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Future role for voluntary carbon markets in the Paris era

Final report

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Future role for voluntary carbon markets in the Paris era

Final report

by

Harry Fearnehough, Aki Kachi, Silke Mooldijk,
Carsten Warnecke
NewClimate Institute, Berlin / Cologne

Lambert Schneider
Independent, Berlin

On behalf of the German Environment Agency

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Publisher
Umweltbundesamt
Wörlitzer Platz 1
06844 Dessau-Roßlau
Tel: +49 340-2103-0
Fax: +49 340-2103-2285
info@umweltbundesamt.de
Internet: www.umweltbundesamt.de

/umweltbundesamt.de
/umweltbundesamt

Report performed by:
NewClimate Institute
Clever Straße 13-15
50668 Cologne
Germany

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Stefanie Böther

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Abstract: Future role for voluntary carbon markets in the Paris era

The end of 2020 marks a fundamental change in the global governance of greenhouse gas emissions with the shift from the Kyoto Protocol era to that of the Paris Agreement. This also has implications for the future role and the feasible models of the voluntary carbon market. A critical focus is whether and how 'double counting' of emission reductions – using the same emission reduction for voluntary offsetting and to achieve a country's target under the Paris Agreement – is avoided. We show that, where there is a risk that the same emission reduction outcome could be claimed more than once, the impact of voluntary engagement in carbon markets could be negligible, or even lead to an overall negative climate impact. Within this context it is important that the future design of the voluntary carbon market ensures that the support of activities does not disincentivise governments from increasing their climate mitigation efforts. We apply a number of criteria to assess potential new models for voluntary carbon markets under the Paris Agreement as well as options to increase engagement in voluntary carbon markets and improve transparency.

Three models emerge as potentially viable options in the Paris era: the “contribution claim”, “NDC crediting” and “non-NDC crediting” approaches, each with their own respective strengths and weaknesses. The relative attractiveness of the models is likely to change over time as country NDCs are scaled up. In order to maximise the climate impact of voluntary market activities and safeguard against some of the risks presented by features of the models, we recommend that the market seeks to focus on project activities representing challenging mitigation options as well as project host countries with ambitious NDC targets.

Kurzbeschreibung: Die zukünftige Rolle der freiwilligen Kohlenstoffmärkte in der Paris Ära

Der Wechsel vom Kyoto Protokoll zum Übereinkommen von Paris (ÜvP) bedeutet für das Ende des Jahres 2020 eine grundlegende Änderung in der globalen Steuerung der Treibhausgasemissionen. Dies hat Auswirkungen auch auf die künftige Rolle und tragfähige Modelle des freiwilligen Kohlenstoffmarktes. Ein kritischer Punkt ist, ob und wie eine „Doppelzählung“ von Emissionsminderungen – die Verwendung derselben Emissionsminderung zum freiwilligen Ausgleich und zur Erreichung des Ziels eines Landes unter dem ÜvP – vermieden wird. Wir zeigen, dass wenn ein Risiko besteht, dass dieselbe Emissionsminderung mehr als einmal geltend gemacht werden kann, die Klimaauswirkungen des freiwilligen Engagements in Kohlenstoffmärkte vernachlässigbar oder sogar insgesamt negativ sein können. In diesem Zusammenhang ist es wichtig, dass die künftige Gestaltung des freiwilligen Kohlenstoffmarktes sicherstellt, dass die Unterstützung von Aktivitäten die Regierungen nicht davon abhält, ihre Klimaschutzbemühungen zu verstärken. Wir wenden eine Reihe von Kriterien an, um potenziell neue Modelle für freiwillige Kohlenstoffmärkte unter dem ÜvP zu bewerten und nennen Optionen, um das Engagement in den freiwilligen Kohlenstoffmärkten zu erhöhen und die Transparenz zu verbessern.

Im Ergebnis zeigen sich drei Modelle als potenziell realisierbar in der Paris Ära: das „contribution claim“, das „NDC crediting“ und das „non-NDC crediting“ Modell, jeweils mit eigenen Stärken und Schwächen. Die relative Attraktivität der Modelle wird sich wahrscheinlich im Laufe der Zeit ändern, wenn die NDCs in den Ländern ausgeweitet werden. Um den Klimaschutzeffekt zu maximieren und sich gegen einige der Risiken abzusichern, die sich aus den Merkmalen der Modelle ergeben, wird empfohlen, dass der Markt sich auf Projektaktivitäten, die herausfordernde Minderungsoptionen repräsentieren und auf Gastländer mit ambitionierten Zielen konzentriert.

