where emissions trading is being taken to the next level and a nation-wide ETS is taking form.

No matter what the outcome in Paris, carbon markets are spreading around the world, at both national and regional levels. This is why the G7 launched the Carbon Market Platform for Strategic Dialogue, something we look at in detail in this issue (see "Providing impetus"). With dialogue combined with information about and analysis of market developments the aim of both the G7 platform and the Carbon Mechanisms Review, we look forward to providing ongoing updates and insights both ahead of and after the Paris conference.

On behalf of the editorial team, I wish you an interesting and enjoyable read.

Christof Arens



Wuppertal Institute
for Climate, Environment
and Energy

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What Role for Markets in the Paris Agreement?

INDCs Give a Mixed Picture

by Wolfgang Obergassel and Markus Gornik, Wuppertal Institute

The shape of the new climate agreement to be adopted at this year's conference in Paris is emerging only slowly, including the role market mechanisms will play. A new paper by the Wuppertal Institute looks at the submitted Intended Nationally Determined Contributions (INDCs) to assess the extent to which they envisage the use of market mechanisms. It emerges that a large number of Parties intend to use international market mechanisms, but the vast majority of them intend to be sellers. At the same time, a substantial number of Parties, in particular large emitters, intend to use domestic market instruments. Among those that want to use international mechanisms, there is a comparatively strong call for continuation of the CDM, while only relatively few countries specify the NMM or REDD+. This suggests that

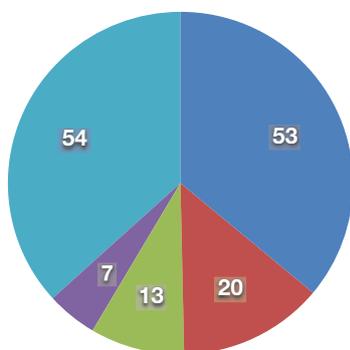
reform of the existing CDM and capacity building for its use by low-income countries is a significantly higher priority than development of new mechanisms.

Market mechanisms – the Clean Development Mechanism (CDM), Joint Implementation (JI) and Art. 17 emission trading – have been a central feature of the Kyoto Protocol, but the role they may play under the Paris agreement is still unclear.

The UNFCCC's soft deadline for submitting INDCs ended on 1 October 2015. At the time of writing, 144 countries had provided submissions.¹ A new paper by the Wuppertal Institute looks at five issues for each INDC to gauge what role markets may play in the new agreement:

- **Does the INDC make any mention of market mechanisms?**
- **Does the Party plan to use market mechanisms to achieve its contribution under the Paris agreement?** The answer to this question will allow assessment of the potential demand for units from market mechanisms under the new agreement. Under the Kyoto Protocol, various Parties were in favour of market mechanisms but did not themselves use them for compliance with their targets.
- **If a Party intends to use market mechanisms, does the INDC specify which mechanisms or types of units the country intends to use?** In addition to the Kyoto mechanisms, Parties are discussing the possibility of establishing a new market-based mechanism (NMM) under the Convention. Furthermore, several Parties are in the process of developing bilateral mechanisms or linking domestic emission trading systems (ETS), and the UNFCCC is

Use of mechanisms



- Intending to use international mechanisms as sellers
- Considering to use mechanisms
- Intending to use international mechanisms as buyers
- Intending to use only national mechanisms
- Not mentioning or refusing mechanisms

¹ Submitted INDCs are available online at <http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx>

discussing whether and how such nationally-driven mechanisms could be governed under a UNFCCC Framework for Various Approaches (FVA). There are also discussions on the use of market mechanisms to reduce emissions from deforestation and forest degradation (REDD+).

- **Does the Party quantify the extent to which it intends to use market mechanisms?** Under the Kyoto Protocol, use of mechanisms should be supplemental to domestic action, though this principle has never been quantified.
- **Does the Party specify how the use of mechanisms will ensure environmental integrity and avoid double counting?** The emergence of nationally-driven mechanisms without UNFCCC oversight has given rise to concerns about their environmental integrity. Furthermore, a proliferation of mechanisms may lead to double counting of emission reductions. Finally, market mechanisms will to a large extent operate within the boundaries of countries' contributions. If not properly accounted for, emission reductions could be double-claimed by the host countries and by the unit buyers.

Some 66 Parties are intending and 20 are considering the use of international market mechanisms. The other Parties either do not address the issue explicitly or do not envisage use of international market mechanisms.

While this is a high number, the vast majority of these Parties intend to be sellers in the carbon market. Typically, they stipulate that markets could be used to finance the conditional parts of their INDCs. Only thirteen Parties intend to buy units: Canada, Costa Rica, Japan, Liechtenstein, Mexico, Moldova, Monaco, New Zealand, Saint Lucia, San Marino, Norway, South Korea, Switzerland and Turkey. Notably, only about half of them are large emitters. The Parties that want to use mechanisms as sellers are mostly low-income countries which have so far not had much success in using the CDM.

However, interest in markets is not limited to the 87 Parties considering use of international mechanisms. Five of the Parties that do not intend to use international market mechanisms highlight their use of domestic systems: China, the EU, Gabon, Iceland and India. In addition, a number of countries envisage using both international and domestic systems: Belize, Costa Rica, Egypt, Ivory Coast, Liechtenstein, New Zealand, Norway and South Korea.

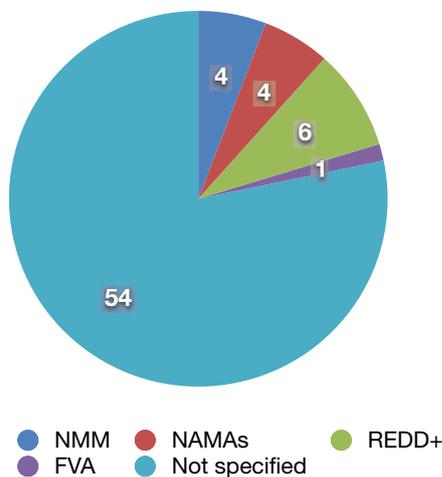


Supply and demand: most Parties that intend to use international market mechanisms will be sellers.

It is important to note, here, that Kazakhstan and Switzerland have domestic systems but do not mention them in their INDCs. Similarly, a significant number of US states and Canadian provinces are already operating trading systems.

The lack of emphasis on international markets in the EU's INDC is somewhat odd, given its strong engagement in the discussions on the reform of existing and development of new mechanisms. The EU has been the main driver in establishing the NMM and has also advocated the inclusion of market mecha-

Types of mechanisms



nisms in the Paris agreement, but as its INDC currently stands, it would not provide demand for such mechanisms in the post-2020 period. The same applies to Norway and its 40% target, but in contrast to the EU it stresses its openness to adopting a stronger target with use of international mechanisms.

The US silence on markets is similarly somewhat surprising, given that various US states and Canadian provinces are already engaging in cross-border emission trading. To ensure clear accounting, these transfers should be accounted for when assessing the achievement of contributions under the Paris agreement. The US had in the past acknowledged this necessity in discussions on the FVA.

Of the 87 Parties that may use international mechanisms, the majority does not specify which mechanisms they intend to use. 23 Parties specify the CDM, six REDD+, four the new market mechanism, four (credited) NAMAs and one the FVA.

Only few Parties discuss limits on the use of mechanisms. Armenia stipulates that it will sell surplus units if emissions stay below its target. Japan expects to purchase 50-100 Mt CO₂e. Liechtenstein, Moldova, Monaco, San Marino and Switzerland stipulate a primary focus on domestic reductions, but provide no quantification. By contrast, New Zealand requires “unrestricted access” to market mechanisms.

Some 35 Parties highlight that environmental integrity needs to be preserved, but only few go into detail. Brazil stipulates that it will not recognise use by other Parties of emission reductions achieved on Brazilian territory that have been

acquired through instruments outside the Convention, the Kyoto Protocol or the Paris agreement. Switzerland assumes that only the purchasing country will account for the emission reductions covered by the credits.

In summary, the INDCs reflect that there are ongoing dynamics at national and sub-national levels, but the decline of the role of international mechanisms is unlikely to be reversed soon. While many Parties want to use market mechanisms under the new agreement, only a very limited number want to do so as buyers. This is mirrored by the interest on the seller side, which mostly comes from low-income countries, which have so far not had much success in using the CDM.

In terms of mechanisms, there is a comparatively strong call for continuation of the CDM, while only relatively few countries specify the NMM or REDD+. The low-income countries that want to use mechanisms as sellers may indeed not have much scope for mechanisms at sectoral level, as envisaged for the NMM.

While the INDCs do not necessarily deliver a full picture, using them as a basis suggests that reform of the existing CDM and capacity building for its use by low-income countries is a significantly higher priority than development of new mechanisms. While indications of demand in the INDCs are low, the countries that want to use mechanisms as sellers will similarly not be able to deliver a large supply. The future landscape may therefore be characterised by a better balance of demand and supply than is currently the case, albeit at a low level.

