

The Role of Market Mechanisms in a Post-2020 Climate Change Agreement

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Abstract

This special report is intended to serve as a background briefing document for the European Climate Platform seminar on **Carbon Markets in the 2015 Agreement: Role and Architecture**, but also raises issues of more enduring relevance in the wider debate about market mechanisms and the next climate change agreement.

The paper looks at the relationship between the carbon market and a new climate change agreement, to be finalised in Paris in 2015. It tries to answer two key questions: does the carbon market have a role to play in a post-2020 agreement, and what is the role of a post-2020 agreement in the creation and operation of a carbon market?

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1. Background

Since the Montreal Conference of the Parties (COP) in 2005, we have been inexorably moving away from the 'orderly' world of the Kyoto Protocol (KP) to a new climate change regime that is intended to be better adapted to today's economic and political realities.

The world has changed in many ways since 1997 when the KP was adopted, along some critical axes, both from an economic and emissions points of view. Moreover, and this cannot be quantified, the appetite for global governance, especially for an agreement with such far-reaching implications as a climate change agreement, has diminished considerably.

Since Rio in 1992, progress on climate change has been slow. On the one hand we have the interminable UNFCCC negotiations, punctuated by the yearly drama of the COPs, which to the casual observer have not produced any visible progress over the last decade.

The second, more visible, track, has been activity in the carbon market that put a price on pollution in some Annex 1 countries and provided a financial signal for what a tonne of reduction may be worth globally for project developers in non-Annex 1 countries.

In the last decade, markets in general, including commodity and equity markets, have experienced some turmoil. The public at large, and some Parties, have always questioned the role of markets, especially in addressing environmental scarcity. While the performance of the sulphur dioxide (SO₂) market in the US has left a good legacy, the performance of the greenhouse gas (GHG) markets has raised a number of questions about their ability to deliver, and implicitly their relevance to any post-2020 climate change agreement.

This paper looks at the relationship between the carbon market and a new climate change agreement, to be finalised in Paris in 2015. It tries to answer two key questions: does the carbon market have a role to play in a post-2020 agreement, and what is the role of a post-2020 agreement in the creation and operation of a carbon market?

2. State of play in UNFCCC negotiations

It is still unclear what role, if any, markets will have in the Agreement currently being negotiated under the ADP. However, the use of markets was very much part of the Bali Road Map (BRM) where it was included under the rather complex and all-encompassing

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heading of “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”.

The title itself reflects the compromise that was necessary to include markets in the BRM.

Since Bali, work under this item is hampered by the evident lack of desire by many Parties to move forward. Reasons for this vary, but the results speak for themselves. Advances that were achieved were the result of the final overall agreement in which the ‘markets’ text was inserted involving a take-it-or-leave-it overall Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) text. Warsaw saw this item stall completely.

A certain amount of confusion was introduced through the two terms that have become the buzzwords of this part of the negotiations: “New Market Mechanisms” (NMM) and “Framework for Various Approaches” (FVA). There is still a lack of clarity as to what is meant by these two terms. For some this lack of clarity is genuine, for others it is useful because it slows down the process.

It must be understood that the FVA is now seen as one of the central elements of the 2015 agreement, and in general, as a move towards decentralisation, with countries using diverse approaches. The FVA could be seen, in this scenario, as serving a number of functions, such as:

- Quality control, by ensuring that domestically created reduction units, used internationally for UNFCCC compliance, meet minimum agreed standards, and
- Coordination, by tracking units and avoiding double counting in issuance and use for compliance.

On the other hand, New Market Mechanisms may be seen to cover a great variety of approaches, and have no clear definition or common elements, other than the fact that:

- They cover broad sectors of the economy (as opposed to CDM, which is project oriented) and
- They are created and run by the COP, just like a broader and more flexible CDM; in essence a more centralised approach than the FVA.

In Warsaw, there was a strong interest in achieving progress on markets, and FVA in particular, and it found strong and vocal support from significant groups, ranging from:

- AILAC (Peru, Colombia, Chile, et al.),
- Umbrella Group (Japan, USA, New Zealand, et al.). Japan was particularly interested to move the FVA forward, given its significant effort to establish a Japanese Joint Crediting Mechanism;
- EIG (Switzerland, Mexico, RoK, et al.),
- Coalition for Rainforest Nations (41 countries interested in a REDD+ mechanism, and led by PNG);
- To a limited degree, support from Ecuador (part of ALBA)
- Brazil, which could support a ‘transparency platform’ in Warsaw in order to understand what initiatives were being undertaken, but not go further;
- The EU seemed interested in moving NMM and FVA in parallel. This put it in a difficult position; while there was some support for an FVA resolution, there was very little, if any, support among G77 + China for an NMM resolution. Not being willing to move one without the other limited its flexibility, however.

At the same time a number of Parties did not want to make progress, for a variety of reasons – politics can bring together strange bedfellows. In no particular order of importance, these reasons include:

- Some are ideologically opposed to markets in the UNFCCC. The UNFCCC is seen as a non-market approach. The FVA is lumped with markets, and seen as providing an avenue for markets to enter the UNFCCC.
- Some recognise the importance and centrality of the FVA in the 2015 agreement, and think that any outcome of the FVA will prejudice the outcome for the 2015 agreement.
- Progress on the FVA is tied to progress on finance and other issues to which they attach importance – this item is viewed as a ‘give to get’.
- Some remain unconvinced that a decentralised system can deliver quality, and therefore prefer a more centralised approach. Based on the experience with the CDM, some see quality control for compliance units as critical.
- The FVA is an accounting tool/accounting approach, and discussions under the FVA are a surrogate for accounting discussions. In short, no progress on accounting, no movement on FVA.