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AFOLU	Agriculture, forestry and other land-use sector
CO_2	Carbon dioxide
CDM	Clean Development Mechanism
CER	Certified emission reduction
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CSR	Corporate Social Responsibility
ESG	Environment Social Governance
EU ETS	EU Emissions Trading System
GHG	Greenhouse gas
GWP	Global warming potential
ICAO	International Civil Aviation Organization
ICROA	International Carbon Reduction and Offset Alliance
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
MPGs	Modalities, procedures and guidelines for the enhanced transparency framework adopted in Katowice
$MtCO_2$	Megatonnes of carbon dioxide equivalent units
NDC	Nationally Determined Contributions (in Paris Agreement)
QELRO	Qualified Emission Limitation and Reduction Objectives
tCO2eq	Tonnes of carbon dioxide equivalents
UNFCCC	United Nations Framework Convention on Climate Change
VER	Voluntary (or Verified) emission reduction unit

Executive Summary

Changing context of efforts to tackle climate change

The end of the year 2020 marks a fundamental change in the global governance of greenhouse gas (GHG) emissions. Looking forward, the Paris Agreement now provides the new framework for the global effort to combat temperature rise. This significantly differs from the approach of its predecessor, the Kyoto Protocol. The new context of the Paris Agreement has important implications for the voluntary carbon market, i.e. the voluntary purchasing and retiring of carbon credits.

Understanding future models for the voluntary carbon market – and the potential for it to support efforts to address climate change – is particularly relevant as an increasing number of organisations and individuals are concerned about climate change and are taking voluntary action to both reduce their emissions and to offset those that remain via the use of carbon credits.

Historically, carbon credits have mostly been generated from projects implemented in countries that did not have GHG emissions targets under the Kyoto Protocol. In this context, the carbon credit's emission reductions were only used by the buyer to achieve a climate change mitigation target or goal, and not by the country hosting the mitigation project. Under the Paris Agreement, however, all countries must formulate climate targets or actions in the form of nationally determined contributions (NDCs). This new context poses important challenges for the role that voluntary offsetting can play in the future, in particular whether and how voluntary purchasing and retirement of carbon credits fits into this new global framework.

This report examines the future role of the voluntary carbon market under the Paris Agreement. A critical focus is whether and how 'double counting' of emission reductions – using the same emission reduction for voluntary offsetting and to achieve a country's target under the Paris Agreement – is avoided. Within this context it is important that the future design of the voluntary carbon market ensures that the support of activities does not disincentivise governments from increasing their climate mitigation efforts. We assess potential new models for voluntary carbon markets under the Paris Agreement as well as options to increase engagement in voluntary carbon markets and improve transparency.

Channelling finance to climate mitigation activities

There is an urgent need to scale up climate change mitigation action. This global challenge offers an important opportunity for the voluntary carbon market to contribute to the flow of climate finance. Collective pledges by national governments included in current NDCs fall well short of what is needed to keep the global temperature rise to within 2°C of pre-industrial levels, let alone the more ambitious 1.5°C objective (Climate Action Tracker, 2019).

Currently, the voluntary market for carbon credits plays a relatively small role – in comparison to global emissions (less than 0.1 percent), as well as in comparison to the compliance carbon market – but one which has grown over time. Voluntary actions, in part delivered through carbon markets, could play a role in bridging the current mitigation gap to achieve the Paris Agreement temperature goal.

The double counting challenge

The new context of the Paris Agreement – in which all countries have to communicate mitigation targets or actions in their NDCs – raises the question of whether and how to avoid double counting of emission reductions. The Paris Agreement requires countries to avoid double counting in accounting for their NDCs (Article 4.13) and when engaging in the international

transfer of mitigation outcomes (Article 6). Avoiding double counting is also a requirement if carbon credits are used under CORSIA – the scheme to address the growth in emissions from international aviation after 2020. There is, however, debate regarding the potential climate impact if the emission reductions resulting from the voluntary carbon market are claimed both by the buyers of the carbon credits and by host countries to achieve their NDCs.

A key question for understanding the challenges and possible risks related to double counting is what voluntary buyers of carbon credits claim to achieve with the purchase of carbon credits. Carbon credits are mostly used to 'offset' or balance out GHG emissions associated with a buyer's activities. In this case, a buyer could report a lower climate footprint, or net GHG emissions, through the emission reductions represented by the carbon credits. Alternatively, carbon credits can be used by the buyer to 'contribute' to emission reductions in a country, or to the overall goals of the Paris Agreement without supporting a claim to balance out any of the buyer's emissions.

Due to the increased potential for double claiming under the Paris Agreement, the use of voluntary carbon markets presents a risk that emission reduction claims misrepresent their actual impact on the climate, i.e. that countries and carbon credit buyers claim on aggregate to have reduced emissions by more than the overall reduction in emissions actually released into the atmosphere. This is irrespective of other potential concerns related to the 'quality' of carbon credits, such as a lack of additionality, baseline assumptions, permanence or safeguards to avoid carbon leakage.

The actual impact to the climate may depend on a wide number of factors, many of which are likely to be out of the direct control of key stakeholders involved in driving voluntary carbon market activities – such as project owners, carbon crediting standards and carbon credit buyers. Through a systematic consideration of six different scenarios for the possible implications of double claiming the same emission reduction outcome, we find that the use of voluntary carbon markets could lead to a net reduction in global emissions, have no impact, or even lead to a net increase in global emissions.

