The Voluntary Carbon Market: What may be Its Future Role and Potential Contributions to Ambition Raising?

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Abstract

This report explores the future role of the voluntary carbon market and its potential to contribute to raising the ambition of climate policy. For this purpose, desk research was complemented by inter-views with voluntary carbon market representatives. The report finds that the current roles of the vol-untary market are set to change fundamentally due to the Paris Agreement. For the future of the volun-tary market as an investor, three roles were identified, each of which is associated with specific chal-lenges: The market may maintain its current role of buyer of carbon neutrality credits, it may become a supporter of NDC implementation, or it may become a driver of ambition. With regard to the future role of private certification standards, the Paris Agreement may hold the possibility of using such standards in the context of compliance activities. Overall, the findings indi-cate that the voluntary mar-ket has some potential to contribute to ambition raising. Whether this potential will actually be un-locked depends on how the concept of ambition raising will be operationalized under the Paris Agree-ment and to what degree it can be integrated into the voluntary market's activities and business models.

Kurzbeschreibung

Dieser Bericht untersucht die zukünftige Rolle des freiwilligen Kohlenstoffmarkts und sein Potenzial, zur Steigerung der Ambition der Klimapolitik beizutragen. Hierfür wurde eine literaturgestützte Analy-se ergänzt durch Interviews mit Vertreterinnen und Vertretern des freiwilligen Markts. Die Autoren kommen zu dem Schluss, dass sich die derzeitigen Rollen des freiwilligen Marktes durch das Überein-kommen von Paris grund-sätzlich wandeln werden. Für die Zukunft des freiwilligen Marktes als Inves-tor wurden drei mögliche Rollen identifiziert, die jeweils mit eigenen Herausforderungen konfrontiert sind: Der Markt könnte seine jetzige Rolle als Käufer von CO_2-Neutralitätszertifkate fortsetzen, er könn-te zum Unterstützer bei der Umsetzung von NDCs werden oder aber zum Treiber der Ambitionssteige-rung avancieren. Mit Blick auf die zukünftige Rolle der privaten Zertifizierungsstandards könnte das Übereinkommen von Paris die Möglichkeit bieten, diese im Rahmen von Compliance-Maßnahmen an-zuwenden. Die Ergebnisse zeigen, dass der freiwillige Markt über ein gewisses Potenzial verfügt, zur Ambitionssteigerung beizutragen. Ob dieses Potenzial tatsächlich freigesetzt wird, hängt von der Ope-rationalisierung des Konzepts der Ambitionssteigerung im Übereinkommen von Paris ab sowie von der Frage, in welchem Maße dieses Konzept in die Aktivitäten und Geschäftsmodelle des freiwil-ligen Markts integriert werden kann.

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Abbreviations

DCC	Domestic Climate Contribution
CDM	Clean Development Mechanism
CDP	Carbon Disclosure Project
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CSR	Corporate Social Responsibility
ITMOs	Internationally Transferred Mitigation Outcomes
MOs	Mitigation Outcomes
MRV	Monitoring, Reporting and Verification
NDC	Nationally Determined Contribution
PA	Paris Agreement
REDD+	Reducing Emissions from Deforestation and Forest Degradation, and the Role of Conservation of Forest Carbon Stocks, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit

Summary

With the Paris Agreement, the role of the voluntary carbon market and its relation with mandatory carbon regulation schemes is set to change fundamentally. This is due to two major paradigm shifts: First, by requiring all Parties to adopt nationally determined contributions (NDCs), the Paris Agreement will significantly reduce the so called 'uncapped environment', i.e. the emissions not covered by carbon regulation, which have so far been the main source of supply for voluntary carbon market activities. Second, the new agreement requires all Parties to raise their ambition when engaging in cooperation under Article 6, thereby terminating the era of 'pure offsetting'.

Against this backdrop, this report explores the future role of the voluntary market and its potential to contribute to ambition raising. For this purpose, desktop research was complemented by interviews with voluntary carbon market representatives. The interviews allowed to further elaborate initial ideas and concepts as well as to gather views from the voluntary market representatives on some of the key issues identified. The paper looks at the voluntary market as an investor in and as a certifier of ambition raising activities and identifies different roles it could play in the future by putting particular focus on its potential to contribute to ambition raising.

For the future of the **voluntary market as an investor**, three potential roles were identified:

- The market may maintain its current role of buyer of carbon neutrality credits,
- it may become a supporter of NDC implementation,
- or it may become a driver of ambition by purchasing ambition raising units.

The findings indicate that the current role of the voluntary investor as a buyer of carbon neutrality credits (role 1) will be impacted significantly by the changes introduced with the Paris Agreement as the "uncapped environment" will be limited in the future. The potential of the voluntary market to continue performing this role will largely depend on the requirements for host Parties to account for mitigation outcomes exported. Transparent and easily accessible accounting instruments will be key determinants for continuing the carbon neutrality concept in the future, as well as countries' capacities and willingness to make corresponding adjustments. Despite these challenges, the continuation of the carbon neutrality model can be considered the most promising future role for the voluntary market. If carbon neutrality credits are generated within the scope of ambitious NDCs and accounted for by a robust accounting approach that uses the NDC as its point of reference, this model holds significant potential to assist Parties in increasing their ambition. This also holds for carbon neutrality credits generated outside the scope of NDCs, if it is ensured that activities are truly additional. This is particularly salient as no decision has yet been taken on whether mitigation outcomes generated outside the scope of an NDC will have to be accounted for.

The role of the voluntary investor as a facilitator of NDC implementation (role 2) is increasingly being endorsed by carbon market participants. Private certification standards are exploring the possibilities to develop respective products and suppliers are engaging with final customers to evaluate the marketing potential. While there seems to be some potential for this new role in terms of demand it is also associated with significant challenges: This role does not only require the development of a new product but there are also some environmental risks associated with its use if the underlying NDC lacks ambition. Therefore, this approach should be carefully explored further in order to find solutions in addressing the major concerns.

The role of the voluntary investor as a contributor to ambition raising through investing in ambition raising units (role 3) turned out to be the role with the lowest overall potential. While it could have a direct ambition raising impact, it suffers from the fact that it requires both, the creation of a new commodity and the need to implement corresponding adjustments. Therefore, approaches that allow the voluntary market to contribute to ambition raising through its role as an investor in carbon neutrality offsets or while supporting countries in achieving their NDCs seems the most promising avenue.

With regard to the **future role of private certification standards**, three options were identified:

- Private standards could function as mere providers of methodologies and innovative approaches to be used by the Article 6.4 mechanism,
- they could be used as standards under Article 6.2,
- or they could be applied outside of Article 6.

The analysis found that the integration of private standards into Article 6.2 can be expected to be the most promising option, as it would allow to use the entire architecture of the standards while accounting would accrue to the international accounting framework under Article 6.2.

The findings indicate that the voluntary market has potential to contribute to ambition raising. Whether this potential will actually be unlocked depends on how the concept of ambition raising will be operationalized under the Paris Agreement. Another determinant will be the voluntary market's ability in transitioning from the current carbon neutrality-based model to new approaches that take into account the new framework conditions established with the Paris Agreement. Negotiators under the United Nations Framework Convention on Climate Change (UNFCCC) are currently in the process of translating these framework conditions into provisions in order to make the Paris Agreement and its Article 6 operational. This process cannot be expected to answer all questions that are relevant to the current operations of the voluntary market and its future role. When being confronted with such governance gaps, the voluntary market should take a progressive stance by advocating for robust solutions that enhance mitigation ambition and safeguard the environmental integrity of the Paris regime. With this, the voluntary market can live up to its role as an innovator and developer of solutions that could at a later stage be translated into compliance market activities under the Paris Agreement.

Zusammenfassung

Mit dem Übereinkommen von Paris werden sich die Rolle des freiwilligen Kohlenstoffmarkts und sein Verhältnis zu verpflichtenden Emissionsregulierungssystemen grundlegend wandeln. Dies ist durch zwei zentrale Paradigmenwechsel bedingt: Erstens: Indem das Übereinkommen von Paris alle Vertragsstaaten dazu verpflichtet, national festgelegt Beiträge (NDCs — Nationally Determined Contributions) zu leisten, wird das so genannte uncapped environment, also jene Emissionen, die nicht von Treibhausgasregulierungen betroffen sind, begrenzt. Dies war in der Vergangenheit jedoch eine zentrale Quelle für Minderungsmaßnahmen des freiwilligen Markts. Zweitens: Unter dem neuen Abkommen müssen alle Vertragsstaaten ihre Ambition steigern, wenn sie eine Kooperation unter Artikel 6 des Abkommens eingehen. Die Ära der reinen CO_2-Kompensation (offsetting) geht somit zu Ende.

Vor diesem Hintergrund untersucht dieser Bericht die zukünftige Rolle des freiwilligen Markts und sein Potenzial, zur Ambitionssteigerung beizutragen. Hierfür wurde eine literaturgestützte Analyse ergänzt durch Interviews mit Vertreterinnen und Vertretern des freiwilligen Markts. Die Interviews ermöglichten es, erste Ideen und Konzepte weiterzuentwickeln sowie die Perspektiven der Vertreterinnen und Vertreter des freiwilligen Marktes zu zentralen Fragen zu erfassen. Diese Studie betrachtet den freiwilligen Markt als Investor und Zertifizierer von Klimaschutzmaßnahmen und identifiziert unterschiedliche Rollen, die dieser zukünftig spielen kann, indem der Schwerpunkt auf dessen Potenzial zur Ambitionssteigerung gelegt wird.

Für den **freiwilligen Markt als Investor** wurden drei mögliche Rollen identifiziert:

- Der Markt hält seine jetzige Rolle als Käufer von CO_2-Neutralitätszertifikaten bei,
- er wird zum Unterstützer bei der Umsetzung von NDCs,
- oder er avanciert durch den Ankauf von Ambitionssteigerungszertifikaten zum Treiber der Ambition.

Die Ergebnisse machen deutlich, dass die derzeitige Rolle des freiwilligen Investors als Käufer von CO_2-Neutralitätszertifikate (Rolle 1) erheblich von den Veränderungen betroffen sein wird, die mit der Einführung des Übereinkommens von Paris einhergehen, da das uncapped environment zukünftig stark begrenzt sein wird. Das Potenzial des freiwilligen Markts, diese Rolle in Zukunft weiterhin auszuüben, wird maßgeblich von den Anforderungen an die Gastgeberländer abhängig sein, die exportierten Emissionsminderungen zu verrechnen. Transparente und einfach zugängliche Verrechnungsinstrumente werden zentrale Bestimmungsfaktoren für die Fortsetzung des Konzepts der CO_2-Neutralität sein, neben der Kapazität und Bereitschaft der Länder, die erforderlichen corresponding adjustments auch durchzuführen. Trotz dieser Herausforderungen kann die Fortführung des auf CO_2-Neutralität beruhenden Modells als die aussichtsreichste Rolle des freiwilligen Markts betrachtet werden. Wenn die CO_2-Neutralitätszertifikate innerhalb eines ambitionierter NDCs erzielt und im Rahmen eines robustes Verrechnungsansatzes verrechnet werden, der das NDC als Bezugspunkt nutzt, besitzt dieses Modell großes Potenzial, Länder bei der Steigerung ihrer Ambition zu unterstützen. Dies gilt auch für CO_2-Neutralitätszertifikate die außerhalb des NDC erzielt wurden, solange sichergestellt ist, dass die ihnen zugrundeliegenden Maßnahmen auch tatsächlich zusätzlich sind. Letzteres ist von herausragender Bedeutung, da weiterhin unklar ist, ob Minderungsergebnisse, die außerhalb des NDC erzielt wurden, verrechnet werden müssen.