Large emitters are apparently taking the route of domestic emission trading schemes rather than international mechanisms, see also “Mixed results” elsewhere in this issue. While domestic emission trading schemes could in theory be linked with each other, based on the current political debate, these will in practice probably be limited to regional level for the foreseeable future. The EU is discussing a link with Switzerland and there will likely be a North American market at some point. Linkages across regions are unlikely to become a viable perspective before the mid-2020s.

Further information:

The underlying JIKO Policy Brief can be downloaded at www.carbon-mechanisms.de/en/INDC2

Making a Difference in Markets

Enabling domestic policy environments key to advanced carbon market mechanisms

by Thomas Forth, Advisor to BMUB

Since Copenhagen, expectation management has been the routine approach in the lead up to each subsequent COP. Nonetheless, Paris is more than just another conference to keep the process alive. The question being asked on the eve of Sunday, December 13 will not involve a new analysis of whether the glass is half-empty or half-full. It will be about the glass itself.

This commentary takes a deeper look at selected aspects of the market negotiations. Other relevant aspects of concrete options for market mechanisms which are part of the debate, such as the Sustainable Development Mechanism, are not addressed here.

For it to be realistic, expectation management must consider positive signals as well. In this regard, a recent OECD study estimated that in 2014, public and private climate finance amounted to USD 62 billion globally. Even if the underlying definitions of the activities and financial flows that be counted against the climate finance target are subject to debate, the publication shows nonetheless that climate finance will see substantial growth in the period up to 2020 and is on the right track.

A second positive signal comes from the first analyses of INDCs, cp. "What Role for Markets in the Paris Agreement?" elsewhere in this issue. More than 160 INDCs have been submitted so far. This is good and indicates that the need for mitigation contributions from all Parties is broadly accepted. While their mitigation potential will not put the world on the 2 degree path,

Arguments in favour of carbon markets in the future

The overall aim in the use of carbon markets is threefold:

- a) Achieving emission reductions in a cost-efficient manner
- b) Serve ambition-raising beyond existing domestic targets and with respect to the ultimate goal of the Convention
- c) Assist developing countries in sustainable development, meaning decarbonisation before the end of this century

These are good reasons to include all three of these dimensions in the New Agreement .

In recent years the 'service' functions of the CDM and of market mechanisms in general has been highlighted for MRV activities and result-based financing concepts. These service functions are useful for all public and private mitigation activities in cooperation with Third Parties. In the international climate negotiation arena, this point has been taken into consideration for climate finance, but could have interfaces with technology, REDD+ and adaptation.

Last but not least, the character of market mechanisms would change if some major calls for reform on upscaling, own contributions and so on are adopted and implemented. The new character would lead to a new relationship between markets and non-markets, because the domestic policies and the set of instruments applied nationally provide the foundation for additional use of international markets.



Photo: /ISD/ENB

Enabling markets: a broad variety of options is on the table

the potential in these INDCs covers more than 90% of global GHG emissions and may range between 2.7 or 3 degrees. Of course, this is far below the policy target of 2 degrees. Even if these figures exaggerate the mitigation potential harboured within the INDCs, the trend is going into the right direction. One conclusion regarding future formulation of INDCs could thus be that a diversion into conditional and unconditional parts could become a systematic and guided routine.

Against the backdrop of these figures and developments, which indicate that change is afoot in two major areas as a result of pro-active climate policies on the part of most Parties, there is hope that common ground can be reached. The readiness of the Parties to consent to the New Agreement and its related decisions, which pave the way for international climate policy in the coming decades, is more likely than it was back in 2009. If this happens, the glass is secure.

Enabling markets

With the final negotiation round in Paris just days away, it is impossible to draw any further assumptions regarding the

outcome. Speculation does not help. Given the complexity involved and the path-dependent priorities, it is best to remain open minded and put wishful thinking aside. This is especially the case when it comes to markets, where there is an extremely broad variety of options – from zero to advanced concepts – on the table. The negotiations on this issue became broader and manifold during the most recent ADP sessions (see CMR 03-2015). But this is not necessarily a bad trend compared with the decline of the carbon market seen in the last two years of the first commitment period under the Kyoto Protocol, when markets disappeared from the priority list for climate negotiations altogether.

How this newly awakened interest in carbon markets might manifest at the endgame in Paris remains to be seen. For those who prefer to say the glass is half full, it could be argued that the current negotiation text has more substance than the two minimum provisions, one for markets and one for accounting – a result which, even in recent months, many negotiators regarded as the maximum outcome in Paris.

Outside the inner carbon market negotiations, other areas covered by international climate talks might have a positive

influence on carbon market acceptance. The INDCs have most relevance as a political process, as does the option of cooperative approaches as a genuine animal of the Convention. Both dimensions turned to carbon markets relative lately.

INDCs and markets

As INDCs are meant to focus on domestic mitigation only, the Parties addressed the issues of international support, finance and markets, and the relating conditional mitigation activities in their territories at a very late stage. Information on the intended use of international support, including markets, is somewhat vague. While this is regrettable, it does not pose a problem.

With regard to the five year mitigation cycles, which are expected to be included in the New Agreement, existing INDCs – once they have turned into contributions – will not be updated in the short term, but in preparation for the subsequent five year cycle. The challenge in raising ambition over time also depends on the length of the mitigation cycles. With five-year mitigation cycles, any mechanism designed for use in raising ambition will overlap with the drafting of the next INDC. Consequently, all cycles in the INDC should contribute to strengthening the domestic efforts of all Parties.

However, the relationship between the unconditional domestic part of an INDC and the conditional part, including markets, is not as clear cut as the terms might imply. By using markets, domestic involvement may vary from sector to sector and from activity to activity. Through domestic involvement, the domestic contribution of the implementing country will be increased automatically. As a consequence, the desired net decrease of emission reductions would take on a dual dimension: on the one hand, implementing countries would be aiming for a higher, cost-effective number of mitigation measures and on the other, the internal market mechanisms would be mobilised to the extent needed for implementation of such measures in terms of resources, finance and the demand on international certificates.

A feature of this kind might be not available in advance of the second INDC review process. It is more likely to be available some time towards the middle of the next decade, which is rather late to say the least.

Having said that, a challenge arises regarding how to fill the available time with effective market activities. This is why the first mitigation cycle under the New Agreement must be looked at again, but from a different angle. In many cases, building on existing INDCs might provide a viable basis for international and bilateral cooperation between the Parties: Unlike the CDM, conditional INDCs constitute a national



Weighing the options: market mechanisms can help achieve emission reductions in a cost-effective manner.

reference system. This allows policies and measures in line with national climate policies and mitigation targets which are designed and well-suited for implementation by means of additional international support.

It might make sense to distinguish markets and climate finance as the two main channels through which to provide international support. Climate finance is expected to be closer to the needs of the implementing countries, while the project-based mechanisms are not expected to play a crucial role in the development of national climate policies. This assumption coincides with market experiences during the first commitment period.

Successful negotiations on markets in Paris would change this, especially if some calls for reform regarding upscaling and own contributions are integrated into the Paris mechanisms. These calls for reform are not new. The first attempt to overcome the limits of project-based mechanisms came in the form of the Programme of Activities (PoA) under the CDM and has the potential for reaching a sectoral dimension through subsequent bottom-up activities.

There are also other aspects which influence the relevance of markets for domestic policies. Among others I would like to highlight the expected enhancement of the following: additionality may undergo redefinition without E+/E- bugs and even appropriate own contributions (above the host countries' involvement in the CDM) might see acceptance by implementing countries if market activities can be used to achieve national development goals under a climate policy focus.

In cases where participating Parties have defined the use of international markets in addition to their domestic and unconditional target, the probability of reaching a net decrease of GHG emissions is high. This is true for sellers and buyers. A well-defined target on the part of buying Parties may help selling Parties to engage in markets under reliable conditions rather than in a vacuum. The more Parties define both their readiness to use international carbon markets in future INDCs and the extent to which they intend to do so, the better the enabling environment for a global market.

Of course, this is a long-term outlook. However, with this vision on how the global carbon market may grow over time in mind, organising INDC stocktaking to assist the development of good

proposals for the next cycle is one of the first steps that can be taken immediately after the Paris conference.

Provisions which allow use of carbon market mechanisms under the New Agreement will stimulate new activities on the market even before 2020. Decisions on a prompt start for the new mechanism(s) or the recognition of early mitigation outcomes may be considered as a means to revitalise the global carbon market. However, such thoughts are premature and should only be intensified once the outlook for the future carbon market is clear.

It is fair to say that on their own, the New Agreement and its related decisions will not lead directly to a sufficient level of activity. The Parties interested in international markets should act in a more coordinated manner to build up momentum beyond Paris. By using the existing market mechanisms as well as the experimental use of new mechanisms, they are able to achieve higher pre2020 targets and reduce the ambition gap.