Given that, in the worst case in terms of climate impact, double claiming emission reductions delivered by the voluntary carbon market can lead to a net increase in GHG emissions, future voluntary carbon market models should aim to reduce, and ideally eliminate, double claiming risks. In part, some of the future models for the voluntary carbon market can address, or at least reduce, the risk of double claiming, helping to ensure that a claim to reduce emissions by one tonne of carbon dioxide actually reflects one less tonne of carbon dioxide in the atmosphere.

Avoiding risks to the climate impact of voluntary market activities due to double claiming

The risk of double claiming the same emission reduction between the project host country and the carbon credit buyer can be avoided in a number of ways, thereby increasing the likelihood and magnitude of the climate change mitigation impact of engagement in the voluntary carbon market.

- **Limiting the emission reduction claim to the buyer: corresponding adjustment**

  The host country can forgo a claim to the emission reduction outcome from a voluntary market project by applying a corresponding adjustment to the reporting of its progress towards achievement of its NDC, such that the level of effort required to meet its targets remains unaffected. However, the administrative rules and procedures for authorising projects and applying such adjustments still need to be determined and can introduce additional cost and risk as well as the potential for corrupt practices.

- **Limiting the emission reduction claim to the buyer: crediting outside NDC scope**

  Alternatively, voluntary carbon markets could focus on crediting emission reductions outside of the scope of host country targets. Transparent communication of both host country NDC targets as well as carbon crediting activities is critical for this to work. For many countries, however, it can be challenging to clearly identify whether the emission reductions were achieved within or outside the scope of its current (and potentially future) NDC target. This option also introduces the risk of providing a disincentive for potential project host countries to increase the scope of their NDC over time. A key requirement of the Paris Agreement is for all NDCs to be scaled-up to cover economy-wide emissions.

- **Limiting the emission reduction claim to the host country**

  The carbon credit buyer can also forgo its claim to the emission reduction outcome. This would mean that the purchasing and retiring of carbon credits could not be used to 'offset' or neutralise the climate footprint of the carbon credit buyer. Instead, the carbon credit buyer could claim to only 'contribute' to emission reductions delivered in the host country and which count towards that country's achievement of its NDC. In this case, to ensure that there is no effective claim to the emission reductions on the part of the carbon credit buyer, its messaging to its own consumers, or other stakeholders that might be influenced by the claim, needs to be clear that the actual climate footprint of its activities are in no way offset.

The occurrence of double claiming may not always lead to inferior impacts on the climate. For example, a host country may not alter its climate action efforts as a result of a voluntary carbon market project and, as a result, ends up overachieving its NDC target. A number of determining factors – such as the relative materiality of support provided through the voluntary carbon market, the visibility of emissions in GHG inventories, the intention of country's to achieve their pledges and the ambition levels reflected in both current and future NDCs – are likely to influence the overall impact of voluntary carbon markets on emissions released into the atmosphere. We explore these considerations further within section 3.3 of the main report. However, such outcomes depend on the actions of multiple stakeholders, typically outside of the control of the key drivers of voluntary carbon markets such as project owners, carbon crediting standards or carbon credit buyers. The climate impact can therefore not be guaranteed without imposing the measures to avoid double claiming set out above.