Die Rolle des freiwilligen Investors als Unterstützer der NDC-Umsetzung (Rolle 2) wird von den Akteuren des Kohlenstoffmarkts zunehmend begrüßt. Private Zertifizierungsstandards loten die Möglichkeiten aus, entsprechende Produkte zu entwickeln, und Anbieter gehen auf ihre Endkunden zu, um die Absatzmöglichkeiten zu evaluieren. Während für diese neue Rolle ein gewisses Nachfragepotenzial besteht, so ist diese auch mit bedeutenden Herausforderungen verbunden: Die Rolle macht nicht nur die Entwicklung eines neuen Produktes erforderlich, sondern dessen Nutzung geht auch mit einigen Umweltrisiken einher, wenn das zugrundeliegende NDC nicht ausreichend ambitioniert ist. Daher sollte dieser Ansatz sorgsam weiter untersucht werden, um Lösungen zu finden, mit denen die zentralen Bedenken ausgeräumt werden können.

Die Rolle des freiwilligen Investors, der durch Investitionen in Ambitionssteigerungszertifikate zu einer Steigerung der Ambition beiträgt (Rolle 3), erwies sich als die Rolle mit dem geringsten Potenzial. Während diese eine unmittelbare Ambitionssteigerung bewirken könnte, leidet sie darunter, dass sie beides benötigt, die Einführung eines neuen Produkts und die Notwendigkeit, corresponding adjustments durchzuführen. Daher scheinen jene Ansätze, bei denen der freiwillige Markt als Investor in CO_2-Neutralitätszertifikate auftritt oder bei dem dieser Länder bei der NDC-Umsetzung unterstützt, über das größte Potenzial zur Ambitionssteigerung zu verfügen.

Mit Blick auf die **zukünftige Rolle privater Zertifizierungsstandards** wurden drei Optionen identifiziert:

- Private Standards könnten Methoden und innovative Ansätze für den Artikel 6.4-Mechanismus bereitstellen,
- sie könnten im Rahmen von Artikel 6.2 genutzt werden,
- oder außerhalb von Artikel 6 Anwendung finden.

Die Analyse ergab, dass die Einbindung privater Standards unter Artikel 6.2 die aussichtsreichste Option darstellt, da hier die gesamte Architektur der privaten Standards genutzt werden kann, während die Verrechnung auf Grundlage des internationalen Verrechnungsrahmens unter Artikel 6.2 erfolgt.

Die Ergebnisse weisen auf ein bedeutendes Potenzial des freiwilligen Markts hin, zur Ambitionssteigerung beizutragen. Ob dieses Potenzial tatsächlich freigesetzt wird, hängt zum einen von der Operationalisierung des Konzepts der Ambitionssteigerung unter dem Übereinkommen von Paris ab. Ein weiterer maßgeblicher Faktor wird die Fähigkeit des freiwilligen Marktes sein, den Übergang vom jetzigen Modell der CO_2-Neutralität hin zu neuen Ansätzen, die die veränderten Rahmenbedingungen des Übereinkommens von Paris berücksichtigen. Die Verhandlungsführer unter der Klimarahmenkonvention sind derzeit damit befasst, diese Rahmenbedingung in konkrete Vorgaben zu übersetzen um Artikel 6 zur Operationalisierung zu bringen. Es kann nicht erwartet werden, dass dieser Prozess alle offenen Fragen beantwortet, die für die jetzigen Tätigkeiten des freiwilligen Markts und seiner zukünftigen Rolle von Bedeutung sind. Wenn der freiwillige Markt mit solchen Governance-Lücken konfrontiert ist, sollte er eine progressive Haltung einnehmen und sich für robuste Lösungen einsetzen, die die Klimaschutzambition steigern und die Umweltintegrität des Übereinkommens von Paris sicherstellen. Somit kann der freiwillige Markt seiner Rolle als Innovator und Entwickler innovativer Lösungen gerecht werden, die zu einem späteren Punkt in den verpflichtenden Kohlenstoffmarkt des Übereinkommens von Paris überführt werden könnten.

1 Introduction

Voluntary carbon markets have in the past often played a role in complementing mandatory regulation of GHG emissions. They have allowed companies and individuals to reduce their carbon footprint by offsetting a part of their emissions that were not subject to carbon regulation. The rising demand from voluntary buyers has led to a proliferation of privately governed certification standards, which in turn served as a testing ground for the development of innovative approaches, some of which were adopted by the compliance market later on.

With the Paris Agreement, the role of the voluntary carbon market and its relation with mandatory carbon regulation schemes is set to change fundamentally. This is due to two major paradigm shifts: First, by requiring all Parties to adopt nationally determined contributions (NDCs), the Paris Agreement will significantly reduce the so called 'uncapped environment', i.e. the emissions not covered by carbon regulation, which have so far been the main source of supply for voluntary carbon market activities. Second, the new agreement requires all Parties to raise their ambition when engaging in cooperation under Article 6, thereby terminating the era of 'pure offsetting'.

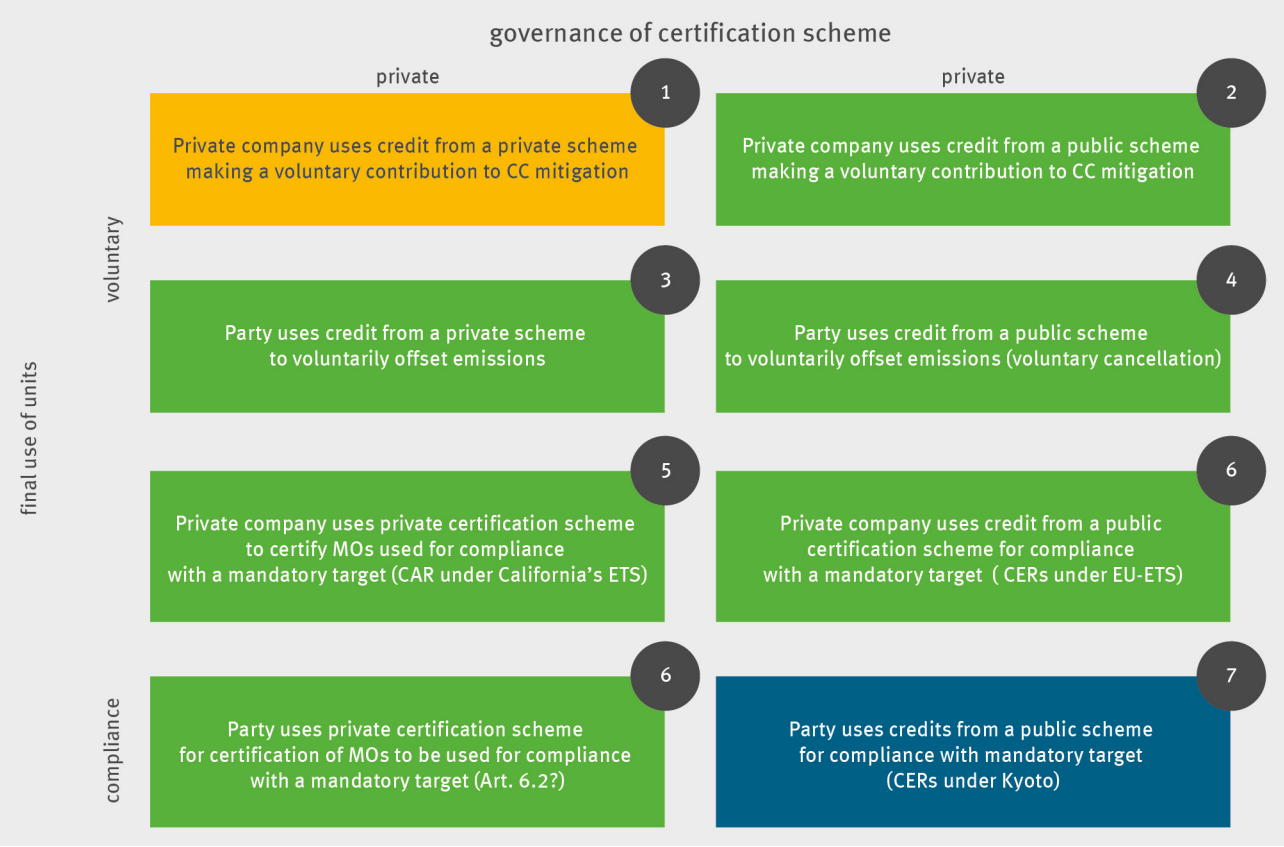
Against the backdrop of these major changes in global climate governance and in light of the urgent need to raise the global mitigation ambition, this paper explores the potential for the voluntary carbon market to contribute to ambition raising. For this purpose, desktop research was complemented by interviews with voluntary carbon market representatives. The ideas and concepts on the future of the voluntary market and its potential role in ambition raising were discussed with interviewees. The interviews allowed to further elaborate the initial ideas and concepts as well as to gather views from the voluntary market representatives on some of the key issues identified. The present report compiles these findings, presenting different concepts and ideas that are to inform the debate about the future of the voluntary carbon market and its contribution to ambition raising.

For this purpose, the different segments of the voluntary carbon market will first be identified and delimited from compliance market activities (section 2). In a second step, the two paradigm shifts introduced with the Paris Agreement and their potential implications for carbon market activities will be discussed in greater detail (section 3). Building on these observations, section 4 explores how the future of the voluntary carbon markets could look like post-2020 and how different elements of this market may contribute to ambition raising. The paper looks at the voluntary market as an investor and as a certifier of ambition raising activities and identifies different roles it could play in the future. The roles are explored by taking into account the modified circumstances introduced with the Paris Agreement and their potential to contribute to ambition raising.

2 Segments of the voluntary market

In principle, the global carbon market can be divided into two segments: On the one hand, there is the compliance market, the market whose demand is fed by the binding emission reduction targets of countries. At the moment, demand comes primarily from industrialised Parties that have adopted binding mitigation targets under the Kyoto Protocol. On the other hand, there is the voluntary market, which has evolved dynamically over the recent years. This newer market enables private organisations such as businesses, non-governmental organisations or churches as well as public organisations and individuals to reduce their carbon footprint voluntarily. Firms inter alia use this market to claim "carbon neutrality" by buying and cancelling carbon credits to "neutralise" the emissions from their products and services.

However, the lines between the compliance market and the voluntary carbon market become increasingly blurred, an observation also made by one of the interviewees (Interview 5). The current efforts of private certification standards towards being recognized under future compliance schemes, such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), are also a manifestation of this development. The term "voluntary market" is not clear cut and can relate to activities with different characteristics. In its most common usage it refers to the situation described above, in which individuals or organisations buy carbon credits issued by private sector certification schemes to voluntarily reduce their carbon footprint. A clear delimitation of such activities and compliance market activities is, however, increasingly difficult, as private certification standards are also being used in compliance markets and voluntary buyers do also use internationally governed market standards for voluntary offsetting.



Source: Own illustration

Figure 1: Segments of the global carbon market

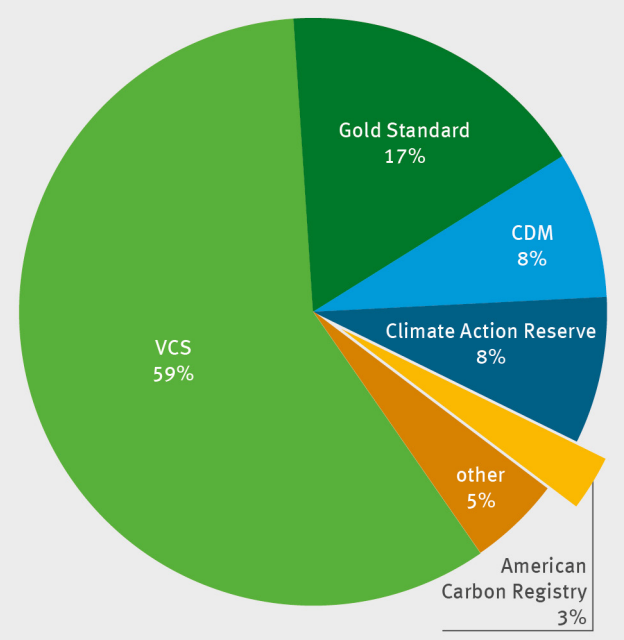
Figure 1 shows different types of transfers taking place on the global carbon market. The prototype voluntary carbon market activity described in the preceding paragraph is case 1 (yellow). Case 8 (blue) is exactly opposite to this case and describes the compliance market transfer known from the Kyoto Protocol, where a national government uses credits from a public certification scheme (e.g. the Clean Development Mechanism (CDM)) to comply with a mandatory mitigation target. In between these two prototypes there are different subtypes which involve different degrees of private and public participation and different usages of the mitigation outcome (green). Table 1 provides an overview of the key characteristics of these different cases.