Early on in Warsaw it became clear that all that could be accomplished was a ‘Transparency Platform’ that would collect information in a consistent and comparable way on the market and non-market mitigation approaches that are taking place around the world. The Polish COP Presidency had put forward this idea earlier in the year, and Brazil’s support ensured that the Transparency Platform became the main possible outcome in Warsaw.

This very modest outcome succumbed to the determination of those who did not want any progress at all and who used, or threatened to use, procedural fights to prevent any decision. Those who wanted a decision in the end found that a hard-fought Pyrrhic victory was a poor return on political capital, and recommended dropping the item when the COP President undertook further consultations in the second week.

However, it is important to note that there is no area under the ADP negotiations that is currently dedicated to the role of markets, and that further work on markets will be carried out under the Subsidiary Body for Scientific and Technological Advice (SBSTA). This points to continued ambivalence as to the role of markets in a post-2020 climate change agreement.

At the ADP session in March 2014 in Bonn, the role of markets was introduced for the first time under the topic of “Other issues raised by Parties”. This did not result in any significant breakthrough, as it was a restatement of old positions. There continues to be a group that takes the position that markets in general, and carbon markets in particular, are not to be trusted, and have failed to provide any real incentives for mitigation. They cite the attacks on the CDM and the price of permits, both for EU ETS permits and for KP mechanism products, as proof.

This discussion followed on the outcome of Warsaw, which urged Parties to use CDM and CERs to meet their pre-2020 commitments and increase ambition (1/CP.19 – “promote the voluntary cancellation of certified emission reductions, without double counting, as a means of closing the pre-2020 ambition gap”).

How the process will bring markets under the ADP is unclear, but the effort should be made sooner rather than later. Markets must become part of the ADP agenda.

The real question is, given the nature of the agreement, what is really needed from the international agreement for markets to play a part in the goals of the Convention? As we

discuss further below, this depends largely, among other things, on the nature of the 2015 agreement, its governance, accounting, and compliance provisions.

3. State of the carbon market

It must be noted that, over the last ten years, most activity in the carbon market was related to 'domestic trading' for European Union Emissions Trading Scheme (EU ETS) compliance, with the Clean Development Mechanism (CDM) and Joint Implementation (JI) contributing to that activity. Some trading of Assigned Amount Units (AAU) under Article 17 of the KP did take place, but it did not play a major role. In addition, as there was no linking of domestic ETS, circulation of AAUs did not fulfil the role of shadowing units being transferred between different jurisdictions.

Broadly, carbon markets in the period leading to 2020 are expected to behave in a similar way. Elements of new international market architecture are being expected, but have so far failed to materialise. This is due to a number of factors, the most important ones being:

- Low prices in the main market, the EU ETS. As such, stakeholders see little urgency or need to put any effort into creating a new effort. *"Who needs an international carbon market right now?"* – is more than a rhetorical question that is currently heard.
- The process of linking markets has been slower than expected due to political and economic barriers.
- Uncertainty in international negotiations. Lack of clear direction is not helping. It is expected that most carbon markets and carbon pricing mechanisms will primarily be put in place to meet some type of sub-regional/national/regional regulatory commitment. These in turn, although not exclusively, will help meet international commitments (not the case of California and Quebec). Since the shape of the 2015 agreement is very unclear, it is inherently difficult to design a global market architecture that is compatible with the new agreement.

Most market activity to 2020 is expected to be in the EU ETS, California and Quebec. The ETS in Australia is likely to be rescinded by the end of the year due to political changes. The pilots in China will be watched closely, as will the expected carbon market to start in Korea. Other markets in operation include Switzerland, New Zealand, the city of Tokyo, Kazakhstan and RGGI - nine states in the north-eastern United States.

When understanding how a future carbon market architecture may evolve, there are important lessons to be learned from the EU ETS, the California-Quebec system and the now abandoned Australian ETS.

While the EU is by far the largest and most influential bloc in terms of policy, it must be noted that there is an increasing interest in the operation and experience in California, which is experimenting with new approaches.

This is especially true in matters of competitiveness. However, the California experience is limited in the area of building an international architecture, where it does not seem to have a significant interest outside the linkage with Quebec. This experiment is however important, and will provide significant experience in what linking means, and how to run a linked system. Given that one view of the world is that the future lies in linked international markets, this is a very important contribution.

As a market, although criticised for its low price, the EU ETS is well functioning, in that it is liquid and provides a market signal in line with the scarcity that is evident up to 2020.

Market players currently discount the EU 2050 goals, which keeps EUA prices low, but above the zero level which the current EUA surplus (over 2 billion EUA) would justify.

The reason for the non zero price is the political/regulatory intervention that is either taking place or is expected to take place, in the form of back loading (which has passed under an accelerated timetable) or structural EU ETS reform, which would include a more stringent cap and an EC Market Stability Reserve (MSR).

A legislative proposal for an MSR was included in the EC package that was put forward in January 2014, as part of the EC 2030 climate and energy framework. That package included other non-legislative elements, such as 40% reduction target to 2030.

Market reaction to these developments has been cautious, and has kept prices within a 4.5 to 7 euro range, with some significant volatility. Some market participants see carbon markets as totally regulatory in nature, with a short and heavily politicised history, and one that has seen much turmoil. A perfect example is the Australian ETS, which is being disassembled after a very short existence. Market participants seem to demand a constant dose of news indicating proof of political support of the ETS in order to provide a long-term price signal. This is a reality that needs to be factored into any expectations of the efficacy of an ETS.

By 2020 we expect to see domestic ETS operating within, and outside, KP Parties. There was a belief that Australia and the EU would be fully linked by 1 July 2018, but this is not going to happen under current conditions.

Had that been the case, it would have triggered the transfer of AAUs between these two jurisdictions to 'shadow' the transfer of domestic units and keep KP accounting whole for these two countries as Parties to the KP. As long as AAUs are used as a backstop there is no concern, as both countries would have de facto guaranteed the environmental integrity of their domestic units through the AAUs.