Assessing models for voluntary carbon markets after 2020

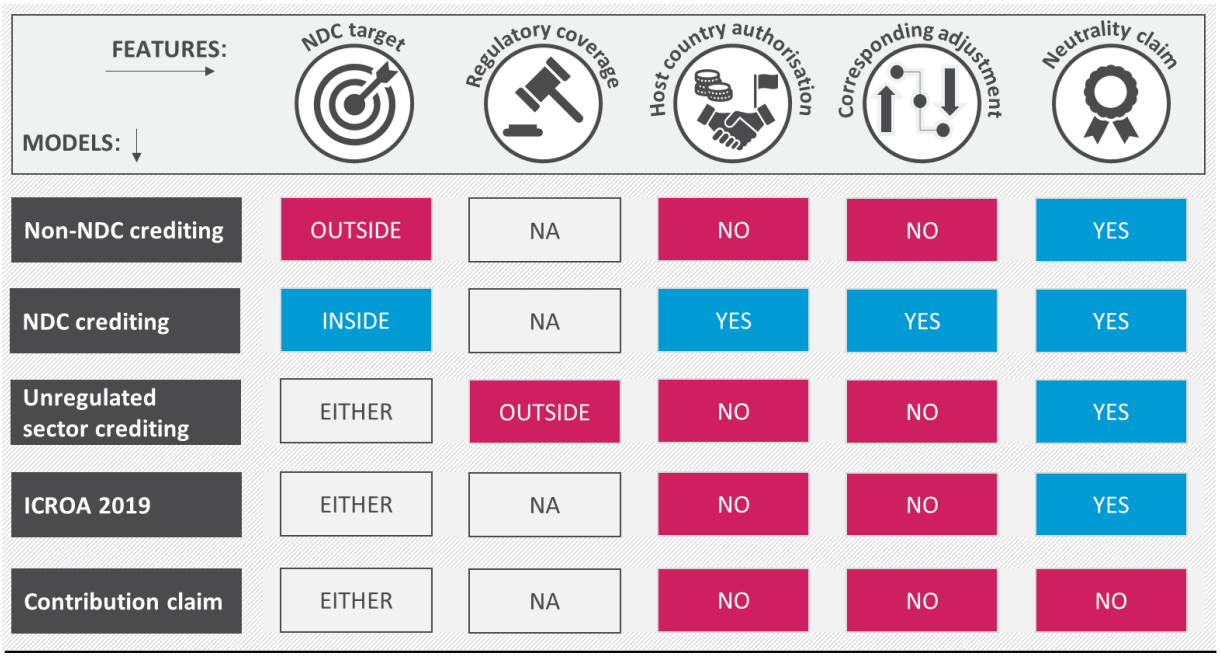
We identify and assess five main models that market participants and wider stakeholders have proposed for voluntary carbon markets after 2020 to address the challenges posed by the new context of the Paris Agreement. The key models that we identified as most relevant for consideration have emerged from publications by two parallel working groups convened by the International Carbon Reduction and Offset Alliance (ICROA) and the non-governmental carbon crediting standard, Gold Standard.[1] There is considerable overlap in both the stakeholders participating within these groups as well as the models put forward. The models we assess are listed down the left-hand side of Figure 1 along with a summary of their key features set out

[1] We identified a selection of representative models to assess based on information available at the beginning of the research study in early 2019 and considering further developments up to the end of 2019. This drew on published statements as well as interviews and a workshop with market stakeholders.

along the top. The different models can broadly be categorised across five headline features that are described in the bullet points below:

- **Scope of NDC target:** Whether the carbon credits reflect emission reductions that occur *within* or *outside* of the scope of the host country's NDC target;
- **Scope of regulatory coverage:** Whether the carbon credits reflect emission reductions that occur *within* or *outside* of the scope of the regulation of GHG emissions in the host country, regardless of the NDC scope;
- **Host country authorisation:** Whether the host country is required to authorise emission reduction projects and the issuance of carbon credits to the project developer, particularly if the credits will be used to support a claim of carbon neutrality;
- **Corresponding adjustment**: Whether the host country makes an accounting adjustment to its reported emissions related to the achievement of its NDC, to avoid the risk of double claiming the same emission reduction outcome;
- **Neutrality claim**: Whether the carbon credits issued for emission reductions can be used – upon their retirement – to offset emissions elsewhere and support a claim of climate neutrality.

Figure 1: Overview of proposals for future models of the voluntary carbon market



Source: NewClimate Institute; Lambert Schneider

We evaluate the key features of the models based on a set of criteria intended to offer critical insight into the possible implications of each model for mitigating climate change, issues related to their practical implementation as well as their potential acceptance by the market. The criteria include climate impact considerations – related to the risk of double claiming, incentives for countries to raise the ambition of their climate mitigation commitments over time and incentives to ensure carbon credit quality; challenges in practical implementation of the models; and their acceptance by the market.

Figure 2 provides a high-level overview of our evaluation of the five different models. It illustrates whether the key features generally present positive opportunities, relative to the evaluation criteria (green); challenges or key risks (red); or both opportunities as well as challenges or risks (yellow). The summary is intended to offer an overview of the relative attractiveness of the different models. However, many of the opportunities and trade-offs are either somewhat nuanced or specific to a certain set of circumstances and therefore benefit from a full consideration of the points discussed in section 4.2 of the main report.