Table 1: Key characteristics of different cases of carbon market activities

	Is the user of the mitigation out-come private or public?	Is the governance of the certification scheme private or public?	Will the unit be used for compliance or on a voluntary basis?
Case 1	Private	Private	Voluntary
Case 2	Private	Public	Voluntary
Case 3	Public	Private	Voluntary
Case 4	Public	Public	Voluntary
Case 5	Private	Private	Mandatory
Case 6	Private	Public	Mandatory
Case 7	Public	Private	Mandatory
Case 8	Public	Public	Mandatory

Source: Own compilation

UN-governed instruments, such as the CDM, have in the past only had limited relevance on the voluntary market. Voluntary credit buyers have until now largely relied on the growing number of certification mechanisms developed from private initiatives, such as the Verified Carbon Standard (VCS) and the Gold Standard. These standards each have their own requirements regarding the design and implementation of emission reduction activities. Some focus purely on the climate impact of the certified projects, while others take a broader approach which includes their social and environmental impacts. Combinations of different standards are also possible and are frequently used. Certificates generated by projects with high social and environmental additionality are particularly attractive to voluntary market buyers. Figure 2 illustrates the share of the different certification standards used in the voluntary transactions that took place in 2016. The most common standard used is VERRA's Verified Carbon Standard, accounting for almost 60% of all transactions.[1] Other common standards are the Gold Standard (17%), the CDM (8%), Climate Action Reserve (8%) and the American Carbon Registry (3%). The role of public standards is rather limited, as the small share of the use of the CDM indicates.



Source: Own illustration based on Hamrick / Gallant (2017).

Figure 2: Market share of certification standards in the voluntary carbon market in 2016

1 A significant share of these emission reductions (around 23%) where also certified by the Climate, Community and Biodiversity (CCB) Standards. The CCB Standards focus on social and environmental benefits of land-based project, but do not issue emission reduction credits.

3 New challenges for carbon market activities under the Paris regime

All the segments of the global carbon market identified above are directly or indirectly affected by the paradigm shifts of global climate governance introduced with the Paris Agreement. We will in the following outline two of these major changes to then describe how these can be expected to impact carbon market activities under the Paris Agreement.

3.1 Paris' first paradigm shift: from partial to global participation

3.1.1 Overview

Under the Paris Agreement, all Parties have to adopt Nationally Determined Contributions (NDCs). Hence, Parties will put some sort of (absolute, dynamic or relative) cap on the emissions of their economy or at least on some sectors thereof. This situation is very different from the Kyoto Protocol, where only Parties listed in Annex B of the protocol — mainly industrialised countries — have adopted mitigation targets, leaving a large part of the world unregulated, the so called 'uncapped environment'. Mitigation activities implemented in this uncapped environment could be used for (voluntary as well as mandatory) offsetting emissions anywhere else without host countries having to account for these exported mitigation outcomes.

With the Paris Agreement requiring all Parties to adopt NDCs, the uncapped environment will be much smaller in size, and is set to become even smaller in the future as all Parties are supposed to move towards economy-wide NDCs, as envisaged by Art. 4.4 of the PA. Consequently, the majority of mitigation outcomes (MOs) will be generated by activities implemented within the scope of an NDC.

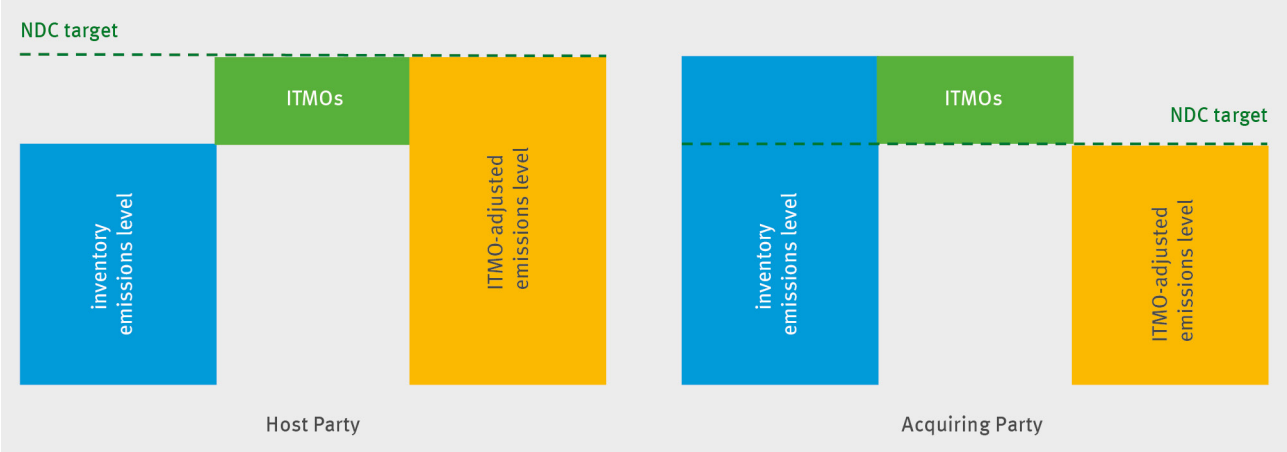
3.1.2 Increased risk of double claiming

Without further action, these mitigation activities would contribute towards the achievement of the NDC of the host country. If the acquiring Party uses these MOs for NDC attainment, emission reductions would be counted twice (on double counting see inter alia: Schneider et al. 2014; Hood et al. 2014; Kreibich / Obergassel 2016). This situation is commonly referred to as double claiming as both Parties claim one mitigation outcome for achieving their individual climate change mitigation targets. As the Paris Agreement has a global reach and the coverage of NDCs will presumably increase, the risk of double claiming is also set to rise.

3.1.3 Corresponding adjustments as a means to address double claiming

To address the risk of double claiming, Article 6.2 of the agreement requires Parties to avoid double counting of emission reductions through robust accounting. Decision 1/CP.21 envisages that transfers of mitigation outcomes under the Paris Agreement's Article 6.2 are to entail a 'corresponding adjustment' by Parties for both anthropogenic emissions by sources and removals by sinks covered by their NDCs under the Agreement. The details of how to implement these adjustments still have to be agreed and must be translated into concrete provisions that will form part of the Paris rule book. In principle, however, two mathematically equivalent approaches can be distinguished: Adjustments of emissions levels (emissions-based accounting) and adjustment of target levels (target-based accounting) (OECD / IEA 2017).

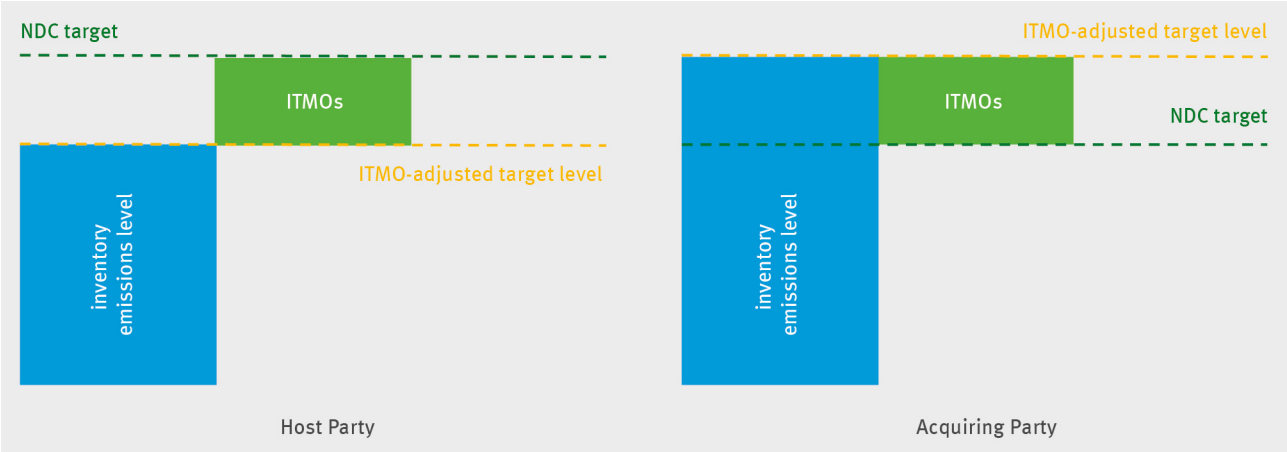
Emissionsbased accounting (Figure 3) starts from the Party's inventory emissions (blue) which are then adjusted by adding or subtracting Internationally Transferred Mitigation Outcomes (ITMOs) (green) to reach an ITMO-adjusted emissions level (yellow). This ITMO-adjusted emissions level can then be compared to the NDC target level in order to account for the Party's progress in achieving its NDC.



Source: Own illustration based on OECD / IEA (2017)

Figure 3: Emissions-based accounting

Target-based accounting (Figure 4) starts from the NDC target level and adjusts it according to the ITMOs transferred. The adjusted target-level can then be compared to the actual inventory emissions to account for the progress of the Party. This approach is applied under the Kyoto Protocol using emission budgets. Countries' individual targets are translated into assigned amounts which can then be modified by adding acquisitions made and subtracting units transferred. Compliance with the targets is then assessed by comparing the budgets with the countries' inventories (see: Kreibich / Obergassel 2016).



Source: Own illustration based on OECD / IEA (2017)

Figure 4: Target-based accounting

It must be noted that it is still unclear whether accounting for transfers will be required and even be possible if ITMOs are generated outside the scope of an NDC. The concept of corresponding adjustments is commonly understood to apply to transferred mitigation outcomes that were generated in sectors covered by the NDC. However, in a submission to the UNFCCC, Japan suggests that the concept should also be applied to MOs generated outside the scope of an NDC by adding "the amount of credits/units transferred to its own emissions or deduct it from its own removals" (Japan 2017). It remains to be seen how this approach could work in practice. In principle, the amount of ITMOs generated outside of the NDC could be added or subtracted to the exporting country's target level or emissions level. Applying these deductions or additions to the inventory of Parties, in contrast, can be associated to additional challenges, as the granularity of inventories will in most cases not be sufficiently high to reflect impacts of individual mitigation outcome. Prag et al. (2013) describe this phenomenon as "partial lack of visibility of reductions in emissions inventories" and underscore that reporting of unit transfers should be kept separate from inventory reporting.

There will also be cases in which corresponding adjustments will not be required, for instance if the acquiring country uses Article 6 in the context of (results-based) climate finance in order to assist NDC implementation. These transfers should, however, be subject to reporting for the sake of transparency.

It is still unclear how corresponding adjustments will be embedded in the overall structure of the Paris Agreement and the different approaches it offers to Parties for cooperation. With the adoption of the modalities, procedures and guidelines for the transparency framework at COP 24 Katowice, an accounting approach was introduced which requires countries to adjust their emissions balance (emissions-based accounting) (UNFCCC 2018, para 77d). It remains to be seen how this approach will be operationalized once Parties agree on a guidance for Article 6.2.