Linking is also taking place between Quebec and California, neither of which is part of the KP. Therefore, they have no obligations vertically, that is, to a higher-level international treaty. As such, they only have to worry about their own domestic commitments and can function with mutually recognised units, which they agree are good for compliance with their respective obligations.

There is also a debate (addressed by compromise language) about whether commitments made by Parties that are not members of the KP under the Cancun agreements can be met with units that have not been given any formal recognition by the UNFCCC. This is a political issue that needs to be decided and is currently reflected in a footnote in 19/CP.18: "Common tabular format for UNFCCC biennial reporting guidelines for developed country Parties".

There are serious implications for the final outcome of this decision, as it would raise the issue of whether the body that recognises or gave credence to the obligation, the COP, has anything to say about how that obligation is met.

In most jurisdictions, the authority that creates the obligation is the only one to affirm whether that obligation has been met and to decide the units or means whereby to prove that it has been met. In any jurisdiction, the respective authorities decide, "What is Legal Tender", which is what carbon units are often compared to.

4. Markets under the KP: what was learned

We have now had international carbon markets operating under the architecture of a KP-type climate change agreement, and can reflect on what we learned.

- Market infrastructure was part of KP and provided strong reassurance to market participants in the CDM. Participation in mechanisms by the Parties on a voluntary basis was subject to compliance with conditions under the authority of the CMP. If a Party did not meet certain conditions, then it could not issue units, nor use units from market mechanisms. This was a very real situation that did affect Parties such as Romania and Ukraine. The International Transaction Log (ITL) played a critical role in ensuring that units were tracked, that there was no double counting, and most importantly, units were issued, and arrived, where they contractually were supposed to arrive.
- Those who created the obligations for compliance had the authority to decide what units could be used for compliance. This also provided value certainty for market participants. Compliance obligations for Parties with the KP were set under the CMP. All units that could be used for compliance with the KP were issued under the CMP's authority. That ensured, in a very simple way, that the CMP knew the 'environmental value' of each unit used for compliance (1 tonne). Because only CMP approved or issued units could be used for KP compliance, there was recognition that the 'environmental value' of a compliance unit can only be set by those who set the constraints. This is a fundamental issue in any regulatory regime. However, an additional principle also needs to be recognised and accepted; namely *how* that recognition is provided, which is also something that the Regulator (CMP) has the authority to decide upon. ERUs were issued through T1 and T2 either under international supervision or at the purely domestic level, with little international intervention by the CMP regulator, the JI Supervisory Board.
- A number of the controversies that emerged regarding the functioning and contribution of carbon markets to mitigation efforts were caused by the discontinuity resulting from the largely uncoordinated objectives and rules of the two regulators of the carbon market, the EU and UNFCCC. This is in itself a critical issue that needs to be recognised and addressed in the new climate change architecture that will emerge from the ADP. A few very powerful examples can easily be identified. The so-called "recycle CERs" controversy was caused by the fact that, for some EU Economies in Transition Parties, they were a way to use their surplus AAUs resulting from the economic downturn in the post-Communist era (addressed by the unappealing name, used by some stakeholders, of "hot air"). Similarly, the debate over the use in the EU ETS of CERs from industrial gas projects caused substantial damage to the KP, the KP mechanisms and the credibility of carbon markets in general. It was inevitable that having one regulator in Bonn (the CDM EB) decree, after a thorough investigation, that it would continue to issue these credits, while a second regulator and legislative body in Brussels took the strong stance that they were unpalatable, would provide ammunition to those looking for an excuse to attack the whole concept of carbon markets.
- **Process Politicisation.** The process of running and administering the KP mechanisms has been heavily politicised.
- **Clear objectives.** The CDM was the flagship of the KP market mechanism, but its duality of objectives has led to vigorous debates on the contribution it has made to real reductions, as well as to sustainable development. The lesson that needs to be learned, in what is a pure regulatory market, is that the lack of clarity in objectives will damage the credibility of the market, affect the social license to operate, and finally impact on its

good market functioning. Examples are the dispute over the objectives of the EU ETS, namely compliance within the period cap or long-term de-carbonisation. Similarly, when it did not meet the purity tests of some, the Sustainable Development (SD) objective of the CDM has been interpreted as casting a negative light over certain projects and technologies. However, adding the SD conditionality as a market constraint, a concept not quantified, muddies the waters in a way that markets cannot understand.

Whatever conditionality is introduced, it needs to be clearly spelled out for markets so they can quantify it and operate within it.

- **Competition and leakage.** The vision of the KP was one of a global price for carbon, which would drive reductions around the world in the most efficient way. However, that was in a 'simpler' world, divided into Annex 1 and non-Annex 1 income countries and emissions. However, as the world changed and the new economic and emissions realities have taken hold, it becomes apparent that, while paying for rapid development was OK, subsidising competition in globally competitive industries, especially in a time of grave economic crisis, was not acceptable. Carbon leakage is becoming an increasing concern. All these matters need to be accounted for in any new climate change agreement.
- **Stability: acceptance of GHG markets and CC science.** Closely connected to the issues of competitiveness and leakage is the acceptance of climate change science. The introduction of a carbon price through carbon markets imposes an additional cost on society. Public acceptance of climate change science is important to markets, given their complete regulatory nature and the need for stability. A price of carbon in the economy, with the attached concerns surrounding competitiveness, can lead to an unstable regulatory environment. With the Australian example in mind, investments driven by carbon prices cannot take place in an environment where the price of carbon is "here today, gone tomorrow" due to the political colour of the government of the day.

5. Future of the Carbon Market

Given that in any post-2020 agreement it is expected that all Parties will contribute to mitigation efforts, it can also be expected that many will wish to have a domestic carbon market as part of their tool box. Others will want to use carbon units in meeting their obligations, and as such will participate in the international carbon market, while having a domestic market in place.