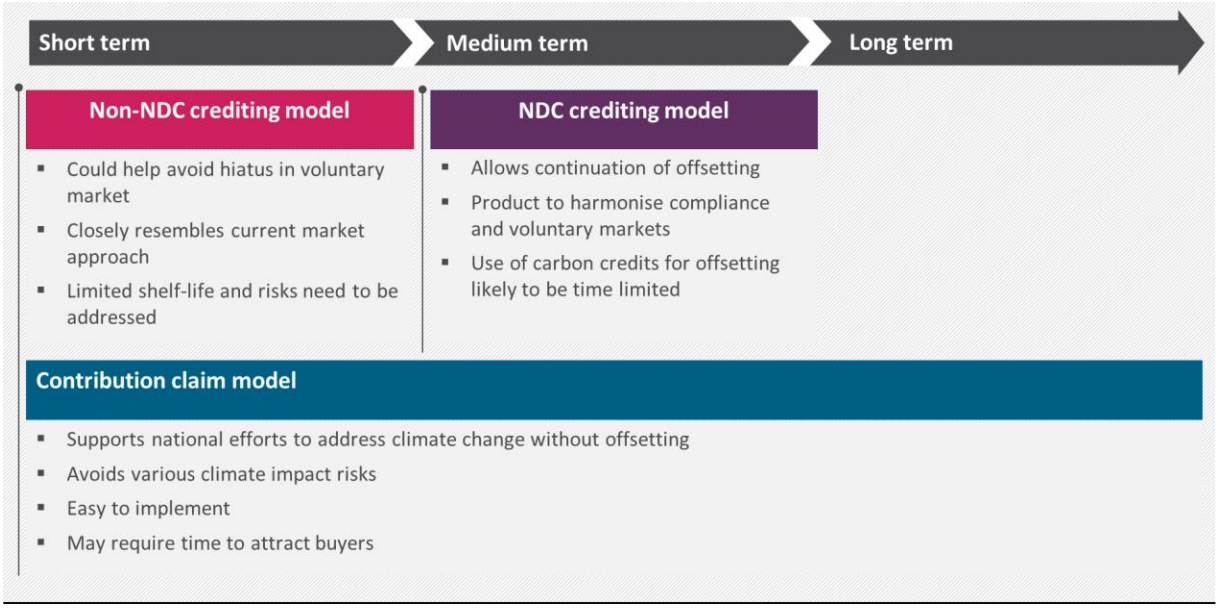
Figure 2: Overview of evaluation of key features of the proposed models[2]

Source: NewClimate Institute; Lambert Schneider

According to our evaluation, of the five models, only three emerge as potentially viable options in the Paris era: the "contribution claim", "NDC crediting" and "non-NDC crediting", each with their own respective strengths and weaknesses. The relative attractiveness of the models is also likely to change over time. In Figure 3 we present the three models with an indication of their possible validity over time along with key justifications for this assessment. The contribution claim model as well as the non-NDC crediting models could be implemented today with appropriate safeguards to mitigate their respective risks, whereas new rules and procedures are needed prior to the implementation of the NDC crediting model.

[2] A more detailed version of this exhibit with summary text from the evaluation is included in section 4.3 of the main report.

Figure 3: Viable voluntary market models in the Paris era



Source: NewClimate Institute; Lambert Schneider

The "non-NDC crediting" model could offer a short-term option to avoid hiatus in the voluntary market as it bears the closest resemblance to the current market approach. However, this model has a limited potential as NDCs need to rapidly expand to economy-wide targets and the voluntary market should avoid disincentivising this expansion in any way. To minimise some of the risks associated with the approach of crediting activities outside the scope of an NDC target, support should be restricted to:

- Project activities that are clearly identifiable as outside of the NDC scope;
- Project activities that represent challenging mitigation options that can kick-start nascent markets for low carbon technologies, bringing down barriers and costs to better enable the host country to expand its NDC to these areas in the future;
- Sources of GHG emissions for which the host country has committed to expand its future NDC coverage to either contingent on initial voluntary market project support or independent of it.

The "NDC crediting" model could be developed as a medium-term solution, still providing the option for carbon credit buyers to make a claim to offset their own emissions. The model is dependent on international rules for host country authorisation of projects and the application of corresponding adjustments. Due to slow progress and continued uncertainty in establishing these rules, this model may not be a viable option in the short term. However, the use of carbon credits under CORSIA is also likely to require international rules and procedures that prevent double counting through the application of a corresponding adjustment for compliance with the scheme beyond its pilot phase, which runs to 2023. Given that such a product is likely needed in the coming years, it is an attractive way of harmonising both voluntary and compliance carbon markets, to some extent. The main advantage of this model is that it addresses risks to the climate associated with the possibility of double claiming, whilst allowing carbon credit buyers to claim to neutralise the impact of their emissions. However, the administrative burden associated with host country authorisation can introduce additional cost and risk as well as the potential for corrupt practices.

Ultimately, the use of carbon credits for offsetting purposes is time limited. The concept is already challenged by some as an ineffective means to address climate change impacts. As all countries increase the scope and degree of challenging mitigation options in their NDC targets over time, and many institutions and individuals continue to prioritise avoiding and reducing their own emissions, both the remaining emissions to offset, as well as the available options to deliver additional emission reduction projects, will decline.

The "contribution claim" model can be introduced today and offers an approach that is viable over the long term to support countries' efforts to address climate change. It avoids some of the risks associated with other models in relation to negative climate impacts, such as double claiming and the introduction of disincentives to raise the scope of NDC targets. It also avoids the need to seek host country authorisation for emission reduction projects and apply a corresponding adjustment – both of which provide barriers to implementation of the NDC crediting model.