Cooperative approaches for mitigation outcomes

Cooperative approaches, if inserted into the New Agreement, would allow Parties to engage in bilateral or multilateral cooperation below the legal level of joint fulfilment. Parties may be exempted from complying with specific UNFCCC regulations to allow them to cooperate on different issues in different ways. However, when it comes to the transfer of mitigation outcomes, robust accounting rules must be applied. Without this, a mismatch between UNFCCC mechanisms and nationally regulated activities could occur, as has been seen to a very large extent under First Track Joint Implementation – a major mistake under the Kyoto Protocol (cp. CMR 03-2015).

But it is not only for that reason that robust accounting rules are the key issue in Paris. The avoidance of double counting by establishing a complete registration system, obligatory tracking of all mitigations outcomes within a cooperating national territory, full coherence of additions and subtractions and not at least reliable progress in inventories in the coming years are crucial to prevent a global carbon market from effecting negative development on up-scaled level. The challenge of achieving environmental integrity will be greater than under the Kyoto Protocol. Falling short of the requirements of the



Overcoming the limits: reaching out for sectoral market mechanisms

robust accounting system will undermine not only the market, but also mitigation activities conducted under climate finance. Transparency and reporting, as called for by some Parties, sound nice, but they are not enough.

Coming back to the cooperative approaches, these would— on the basis of robust accounting – allow bilateral or multilateral schemes to operate outside the voluntary use of UNFCCC mechanism(s), enabling them to continue or enabling the establishment of new schemes. This might be not a preferred option for most Parties. However, if it is in the interest of a relevant group of Parties, this form of cooperation could be more acceptable if the same standards and the same methodologies are applied.

By way of contrast, the cooperative approaches provide a basis for broader cooperation between Parties regarding markets, non-markets, climate finance in mitigation and/or adaptation. The potential for strengthening global cooperation on climate-related policies has still to be revealed and should be explored after Paris.

Outlook

Most arguments in favour of markets are well-known and flexibility in achieving emission reduction targets is only one of many. When it comes to ambition raising, bringing convincing arguments to the negotiation table is the challenge faced right now. But markets have inherent service functions which can serve other areas of international and domestic climate change policy. These should be developed in line with needs of these areas and the action that will be taken there.

Further information:

The negotiation texts mentioned in the article can be viewed at http://unfccc.int/meetings/paris_nov_2015/session/9126.php

Providing Impetus

G7 initiate strategic dialogue on Carbon Markets

by Franzjosef Schafhausen, BMUB

In the run-up to the upcoming Paris Climate Change Conference, Germany's G7 Presidency presented a major opportunity to prominently put the important issue of climate change policy on the agenda this year. At the G7 Summit at Schloss Elmau in Germany, the G7 leaders acknowledged the need for urgent and concerted action to address climate change. Emphasising that decarbonisation of the global economy over the course of this century is required, the G7 leaders committed, among other things, to the long-term objective of applying effective policies and actions, including carbon market-based and regulatory instruments. In order to facilitate a worldwide low-carbon development path, the G7 leaders therefore decided to establish a political platform for strategic dialogue on these issues, and called on other countries to join them. Acting on this mandate, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, has taken concrete steps towards establishing the Carbon Market Platform: Strategic Dialogue on Carbon Markets and the Regulatory Environment, - a kick-off meeting being held in Berlin on the 8th and 9th of October.

Rationale to Establish a Carbon Market Platform

Market-based policies and other regulations that directly or indirectly put a price on greenhouse gas emissions are considered key elements in an effective climate policy mix, and their implementation will be essential if the global community is to avoid dangerous interference in the climate system. The last decade has seen strong progress in this regard, both at international and domestic level, with a wide range of instruments implemented and planned.

However, there remain significant challenges. Progress at UNFCCC level is stalled, and the international carbon market is struggling with low demand for credits. At the same time, domestic approaches are growing, but in a fragmented and uncoordinated manner. The main challenge now is to find how and to what extent the different approaches can be brought together, and what common approaches can maximise benefits to the global community. In this regard, the Carbon Market Platform represents a new opportunity for international cooperation that can provide political impetus on these issues, and ultimately foster a robust and sustainable global carbon market while taking into account national preferences and circumstances.

There are several areas in which the Carbon Market Platform can provide timely impetus to the international process. International negotiations at the UNFCCC are set to draw up a new

Leaders' Declaration G7 Summit 2015: "[...] In order to incentivize investments towards low-carbon growth opportunities we commit to the long-term objective of applying effective policies and actions throughout the global economy, including carbon market-based and regulatory instruments, and call on other countries to join us. We are committed to establishing a platform for strategic dialogue on these issues based on voluntary participation and in cooperation with relevant partners, including the World Bank."

Further information:

https://www.g7germany.de/Content/DE/_Anlagen/G8_G20/2015-06-08-g7-abschluss-eng.pdf?__blob=publicationFile&v=6



Photo: Asian Development Bank

Towards decarbonization: Carbon markets can foster effective climate policy.

climate change agreement in Paris this year. This will form the basis for international climate policy architecture to replace the Kyoto Protocol from 2020. To date, 147 Intended Nationally Determined Contributions (INDCs) have been submitted by around 174 countries, with around 93 INDCs implying the use of international and/or domestic carbon markets, cp. "What Role for Markets in the Paris Agreement?" elsewhere in this issue. There is clearly great potential for a common framework for carbon markets, developed under the UNFCCC, to allow the international community to achieve more ambitious climate targets, and to foster effective climate policy around the world while enabling cooperation to meet mitigation commitments. However, so far it is unclear to what extent carbon markets will be featured in the Paris agreement and how the UNFCCC will proceed in developing overarching rules and standards. While it is likely that carbon markets will be mentioned in the agreement text in some form or other, it is expected that the details of any potential international accounting framework for emissions trading will still need to be developed in the period following COP21.

It is here that the Carbon Market Platform can add real value to the international process. By supporting and complementing the UNFCCC in the development of common rules and standards, the platform can ensure that in the future, international carbon markets can deliver environmentally sound and cost-effective climate outcomes. To achieve this, the Platform is designed to bring together interested countries and find a common voice to guide the development of this framework. Key to this process is facilitating open and honest dialogue that can go beyond official negotiating positions to build bridges and find common ground. Several issues were discussed at the first meeting, including the need for robust accounting rules and MRV standards that can ensure transparency and avoid double counting, while remaining flexible enough to allow domestic approaches to flourish. It was also broadly agreed that the G7 countries cannot hope to achieve this alone, so that it is essential to broaden membership from the outset, and ensure that all interested countries can participate in the development of the common framework. In particular, large emitting countries, and countries that have



Photo: K. Porembinski/Flickr

A tonne must be a tonne: cooperative mechanisms needs robust accounting rules and MRV standards.

indicated interest in international carbon markets through their INDCs, will be invited to join the Platform on this issue.

Beyond a common accounting framework, the UNFCCC has the potential to further develop flexible mechanisms for international emissions trading. The success of the Kyoto mechanisms is not only measured in emissions reductions, but in the establishment of a worldwide infrastructure for climate change mitigation projects. They have demonstrated the ability to stimulate investment mitigation activities, exploit cost-effective abatement options, build up expertise on climate change mitigation in host countries, and give momentum to domestic climate policy. However, due to a dramatic decline in demand and a significant loss of trust in international markets, many project activities are currently regressing, and hard won institutions, infrastructure and expertise in developing countries are at great risk of being demobilised and lost.

On this issue, the Carbon Market Platform also has potential to take positive action, and there is considerable interest in exploring options for promoting the use of market mechanisms in future international cooperation. Broadly, discussions can explore the potential for common actions to restore confidence in international carbon markets and revive the demand for units from emission reduction projects. More specifically, the future of the existing Kyoto mechanisms could be discussed, with a view to adapting them to a post-2020 landscape and complementing them with new mechanisms. A common position on the value of the offset market can send a strong signal to carbon market actors, while there is also potential for common approaches to be developed within the Platform that can provide more concrete support.

While negotiations at the UNFCCC continue to make progress, many countries, and even sub-national jurisdictions, have already implemented or are planning domestic mitigation policies in accordance with their own domestic

circumstances. Approaches include carbon pricing instruments such as emissions trading schemes, carbon taxes and crediting mechanisms, as well as a range of regulatory measures such as fuel taxes, technology standards, and subsidies that may also put an implicit price on carbon. These bottom-up efforts are promising, and there is no doubt that action at all levels is required to effectively address climate change. However, an overview of existing instruments shows a fragmented policy landscape. In this regard there is great potential for international cooperation to generate benefits from policy coordination. Firstly, through open dialogue on domestic approaches, the Carbon Market Platform can foster understanding of the different approaches, their drivers and barriers, as well as best practice. Eventually, such dialogue may also uncover options for policy coordination that can enhance environmental integrity, leverage gains in efficiency and reduce competitiveness concerns.