From a markets perspective, two important elements stand out in the future climate change regime, **given the way it seems to be emerging**. One is the lack of AAUs. AAUs are associated with 'budgets' and are allocated according to a KP-type agreement. This does not seem to be on the cards for the post-2020 period, as most countries are unlikely to make that type of commitment.

The importance of the AAUs for market functioning may not be well understood, but once they are removed from the infrastructure, the complications become self-evident.

There is no 'international' unit that provides the backstop to ensure environmental integrity and common accounting. There are no AAUs shadowing EU Allowances (EUA) and Australian units flowing between systems, thus keeping the accounting and environmental integrity whole.

International units, AAU, or AAU-like (e.g. International Compliance Unit), may still emerge, in which case they could be made available for certain types of commitments by

Parties that have budget characteristics, or could be issued for domestic units that are used internationally and that meet UNFCCC compliance standards.

The second element is the fact that all Parties will be expected to contribute, in a concrete way, to the goals of the Convention and may use markets as a tool.

Markets under the KP were essentially trading among, or within, developed countries. Developing countries were exporters of CERs.

In the new architecture, markets are also likely to occur within developing countries, and developing countries may purchase permits. Now, in addition to the exiting flows, the flow of permits could expand from a *North to North* and *South to North* pattern to include *South to South* and maybe *North to South* flows.

The future carbon market is expected to have:

- Domestic cap-and-trade systems and/or crediting systems. These systems may or may not be linked internationally. Given the lack of liquidity in most of these systems, it can be expected that most will end up being connected in some way to the international market.
- There is also an expectation that internationally (UNFCCC) developed and operated market mechanisms will emerge. They may only be available for use in certain jurisdictions, based on internationally agreed qualifying criteria (such as CDM for Least Developed Countries, LDC, only). Alternatively, they could be used by any Party to produce reduction units, but only accepted by Parties for use in their jurisdictions at their own discretion. As such, some Parties may only accept CERs originating from LDCs, even if any other Party under UNFCCC can produce them.
- Based on economically rational decisions, all Parties will use the most effective way to meet their obligations. This may not be evident to start with, as what are currently non-Annex 1 developing countries may be reluctant to purchase units from developed countries or to allow them to be used in their jurisdictions. As such, the purchase of EUAs by a developing country to meet a post-2020 obligation may not be the first choice of that country. Will it happen in time?
- Competitiveness as a result of asymmetric climate change policies, especially expressed through ETS, is a growing concern to many industrial stakeholders. This is a complex issue but one way of addressing it is through the creation of a global carbon market.

How that carbon market evolves will depend on many factors, including the international climate change regime.

5.1 Scenario 1: 'Mission Impossible' or 'Super KP'

In this scenario we have one 'global' carbon market in the true sense. This implies that the central regulator (one would be presumably designated as part of the international agreement post-2020) will decide on the obligation on each covered entity/installation, as well as what sectors are covered, and by what instrument.

That would be the most efficient economic scenario with one regulator that sets the caps, the sectors that are covered in each jurisdiction, great liquidity, fixed environmental value for each unit generated, etc.

However, this kind of authority was not delegated to a supranational body in the KP scenario, which is now seen as being too centralised. As such, it is highly unlikely that this is the direction that governance will take.

Consequently, this is and can only be considered as a nice, theoretical scenario; one that would likely generate the lowest price of CO₂, but it is not a realistic one.

5.2 Scenario 2: Cartesian scenario: UNFCCC-linked carbon markets

Under this scenario, the carbon market evolves as a set of subnational /national/ regional market approaches, linked through the backbone of an international agreement that uses surrogates to mimic a KP market arrangement to create liquidity – or creates the condition for such liquidity to emerge in time.

Every jurisdiction will have a ‘menu’ of market instruments to choose from, with developed countries, or advanced developing countries likely to have a broad C+T coverage that will keep expanding (to new sectors of the economy in a given jurisdiction, to new jurisdictions globally). However, it is possible that different types of mechanisms, possibly of a B+T type, may cover some sectors of these economies.

Other jurisdictions may employ different just B+C type approaches, some at the project level, some covering broader sectors of the economy.

Mitigation approaches that could have at their root non-market drivers may also exist, such as the one currently being promoted by Ecuador through the Yasuni project. However, such an approach may nevertheless produce reductions units that could then be traded for international compliance with UNFCCC obligations.

Finally, there could be international mitigation efforts resulting in outcomes, and not in tradable units. An example of such outcomes would be the Japanese JCM that is currently being developed, as well as the proposals being promoted by some Parties, such as Bolivia. Whether REDD+ reductions will be tradable or not will have a great impact on price formation in GHG markets.

More importantly, this latter category may include REDD+ projects that could represent substantial volumes.

In this scenario the UNFCCC would be the Regulator that establishes the environmental value of reductions – they would have a fixed environmental value for international compliance. Whether the UNFCCC establishes a Standardized International Compliance Unit or not is important but not a game-changer; as such a role could be taken on by a private interest on a commercial basis.

Under such a Scenario the UNFCCC/COP would ‘Certify’ ex ante (through some protocol), unit-types from domestic systems for use in international UNFCCC compliance.

A difference would have to be made between UNFCCC Certified Units being deemed usable for UNFCCC compliance, and Parties allowing them to be used. It is fully expected that Parties will impose politically motivated restrictions.

These restrictions will take different forms, such as restrictions on the export of units, through price floors and a list of type of mitigation ‘sources’ for export. This may become increasingly severe as obligations that Parties take on start to ‘bite’.

Similarly, while less likely that there will price floors for the ‘import’ of units, it is possible that severe restrictions will be put on the type of units that would be allowed into a national C+T.