A key concern in relation to the contribution claim model is that its acceptance by the market, in particular by carbon credit buyers, may be limited at least initially as understanding of the implications of the Paris Agreement for offsetting take time to communicate and evolve. Businesses account for the largest share of carbon credit buyers in the voluntary market and – under the contribution claim model – many would need to alter their current messaging to their consumers and wider stakeholders around claims associated with carbon credits. This could align more with how contributions to non-climate sustainable development objectives are reported. The model's acceptance by the market may improve over time as awareness of the uncertainties associated with guaranteeing the environmental integrity of offsetting increase.

We find that the "unregulated sector crediting" and "ICROA 2019" models present significant risks to the environmental integrity of voluntary carbon markets. Their advantages in terms of opening up more opportunities for project development by the voluntary market do not outweigh the notable risks and are unlikely to receive broad acceptance by stakeholders.

In the "unregulated sector crediting" model, there is a double claiming risk if the project activity is outside of regulatory coverage but within the NDC scope, as no corresponding adjustment is applied by the host country in their reporting towards achievement of their climate commitments. It is also likely to be challenging to clearly identify the scope of regulation in many contexts. Furthermore, there is a material risk that targeting voluntary market support to activities and sectors outside the scope of regulatory coverage could in fact serve to limit any expansion of GHG emission regulations, or even weaken existing regulations.

The "ICROA 2019" model would allow carbon credits to be used to support offsetting claims without requiring a host country authorisation or corresponding adjustment, regardless of how the project activity relates to the scope of the host countries NDC target. This model presents a high risk of double claiming, which – under certain circumstances – could lead to an overall negative impact to the climate.

To help maximise the climate impact of voluntary market activities and safeguard against some of the risks presented by features of the models, we also recommend that the voluntary market should, irrespective of the model used, seek to focus on:

- **Project activities representing challenging mitigation options**

  Voluntary market investment targeted at mitigation options that are inaccessible to the host country can help bring down the cost of nascent technologies, lower barriers to adoption and

facilitate raising country ambition in subsequent NDCs rather than just addressing the "low hanging fruit" of mitigation potential that is accessible to host countries.

- **Host countries with ambitious NDC targets**

  Focusing support in ambitious countries, which back up their NDC targets with appropriate policy measures, can mitigate the risk of the voluntary market creating perverse incentives against expanding the scope or abatement levels of NDC targets and send a signal to potential host countries that their ambitious efforts can be rewarded by complementary financial support from voluntary carbon credit buyers.

Options for enhancing engagement in voluntary carbon markets

The demand for carbon credits from voluntary buyers has grown year-on-year almost continuously over the past decade with a particularly pronounced increase in recent years. Most demand for carbon credits on the voluntary market comes from the private sector, particularly multinational companies. The broader uptick in climate change awareness, appreciation of the urgency of the climate challenge and the responsibility for action beyond just national governments seem to have played a material role in enhancing recent engagement in voluntary carbon markets.

The new context of the Paris Agreement and the increased risks it introduces regarding the appropriateness of offsetting poses a threat to the success of efforts to date to help raise awareness of the voluntary carbon market. In particular, changing the model for engagement in voluntary carbon markets, and ultimately the product available to buyers, could introduce a new barrier to market participation. For example, some stakeholders expressed concern that not being able to use carbon credits to support their claims of carbon neutrality will undermine their attractiveness.

Despite challenges, the ambition of the Paris Agreement and the sheer scale of the challenge to meet its temperature goals, presents an opportunity for voluntary actors to complement governmental decarbonisation efforts. Carbon markets offer a possible channel for such voluntary actions. We recommend three areas of focus to enhance engagement in the voluntary carbon market in the Paris era.

- **Voluntary carbon markets can showcase their role in overcoming barriers in nascent technologies and sectors**. As we note above this can help develop and bring down the costs of inaccessible mitigation options (so-called 'high-hanging fruits'). If project developers can identify opportunities that are aligned with the ambitious goals of the Paris Agreement and demonstrate their transformational impact this can help build the reputation of the voluntary carbon market and engage new and existing carbon credit buyers.

- **Carbon credit buyers (and other stakeholders) should increase transparency about the contribution of the voluntary market.** More comprehensive and accessible information is important if voluntary carbon markets are to play a prominent role in future efforts to address climate change. Private and public sector organisations should clearly communicate the emissions associated with their activities, what scope they relate to and how they were quantified. And carbon credit buyers should also set out the types of carbon credits they used, how they were retired and what claim they attach to them, to enable their customers, wider audience and civil society to assess their overall impact on the climate.

This is particularly relevant for voluntary actors claiming that their activities are climate neutral. Developing a widely accepted 'good practice' guide to enable transparency in the use of carbon credits, along with institutions providing independent oversight, could provide an opportunity to build market trust and enhance engagement.

- **Voluntary carbon market actors could leverage existing fora for non-state actors to report their contributions within the Paris process.** Engaging in initiatives set up under the UNFCCC could provide an opportunity for the contributions of the voluntary market to feed into the regular global stocktake process, enhancing their visibility and profile as a viable mechanism to address climate change.