First Step – Kick-off Event

Still under its G7 Presidency, Germany hosted the kick-off event of the Carbon Market Platform. This was attended by high level policy makers from the G7 countries and the European Commission as well as representatives of the World Bank, the International Carbon Action Partnership (ICAP), the United Nations Framework Convention on Climate Change (UNFCCC) and the Organisation for Economic Co-operation and Development (OECD).

As it was the kick-off meeting of the Carbon Market Platform, structural and organizational aspects were high on the agenda. It was agreed to establish the Platform for an initial five year period. This timeframe is important in two respects: Firstly, it allows the Platform to focus on the period between COP21 and 2020, when the new global agreement will come into effect. Secondly, it is expected that during this period, both international and domestic policy approaches will undergo dynamic development, and it is therefore during this time that the Platform can be most effective.

For the initial phase of the Platform, a lean and flexible governance model will be set up, with rotating Co-Chairs taking the main steering role. Germany offered to co-chair the Platform for 2016, and a second co-chair is to be decided by the second meeting at the beginning of next year.

The Carbon Market Platform has been conceived as a voluntary forum for strategic political dialogue. It is therefore primarily a country-led initiative. Given that the G7 countries have initiated the Platform's establishment, it is considered important to extend membership to other countries, especially major emitters and others that have demonstrated significant climate leadership and have an interest in using carbon markets. The main forum of the Platform will be the annual strategic dialogue that will engage policy-makers at the Director General level, and this will be supported by ongoing preparatory work at the technical level.

Additionally, the aim of the Platform is to facilitate open dialogue between decision makers that can bridge the gap between the highest political level and existing technical initiatives and partnerships. Several international organisations are currently performing technical and political work in a range of related fields and the Platform will cooperate closely with these organisations as technical partners. Key technical partners include the UNFCCC, ICAP, OECD and the two initiatives of the World Bank, the Partnership for Market Readiness (PMR) and the Carbon Pricing Leadership Coalition (CPLC). Through cooperation with these organisations, it is envisaged that the Platform will enable state-of-the-art technical knowledge and expertise on climate policy to reach decision makers and enter the international political discourse.

Next Steps

At the United Nations Climate Change Conference in Paris, the Carbon Market Platform will be presented at a side event of the German Pavilion on the 9th of December, a day thematically focused around topics on The Low Emission Path. Furthermore, the second meeting of the Carbon Market Platform is to be held soon after the Paris Conference, in spring 2016. Representatives from non-G7 countries will be invited to attend.

Mobilizing Resources

The Role of the Private Sector under the New Climate Change Agreement¹

by Vladislav Arnaoudov, Mitsubishi UFJ Morgan Stanley Securities Co.

The past year has been marked by growing optimism about the next climate change agreement to be adopted at COP 21 in Paris. A series of international and regional forums were held around the world, providing stakeholders with the opportunity to share their views and expectations. Among the multitude of topics discussed, the role of the private sector seemed to be gaining more and more attention. However, while it was widely recognized that the private sector has to continue playing an important role in delivering finance and technology, the general impression remained that there is still little understanding among some policymakers and stakeholders as to what the private sector can actually do and how private sector resources can be mobilized. Similarly, representatives of the private sector had apparent difficulties in seeing the actual business case in some newly proposed ambitious approaches, such as Nationally Appropriate Mitigation Actions (NAMAs), leaving the impression that for the time being climate change activities remain within the domain of the public sector.

This article looks at the experience of the private sector in climate change business up to now and provides some ideas on how to more efficiently mobilize private sector resources under the new climate change agreement.

The private sector and the Kyoto Protocol

The involvement of the private sector in climate change initiatives is not new, especially as it played a

pivotal role under the flexible mechanisms of the Kyoto Protocol, the Clean Development Mechanisms (CDM) and Joint Implementation (JI). Private sector companies developed CDM and JI projects and invested in them, private sector companies were those who transferred technologies to developing countries and economies in transition. Thanks to the CDM and JI, there has been an increase in the share of renewable energy, more efficient and cleaner industries have been developed and green transport introduced. Finally, as a result of the CDM alone, GHG emission reductions amounting to more than 1.6 billion tCO₂e have been achieved from the time the mechanism started in 2000 up to the end of October 2015². This was largely due to the active private sector involvement.

Indisputably, the Kyoto Protocol system has its weaknesses, but it was the first system that ever managed to mobilize private capital for climate change mitigation activities at scale and it presented a different private sector-led, result-based investment model – one that did not extensively rely on public funding, but responded to market signals, such as the price of carbon credits. The success of the Kyoto Protocol system in involving private capital is rooted in the fact that carbon credits are tradable, have their own price and can generate an additional revenue stream. Put differently, the absence of these incentives after 2012 is the main reason why the private sector has withdrawn from active participation in climate change projects.

¹ This article represents the personal views of the author which do not necessarily reflect the views of Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. or the Mitsubishi UFJ Financial Group, Inc.

² <http://cdm.unfccc.int/>



Photo: Freude / KfW Bildarchiv

Missing incentives: tradable carbon credits that could generate an additional revenue stream were one of the success factors of the Kyoto system.

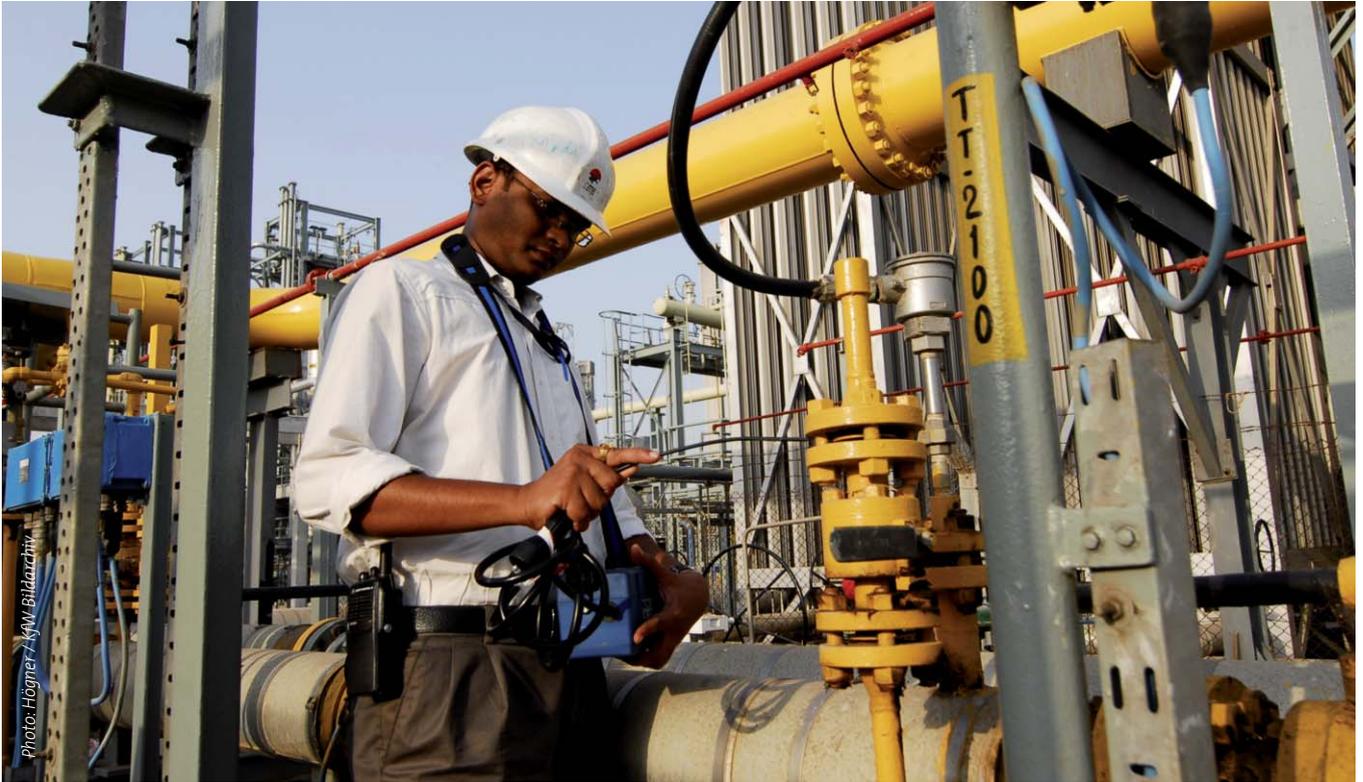
The private sector and climate finance

There is a common understanding that the revival of carbon markets through new, ambitious GHG emission reduction targets could trigger a fresh wave of private sector investment in climate change activities. However, the uncertainty that currently surrounds the negotiations on the role of markets and emission reduction targets has become a source of innovation and has given rise to new mechanisms and initiatives outside the scope of carbon markets. The new initiative's aim is to involve the private sector more actively while using the infrastructure that was developed and the experience that was gained over the past fifteen years under the Kyoto Protocol.