3.2 Paris' second paradigm shift: making ambition raising a key component of market-based cooperation

A second paradigm shift relates to the role of carbon markets as a means to achieve national mitigation targets. While offsetting of emissions will still be possible in the future as Article 6 of the Paris Agreement explicitly allows Parties to cooperate in implementing their NDCs, such a cooperation is "to allow for higher ambition of their mitigation and adaptation actions" (Art. 6.1). Hence, 'pure offsetting' with no net impact on the global environment (zerosum game) will no longer be possible under the Paris Agreement. Building on a conceptual foundation developed by Kreibich (2018) ambition raising will in the following be understood as follows:

- Ambition raising is related to Parties' targets: This notion is inter alia included in Art. 4.3, which requires Parties' NDCs to reflect the highest possible ambition.
- Ambition raising is related to Parties' actions: Several paragraphs of the Paris Agreement indicate that ambition raising also relates to Parties' actions. Art. 6.1 for instance makes reference to an increase of ambition in Parties' mitigation and adaptation actions.

With this conceptual foundation, ambition raising can be discerned from the concept of overall mitigation: Despite both concepts being associated with a positive contribution to the global climate, they must be kept separate. In the context of cooperative approaches, ambition raising is a requirement for all *Parties using Art. 6*, while overall mitigation is exclusively devoted to *activities implemented under the Article 6.4. mechanism*: Article 6.4 lists four objectives the new mechanism "shall aim" at. "To deliver an overall mitigation in global emissions" (Art 6.4 (d)) is one of them. Following this distinction, ambition raising of Parties cannot at the same time contribute to overall mitigation, as otherwise establishing this additional objective for the Article 6.4 mechanism would be pointless.

Following this reading of the Paris Agreement, the concept of ambition raising encompasses both, strengthening of Parties' **mitigation targets** and an increase of their mitigation actions. In principle, a cooperation under Article 6 can contribute to both, as will be shown in the following.

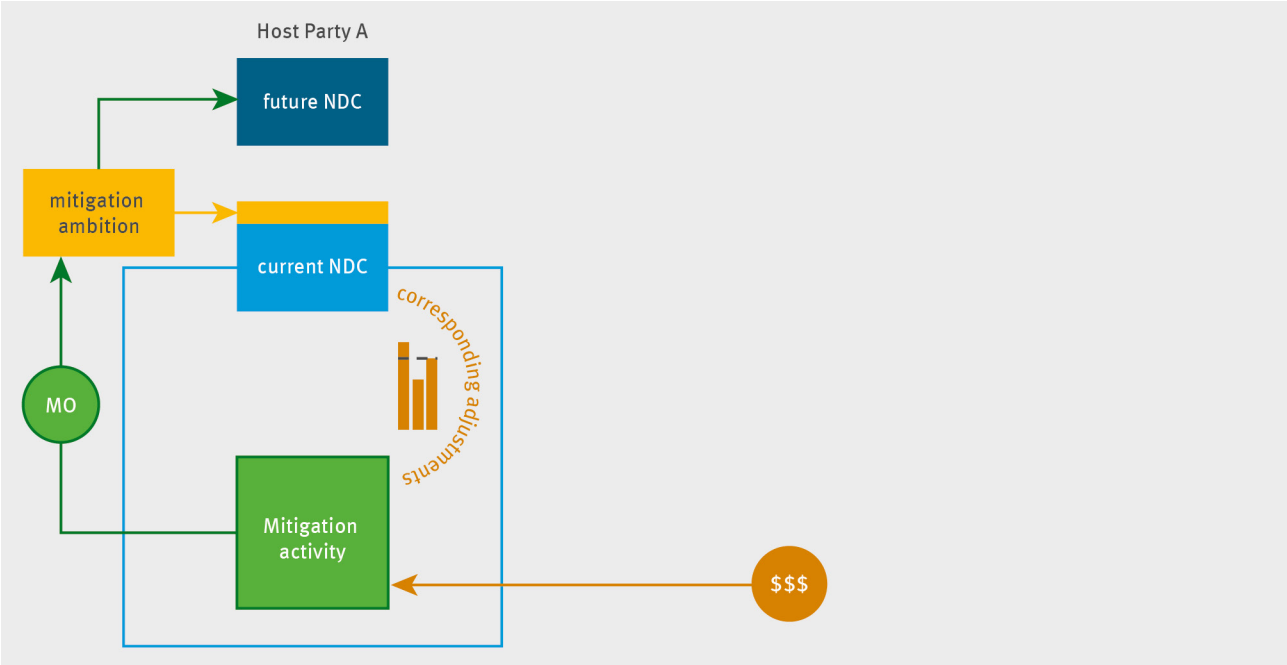
3.3 Impacts of the paradigm shifts on carbon market activities

We will in the following explore how these two paradigm shifts impact carbon market activities by focusing on the potential contribution of Article 6 activities to ambition raising. For this purpose we will start from the assumption that the Article 6 cooperation is undertaken with the sole purpose of contributing to ambition raising, while other objectives will only be taken into account at a later stage. For the sake of simplicity we will further assume that the cooperation activity will only generate one single mitigation outcome that is indivisible.

From a static perspective, the participation in an Article 6 cooperation may allow the host Party to target emissions that could not be tapped unilaterally. Provided that the mitigation outcome is not transferred and used by the acquiring Party but cancelled, it could be considered a contribution to ambition raising of the host Party. It should further be noted that the host Party would have to implement an adjustment if this MO is generated within the scope of its NDC, as it would otherwise automatically contribute to the achievement of its NDC. This adjustment would be "unilateral", as there is no use of ITMOs by an acquiring Party to which the adjustment could correspond. If not used by the host Party, the cooperation could also be used to raise the ambition of the acquiring Party. The acquiring Party could raise its ambition by voluntarily cancelling the mitigation outcome acquired, instead of counting it against its NDC. With this measure, the acquiring Party could overachieve its NDC, which is then achieved by other means (domestic measures and/or use of other ITMOs).

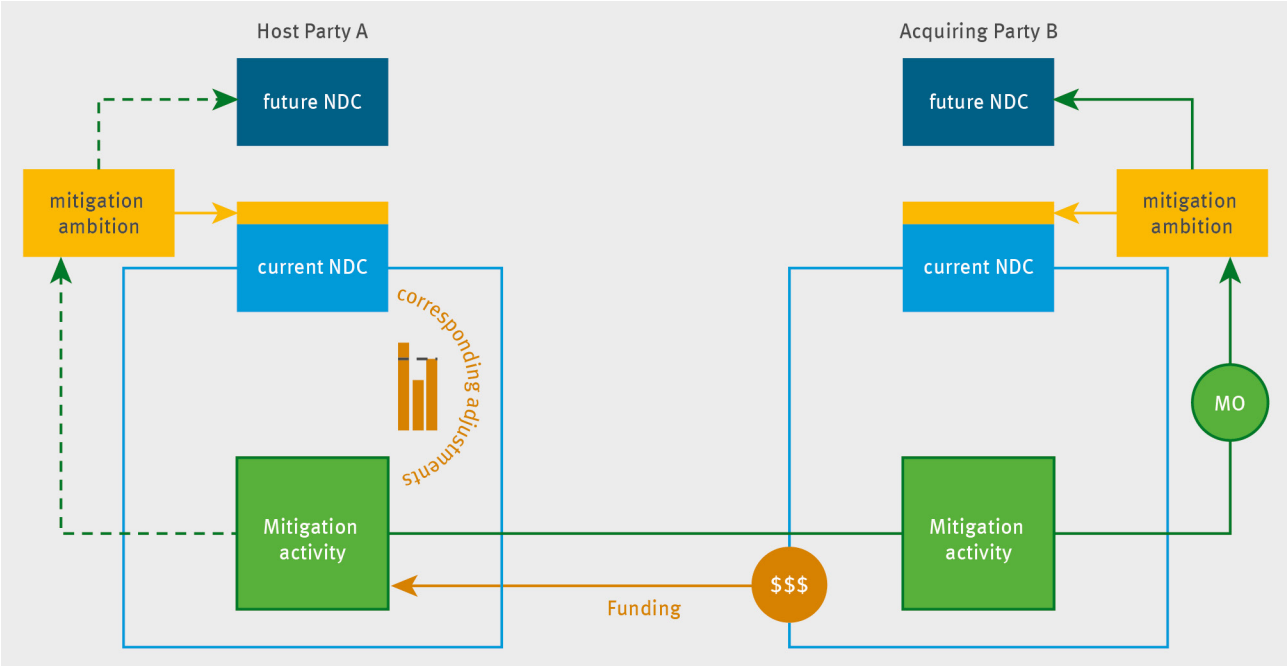
From a **dynamic perspective**, the Article 6 cooperation may further put the host Party in a better position to strengthen its mitigation targets in the future. Once the crediting period of the mitigation activity is terminated, the host Party could decide to unilaterally target the emissions that were previously addressed by the Article 6 cooperation and integrate these into its NDC. Article 6 host Parties may therefore be able to adopt a stronger future NDC. Article 6 may also allow the acquiring Party to dynamically enhance its mitigation ambition: An Article 6 cooperation will usually take place because emissions can be reduced at lower cost in the host Party than in the acquiring Party. These cost savings could in principle facilitate the adoption of more ambitious mitigation targets by the acquiring Party in the future, by lowering political resistance and unlocking additional resources that can be devoted to climate action. It should be noted, however, that lower costs do not automatically translate into an increase of mitigation ambition.

Ideally, a market-based cooperation under Article 6 will lead to an immediate climate mitigation impact as well as strengthened mid- or long-term mitigation targets. Figure 5 and Figure 6 illustrate two such pure cases that are exclusively aimed at raising the mitigation ambition. Figure 5 shows how an immediate as well as a long-term ambition raising impact could be achieved in the host Party participating in an Article 6 cooperation. The illustration focuses on the host Party since there is no transfer of ITMOs and the investor will not receive anything in return for its investment. This clearly makes this form of cooperation a rather theoretical example. Figure 6, in contrast, shows a cooperation in which the mitigation outcome generated is transferred to the acquiring Party, who uses this MO to raise its ambition, while the host country raises its ambition by increasing its future NDC. The cost savings associated to the import of the MOs could allow the acquiring Party to dynamically increase its ambition.



Source: Own illustration. Explanation: Host Party A implements a mitigation activity (green box) and uses the mitigation outcome (green circle) for ambition raising by overachieving its current NDC (blue box). Since the mitigation activity is within the scope of the NDC, the host Party must implement a unilateral adjustments and cancel the MO to avoid that the mitigation outcome contributes to NDC attainment. Funding is provided from outside, however, the mitigation out-come remains within the host Party. The mitigation activity further contributes to the strengthening of the future NDC (dark blue box).