Zusammenfassung

Geänderte Rahmenbedingungen zur Bekämpfung des Klimawandels

Das Ende des Jahres 2020 bedeutet eine grundlegende Änderung in der globalen Steuerung der Treibhausgasemissionen (THG). Zukünftig bildet das Übereinkommen von Paris (ÜvP) den neuen Rahmen für die weltweiten Bemühungen zur Bekämpfung des Temperaturanstiegs. Dieses unterscheidet sich erheblich vom Ansatz seines Vorgängers, dem Kyoto-Protokoll. Der neue Kontext des ÜvP hat auch relevante Auswirkungen auf den freiwilligen Kohlenstoffmarkt, d.h. den freiwilligen Kauf und die Stilllegung von Emissionsminderungsgutschriften (meist als Zertifikate bezeichnet).

Ein gutes Verständnis für die zukünftigen Modelle des freiwilligen Kohlenstoffmarktes und dessen Potenzial zur Bekämpfung des Klimawandels ist von zentraler Bedeutung, da immer mehr Organisationen und Einzelpersonen wegen des Klimawandels besorgt sind und freiwillige Maßnahmen ergreifen, um sowohl ihre Emissionen zu reduzieren als auch die verbleibenden Emissionen durch die Nutzung von Emissionsminderungsgutschriften auszugleichen.

In der Vergangenheit wurden diese Gutschriften hauptsächlich durch Aktivitäten in Ländern generiert, die unter dem Kyoto-Protokoll keine THG-Emissionsziele hatten. Käuferinnen und Käufer nutzen die Gutschriften zum Erreichen eines Klimaschutzziels, wobei das Gastland des Minderungsprojekts diese nicht verwendete. Unter dem ÜvP müssen jedoch alle Länder Klimaschutzziele oder -maßnahmen in Form von national festgelegten Beiträgen (NDCs) ausarbeiten. Dieser neue Rahmen hat bedeutende Implikationen für die Rolle, die der freiwillige Ausgleich in Zukunft spielen kann, insbesondere, ob und wie der freiwillige Kauf und die Stilllegung von Emissionsminderungsgutschriften in diesen neuen globalen Rahmen passen.

In diesem Bericht wird die künftige Rolle des freiwilligen Kohlenstoffmarktes unter dem ÜvP untersucht. Ein kritischer Punkt ist, ob und wie eine „Doppelzählung" von Emissionsminderungen – die Verwendung derselben Emissionsminderung zur freiwilligen Verrechnung und zur Erreichung des Ziels eines Landes im Rahmen des ÜvP – vermieden wird. In diesem Zusammenhang ist es wichtig, dass die künftige Gestaltung des freiwilligen Kohlenstoffmarktes sicherstellt, dass die Unterstützung von Aktivitäten die Regierungen nicht davon abhält, ihre eigenen Klimaschutzbemühungen zu verstärken. Wir bewerten potenziell neue Modelle für freiwillige Kohlenstoffmärkte im Kontext des ÜvP sowie Optionen zur Steigerung des Engagements für freiwillige Kohlenstoffmärkte und zur Verbesserung der Transparenz.

Kanalisierung von Finanzmitteln für Klimaschutzmaßnahmen

Es ist dringend erforderlich, die Maßnahmen zur Eindämmung des Klimawandels zu verstärken. Diese globale Herausforderung bietet dem freiwilligen Kohlenstoffmarkt eine gute Gelegenheit, zur Klimaschutzfinanzierung beizutragen. Die in den derzeitigen NDCs enthaltenen kollektiven Zusagen der nationalen Regierungen bleiben weit hinter dem zurück, was erforderlich ist, um den globalen Temperaturanstieg auf 2 °C des vorindustriellen Niveaus zu begrenzen, geschweige denn das ehrgeizigere Ziel von 1,5 °C zu erreichen (Climate Action Tracker, 2019).

Derzeit spielt der freiwillige Markt für Emissionsminderungsgutschriften eine relativ kleine Rolle – sowohl im Vergleich zu den globalen Emissionen (weniger als 0,1 Prozent) als auch im Vergleich zum Compliance-CO2-Markt (Verpflichtungsmarkt) – die jedoch im Laufe der Zeit gewachsen ist. Freiwillige Maßnahmen, teilweise durchgeführt über Kohlenstoffmärkte, könnten die derzeitige Minderungslücke überbrücken, um so das Temperaturziel des ÜvP zu erreichen.