This may be achieved through an outright ban on certain jurisdictions that would be considered a reputational risk, or preference being given to certain jurisdictions (LDCs, SIDS, jurisdictions that present historical or economic interest), a ban on technologies, etc.

A situation that could prove more common than we may expect at this stage of the development of carbon markets is that there will be disagreement between Parties as to the equivalent level of effort on C+T systems between jurisdictions, and as such units may not be allowed 'in', since they may be considered the result of 'hot air'.

How the AAU surplus from KP will be treated in the long term will have an impact on such decisions, but this does not mean that the problem will go away. It may go away in the long term when caps and commitments start hurting everyone. However, this may take a while, and as such, in the medium term, it could continue to be a problem, especially for mid-level countries. This is likely to continue to impact liquidity and the move to free circulation and fungibility of allowances.

In the short to midterm the role of carbon pricing (visible/hidden) may also vary from jurisdiction to jurisdiction, and this could make Usable units (UNFCCC approved) less Used (in certain jurisdictions).

Finally, a critical element may be the desire of certain jurisdictions to make some form of price management at the domestic level. In a broadly interconnected system such efforts are not likely to go far, but it could take a while for these aspects to be cleaned up.

5.3 Scenario 3: Globally Networked Carbon Markets

Under the KP domestic markets could be linked under Article 17 of the KP. That did not happen. Instead, what did take place was indirect linking through CERs from CDM.

Instead, this approach is that of a global network of carbon markets created through different domestic units (similar to currencies), which would have a rating for use for global and domestic compliance. In this case there would be no effort to 'link' carbon markets; an effort whose complexity and fallout could be underestimated.

The starting point is to recognise that while efforts to share information and experience are valuable inputs into domestic decision-making, ultimately each government will make decisions based on what is the best fit for its specific situation. The concept builds on the principle of flexibility so that a wide range of approaches and designs can be accommodated, rather than aiming to enforce elements of system choice, design or scope of linking. An essential element of such an approach is fungibility across a variety of carbon asset types based on the climate change mitigation value of the carbon assets.

This approach is currently being explored through an initiative that the World Bank is catalysing, the Networked Carbon Market initiative.

The globally networked carbon markets approach requires i) a transparent, reliable, efficient approach to providing the information needed to determine the relative climate change mitigation value of assets to be traded internationally, ii) at least one significant market participant that will buy, sell, bank and / or borrow across a wide range of assets and provide benchmark carbon exchange rates across these assets, and iii) a mechanism to keep track of the international exchanges and potentially provide a "clearing house" function. As such, the elements of such a system would include:

- An independent rating system and independent private sector rating agencies (in many ways analogous to financial rating agencies) applying a risk-based approach to rate the climate change mitigation value of carbon assets. A rating approach would involve a transparent approach to addressing risk, uncertainty and subjectivity. It would take into account not only programme-level considerations such as the environmental integrity or 'quality' of assets, but also the policy environment and level of ambition of the jurisdiction in which the mitigation programme/ activity originates. It would provide

the information needed to determine discounting or carbon exchange rates among rated assets.

- An International Carbon Reserve (ICAR) that would buy, sell, bank and/or borrow across a wide range of rated assets, using the rating information as the basis for determining the relative climate change mitigation values (i.e. carbon exchange rates) of the traded assets. The ICAR could also offer a range of services to help domestic regulators manage market risks or address market failures.
- An International Settlement Platform to track cross-border trades and potentially provide a clearing house function.

Units would be risk rated for different characteristics, including for the level of effort that is implied in the baseline that jurisdictions set. This could represent a departure from the hallowed principle of 'a tonne is a tonne' in that the different GHG reductions could be assigned different values, depending of the relative effort that is needed to produce that reduction.

This would represent an important departure from the current dogma that has been used, with significant controversy, so far. The best illustration is the CDM, where projects were in/out – that is, they were deemed to be additional or not. Many felt that the counterfactual nature of additionality would always lead to questionable outcomes and perpetual disagreement over whether projects were additional or not.

The risk-rating approach that is being proposed could be seen as more in line with reality, in that outcomes are assigned ratings.

6. Role of markets in the post-2020 climate change agreement

In considering the role of markets in a post-2020 climate change agreement, we need to consider two issues:

- a) What is the role of markets in addressing climate change?
- b) What is the role of carbon markets in a post-2020 climate change agreement?

6.1 Role of markets in addressing climate change

Carbon markets are not an objective in themselves, but are, and must be seen to be, a tool for price discovery, asset allocation and rational economic decision-making. Their role is to direct flows of investment into areas where they might not otherwise go. It must be one of the elements of providing carbon finance.

The role of carbon markets in technology Research and Development (R&D), piloting and deployment is not well understood. However, more and more research seems to indicate that markets cannot be everything to everyone, equally influential and determining at all stages of the technology cycle.

Treating markets, their impacts and functioning separately at the national and international or UN levels does not take into account what real-life experience tells us.

Carbon markets can play a purely national or regional role, but with a few exceptions, it is unlikely that they can function well if they are isolated. Small, illiquid markets are unlikely to produce good market functioning as defined through the ability to process a transfer without it causing significant price movements or loss of value of the asset being traded (ease of entry and exit, absence of monopoly power, widespread availability of information, absence of market externalities, achievement of public interest objectives, sufficient liquidity,

lack of large fluctuations, enough actors within the market, etc.). As such, their international dimension becomes, **while not an obligation, a necessity, rather than a luxury**.

A second observation is that experience with environmental markets in general, and carbon markets in particular, indicate that they can make a significant contribution to minimizing overall social costs in addressing climate change. However, carbon markets need clarity of objectives, as multiple objectives will make them less efficient and reduce trust in their performance.