Figure 5: Raising mitigation ambition of the host Party



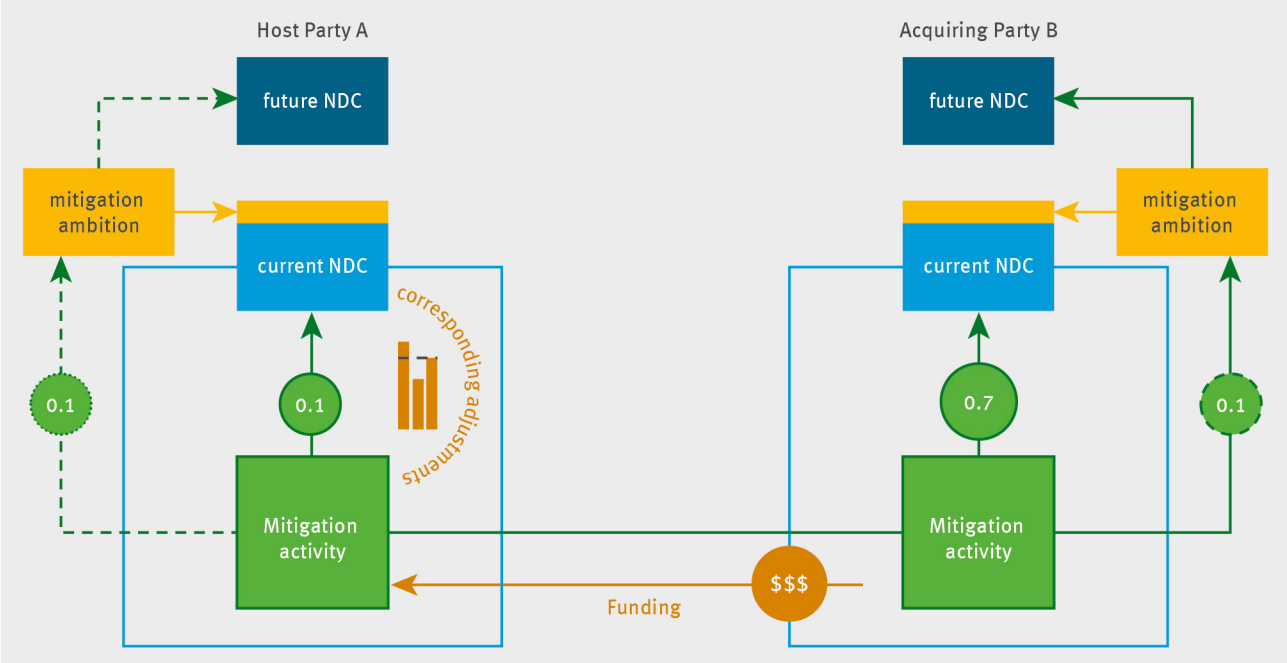
Source: Own illustration. Explanation: Host Party A implements a mitigation activity (green box) and exports the mitigation outcome (green circle) generated in exchange of funding to the acquiring Party B, who uses this MO to overachieve its current NDC by voluntarily cancelling the MO acquired, instead of counting it against its NDC. Hence, no corresponding adjustment will be implemented by the acquiring Party but the MO will be cancelled. Since the mitigation activity is within the scope of the host Party's NDC, this Party must implement corresponding adjustments to avoid that the mitigation outcomes contribute to NDC attainment. The mitigation activity could assist both Parties to raise their future ambition.

Figure 6: Achieving an immediate ambition raising impact in the acquiring Party and a long-term impact in both Parties

Building on these two "pure cases", in which ambition raising is the sole purpose of the cooperation, we will now look at "mixed cases", taking account of the fact that a contribution to ambition raising may not be the only objective of a market-based cooperation. In most cases, the cooperation may also involve a (limited) offsetting element or a climate finance component. A single cooperation activity may therefore contribute to up to three different climate change related objectives[2]:

- Contribution to climate change mitigation ambition by strengthening targets and actions;
- Contribution to achievement of Parties' NDCs;
- Contribution to climate finance.

In order to illustrate how a single cooperation could serve the three objectives, we will in the following explore cases in which the mitigation activity generates a mitigation outcome that is divisible and could be shared among the different participants according to their individual objectives and priorities. Figure 7 below illustrates how such a cooperation could work in principle. As can be seen, the mitigation outcome is divided into four parts (green circles). Table 2 outlines how the mitigation outcomes are used and shared among the participants. It further indicates what consequences this use has in terms of the corresponding adjustments to be implemented and whether accounting for climate finance is possible.



Source: Own illustration.

Figure 7: Example of an ambition raising cooperation with mitigation outcomes generated within an NDC

2 Please note that cooperation under Article 6 may further contribute to other sustainable development goals, by fostering biodiversity conservation or improving access to renewable energy. These contributions, however, will not be looked at in more detail.

Table 2: Sharing of mitigation outcomes in a cooperation scenario with multiple objectives

	Use	Amount of MOs transferred	Corresponding adjustments by host Party required?	Climate finance accounting possible?
	The mitigation activity generates mitigation outcomes of 1 $MtCO_2e$.		–	–
	**NDC attainment:** The acquiring Party uses the largest share of mitigation outcomes (0.7 $MtCO_2e$) for the achievement of its NDC. The acquiring Party has provided funding for these MOs.	0.7 $MtCO_2e$	Yes	No
	**NDC attainment:** The host Party uses a small part of the MOs (0.1 $MtCO_2e$) for the achievement of its NDC. The acquiring Party has provided funding for these MOs.	–	No	Yes
	**Ambition raising:** The acquiring Party uses a small part of the MOs (0.1 $MtCO_2e$) for overachieving its current NDC. The acquiring Party has provided funding for these MOs.	0.1 $MtCO_2e$	Yes	No
	**Ambition raising:** The host Party uses a small part of the MOs (0.1 $MtCO_2e$) for overachieving its current NDC. The acquiring Party has not provided funding for these MOs.	–	Yes	In the authors' view, the acquiring Party cannot claim to have financed these MOs as they were achieved by the host Party and are accounted for through adjustments and cancellation.
Total		The total amount of MOs transferred is 0.8 $MtCO_2e$	The host Party would have to implement adjustments corresponding to 0.9 $MtCO_2e$: 0.8 to account for the MOs transferred plus 0.1 $MtCO_2e$ to overachieve its current target.	The acquiring Party could claim to have provided climate finance corresponding to 0.1 $MtCO_2e$, the MOs used for attainment of the host Party's NDC.

As the mitigation activity is implemented within the scope of the NDC, the host Party will have to implement corresponding adjustments for all mitigation outcomes that will not be used for NDC attainment, this relates to mitigation outcomes exported and those used for ambition raising. In our example, the host Party A will have to make corresponding adjustments in the amount of 0.9 $MtCO_2e$. An adjustment of 0.8 $MtCO_2e$ is needed to account for the ITMOs exported to Party B. An additional adjustment of 0.1 $MtCO_2e$ would have to be made by the host Party to show that its participation in the Article 6 cooperation has contributed to ambition raising.

Ambition raising could also be possible if the **mitigation activity is located outside the scope of the host Party's NDC**. The activity will by design not contribute to NDC attainment. It remains to be seen whether Parties will adopt an accounting approach that also requires corresponding adjustments to be made for mitigation outcomes generated outside of the scope of an NDC, as envisaged in Japan's submission to the UNFCCC (Japan 2017). If, in contrast, these MOs can be used without requiring corresponding adjustments to be made, the host country can directly use them for ambition raising. The host country would, however, have to report on these transfers to the UNFCCC when describing how the increase of ambition was achieved.

The mitigation activity would have an **immediate ambition raising impact**, as the mitigation activity would lead to a reduction of emissions in a sector not covered by the NDC and potentially not yet targeted by a policy. In order to achieve this impact, the project would have to be truly additional and the mitigation outcomes would have to be robustly calculated using an ambitious baseline.

A **long-term mitigation impact** will be achieved if the host Party commits to include the targeted emissions in its NDC after the end of the mitigation activity's crediting period. When including the sector into the future NDC, the mitigation impact of the activity should be taken into consideration when establishing the baseline. This would avoid double counting of ambition raising efforts.

There are some risks associated to this model deriving from the fact that the mitigation activity is not covered by an NDC. First, it is still unclear whether mitigation outcomes generated outside the scope of an NDC could be used for NDC attainment by the acquiring Party. Closely associated to this is the still unanswered question of whether these emissions will be included in the accounting framework of Article 6.2. If Parties decide not to include these MOs in the accounting framework, there will be no requirement to make corresponding adjustments. This could incentivize the host Party to use inflated baselines, to overestimate the mitigation outcomes of the activity and to allow non-additional projects to be credited. In addition, crediting activities implemented outside the scope of the NDC may reduce the incentive to expand the scope of the NDC and therefore conflict with the requirement of Article 4.4 to move towards economy-wide NDCs.

4 The future of the voluntary carbon market and entry points for contributing to ambition raising

The preceding chapter has outlined the fundamental changes introduced with the Paris Agreement and discussed how these could impact carbon market activities in generic terms. This section focuses on what these changes could mean for the voluntary carbon market.

The examples above illustrate how ambition raising could be achieved in the context of bilateral cooperation without specifying potential private sector involvement. The private sector, however, can be expected to play a crucial role in such a cooperation. From the perspective of the host Party, the private sector could be involved in the implementation of the mitigation activity, its certification or verification. From the acquiring Party's perspective, the private sector could engage as a buyer or financier of the mitigation activity. There might therefore be significant room for the voluntary carbon market to contribute to this process. Figure 8 below illustrates the entry points for the voluntary carbon market on which we will focus in the following: the private sector acting as a buyer or investor of mitigation activities and the use of private certification standards. The involvement of the voluntary market actors as project proponent, in contrast, will not be analysed in greater detail, as this function will presumably be similar to that of compliance market actors.

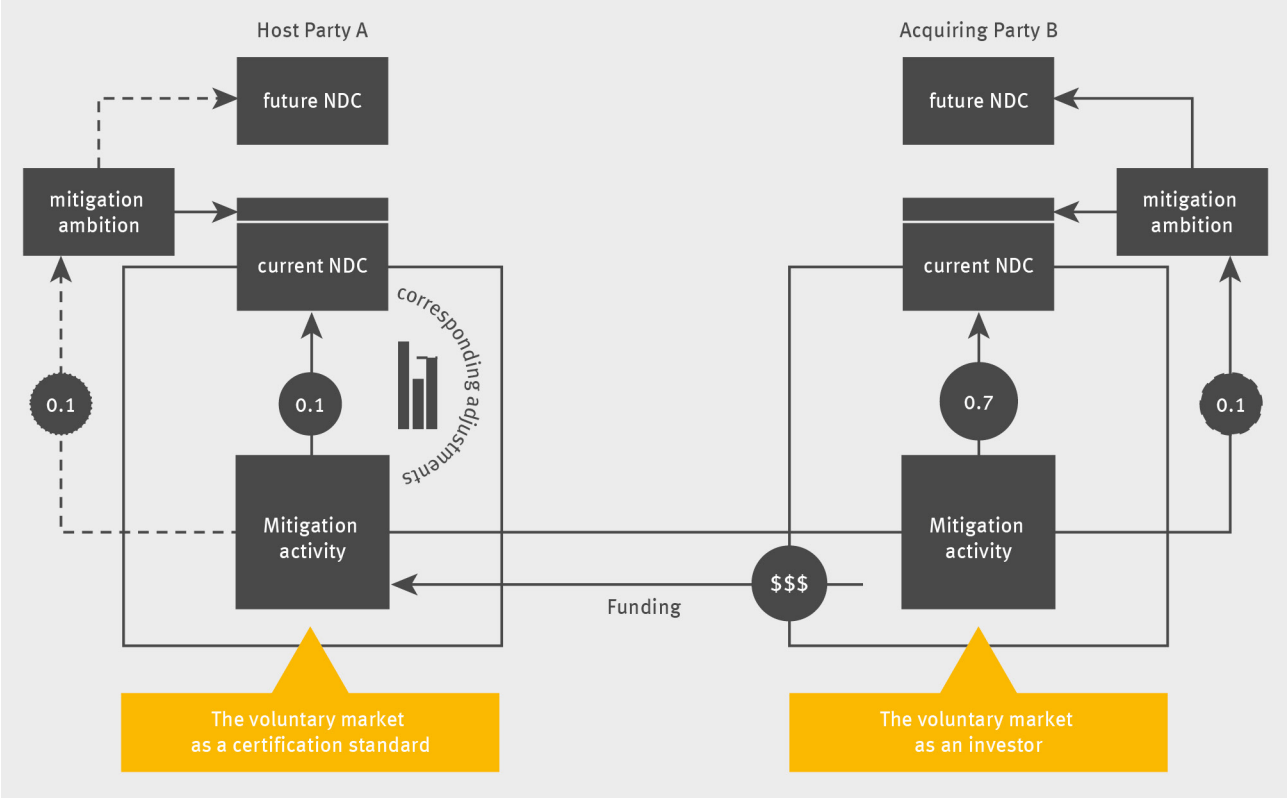


Figure 8: Entry points of the voluntary market in the context of ambition raising

4.1 The future of the voluntary market as an investor

For the voluntary market as an investor, we have identified three roles it could play in the future: The market may maintain its current role of buyer of carbon neutrality credits, it may become a supporter of NDC implementation, or it may become a driver of ambition. The following section discusses these future roles in the context of the new framework conditions established by the Paris Agreement.