Some initiatives come directly from the private sector or are designed with active private sector involvement, such as green bonds.

The green bonds market has been growing, with strong public and private participation attracting significant volumes of private funds into clean energy and energy efficiency. The Climate Bonds Initiative³ reports that green bonds worth more than USD 36 billion were issued in 2014, and an additional USD 32 billion worth were issued by the end of October 2015. Another piece of welcome news was the recent announcement of the Green Climate Fund (GCF) to support the Inter-American Development Bank (IADB) energy efficiency green bond initiative with USD 22 million, with the commitment to allocate up to USD 195 million of additional support for unlock-

³ <https://www.climatebonds.net/>



Checking the instruments: public funds could be used to mobilize private resources.

ing "the capital necessary to address global financing shortfalls in energy efficiency." ⁴

Result-based finance initiatives led by developed country governments are gaining attention as well, one of them being the Joint Crediting Mechanisms (JCM)⁵ that Japan implements on a bilateral basis. The JCM, building on the Measurement, Reporting and Verification (MRV) framework of the CDM, provides investment support for achieved GHG emission reductions to private sector projects in countries that have an agreement with Japan. In the absence of sizable carbon credit revenues from the CDM in the past few years, this particular scheme has managed to stimulate continuous private sector investment and low carbon technology transfer and is a good example of how result-based public funding can support the inflow of private sector capital.

Finally, multilateral development banks (MDBs) have also started designing schemes that can stimulate private sector investments in GHG emission reductions, like the Pilot Auction Facility of the World Bank that came up with a new model involving financial derivatives for carbon pricing (cp. CMR 03-2015).

The above examples shared a very important feature – a new form of cooperation between public and private financiers in climate finance. Through financial innovation and development of new mechanisms and products, public investments and policies are being used to attract private capital. If this approach to climate finance is reinforced in the new climate change agreement (for example, by giving a clear mandate to public institutions to support private investments), the already limited public funds can be used to mobilize the private resources needed to meet the Copenhagen commitment and boost climate change business.

⁴ <http://www.greenclimate.fund/-/green-climate-fund-approves-first-8-investmen-1?inheritRedirect=true&redirect=%2Fhome>

⁵ <https://www.jcm.go.jp/>

Business know-how

Support of public institutions in mobilizing private capital is crucial, but there is another aspect that has so far remained on the periphery of the discussions on private sector participation in climate change activities – business know-how. Among other things, private sector business know-how means the capacity to structure projects and programs, design sustainable business models, handle financial resources, and also the ability to successfully implement and operate projects and programs. That know-how is a result of an intrinsic trait of private business – its ability to generate sustainable cash flow in order to keep business activities operational. Business know-how is the key to designing new climate change activities and unlocking the needed flow of private capital. No matter how much funding is available, unless there are suitably designed projects and programs for private sector companies, it would be impossible to support the implementation and scaling-up of mitigation activities as expected by developing countries.

Nationally Appropriate Mitigation Actions (NAMAs) are a good example of how the lack of business know-how prevents the flow of investment in climate change mitigation activities. NAMAs can be defined as any type of mitigation actions, policies and measures that developing countries undertake to reduce GHG emissions, supported and enabled by technology, finance and capacity building. As the definitions of NAMAs contained in the Bali Action Plan (2007) and the Copenhagen Accord (2009) are somewhat vague, for a long time it was considered that NAMAs would be solely financed by developed countries' public donors. Indeed, public donors like the Global Environmental Fund (GEF), NAMA Facility, or the Japan International Cooperation Agency (JICA) have already extended support to some NAMAs, but funded proposals represent only a minute share of what is in the pipeline. For example, one estimate shows that only USD 27.5 million had been committed for NAMAs by May 2015⁶, while billions of USD are required to fund the existing NAMA proposals seeking financing. It is apparent that, as in the case of many other climate change related activities, there is a lack of sufficient public funding and private capital has to be attracted.

The reason for insufficient NAMA financing, however, does not seem to be the lack of funding only. The major comment made by NAMA donors, including the NAMA Facility, regarding some of the proposals was that many lacked proper financial struc-

turing, and without this it would be impossible for NAMAs to lead to sustainable transformation of any economic sector or attract the necessary investment. In addition, it was recommended that NAMAs involved mechanisms for investors, as well as risk mitigation mechanisms for financiers.

It is clear that similar arguments are valid for attracting private capital, however, having a proper financial scheme, incentives like feed-in tariffs (FITs), or even mechanisms for reducing the investment risks, are not a sufficient solution for the private sector. The reason is that private sector companies need NAMAs that are structured for private sector participation, meaning NAMAs that have concrete investment activities with concrete outcomes and cash flow that creates sufficient revenues. NAMAs requiring private sector participation also need a clear management structure and a clear implementation and operational timeline, as well as a clear investment scenario. Simply put, a NAMA proposal with private sector involvement has to be developed as a business investment proposal in order to attract interest from equity investors or financiers.

A question of design

The reality of today is that NAMA proposals are often designed by entities that, while experienced in dealing with the public donors, have little or no experience in dealing with the private sector. Also, some NAMAs that they design are more abstract (like policy NAMAs), are not sufficiently profitable (low financial IRR) or have vague or no operational structure and timeline. The design of NAMAs and other mitigation activities and their implementation is where private sector business know-how can contribute most. Business know-how can help from the initial structuring of the activities under the NAMA through the design of the financial structure and the overall operational and management structure to make NAMAs more attractive to private business. This, combined with policy and other incentives, can create the necessary environment for active private sector involvement in climate change activities.

It is a welcome change to see that more NAMA developers and even the UNFCCC Secretariat are attempting to address the lack of private sector participation. In the past year, the UNFCCC Secretariat began inviting private companies and bringing them together with public sector entities in NAMA-

6 <http://www.mitigationmomentum.org/downloads/NAMA-Status-Report-June-2015.pdf>

related events, while actively seeking private sector feedback on NAMA design. In September 2015, I was invited by the organizers to be a panelist at the NAMA Marketplaces at the Latin American Carbon Forum and also at the subsequent NAMA Regional Workshop and had the opportunity to comment on some of the NAMAs presented there⁷. The major issue with all NAMAs that were introduced was the lack of clear investment parameters. Some NAMAs presented only cost estimates, but there was no analysis of the expected revenue stream or profitability. Other NAMA proposals presented ambitious mitigation approaches, like the piggy NAMA from Cuba and the Dominican Republic, but they did not define the individual activities where the private sector can get involved. Finally, some NAMAs, like a waste sector NAMA from Guatemala, only focused on emission reduction measures, but did not analyze how exactly the changes that will occur in the sector can be sustainable and what supporting activities besides the emission reduction component are needed to make the actual business case. It must be noted that the participants at both events were open to the comments that were made by the private sector panelist, but it seems that there is a long way to go before extensive cooperation with private sector entities can result in the structuring of private-sector oriented NAMAs.

Needless to say, not all NAMAs or climate change activities are suitable for private sector participation, yet those that are can easily attract private sector investments if they are properly designed and structured.

Conclusions

Opinions vary, but recent discussions are converging on the view that even with the GCF in place, the public sector can provide only between 10% and 20% of the Copenhagen Accord pledge to mobilize USD 100 billion per year for climate change activities in developing countries. There are statements from some developed country governments to increase climate change funds in the future, but even if the currently available funding doubled, the remaining part has to be mobilized from the private sector.

This article illustrates that the private sector is prepared to move ahead and participate in future climate change activities. Having gained significant experience under the Kyoto

Protocol, it initiates new climate change instruments and possesses much-needed financial capacity and business know-how.

Revival of the carbon markets will certainly create incentives for private sector companies to return to the field of climate finance. Yet, the past few years have shown that there are other instruments and mechanisms that can also provide support. If use of such instruments and mechanisms is further reinforced in the Paris Agreement, for example under the Framework of Various Approaches (FVA), it will allow greater variety in private sector involvement beyond what was witnessed under the first commitment period of the Kyoto Protocol.

The new agreement cannot regulate the work of the private sector per se, but it can include a statement that private sector participation is indispensable in reaching the goals of the UNFCCC and keeping global temperature rise within the 2°C limit. A statement of this kind will serve as a green light for private companies to move ahead and for governments and public sector entities to seek more active cooperation with the private sector.