A third observation is that their long-term environmental objectives must be recognised and their regulatory nature accepted. A regulator creates carbon markets, and regulators are rarely infallible. There is, at this stage of society's development, intervention in all markets, or the potential to intervene if necessary. What is needed is flexibility built into the regulatory framework that will permit predictable and transparent intervention under well-understood conditions.

As such, a strong and credible regulatory framework, with a competent and not politicised regulator, is also an important element if markets are to be part of the toolbox.

Finally, carbon markets are not meant to be a silver bullet. They play a precise role and need to be part of a suite of measures. They do not act alone, but need to be surrounded by other complementary policies and measures that can address any potential side effects and interactions. This message is also clearly emerging from the current debates surrounding the main carbon market – the EU ETS.

6.2 Carbon markets and the post-2020 international agreement

'Markets and the post-2020 agreement' is an issue that can be addressed from different angles. A first approach is to try and understand how **a post-2020 agreement can contribute to the establishment of a successful global carbon market**.

A second approach is to analyse **the place of carbon markets in a post-2020 agreement and the provisions that are needed in that agreement**. These two issues are interrelated, yet they represent different questions.

6.2.1 Role of the post-2020 agreement for carbon markets

The post-2020 agreement can play a number of important roles in the development of a global carbon market. Some of the issues outlined below will be options, depending on the 2015 agreement and how markets will develop, and the scenarios in section 5 above.

The KP was 'all in one', creating the market, the market mechanisms and the infrastructure for a carbon market. *From a market functioning* point of view the arrangement was highly logical, and it all added up, but it proved ineffective in terms of getting the major Parties to join the global governance it implied. So although it worked as a market, it did not solve the environmental problem, and under current realities cannot do so.

As such, the new agreement can help make the new realities work towards the creation of a carbon market by providing flexibility, without losing sight of the key issue of environmental integrity. A post-2020 climate change agreement can play a number of key roles, as outlined below.

a. **International in nature**. Provisions in a post-2020 agreement can only

apply to those market systems, and the units produced by them, that will cross international boundaries, and may be used for compliance in jurisdictions other than the ones in which they were created. If the market systems, and the units they create, are used for purely

domestic compliance, there is no reason for the international regime to interfere with the creation, operation, or environmental value of such units. These will all be captured through an inventory system, in whatever format the international agreement will provide for.

It must be made clear, however, that one fundamental principle must be that the international agreement, and system, should only provide those functions that are better provided at the international level, for a variety of reasons. This could be security, environmental integrity or cost. The default option must be that the function must be provided at the domestic level. In addition, in some cases the option could be available for the Party to make that choice and use an international or multilateral service or infrastructure, or else develop its own. An example would be whether it wants to develop its own registry or would want to use a facility already in existence.

b. Connect markets for UNFCCC compliance A post-2020 international agreement can provide a framework under which domestic carbon markets can accede to the international system. “Accede” can be interpreted as becoming part of the international agreement, with the consequence that the units thus produced can be used for compliance with international/UNFCCC obligations by a jurisdiction other than the one in which they were created. *How* that accession is accomplished will be an important part of a post-2020 international agreement. Most thinking currently sees two options, or a hybrid off the two, as being viable:

- One option is for the accession to be done through an ‘approval process’, whereby the COP ‘approves’ a domestic system according to internationally agreed rules. Many Parties view this approach with suspicion, as it is seen as interfering in their domestic carbon markets. The rigidity and micro-management of the CDM by the UNFCCC provides Parties with a good example *not* to follow.
- Another approach has been called the “Transparency” or “Show and Tell” approach. Under this approach, the role of the international agreement is to provide a series of declaratory templates, possibly supplemented by a Peer Review system. In this case a domestic system may have to submit to the UNFCCC a declaration of its details under agreed templates, which *may* be peer reviewed, and the result *could* be put in the public domain. There is no *approval* at the end of this track, just the public availability of information. As an alternative, both tracks could be made available, with the Transparency Track being the default one.

It is believed that the power of the ‘regulatory market’ may push most Parties to use the ‘Approval’ track. Most Parties will be reluctant to explain why they do not submit their *own* systems to that track, as well as why they accept for compliance purposes units from *other* systems that have chosen not to go through an Approval track. The latter may especially apply if they come from Parties that do not have an economy-wide cap. This is already observed in the case of JI Track 1 (national guidelines) and Track 2 (international guidelines), where Parties, or entities, have a preference for units emanating from T2 projects, which is seen as having stronger environmental credentials.

In addition, should this kind of market segmentation occur, with some units having better and broader access to markets for compliance, it is highly unlikely that this will not also translate into increased market value (as opposed to environmental value, which only the regulator can confer).

c. International Compliance Unit (ICU) (the creation of an internationally recognised compliance unit). This is especially important given the assumed lack of AAUs in the post-2020 agreement as a ‘common currency’. While this is not an absolute necessity, it would simplify international accounting, the linking of domestic systems and international

commercial transactions by creating a more liquid market. An ICU would be issued, on demand, for domestic units that have crossed international boundaries, that originate from domestic systems, and that had already acceded to the international framework.

d. **Infrastructure.** Infrastructure should be provided for a global carbon market to help Parties meet their UNFCCC compliance obligations. Two components that would immediately be seen as benefiting from definition through an international agreement would be an ITL and a system of standardised National Registries (NR). An ITL would ensure the transfer and tracking of units that cross international borders. It would also allow Parties to provide 'filtering' instructions for transfers to national registries. For illustrative purposes, a Party may wish to accept in its NR only CERs from LDCs, units from certain geographical areas, or units only from systems that acceded through an Approval track.

National registries already exist for Annex 1 Parties under the KP. The same is true for national registries at the beginning of the EU ETS, which has currently moved to a Community Registry. This migration from 27 registries to a single registry was to a large degree a hard lesson for the EU to learn. It was driven by the realities of cost, capacity and security concerns.