4.1.1 The voluntary investor as a buyer of carbon neutrality credits

The changes introduced with the Paris Agreement can be expected to significantly impact the role of the voluntary market as a buyer of carbon neutrality credits. This role is the continuation of the current mode, where mitigation outcomes are used by investors to offset their emissions. The investor can use these MOs to reduce its carbon footprint and claim carbon neutrality. With the Paris Agreement, this role is at risk: As outlined in section 3, the new climate regime will significantly reduce the "uncapped environment" and host Parties will presumably be required to account for emission reductions transferred to the voluntary market.

The potential of the voluntary market to continue performing this role in the future will depend on the requirements for host Parties to account for MOs exported by implementing corresponding adjustments. Looking at the Paris Agreement, one could assume that Parties will be required to account for all MOs exported. For a long time, there was no indication whether accounting will be required if MOs are not used for NDC attainment. However, Parties in Katowice agreed that "use of mitigation out-comes for international mitigation purposes" (UNFCCC 2018, para 77 d)) will have to adhere to the same rules as the use of MOs against NDC attainment. While this is primarily understood as referring to the use of mitigation outcomes under CORSIA and other future mandatory mitigation schemes, it could also be seen as an indication that adjustments can be made for carbon neutrality or for other purposes. However, there is no certainty regarding accounting for the use of mitigation outcomes for such purposes. Private certification standards, which are currently dominating the voluntary market, have in the past partially addressed similar governance gaps by developing their own accounting provisions. They required host Parties to account for offsetting credits if the host countries had adopted a commitment under the Kyoto Protocol (see for instance VCS 2012), while there was no accounting against pledges adopted by Parties under the Cancún Agreements.

According to one interviewee, the future under the Paris Agreement will not differ significantly from the current situation under the Cancún Agreements: Due to their non-binding nature, NDCs will be largely similar to the pledges adopted under the Cancún Agreements. Private certification standards could hence decide not to use NDCs as a reference point for accounting but to instead rely on other parameters, such as domestic policies (Interview 3). Interviewees have indicated that alternatives to an accounting framework based on NDCs are currently being explored (Interview 1). These efforts must be seen against the backdrop of an NDC-based accounting approach putting the future of the voluntary market at risk.

What follows from this is a wide spectrum of possible accounting approaches:

- On the one side of the spectrum there is a rigorous accounting approach requiring the implementation of corresponding adjustments for each mitigation outcome that is exported from an NDC (approach A).
- Another approach would be to require a corresponding adjustment to be made for all MOs that are exported from sectors for which a sectoral, quantified mitigation target was adopted and which is legally enshrined (approach B).
- A third approach would require a corresponding adjustment to me made only if the mitigation outcome is transferred from a sector covered by a policy instrument that puts a cap on emissions, such as an emissions trading system (ETS) (approach C).

In principle, the potential for the voluntary market to continue its current offsetting role will be higher if a less rigorous approach is chosen (approach C) as there would only be limited need to implement corresponding adjustments. With one of the more rigorous approaches the need to implement corresponding adjustments rises. This process can be expected to be associated with significant challenges. Views among voluntary carbon market representatives are diverse: While some interviewees advocate for the rigorous accounting approach A that is linked to Parties' NDCs (e.g. Interview 5, Interview 6), others speak in favour of making corresponding adjustments contingent on the targeted emissions being covered by a specific policy or quantitative goal, as envisaged by approaches B and C (Interview 1, Interview 3).

From a **political perspective**, countries' willingness to implement corresponding adjustments could be one major concern, in particular during the transition period which can be expected to last five to ten years and in which the consequences of the new framework conditions under the Paris Agreement are highly uncertain (Interview 1). Being confronted with these uncertainties, Parties could decide to adopt a very conservative approach, not exporting any MOs. This could put the future of the voluntary market at existential risk (Interview 1). With regard to concerns regarding the limited willingness of Parties to implement corresponding adjustments for exporting MOs, a voluntary market representative referred to the experiences made under the EU, where no AAUs have been cancelled to account for voluntary market units (Interview 6).

Another concern are the **administrative and institutional capacities needed to implement corresponding adjustments**. As highlighted by interviewees, obtaining a Letter of Approval from CDM host Parties has already been quite cumbersome in the past, despite this document being a clear requirement under the Kyoto Protocol's CDM and the fact that their issuance does not involve any costs for the host Party in terms of giving away part of its (potentially low cost) mitigation potential (Interview 4, Interview 6). Against this backdrop it could be challenging for voluntary market participants to ensure that host Parties implement the corresponding adjustments needed for exporting the MOs.

Another aspect closely associated to this is the fact that implementing corresponding adjustments will require strong **technical capacities**. Host Parties will have to assess whether the mitigation outcomes at stake should be sold or if they should be kept for the achievement of Parties' NDCs. This assessment will be particularly difficult for small countries with limited capacities and where data is insufficient (Interview 2).

More generally, the **design of the corresponding adjustment framework** will be a key parameter influencing the potential of Parties to account for MOs exported. As highlighted by one interviewee, the accounting framework should meet several requirements: The framework should be transparent and provide a level playing field for all players involved. What should be avoided is a situation in which the degree of implementing corresponding adjustments is subject to negotiations, with some actors being able to negotiate an agreement with a host Party that another actor could not be able to negotiate. Otherwise, there is a risk of the corresponding adjustments becoming a "corruption blackbox". Timing will be another key aspect: Will corresponding adjustment be made before MOs are exported or on a regular (annual) basis? These and other issues must be addressed to ensure that corresponding adjustments will be available for voluntary market activities (Interview 5).

Table 3 below summarizes the potentials and challenges of continuing the current mode based on carbon neutrality credits. One of the benefits of this role of the voluntary investor is that the carbon neutrality credits are already well established products on the market that align with business models of many investors. On the other hand, this role is challenged by the changes introduced with the Paris Agreement, namely the limitation of the "uncapped environment". Furthermore, there is large uncertainty regarding the conditions under which MOs will have to be accounted through corresponding adjustments, adding an additional layer of complexity to this role. In this regard it should be noted that corresponding adjustments will only have an impact if the host Party's NDC is sufficiently ambitious. This has direct impacts on the carbon neutrality model, since implementing corresponding adjustments on the basis of above-business as usual NDCs would undermine the integrity of the MOs exported and even put at risk the credibility of the entire voluntary carbon market. Hence, voluntary market activities should either address mitigation sources that are not covered by an NDC at all, not requiring corresponding adjustments to be implemented, or focus on emissions that are covered by an ambitious NDC. Alternative approaches that suggest moving away from the NDCs as the accounting reference point and using national policies or sectoral targets instead should not be pursued further, as this would result in the accounting approach being undermined.

Table 3: Potentials and challenges of the voluntary investor as a buyer of carbon neutrality credits

Potentials	Challenges
	Accounting: If MOs are generated within the host Party's NDC, implementation of corresponding adjustment will be required, which is associated with significant challenges.
	Regulatory uncertainty: Large uncertainty regarding the requirement to implement corresponding adjustments and the administrative/institutional and technical capacities to make these adjustments.
	Supply: Paris regime will significantly reduce the "uncapped environment" and host Parties will presumably have to account for emission reductions transferred to the voluntary market
Marketability: Carbon neutrality credits are well established products	
Demand: Potentially large interest from buyers to continue offsetting their emissions	

4.1.2 The voluntary investor as a facilitator of NDC implementation

With the Paris Agreement putting at risk the previous operational mode of the voluntary carbon market, voluntary investors could adopt the role of a facilitator of NDC implementation. In this model, the mitigation outcomes would remain with the host Party while investors of mitigation activities would only be allowed to claim having assisted the host country in achieving their NDC, instead of claiming carbon neutrality.

This role would require private certification standards to develop a new type of product which certifies the support provided to the host Party. Private certification standards are already exploring products that could complement existing carbon credits: The Gold Standard is currently exploring the concept of "certified statements of emission reductions", which could be used by investors to claim a contribution to climate finance (Verles 2017). Similarly, VERRA is currently considering the creation of a new unit called "domestic climate contribution — DCC". These DCCs could work as a complement to the organisation's offset units, the verified carbon units (VCU), without having to address the issue of double counting (VERRA 2018).

While such an approach would avoid the double claiming risk, it could at the same time significantly reduce the attractiveness for voluntary buyers to engage in such transfers, as carbon neutrality is one of the main reasons to invest in mitigation activities. As highlighted by interviewees, it took more than a decade to establish the concept of carbon neutrality and corporate investors have made considerable efforts to promote and communicate this concept both within and outside their companies (Interview 3, Interview 5, Interview 6). Establishing a new concept would require a broad consensus among key players from the voluntary market and civil society organisations and a branding campaign (Interview 6). Support from governments would also be key (Interview 5).

Voluntary credit suppliers are generally open to explore alternatives to the carbon neutrality offsets, and they engage with their customers asking whether they would be interested in buying such a new product in the future (Interview 3). The picture regarding the interest to invest in such project in the future is mixed: Large companies, in particular those operating at a global level, could be interested in supporting a specific country in the implementation of its NDC, as this could align with their global approach (Interview 1). For some companies that have in the past refrained from investing in carbon offsets due to the environmental justice debates that surrounded the offsetting approach, the new model of assisting countries in NDC attainment could be even more interesting than the previous model (Interview 6). And also buyers from the public domain have shown interest in exploring alternatives to carbon offsetting (Interview 3). One interviewee highlighted that there could even be some potential among the group of private end customers: some of these voluntary buyers are very interested in the performance of the individual projects supported and do not use credits for claiming carbon neutrality but to make a positive contribution to the climate cause. This specific type of buyer could be interested in supporting NDC implementation abroad (Interview 2). Some buyers, however, are more reluctant to explore such alternatives, as their business model builds on the provision of carbon neutral products (Interview 6) . Furthermore, for some small and medium enterprises, communicating their engagement as NDC supporters could be challenging. These entities might further encounter difficulties in assessing the quality of individual products. These entities could however be assisted through the establishment of a new product that is endorsed by many actors (Interview 1).

Moving from the concept of carbon neutrality to a "support approach" that is delinked from own emissions could however also be associated to environmental risks: some companies could buy small amounts of units and use them for window dressing, while own emissions continue to rise. More generally, this approach does not align with the idea of internalising the environmental externalities of products and services. Transitioning away from the carbon neutrality approach could also undermine the quality of monitoring, reporting and verification (MRV) standards: The fact that these units will not be used to offset emissions could be seen as an argument against rigorous MRV standards (Interview 1). Moreover, if the NDC that is being supported is weak, environmental integrity and the reputation of the voluntary market actors are at risk.

Table 4 summarizes the potentials and challenges of the voluntary investor's role as a facilitator of NDC implementation. On the one hand, moving away from the carbon neutrality approach would address the double claiming risk and avoid the challenges associated to implementing corresponding adjustments. There could even be considerable interest from some companies to invest in such activities for CSR reasons. At the same time, however, this model is associated to numerous challenges, including the difficulties in communicating the new product, environmental and reputational risks linked to the difficulties in assessing the ambition level of the NDCs supported as well as a potential undermining of MRV standards. In light of these numerous challenges, the future potential of this model seems limited.

Table 4: Potentials and challenges of the voluntary investor as a facilitator of NDC implementation

Potentials	Challenges
Environmental Integrity: Double claiming risk is avoided	
Demand: Claiming NDC support could align with global strategy of some companies.	**Demand:** Reduced attractiveness for voluntary buyers to engage, as product cannot be used to claim carbon neutrality. Communicating their engagement as NDC supporters could be challenging for some small and medium enterprises.
	Marketability: Requires development of new product (NDC support unit)
	Reputational risk/Environmental impact: Difficulties in assessing the ambition level of NDCs could expose investors to a reputational risk and undermine environmental impact.
	Environmental impact: Companies could buy small amounts of units and use them for window dressing, while own emissions continue to rise.
	MRV Standards: Transitioning away from the carbon neutrality approach could result in MRV standards being undermined if strong MRV is only being considered relevant in the context of offsetting.