It is also important to create platforms for active climate change dialogue between governments and private sector participants, including project developers, technology providers, investors and financiers, cp. "Providing impetus" elsewhere in this issue. Such platforms can be developed at national, regional and international levels and will give the private sector an opportunity to learn more about government agenda on climate change. It will also help governments to understand what private sector companies can actually do and under what conditions.

Finally, the early stage involvement of the private sector in the design of climate change related activities is crucial in attracting private sector investment. This kind of approach will effect a shift from the current top-down policy incentive models towards bottom-up private sector-led initiatives in the design of climate change activities. Only activities that are designed with strong private sector involvement and which reflect private sector needs can unlock the flow of capital in the field of climate change that is so urgently needed to achieve the transition to the low-carbon future we are all trying to build.

⁷ For presented NAMAs, see: <http://unfccc.int/focus/mitigation/items/9101.php>

Mixed Results

China accelerates climate action but raises doubts over the true amount of its GHG emissions

by Dr. Ralph Westermann, Martin Dilger and Fu Yinyin, UPM Umwelt-Projekt-Management GmbH

With the decisive UNFCCC COP 21 Climate Conference in Paris immediately ahead, the end of the second compliance year for China's pilot emissions trading schemes (ETS) behind, and newly revealed details about China's upcoming national ETS, this is the right time to strike a balance of China's climate protection activities and attempt a cautious outlook for China's carbon markets.

In November 2014, US president Barack Obama and his Chinese counterpart Xi Jinping informed the public about a new bilateral US-China agreement to reduce their country's greenhouse gas (GHG) emissions. Under this deal, China committed for the first time to cap its carbon dioxide emissions by 2030 and to increase its use of renewable energy to 20% within that time span, whereas the US agreed to reduce its emissions by 26-28% below 2005 levels by 2025.

Nearly one year later, on 25 September 2015, the US and China released a second joint statement on climate change. At this occasion, China's President Xi Jinping announced that his country will launch a national emissions trading system (ETS) in 2017.

This announcement is in line with China's Intended Nationally Determined Contribution (INDC), which was submitted on 30 June. China's INDC includes the following core elements and explicitly endorses emissions trading as an important tool for China to achieve its post-2020 climate protection targets:

- Peak CO₂ emissions by 2030, or earlier if possible
- Increase the share of non-fossil energy sources in the total primary energy supply to around 20% by 2030
- Lower the carbon intensity of GDP by 60% to 65% below 2005 levels by 2030

- Increase the forest stock volume by around 4.5bn cubic metres, compared to 2005 levels.
- Proposed measures to limit or reduce emissions of non-CO₂ greenhouse gases.

The president's recent message to launch China's ETS in 2017 shows his strong commitment and gives a clear deadline to the National Development and Reform Commission (NDRC) for ETS rollout and the completion of the remaining development work.

First draft of China's ETS regulations

In response to the presidential statements and the new schedule, the NDRC revealed the draft of the „National Carbon Emissions Trading Management Regulations“ just by end of October 2015 and allowed further insights into the regulatory framework and conceptual design of China's projected unified carbon market (Table 1).

According to this draft, the national ETS will be tightly controlled by the central government and foresees strict penalties for non-compliance and fraud, while considerable efforts are being made to avoid the design deficiencies that have plagued other emissions trading schemes worldwide. This especially applies to preventing excessive supply with emissions allowances and offsets and introducing flexible mechanisms to keep China's carbon prices on track.

Key aspects, such as the size of the overarching emissions cap, which regions or sectors will participate from the start, and how China's seven existing regional pilot carbon markets will

phase out and be incorporated into the national scheme, are still missing in the draft law.

However, in terms of sectoral scope, the NDRC has previously identified the power, metallurgical, non-ferrous metals, building materials, chemical and aviation sectors as the main candidates to be initially covered under a national ETS. Car and paper manufacturers could also be included from the start, Chinese media reported in August.

The draft refers to free allocations as well as auctioned units, the share of which shall rise over time. It also confirms that emitters will be allowed to use Chinese carbon offsets (China Certified Emissions Reductions, CCERs), to meet an unspecified share of their compliance obligations, and that futures trading would be allowed.

The text also mentions that the NDRC is to set aside an unspecified number of allowances in a price stability reserve from the outset to avoid the problems experienced by the

European Emissions Trading Scheme (EU ETS), which is introducing a similar mechanism in 2019 after being inundated by oversupply for years.

The draft document shows the NDRC's firm intention to remain in charge of the national ETS. On the one hand, probably, to prevent regional governments from over-allocating to local emitters, and on the other, to ensure that big state-owned companies are able to fulfil any imposed compliance obligations.

After review and approval by China's State Council, expected for the first half of 2016, the new carbon trading regulations need to undergo a public consultation process which usually takes another three to six months. Therefore, significant changes may still be made to the ETS legislation text when other powerful institutions have their say and it is not likely that these fundamental regulations for China's national carbon market become effective law before the end of next year.

China's National ETS overview

Core ETS Elements	Description
Roadmap	Preparation phase (2014-2016): legislation, MRV, setting of allowance allocation methods
	Phase I (2017-2020): trial stage, test all key market factors
	Phase II (post-2020): high-speed operation stage, ETS should play a key role in emissions reduction, lower emissions threshold, tightened allowances allocation
Regulator	National Development and Reform Commission (NDRC)
Registry	National Registry System (includes: creation, transfer and cancellation of carbon allowances and offsets)
	The National Registry System for CCERs is already in operation.
Exchange	Target to have a total of 7 – 10 exchanges, the existing 7 pilot exchanges might possibly remain.
GHG emissions coverage	2 – 3bn tonnes of emissions from six main sectors: Power, Steel, Non-ferrous metals, Building Materials, Chemical, Paper, Aviation and Transportation. Compliance companies already enrolled in the Chinese pilot schemes may be included regardless of whether they are from the listed sectors. To include more sectors in later phases.
Geographic coverage	Not announced, most probably the seven existing pilot regions and other more developed regions
GHG emissions threshold	≥26,000 tonnes of emissions annually
Allowances allocation	Will adopt free allocation and auctions, NDRC sets caps for each enrolled province and the local DRCs will allocate allowances to the compliance companies. Detailed allowances allocation mechanism not yet announced but there will most likely be two types of allowance allocation – benchmarking and grandfathering based on historical carbon intensity.
Offset	Chinese Certified Emissions Reduction (CCER), no information has been released on the allocation share, type, scope and vintage of CCERs allowed in the national ETS. A 5% CCER offset share is expected to be likely.
Penalty	Not announced, possibly 3 to 5 times the average allowance price
Linkage	NDRC will explore the possibility of linking the national ETS with other ETSs around the world at an appropriate time in the future.

Table 1: Overview of China's national ETS

Source: ICIS Tschach Solutions, China ETS Portal (<https://www.icis.com>), slightly modified by UPM

	Shenzhen	Shanghai	Beijing	Guangdong	Tianjin	Hubei	Chongqing	Total All ETS
Starting Date	Jun 18, 2013	Nov 26, 2013	Nov 28, 2013	Dec 18, 2013	Dec 26, 2013	Apr 2, 2014	Jun 19, 2014	
Traded Volumes (tCO₂e)	4,168,237	3,400,681	2,290,784	5,873,893	1,548,121	19,333,894	269,921	36,885,531
Turnover (CNY)	194,000,900	105,904,529	127,822,387	148,564,988	28,291,604	493,762,027	6,760,229	1,105,106,664
Average Price (CNY)	46.54	31.14	55.80	25.29	18.27	25.54	25.05	29.96
Average Price (EUR)	6.68	4.47	8.01	3.63	2.62	3.66	3.59	4.30

Table 2: Aggregated Trading Volumes and Average Prices of Pilot Allowances between trading start and 23 October 2015

Source: Tanjiaoyi (<http://k.tanjiaoyi.com/>), modified by UPM, CNY/EUR exchange rate from 23 October 2015

Over-supply

From the start of emissions trading on 18 June 2013 to 23 October 2015, allowance trading activity has been fairly high in the seven Chinese pilot markets (Table 2). According to statistics from Chinese data provider Tanjiaoyi, a total aggregated traded volume of 37 mt and a total accumulated turnover of CNY 1.1bn (EUR 158m) has been achieved in the pilot trading schemes. This translates into an average price of CNY 29.96 per ton (EUR 4.30). One year ago, the total aggregated traded volume still had been at 12.5 mt, the total accumulated turnover at CNY 480m (EUR 63m) and the average price at CNY 38.35 (EUR 5.01). Thus, within a year, the pilot's trading volume has nearly tripled and their turnover has more than doubled, whereas their average price has declined by 14%.¹

The development of daily pilot allowance prices over time gives a more accurate picture and shows a relatively constant decline that accelerated towards the end of the 2014 compliance period. Between June and August 2015, six of the seven pilots (with Hubei being the exception) hit their respective lowest allowance prices ever. The price for Shanghai ETS allowances fell to CNY 9.5 (EUR 1.36) on July 31, so far still the lowest allowance price recorded in all of the pilots. This summer's sharp price drop occurred likely because covered entities expected that pilot allowances will expire in 2017 with the start of the national ETS, and thus preferred to sell their entire surplus instead of reserving it for the future.