Options may be available in this case whereby the UNFCCC provides central registry services for those Parties that do not have the capacity, or do not wish to do it themselves. The same possibility could exist for other functions.

e. **International Environmental Standards.** The agreement can help ensure that the units used for compliance with UNFCCC obligations meet internationally agreed environmental standards. This is closely related to how (units)/(domestically developed carbon pricing mechanisms) accede/become usable to meet UNFCCC compliance obligations.

Under KP1 this was less of an issue, as all the units used for compliance (CERs, AAU, ERUs) were issued under the authority of the COP, and we knew that 'a tonne was a tonne'.

A post-2020 climate change agreement will need to put in place standards to preserve the environmental integrity of the international system. Such an environmental standard will be developed under the authority of the COP and will be used, through a process to be defined, to determine if a domestic mechanism can accede to the international system. Such a standard may include, among others:

- a. Additionality, where appropriate
- b. Baseline methodologies and crediting threshold
- c. A monitoring, reporting and verification approach
- d. Third-party verification

It should be emphasised that, while this standard will be defined and approved at the international level, many elements will be defined and determined in cooperation with the national level. As such, some interaction is necessary between the national and international levels.

Environmental integrity is one of the trio of ideas that defines sustainability. A word of caution is needed here. Ensuring that 'a tonne is a tonne' is not to be confused with producing a global definition of sustainability. While in many ways this is a goal that we should aspire to, at this stage such an approach would break a strong principle – that sustainability is the prerogative of each individual Party.

A push in this direction, we believe, will damage the sustainability concept, as it will be seen by the developing world as an attempt to impose standards and pathways for development on them.

f. **Provide information for accounting.** Markets, by their very nature, will see a lot of transfers taking place between different Parties. An international agreement will need to provide support for the commercial aspect of markets by tracking and avoiding double accounting for all units, be they national or international.

It must be emphasised that double counting can take place in a number of ways and that tracking must take place for:

- Tracking units circulating internationally
- Avoiding double environmental counting
- Avoiding double counting of financial commitments

Double counting will be checked by the NR at the national level, upon issuance of domestic units. A national registry will have all necessary data to identify projects and installations that are in that jurisdiction.

A national registry will also have data on any UN mechanism, such as CDM, as it will need to issue a Letter of Approval. To have double counting checked internationally would imply that the regulatory body and/or the ITL would have to track all domestic mechanisms in every country. This would be inefficient, and not in keeping with the fundamental principle of doing things at the national level wherever possible.

g. **Provide an Environmental Exchange Mechanism.** This aspect ties into the discussions above on the ICU and on environmental integrity: 'a tonne is a tonne'. Any environmental permit has two 'values' associated with it: an Environmental Value and a Financial Value.

The Financial value is defined by the market, being a function of supply and demand, liquidity, etc.

The only entity that can define Environmental Value is the regulator accepting a permit for compliance with an obligation it had imposed. As such it can determine that a unit for a domestic system is equal to a CO₂ tonne, and equal to an ICU.

Alternatively, it could be decided that a multiplication factor needs to be applied and that a certain unit is, for illustration purposes, only valued at 0.7tonne=0.7 ICU.

A second case may emerge where units stemming from a domestic system that wishes to accede internationally may be expressed in units other than CO₂, such as in terms of energy savings. An exchange rate from energy saving units to CO₂ may need to be set, and any post-2020 agreement may wish to set up a mechanism that determines the resulting Environmental Conversion Factor.

h. **Provide internationally developed and operated market mechanisms** for those Parties that do not have the capacity to develop their own systems, or choose not to do so.

The CDM continues to be a prime example of a UNFCCC developed and operated mechanism, where the CDM EB sets very detailed standards and procedures for the creation of CERs, which are reductions from a baseline.

What are currently generically called New Market Mechanisms (NMM), which are mechanisms being developed under the Subsidiary Bodies and which are most likely Sectoral Trading and Sectoral Crediting mechanisms, can also be seen as options for Parties that wish to use an 'international rulebook' instead of developing their own domestic mechanisms.

In this category we could also put a REDD+ mechanism, developed by the COP.

6.2.2 Carbon markets in the 2015 Agreement

What are the provisions in the 2015 agreement that would ensure that a carbon market that is used for UNFCCC compliance could develop? As mentioned in some of the previous sections, it depends to large degree on the provisions of the agreement. The specific details needed to operationalise some provisions may not need to be included in the 2015 agreement, but could be developed prior to 2020.

However, delaying specificity will also delay the development of the market and its instruments, and the start up of badly needed mitigation measures. The provisions are outlined below, and they are a function of the characteristics of the climate change agreement, and carbon market, that will emerge. The different gradations are indicative, and different levels can obviously be defined.

- I. Broadly decentralised climate change regime, where each **country is able to use any international units** it chooses for compliance, without any global standards. The market provisions in the 2015 agreement need to be relatively minimalistic. It may need to include provisions that:
 - a. Recognise the right to use international units (or reductions/outcomes, such as in the case of the Japanese JCM) for compliance. International units are units not produced in the Party that uses them for compliance.
 - b. Define market mechanisms that are created through the UNFCCC (what is now called New Market Mechanisms). These could be CDM like or sectoral based crediting mechanisms. They could be:
 - A family that will be usable by all Parties, at their discretion.
 - Alternatively, there could be criteria under which they can be used (similar to JI T1 and T2).
 - c. Recognise that each Party sets standards for environmental integrity of the units it uses for global compliance.
 - d. Standardise the way each jurisdiction describes the characteristics of the international units it uses for compliance according to the environmental standards.
 - e. Ensure that there is no double counting for issuance and usage for compliance. The way to operationalise this approach could be for the avoidance of double counting to be addressed at the national level in the case of issuance, and for UNFCCC compliance, at the global level. This would ensure that the responsibility is allocated where the information is available, without creating additional unnecessary bureaucracy.
 - f. Ensure that information for accounting purposes is made available. For B+C, an ITL type provision is an option. Others only see a need for netting of transfers between Parties at the end of the compliance period. Such an arrangement is possible, but would result, in our view, in an overly complicated system, and would also negatively impact market confidence.
 - g. Recognise the need for national registries. These registries already exist in many jurisdictions and their function could be provided at the global level for those jurisdictions that don't have the capacity, resources, or inclination to develop their own.