4.1.3 The voluntary investor as a driver of ambition

The role of the private investor as a contributor to ambition raising is particularly salient. Voluntary buyers are already making large investments on the carbon markets and it is not clear if these and future investments should be considered a contribution to ambition raising. In the following, some of the key questions related to this role of the voluntary market will be explored.

Should voluntary buyers be allowed to claim ambition raising or should the concept only be applied to Parties?

One question is related to the definition of ambition raising as such: Should the concept be exclusively devoted to Parties, as Article 6.1 suggests, or should non-Party actors also be allowed to make contributions to ambition raising and claim them for themselves?

We will first look at the consequences of applying a broader concept of ambition raising, which would also allow non-Party actors to claim contributions to ambition raising for themselves. Hence, for instance, a company based in Germany that has bought and cancelled carbon credits from abroad for Corporate Social Responsibility (CSR) reasons could not only claim carbon neutrality but could also claim to have made a contribution to ambition raising. The merits of broadening the concept in such a way, however, seem rather limited. First, delinking the concept of ambition raising from Parties would not be in line with its application in the Paris Agreement: Not only Art. 6.1 relates the concept to Parties' but also other paragraphs of the Paris Agreement and its accompanying decision link it to Parties, be it their "actions" (Art. 4.5), their "nationally determined contributions" (Art. 4.3), their "pre-2020 action" (Decision 1CP21: para 121) or their mitigation efforts (Decision 1CP21: para 122). Second, delinking the concept of ambition raising from Parties could further lead to a situation where responsibility for the urgently needed step to raise ambition cannot be clearly assigned to a particular entity. This could undermine the entire concept. Third and closely related to the second point, the Paris Agreement is related to Parties: While it is clear that 'everybody' should contribute to mitigate climate change, the Paris Agreement can only put a binding obligation on its Parties, which are, for the time being, national states. Therefore, in the view of the authors, the concept of ambition raising should only be applied to Parties. This view was generally shared by interviewees, who also questioned the merit of expanding the concept of ambition raising to voluntary buyers (e.g. Interview 1, Interview 5, Interview 6). As highlighted by one interviewee, companies could, however, be interested in claiming to have contributed to an increase of ambition (Interview 4).

A further question is whether decoupling ambition raising from Parties would ever be done in practice. As Parties using Article 6 are required to raise their ambition, there is the question of whether any Party would give up a potential claim to having raised ambition to a non-Party actor.

Should a voluntary cancellation by a private investor be considered an enhancement of a Party's ambition?

The application of the narrower conceptualisation of ambition, according to which ambition will always be related to the targets and actions of a Party, seems reasonable. This, however, raises the question of whether a voluntary cancellation of mitigation outcomes in a public registry by private entities should be counted as having raised the ambition of the countries involved in the transfer. For the sake of simplicity, we will here focus on the host and the acquiring Party and not consider the role of intermediaries or broker countries.

We will first look at the possible contribution to the ambition of the investor Party, hence the country in which the private investor is based. Consider, for instance, a German company that buys and cancels carbon certificates from abroad to claim carbon neutrality for CSR reasons. Should these voluntary cancelations be considered an enhancement of Germany's mitigation ambition? This seems highly questionable, as the Party, in this case Germany, has neither increased its own mitigation targets nor its mitigation actions and the voluntary cancellation by the company is fully detached from the country's climate policy. You could even argue that counting such voluntary actions towards Parties' ambition leads to a perverse incentive, as voluntary actions are only relevant for emissions not targeted by a climate policy. Hence, allowing Parties to claim subnational non-Party actors' voluntary activities as a contributions of the home Parties' ambition should not be allowed. This perception was generally shared by voluntary market representatives (e.g. Interview 1, Interview 2). One interviewee however outlined the idea that the investments made could be considered a contribution to the "private sector climate finance" of the investor country (Interview 5).

A second possibility would be to consider a voluntary cancellation by the voluntary investor as a contribution to ambition raising of the host Party, hence the country in which the mitigation activity is based. This question is closely related to whether the mitigation outcomes used by the private entity to claim carbon neutrality could also be used by the host Party to claim ambition raising, or whether this should already be considered a case of double claiming that must be avoided.

There are two arguments against considering this a case of double claiming that must be avoided. First, it should be noted that this situation would not adversely impact environmental integrity, at least from a static point of view. This is due to the fact that the private buyer will not use the mitigation outcomes for attaining to a (legally-binding) mitigation target. Claiming carbon neutrality will therefore not result in additional emissions. A second argument in favour of allowing these mitigation outcomes to be used for carbon neutrality is that ambition raising cannot be considered a "claim", as pointed out by one voluntary market representative (Interview 5).

This perception clearly contrasts with the view that units voluntary cancelled by a private entity should not at the same time be counted towards both, carbon neutrality of the private entity and ambition raising of the host country. The main argument against allowing MOs to be used for carbon neutrality and ambition raising is that the concept of carbon neutrality implies that emissions are neutralized through mitigation activities that are implemented elsewhere and not used for another purpose. Using this concept in cases where the mitigation outcomes are used by the host country for ambition raising could therefore be considered misleading.

Could the issuance of "ambition raising units" be a solution to the double claiming challenge?

If the use of MOs for carbon neutrality and their simultaneous use for ambition raising is being considered double claiming, the issuance of so called "ambition raising units" could be a solution to this problem. These units could be used by the investor to show its contribution to increasing the host country's ambition instead of using the investments to claim carbon neutrality (or NDC support). This approach would allow the host Party to voluntarily cancel the mitigation outcomes and thereby increase its ambition. Such a cancellation of mitigation outcomes is equivalent to a unilateral "corresponding adjustment" implemented by the host country, hence, an increase of the Parties' emissions (emissions-based accounting) or the adoption of a more strict NDC target (target-based accounting).

Voluntary market representatives raised several concerns with the introduction of such ambition raising units. Even if it is ensured that the specific mitigation activity will lead to an increase of ambition in the host country through the accounting system, host Parties could lack the incentive to implement corresponding adjustments (cancel the MOs) without getting anything in return. In addition, the volumes and the negotiating power of the voluntary market will presumably be too limited to allow for an active engagement with host Parties (Interview 3).

While this approach would address the double claiming risk outlined above, it could at the same time significantly reduce the attractiveness for voluntary buyers to engage in such transfers. This was confirmed by voluntary market representatives, who have indicated that they consider "ambition raising units" to be very challenging to commercialize. Understanding the concept underlying this new product is difficult and hard to differentiate from voluntary investors' role as supporters of NDC implementation (Interview 3). As highlighted by one interviewee, the use of ambition raising units combines the difficulties of both previous roles: It requires the host Party to account for the mitigation outcomes generated while at the same time preventing the units to be used for carbon neutrality by the investor (Interview 2).

Interviewees highlighted that if such a product is to be developed, it will be of key relevance to ensure that such a new claim is endorsed by key stakeholders, including international NGOs as well as existing initiatives such as the Carbon Disclosure Project (CDP). To avoid a mushrooming of individual claims this process could establish in one universal claim or label, be it "carbon positive", "Paris Supporter" or the like (Interview 1) The development of a public registry with accounts clearly showing how voluntary action contributed to ambition raising of Parties was further mentioned as an idea to ensure public recognition of this role (Interview 4).

Table 5 below summarizes the potentials and challenges of this concept. As indicated previously, the potential of this role is limited by the fact that it combines the challenges of the other two roles: the voluntary market would have to ensure that MOs exported are accounted for, while at the same time having to develop a new virtual product that could be used in lieu of carbon neutrality offsets. While these are considerable challenges the merits of this model are limited, in particular given the lack of clarity in terms of whether the use of MOs for carbon neutrality and ambition raising should be considered a case of double claiming that must be avoided. In general terms, finding ways that allow the voluntary market to make a contribution to ambition raising while building on the other two roles seems much more promising.

Table 5: Potentials and limitations of the voluntary investor as a driver of ambition

Potentials	Challenges
Environmental integrity: Double claiming risk is avoided	
	Accounting: If MOs are generated within the host Party's NDC, implementation of corresponding adjustment will be required, which is associated with significant challenges.
	Regulatory uncertainty: Large uncertainty regarding the requirement to implement corresponding adjustments and the administrative/institutional and technical capacities to make these adjustments.
Environmental impact: Voluntary market activities achieve a climate impact that goes beyond what Parties have adopted (ambition raising)	**Environmental impact:** Companies could buy small amounts of units and use them for window dressing, while own emissions continue to rise. Climate investment activities are delinked from own emissions and do not allow for internalising the externalities of products and services.
	Reputational risk/Environmental impact: Difficulties in assessing the ambition level of NDCs could expose investors to a reputational risk and undermine environmental impact.
	Marketability: Requires development of new product (ambition raising unit)
	Demand: Interest from voluntary buyers to invest in ambition raising could be limited, as product cannot be used to claim carbon neutrality and benefits could be difficult to communicate.
	MRV Standards: Transitioning away from the carbon neutrality approach could result in MRV standards being undermined if strong MRV is only being considered relevant in the context of offsetting.

4.1.4 Combining the different roles to address challenges and account for diverse interests?

In light of the challenges identified with the individual roles of the private market, an alternative approach would be to combine these different roles within one mitigation activity. For this purpose, the host country and the private investor would have to agree on dividing up the shares of the activities' mitigation outcome. The host country could then count the share of MOs that is not used by the investor for carbon neutrality purposes as ambition raising, while the investor could use another share to claim carbon neutrality and make a statement that it has assisted the host country increase its ambition for the amount of MOs that remained with the host Party. However, having the host country deduct a share of the mitigation outcome for its purpose would effectively impose a tax on the project and reduce its economic attractiveness for the private investor. This is particularly problematic during phases in which the carbon market is characterized by low profit margins (Interview 6). In order to deal with this situation, a carbon market representative suggested that the obligation to cancel a certain amount should be binding and be applicable to all mitigation activities globally (Interview 1).

In general terms, interviewees maintain that a combination of role 1 and 2 can be expected to be commonly applied in the future, indicating that Peru is pioneering the sharing of mitigation outcomes in a REDD+[3] project (Interview 3, Interview 4)(see: Ecosphere+ 2018). Using a certain share of MOs for ambition raising by implementing unilateral corresponding adjustments, in contrast, is generally seen with scepticism in light of the difficulties this concept entails (see discussion on "ambition raising units" in section 4.1.3 above).

3 REDD+ stands for: Reducing Emissions from Deforestation and Forest Degradation, and the Role of Conservation of Forest Carbon Stocks, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks

While the static contribution to ambition raising will be challenged by these accounting and double claiming aspects, voluntary carbon market actors may be able to contribute to raising the ambition of a host country by facilitating the inclusion of previously uncapped emissions under future NDCs. One example is a mitigation activity based outside the scope of the NDC. The private investor could invest in this mitigation activity and obtain voluntary certificates that could be used for claiming carbon neutrality, while the host country could commit to include the targeted emissions in future NDCs. Hence, voluntary cancellation could contribute to the enhancement of the host country's ambition if it dynamically assists the host country to include the underlying emission sources in future NDC periods. It should be noted, however that this not different to the potential contribution of compliance market activities.

Several voluntary market representatives have made reference to this role, indicating that it could be relevant in the future (e.g. Interview 2, Interview 4, Interview 5). In order to exploit the full potential, a level playing field for the different actors on the voluntary market will be important, for instance by developing common rules for how these emissions can be tapped (Interview 5). One carbon market representative however raised concerns with regard to ensuring the causality of ambition raising in this context: How can it be ensured that the voluntary market mitigation activity has actually led to an increase of the host Party's ambition? Another problem is political uncertainty: How can the system ensure that future governments commit to the policy decisions made by their predecessors (Interview 3). In light of these uncertainties, engaging the voluntary market in such activities can be considered challenging.

4.2 The future of the voluntary market as a provider of certification standards

Another interesting function of the voluntary market is that of a provider of private certification standards. Under the Paris regime, three different options can be distinguished.