Apart from speculative trading behaviour, there are multiple other reasons behind the falling prices of most pilot allowances. A considerable amount of liable companies in the pilots seems to have received too many emissions allowances. This over-allocation - well known from the EU ETS - might be caused by insufficient GHG emissions inventory data, but could also be due to industry lobbying and the political will of provincial and local governments to ensure the fulfilment of compliance obligations in their pilot markets. Another factor is the increased availability of issued CCERs that need to be added to the supply side of the pilot markets. On the demand side, macro-level developments, such as the recent slow-down of China's economy, China's reduced consumption of fossil fuels for the first time in 2014, its substantial growth of renewable energy capacity, and more implemented energy efficiency measures have to be considered.

Limited use of CCERs

In China's carbon offset market, the CCER registry launched in January 2015 and CCER trading in the pilot markets began in March. On 23 July 2015, the second compliance period ended in all seven Chinese pilots. Participants generally fulfilled most of their 2014 obligations. However, as in the previous year, some pilots extended their deadlines to give participants more time to surrender allowances. Nearly all (99-100%) of entities with obligations met them in Beijing, Shanghai, Shenzhen, Guang-

¹ The Tanjiaoyi trading and pricing figures relate to online trading of allowances on the secondary market via the pilot exchanges only. The provided data does not cover OTC (over-the-counter) transactions nor Guangdong primary market allowance auctions nor CCER carbon offset transactions. All of these would blow up the pilot's trading volume and value substantially. OTC allowance deals account for an estimated 30% of total exchange-based trading volume. As of August 31, 2015, 11 auctions have been held in Guangdong with an aggregated total auction volume of 14.56m GDEAs. Guangdong is the only Chinese pilot ETS with a primary market up to now.

Pilot ETS	Deadline / Extension for 2014 Compliance	2014 Compliance Status	Eligible and issued CCERs for 2014 compliance (million tonnes)	Surrendered CCERs for 2014 compliance (million tonnes)	Number of compliance companies using CCERs	Remarks
Shenzhen	30 June 2015	Only 2 companies failed to complete compliance obligations. Compliance rate is 99.68%.	3.0	approx. 0.9	N.A.	N.A.
Shanghai	30 June 2015	All 190 companies have completed compliance obligations (100% compliance rate). Approximately 0.5m CCERs were surrendered for compliance.	1.5	0.5	4 (all from power sector)	N.A.
Beijing	30 June 2015, extended from 15 June	All 543 companies have completed compliance obligations (100% compliance rate). 64,000 tonnes of carbon sink and 60,000 tonnes of CCERs were surrendered.	1.2	0.06	9 (mostly power sector)	Besides CCERs, 64,000 tonnes of BJ offsets were surrendered.
Guangdong	23 June 2015	On 8 July, all 184 companies have completed compliance obligations (100% compliance rate).	1.4	approx. 0.3 - 0.4	N.A.	N.A.
Tianjin	10 July 2015, extended from 31 May	Only one company failed to complete compliance obligations. Compliance rate is 99.11%.	1.1	0.3	3 (from steel and chemical sector)	Out of the 0.3m tonnes surrendered CCERs, 0.18m were ineligible CCERs (pre-CDM) according to Tianjin's latest restrictions.
Hubei	10 July 2015, extended from 29 May	All 138 companies have completed compliance obligations (100% compliance rate).	0.8	0.6	6 (from power, steel and chemical sector)	All 0.6m tonnes surrendered CCERs come from 13 projects, among which 12 were from Hubei and 1 from Anhui province. Besides, all 0.6m tonnes were pre-issued CCERs. The average price was below RMB10 as most of them were traded through forward contracts.
Chongqing	23 July 2015, extended from 23 June	According to a source from the Chongqing Carbon Emissions Trading Center (CHEEX), Chongqing ETS has a compliance rate of approximately 80% – 90%, as of 25 June 2015.	7.8	N.A.	N.A.	N.A.

Table 3: 2014 Compliance Performance of China's seven pilot ETSS

Source: ICIS Tschach Solutions, China ETS Portal (<https://www.icis.com>), slightly modified by UPM

dong and Tianjin, the pilots that started in 2013. However, Tianjin delayed its deadline by several weeks.

For the Hubei and Chongqing pilots that started in 2014, fewer firms adhered to compliance duties. In Chongqing, 30% of participants failed to surrender their permits by the initial June 23 deadline. The local government then extended the deadline by a month and also organized offline trading to help companies acquire allowances to surrender. This helped to raise the compliance rate to between 80% and 90%. After extending the deadline from 29 May to 10 July 2015, all 138 liable companies in the Hubei ETS had completed their compliance obligations as well (Table 3).

With a view to the amount of CCER offsets used for compliance, roughly 16.8m issued CCERs were eligible for 2014 compliance in the seven pilots according to calculations by international market intelligence firm ICIS Tschach Solutions. Thereof, only 2.76m CCERs or 16.4% were surrendered. Shenzhen entities used approx. 0.9m CCERs out of 3.0m available CCERs (30%), for Shanghai it was 0.5m out of 1.5m (one third), for Beijing 0.06m out of 1.2m (5%), for Guangdong between 0.3m and 0.4m out of 1.4m (21.4%-28.6%) for Tianjin 0.3m out of 1.1m (27.3%), for Hubei 0.6m out of 0.8m (75%). For Chongqing no data were available yet.

The low share of retired CCERs for compliance can partly be explained with the late start of the CCER registry and a lack of carbon offset experience by many liable entities given the complex CCER eligibility rules. With the CCER registry infrastructure in full function and more familiarity with carbon offsetting, a higher percentage of available CCERs should be surrendered in the next 2015 compliance period.

As the national ETS will only start in 2017, there is an increased possibility that the pilots may be extended for one more year in order to include the compliance year 2016.

Tighter restrictions and reduced issuance

Although CCERs have not been used to full extent for 2014 compliance in the pilots, the Chinese carbon offset market is still supposed to grow, especially with a view to the projected national scheme. However, it is necessary to take a closer look into CCER eligibility rules and their handling by national and provincial regulatory authorities.

China based projects can apply as CCER projects if they have started construction after 16 February 2005 and meet one of the following criteria:

1. Projects are developed using methodologies approved by the NDRC (Type I)
2. Projects are approved as CDM projects by the NDRC but have not been registered by the CDM Executive Board (Type II)
3. Projects are approved as CDM projects by the NDRC and their emissions reduction is generated before the effective date of CDM registration (Type III or pre-CDM)
4. Projects are registered with the CDM but have not had any CER issuance yet (Type IV).

While access to the domestic offset market might save many stranded Chinese CDM projects because of potentially better CCER prices than those of CERs in the international carbon markets, concerns related to over-supply have fuelled a debate in China about whether these projects should be eligible. As a consequence, in particular Type III and Type IV CCER projects

face major risks of non-approval, issuance delay or further restrictions of use.

Type IV projects, for instance, must first deregister with the CDM Executive Board (CDM EB) when these projects intend to apply for CCERs. Although a general procedure for the voluntary deregistration from the CDM was adopted during the 82nd CDM EB meeting and became effective on 1 April 2015, the NDRC has yet to clarify whether it would accept these ex-CDM projects, and the outlook to have them approved for the national market from 2017 onwards is uncertain at best. On subnational level, Type III pre-CDM projects are not accepted at all in Guangdong, whereas they are de facto ineligible in Beijing, Shanghai and Tianjin due to vintage restrictions for usable CCERs. Chongqing only allows Type III projects if these started commercial operation not before 31 December 2010.²

In an attempt to reduce the supply of CCERs and stabilize allowance prices in the pilots, the NDRC has slowed down the pace of CCER issuance after the end of the second compliance period. As of 30 October, the CCER Executive Board (EB) has approved 90 CCER issuances in five EB meetings generating a total supply of 26.15m CCERs based on monitored volumes. Two projects have had repeated issuances yet (Table 4).

Among the 90 approved CCER issuances, there are 20 Type I project issuances with 1.75m CCERs issued, one Type II project issuance with 0.14m, and 69 Type III project issuances with 24.27m. Type III (pre-CDM) projects still dominate with nearly 93% of total CCER issuance volume, but the share of this project type will most likely decline. So far, no Type IV project has been registered or has had any CCER issuance and it is not to be expected that the NDRC will open the doors for these projects anytime soon, because this would probably induce a large wave of new applications from deregistered CDM projects to be followed by excess CCER supply to the pilots and, possibly, later on also to the national scheme.