- II. Decentralised climate change regime with some minimum environmental standards provided, **as guidance only**. The units used for UNFCCC compliance by Parties would be expected to observe those guidelines, but no approval is needed. In addition to what is listed above in (I), the agreement may need to include provisions that:
- Define environmental standards that all units need to meet. The COP would define these standards at the global level.
 - Standardise the way each jurisdiction describes the characteristics of the international units it uses for compliance vs. the global environmental standards.
- III. **Environmental standards must be observed, but no approval required for the units used for compliance.** This would represent only a very small incremental step when compared to the approach in (II) above, and has been called a “transparency approach”. In this case, in addition to what is in (I), the agreement should include provisions to:
- Define environmental standards that need to be observed.
 - Standardise the way each jurisdiction describes the characteristics of the international units it uses for compliance according to the environmental standards.
 - Describe units characteristics used in each jurisdiction, and how they meet the standards set by the COP.
 - Create a global body that would review units used for compliance by each jurisdiction (peer review) against the COP standards, but without power to approve or reject units, or systems that produce units.
- IV. Global environmental standards are **defined by the COP, and must be observed**. The units, or systems that produce units used for UNFCCC compliance, must be approved by the COP. In this case, in addition to what is in (I), the agreement should include provisions to:
- Define environmental standards at the global level (by the COP).
 - Define the process for approving the accession of units (or systems that create international units) to be used for compliance with UNFCCC commitments.
 - Create an international regulator that would check units, or systems that create units used internationally, against environmental standards set by the COP. This international regulator would likely be set up on the model of the CDM EB, but with a remit to approve the systems that produce units that are to be used for compliance with UNFCCC obligations and which are produced in jurisdictions other than those in which they were produced /issued. The approval could be done ex ante or ex post – that is at the time of issuance of the units, or at the time of use for compliance. It is likely that a system of ex post certification would create too much uncertainty in the markets.

7. Conclusions

It is clear that carbon markets will play a significant role in the 2015 agreement. While there are Parties that oppose market provisions in the 2015 agreements, there are also many Parties that see the provision to allow their voluntary use internationally as a must for any international agreement.

It is also clear that many Parties are developing their own domestic market approaches. While markets have not been perfect and we continue to learn what works and what does not, global emissions are increasingly falling under carbon pricing mechanisms.

At the same time, asymmetric climate change policies and global competitiveness are an increasing preoccupation, as expressed through equivalence in level of effort and the level of caps and baselines.

We see this in the EU and California debate on carbon leakage, in the UNFCCC in Response Measures and in the linking initiatives, i.e., California and Quebec, and the now abandoned initiative to link the EU and Australia. These initiatives are also evident in the discussion that the World Bank is catalysing under the Networked Carbon Markets initiative.

The alignment of the global climate change regime and role of the UNFCCC in the carbon market is gathering momentum and urgency. It will be much more difficult to adjust many domestic and linked systems to a global agreement than to build them in parallel, recognising those elements in the upcoming agreement as they emerge.

We must also accept that in this effort to build carbon markets 2.0, some elements of the agreement will develop late, and as such not all provisions for carbon markets can, and will be developed, at the same time.

In addition, the development of the infrastructure and capacity will take time, effort and resources. We witnessed this with the CDM, where not all regions have benefited equally. Essentially Africa is now coming on line as a player in the CDM market, when there is no more demand for carbon credits for this compliance phase.

While it is unclear where we will end up in the range of possibilities for carbon markets in the 2015 Agreement, expressed above under Options I-IV, given that Parties wish to retain a certain freedom to negotiate, it is also clear that certain provisions will, and can, be developed on a 'no regret' basis. These are most of the infrastructure and capacity associated with Option I.

A continuing process of postponement risks two outcomes that most Parties may not welcome. One is the forfeit of the role multilateral organisations play in the regulation of carbon markets. The post-2020 climate change regime may become a 'taker' of regulation developed elsewhere.

The second one is the delay of investments in mitigation measures that markets can trigger.

At the time of writing there are about 18 months left to the Paris COP in 2015. The last COP saw the negotiating process on mechanisms stall; it is currently taking place under FVA and NMM. It is important that the existing FVA/NMM under SBSTA be used to better understand the options and technical details of different elements and approaches.

Also, currently, carbon markets are discussed in a number of places in the negotiating process: CDM and JI under SBI and CMP, FVA and NMM under SBSTA, with some reference to markets also in ADP at the last March session in Bonn. This is not likely to lead to a coherent and lasting outcome.

It is important to create a space within the negotiating process, preferably under ADP, where all carbon markets in the post-2020 period can be discussed in a coherent way, and rationalised. Only in such a scenario can issues such as the role and shape of CDM post-2020, its relationship with the FVA and NMM, etc. be discussed and resolved.

This paper draws on Marcu, A., (2013), “UNEP Perspectives”, which it takes as its point of departure; updating it in light of new ideas and developments since that paper was published. It also draws on the paper by Zetterberg L., S. Mandell, S. Roth, A. Marcu, C. Munnings (2013) “The development of the EU Emissions Trading System and Future Carbon Markets”, IVL-report B2139, as well as Prag. A, C. Hood C, A. Aasrud, and G. Briner (2011) “Tracking and Trading: Expanding on Options for International Greenhouse Gas Unit Accounting after 2012”, OECD/IEA.