4.2.1 Option 1: Supporting the design and implementation of the Article 6.4 Mechanism

With Article 6.4, an internationally governed market mechanism is installed. Activities under this mechanism will have to be implemented according to internationally agreed rules, modalities and procedures and be supervised by a designated body. There will presumably be binding rules on how to ensure additionality of activities and how to account for mitigation outcomes exported in case they are covered by an NDC.

The voluntary carbon market could contribute to the development of methodologies and procedures to be applied under Article 6.4 and showcase successful project implementation in areas not yet covered by the mechanism. This would be a continuation of a role the voluntary carbon market already played in the past, having served as a testing ground for concepts that were later introduced in the compliance market.

4.2.2 Option 2: Application of private certification standards under Art. 6.2

An area under the Paris regime where private certification standards could play a more prominent role is Article 6.2. This Article will presumably establish a framework for international transfers of mitigation outcomes. While this framework can be expected to provide accounting provisions for ITMO transfers, it will presumably not establish internationally binding rules for determining and certifying mitigation outcomes. There will hence not be a single Article 6.2 mechanism but possibly only a generic guidance to which the different mechanisms and certification standards applied must adhere. Parties have not yet agreed on the level of rigour to be applied. Private certification standards could presumably be used under Article 6.2. While building on such standards could be a pragmatic way to use existing frameworks, the potential role of private standards in certifying mitigation action of Parties under the UNFCCC might be highly disputed, as countries could fear a breach of sovereignty (Interview 5).

According to information gathered in interviews, private certification standards are already working towards being recognized for the certification of compliance activities in the future and they are also in contact with individual countries (Interview 1; Interview 4). Some countries, such as Colombia and South Africa, have already decided to include private certification standards in the design of their domestic offsetting schemes, which is seen as an indication of Parties' general interest to use such standards in the future (Interview 1, Interview 5, Interview 6).

More generally, using a large number of certification standards each with its own governance structure, procedures and methodologies may significantly reduce transparency. At the same time, a fragmented carbon market in which voluntary certification standards are being used along with international and bilateral standards must not necessarily be less robust than a market with a single UNFCCC-governed mechanism. However, in order to safeguard environmental integrity, each of the certification standards must be as robust as the standard used by the single UNFCCC mechanism. A robust guidance for Article 6.2 could ensure a high quality in this regard. Voluntary standards would have to ensure that they meet these (high) requirements. One particular challenge for all certification standards will be the assessment of additionality of mitigation activities. While this was by no means trivial in the past, the new Paris architecture in which NDCs are the cornerstone adds another layer of complexity to this issue.

4.2.3 Option 3: Use of private certification standards outside Article 6

A third possible role for private certification standards is their application outside of Article 6. In this scenario, private standards determine and certify mitigation outcomes by themselves, according to their own rules and procedures. This is the current modus operandi of most voluntary market transactions. However, under the Paris Agreement, private standards would not only have to apply robust procedures for additionality assessment and MRV of emission reductions but will also have to ensure that they are robustly accounted for (see discussion on double claiming in section 3.1.2).

Robust accounting is also relevant in the context of ambition raising as mitigation outcomes that are used for NDC achievement cannot at the same time be used for ambition raising. One possibility in dealing with these challenges is to focus on emission reductions that are achieved in sectors not covered by NDCs. As these MOs will by definition not contribute to the host country's NDC they could be used for raising the host country's ambition with no risk of double claiming. Some interviewees consider these type of activities as providing some potential for voluntary market activities. Interviewees, however, also pointed at the risk of such activities being of only limited relevance in the mid to long-term as all anthropogenic GHG emissions should be covered by an NDC (e.g. Interviewee 2).

If mitigation outcomes generated within the scope of an NDC are meant to contribute to ambition raising, corresponding adjustments must be made to ensure that these MOs do not contribute to NDC attainment. Hence, the host country would have to adjust its emissions or its NDC to account for the amount of mitigation outcomes used for ambition raising. As we assume that in this option private certification standards will be used outside Article 6, this process would not be linked to any transfers of ITMOs. Hence, the corresponding adjustment would have to be carried out unilaterally by the host country and would have to "correspond" to the amount of mitigation outcomes certified by the voluntary standard. The accounting framework of Article 6 would hence have to allow Parties to implement corresponding adjustments (by adjusting their emissions or their NDC) also if no ITMO transfers have taken place. In this regard, the private certification standards could build on the accounting provisions introduced with Paragraph 77 d) of the modalities, procedures and guidelines of the Transparency Framework. These provisions require the implementation of corresponding adjustments not only when ITMOs are transferred and used towards an NDC but also when mitigation outcomes are used for "international mitigation purposes" (UNFCCC 2018, para 77d). This could be considered an indication of two things: First, that the future accounting framework will not be limited to ITMO transfers. And second, that it will also be open to account for other purposes. If this was the case, private standards could use this framework for implementing "unilateral adjustments", allowing for the development of domestic voluntary markets, where MOs are not internationally transferred. Voluntary certification standards have in the past already established provisions to avoid double counting under the Kyoto protocol (see for instance: Gold Standard 2015). These, however, relied on the accounting framework of the Kyoto Protocol. A similar approach would be to require project developers to present evidence that the host country will account for these MOs. For the buyer, however, this raises the question of who can be held liable if the host country does in the end not account for these transfers.

Another approach would be to establish an accounting framework for voluntary market activities out-side of the Paris Agreement (see also: ICROA 2017). This however, would not only entail considerable efforts but the accounting framework will at some stage need to be linked to the Paris Agreement, in particular if it is to be used as a means for ambition raising. In general, the benefits of using voluntary certification standards outside of Article 6 can be expected to be minimal. Using voluntary certification outside of Article 6 might only be appealing if Article 6.2 does not allow for the participation of voluntary standards or if the barriers for using article 6.2 are too high. One such barrier could be difficulties in meeting the requirements of Article 6.2. However, it can be expected that the benefits of using the accounting framework under Article 6.2 will ultimately outweigh the costs associated to overcoming these barriers. More generally, from the perspective of a host country willing to raise its ambition, using certification schemes outside of the accounting system of the Paris Agreement seems odd, as the concept of ambition raising itself is part of the Paris Agreement.

5 Conclusions

This paper explored the future role of the voluntary carbon market and its potential contribution to ambition raising. For this purpose, the authors first identified the individual segments of the voluntary market and highlighted the specific challenges the market will be confronted with in the post-2020 era, namely the expansion of GHG emission regulation across the world and the requirements for market-based cooperation under the Paris Agreement to contribute to ambition raising. These two fundamental changes were explored by first looking at their implications on carbon market activities in general before analysing their potential impacts on the voluntary market. In particular, two functions of the voluntary carbon market were explored in greater detail: the voluntary market as an investor and the role of certification standards of mitigation activities. The voluntary market's contributions to ambition raising was assessed by taking into consideration the two paradigm shifts of the Paris Agreement may impact its future role as an investor and as an provider of private certification standards.

For the future of the voluntary market as an investor, three roles were identified: The market may maintain its current role of buyer of carbon neutrality credits, it may become a supporter of NDC implementation, or it may become a driver of ambition. The findings indicate that the current role of the **voluntary investor as a buyer of carbon neutrality credits** will be impacted significantly by the changes introduced with the Paris Agreement as the "uncapped environment" will be limited in the future. The potential of the voluntary market to continue performing this role will largely depend on the requirements for host Parties to account for MOs exported. At the moment, there is still uncertainty regarding the rigour of the future accounting provisions and different approaches are being discussed. Voluntary market representatives highlighted the need to have such accounting instruments readily available and pointed to the administrative and institutional capacities needed for their use by host Parties. Countries' readiness and the ultimate design and access to the corresponding adjustment framework will be key parameters influencing the future role of the voluntary carbon neutrality offset market. Despite these challenges, the continuation of the carbon neutrality model can be considered the most promising future role for the voluntary market: It can build on a wellestablished market with clear demand from voluntary investors. If carbon neutrality credits are generated within the scope of ambitious NDCs and accounted for by a robust accounting approach that uses the NDC as its point of reference, this model holds significant potential to assist Parties in increasing their ambition. This also holds for carbon neutrality credits generated outside the scope of NDCs, if it is ensured that activities are truly additional.

The role of the **voluntary investor as a facilitator of NDC implementation** is increasingly being endorsed by carbon market participants as a complement of the current offset-based model. Private certification standards are exploring the possibilities to develop respective products and suppliers are engaging with final customers to evaluate the marketing potential. While there seems to be some potential for this new role in terms of demand it is also associated to significant challenges: This role does not only require the development of a new product but there are also some environmental risks associated to its use if the underlying NDC lacks ambition. In case of a considerable demand for such products and a respective market volume, host countries may even be incentivised to reduce their own efforts in NDC implementation. In our view, this approach should be carefully explored further in order to find solutions in addressing the major concerns.

The role of the **voluntary investor as a contributor to ambition raising** through investing in ambition raising units turned out to be the role with the lowest overall potential. While this role could lead to a direct ambition raising impact it suffers from the fact that it requires both, the creation of a new commodity and the need to implement corresponding adjustments. Therefore, approaches that allow the voluntary market to contribute to ambition raising through its role as an investor in carbon neutrality offsets or while supporting countries in achieving their NDCs seems the most promising avenue.

With regard to the future of private certification standards, three options were identified: Private standards could function as mere providers of methodologies and innovative approaches to be used by the Article 6.4 mechanism, they could be used as standards under Article 6.2, or they could be applied outside of Article 6. Each of these options is associated with specific challenges, of which the assessment of additionality and dealing with double claiming are particularly relevant. The analysis found that the integration of voluntary standards into Article 6.2 can be expected to be the most promising option. Here, the entire architecture of the voluntary standards could be used together with the experiences and knowledge in terms of MRV and additionality demonstration while accounting would accrue to the international accounting framework under Article 6.2. Implementation of activities outside of Article 6 (and therefore outside of the Paris Agreement), in contrast, seems to provide no added value in comparison with their application under Article 6.2 while raising additional questions regarding issues such as the implementation of accounting measures.

The findings indicate that the voluntary market has potential to contribute to ambition raising. Whether this potential will actually be unlocked, however, will depend on how the concept of ambition raising will be operationalized under the Paris Agreement. Another determinant will be the voluntary market's ability in transitioning from the current carbon neutrality-based model to new approaches that take into account the new framework conditions established with the Paris Agreement. Negotiators under the UNFCCC are currently in the process of translating these framework conditions into provisions in order to make the Paris Agreement and its Article 6 operational. This process will take time and its outcome cannot be expected to answer all questions that are relevant to the current operations of the voluntary market and its future role. When being confronted with such governance gaps, the voluntary market should take a progressive stance by advocating for robust solutions that enhance mitigation ambition and safeguard the environmental integrity of the Paris regime. With this, the voluntary market can live up to its role as an innovator and developer of solutions that could at a later stage be translated into compliance market activities under Paris.

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7 Annex

Table 6: List of interviews conducted

Interview	Date	Category
Interview 1	26 September 2018	Voluntary Carbon Credit Suppliers — Organisation involved in the development and implementation of voluntary projects as well as those acting as intermediaries between project developers and credit consumers.
Interview 2	04 October 2018	Voluntary Carbon Credit Suppliers — Organisation involved in the development and implementation of voluntary projects as well as those acting as intermediaries between project developers and credit consumers.
Interview 3	09 October 2018	Voluntary Carbon Credit Suppliers — Organisation involved in the development and implementation of voluntary projects as well as those acting as intermediaries between project developers and credit consumers.
Interview 4	10 October 2018	Lobby Organisation — Organisation representing the views from voluntary market participants.
Interview 5	15 October 2018	Private Certification Standard — Organisation providing a private standard used for voluntary mitigation activities.
Interview 6	08 November 2018	Private Certification Standard — Organisation providing a private standard used for voluntary mitigation activities.

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