Even with tighter CCER eligibility restrictions and further reductions of CCER issuances there should be abundant supply with CCERs for the seven pilots until the start of China's national ETS. A significant recovery of CCER prices will therefore mainly depend on how many and what CCERs China's national market can absorb.

In this context, market participants urgently need clarification on if, or to what extent, a carry-over of pilot allowances and

² In addition to this fundamental type-related CCER project distinction, many further restrictions apply in the pilot schemes. Meanwhile, all of them have introduced specific eligibility criteria for CCER projects regarding share, origin, quality and vintage year of CCERs and continue to reduce CCER usability for carbon offsetting.

Project Category	CCER projects in validation			Registered CCER projects			Approved CCER project issuances			Pending CCER issuance approvals		
	Number of CCER projects in validation	Annual emissions reduction (tCO ₂ e)	One time emissions reduction (tCO ₂ e)	Number of registered CCER Projects	Annual emissions reduction (tCO ₂ e)	One time emissions reduction (tCO ₂ e)	Number of approved CCER issuances	Annual emissions reduction (tCO ₂ e)	One time emissions reduction (tCO ₂ e)	Number of pending CCER issuances	Annual emissions reduction (tCO ₂ e)	One time emissions reduction (tCO ₂ e)
I	642	57,546,410		144	12,141,313		20	1,741,065		3	243,900	
II	61	8,688,527		18	1,700,509		1	137,376		4	3,504,912	
III	60		19,628,603	175		59,642,078	69		24,267,075	29		6,206,265
IV	16	1,071,264		0	0		0	0		0		0
Total	779	67,306,201	19,628,603	337	13,841,822	59,642,078	90	1,878,441	24,267,075	36	3,748,812	6,206,265

Table 4: CCER Project Pipeline and Issuance Statistics as per 31 October 2015

Source: ICIS Tschach Solutions, China ETS Portal (<https://www.icis.com>); China Certified Emission Reduction Exchange Info-Platform (<http://cdm.ccchina.gov.cn/ccer.aspx>), slightly modified by UPM

CCERs into the national scheme will be possible. When the national ETS launches in 2017, the seven pilot markets could have accumulated 50-100 million surplus allowances, according to analysts at Thomson Reuters Point Carbon and ICIS Tschach Solutions.

Carbon Pricing Survey

The 2015 China Carbon Forum Pricing Survey was conducted by non-profit group China Carbon Forum (CCF) and ICF International from late May to early July 2015 and has been published in August. The non-representative survey, the second of its kind, asked 304 China-based carbon market stakeholders within government, industry, consultancies and science about their expectations for China's carbon markets and climate policy.

The respondents' average price expectation for a unit of China Emissions Allowances (CNEAs) in 2017, the likely debut for the national market, is CNY 39 (EUR 5.59). With tightened allocation over time, CNEA prices are expected to increase steadily from CNY 45 (EUR 6.46) in 2018 to CNY 56 (EUR 8.03) in 2020 and CNY 70 (EUR 10.06) in 2025. However, the price level forecast remains highly uncertain, especially towards the more distant future. The 20th and 80th percentiles for 2025 CNEA prices are 40 CNY (EUR 5.74) and 100 CNY (14.35) respectively (Figure 1).³

In the views of the respondents, carbon pricing will increasingly affect investment decisions in the coming years. In 2016, 36% expect investment decisions to be strongly or moderately affected, and by 2020 this figure rises to 82%.

One of the most important findings of the survey is the high degree of confusion persisting among participants as to how and when China will roll out its national ETS. Only a third of those surveyed believes that the government will establish a country-wide carbon market by 2017, while a quarter thought that the national scheme would only be fully operational by 2020.

The survey also echoes deep discontent with the seven pilots, as only 1% of the participants answered they were well-designed. The main problems mentioned are over-allocation, price volatility, low liquidity and a near complete lack of transparency. Insufficient public information is viewed as a major concern because some players with privileged access to information get unfair advantages for trading. Some 22% of respondents want improvements of allocation methodology and cap levels. One fifth misses satisfactory MRV regulations as well as better accreditation and verification routines, while another 15% criticized registry handling and market oversight.

Although the China Carbon Forum study provides a useful tentative outlook on the Chinese carbon markets, it does of

³ This price path is very much in line with the first results of the China National ETS price forecast, released in September 2015 by ICIS Tschach. In their base case scenario price simulation, the CNEA price will start trading at around CNY 40 (EUR 5.74) in Q2/2017 and gradually rise to almost CNY 70 (EUR 10.05) in Q2/2021 due to NDRC's gradual tightening of the allowance cap. The full report shall be published in November and was not available yet.

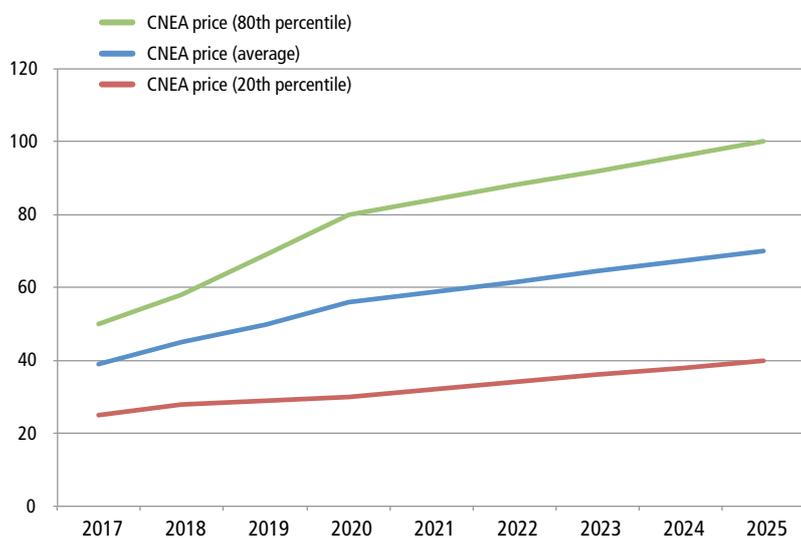


Figure 1: Price Expectations for China Emissions Allowances (CNEAs)

Source: 2015 China Carbon Pricing Survey (<http://www.chinacarbon.info/>), modified by UPM

course have its limitations. The reality check for a similar stakeholder inquiry about the world's carbon markets done annually by Thomson Reuters Point Carbon shows, that many respondents tend to have a positive expert bias and often over-estimate carbon prices because they want emissions trading to succeed.

The even bigger challenge is to determine the likely impact China's carbon markets and its other climate action measures will have on our planet's climate.

Is China contributing its fair share to protect the climate?

Climate Action Tracker (CAT), a consortium of four independent research organisations (Climate Analytics, Ecofys, New Climate Institute and Potsdam Institute for Climate Impact Research), arrives at the following splitted judgement: The GHG emission levels estimated for 2030 resulting from all aspects of China's INDC, except the carbon intensity target, would arrive at around 13.6 GtCO_{2e}. This would be a 29.5% increase from 2010 levels (10.5 GtCO_{2e}) and such climate action outcome is rated „medium“. But the potential emissions calculated solely on the basis of the 2030 carbon inten-

sity targets would be significantly higher, at between 15 and 16.9 GtCO_{2e} in 2030. This policy scenario would end up with a rise of China's GHG emissions of between 42.3% and 60.9% compared to 2010 and is considered as "inadequate."

In essence, CAT concludes that China's INDC and its national actions are not consistent with limiting global warming to below 2°C, unless other countries make much deeper cuts and comparably greater efforts than China.

Unfortunately, all projections and scenarios of China's future GHG emissions pathway and carbon prices, depend on proper emissions measurement by Chinese authorities and the availability of reliable and verifiable emissions data. In this context, the publica-

tion of China's new energy statistics yearbook in early November revealed a very unpleasant surprise. According to the new official figures that corrected the country's 2012 coal consumption upwards by 600 mt, China has been burning up to 17% more coal per year than the government previously disclosed and this means that the level of China's annual GHG emissions is almost one GtCO_{2e} higher than formerly estimated. Even for a country of China's size, the scale of the correction is immense. The increase alone is greater than the whole German economy's annual carbon emissions.

It remains to be seen if China's leaders will step up their ambition in Paris to compensate for that suddenly emerged extra burden on the earth's climate.

CARBON MECHANISMS REVIEW



New Market Mechanisms Website

The new JIKO website features latest news, a comprehensive publications library and introduces German government initiatives. www.carbon-mechanisms.de/en

Transformation and the NMM

This JIKO policy paper looks at how the New Market Mechanism can assist transformative change and the kind of structure it needs for its full potential to unfold. It is available for download at: www.carbon-mechanisms.de/en/nmm_transform

Glossary

All Carbon Market terms and abbreviations are explained in detail in the glossary on the JIKO website. You can view the glossary here: www.carbon-mechanisms.de/en/service/glossary/