Die Herausforderung mit der Doppelzählung

Der neue Kontext des ÜvP, in dem alle Länder Minderungsziele oder -maßnahmen durch ihre NDCs kommunizieren müssen, wirft die Frage auf, ob und wie die Doppelzählung von Emissionsminderungen vermieden werden kann. Das ÜvP schreibt vor, dass die Länder eine Doppelzählung bei der Bilanzierung ihres NDC unter Artikel 4.13 und bei der internationalen Übertragung von Minderungen unter Artikel 6 vermeiden müssen. Die Vermeidung von Doppelzählungen ist auch erforderlich, wenn Emissionsminderungsgutschriften im Rahmen von CORSIA verwendet werden – dem System zur Bekämpfung des Anstiegs der Emissionen aus der internationalen Luftfahrt nach 2020. Es gibt jedoch eine Debatte über die möglichen Auswirkungen auf das Klima, wenn die Emissionsminderungen aufgrund des freiwilligen Kohlenstoffmarktes sowohl von den Käuferinnen und Käufern der Gutschriften als auch von den Gastländern zur Erreichung ihrer NDCs genutzt werden.

Eine entscheidende Frage für das Verständnis der Herausforderungen und möglichen Risiken im Zusammenhang mit Doppelzählungen ist, was Käuferinnen und Käufer mit dem freiwilligen Kauf von Emissionsminderungsgutschriften beanspruchen zu erreichen. Emissionsminderungsgutschriften werden hauptsächlich verwendet, um die mit den Aktivitäten einer Käuferin oder eines Käufers verbundenen Treibhausgasemissionen auszugleichen. In diesem Fall könnte eine Käuferin oder ein Käufer, durch die Emissionsminderung, die den Gutschriften zu Grunde liegt, einen geringeren klimabezogenen Fußabdruck, oder eine geringere Netto-THG-Emissionsbilanz berichten. Daneben ist es möglich, dass die Gutschriften von Käuferinnen und von Käufern genutzt werden, um einen Beitrag zur Emissionsreduzierung in einem Land oder zu den Gesamtzielen des ÜvP zu erbringen, ohne den Anspruch zu erheben, dadurch die Emissionen der Käuferin oder des Käufers auszugleichen.

Aufgrund des erhöhten Potenzials für doppelte Anrechnungen unter dem ÜvP kann die Nutzung freiwilliger Kohlenstoffmärkte das Risiko bergen, dass Aussagen zur Emissionsminderung die tatsächlichen Auswirkungen auf das Klima falsch darstellen. So können Länder sowie Käuferinnen und Käufer von Emissionsminderungsgutschriften insgesamt behaupten, die Emissionen um mehr reduziert zu haben, als die Gesamtverringerung der tatsächlich in die Atmosphäre freigesetzten Emissionen. Dies gilt unabhängig von anderen potenziellen Bedenken im Zusammenhang mit der „Qualität“ von Emissionsminderungsgutschriften, wie z. B. mangelnder Zusätzlichkeit, Annahmen über die „Baseline“, Dauerhaftigkeit der Minderungen oder Schutzmaßnahmen zur Vermeidung von „carbon leakage“.

Die tatsächlichen Auswirkungen auf das Klima können von einer Vielzahl von Faktoren abhängen, von denen viele wahrscheinlich außerhalb der direkten Kontrolle der wichtigsten Akteure liegen, die an der Förderung freiwilliger Aktivitäten auf dem Kohlenstoffmarkt beteiligt sind, wie Projektbesitzer, Standards für die Emissionszertifizierung sowie Käuferinnen und Käufer von Emissionsminderungsgutschriften. Eine systematische Betrachtung von sechs verschiedenen Szenarien für die möglichen Auswirkungen der doppelten Anrechnung der gleichen Emissionsminderungen zeigt, dass die Nutzung freiwilliger Kohlenstoffmärkte zu einer Nettominderung der globalen Emissionen führen, keine Auswirkungen haben oder sogar zu einem Nettoanstieg der globalen Emissionen führen kann.

Da im schlechtesten Fall die doppelte Anrechnung von Emissionsminderungen aus dem freiwilligen Markt zu einer Nettoerhöhung der THG-Emissionen führen kann, sollte der zukünftige freiwillige Markt versuchen, das Doppelzählungsrisiko zu reduzieren oder idealerweise zu vermeiden. Die zukünftigen Modelle für den freiwilligen Kohlenstoffmarkt können das Risiko einer doppelten Anrechnung teilweise adressieren oder zumindest verringern und so dazu beitragen, dass eine beanspruchte Emissionsreduktion um eine Tonne Kohlendioxid tatsächlich eine Tonne weniger Kohlendioxid in der Atmosphäre widerspiegelt.

Vermeidung von Risiken für die Klimaauswirkungen freiwilliger Marktaktivitäten aufgrund doppelter Anrechnung

Das Risiko einer doppelten Anrechnung derselben Emissionsminderung zwischen dem Gastland des Projekts und der Käuferin oder dem Käufer der Emissionsminderungsgutschriften kann auf verschiedene Weise vermieden werden. Hierdurch wird die Wahrscheinlichkeit und das Ausmaß der Auswirkungen des Engagements auf dem freiwilligen Kohlenstoffmarkt auf die Eindämmung des Klimawandels erhöht.

- **Beschränkung des Emissionsminderungsanspruchs auf die Käuferin oder den Käufer: „corresponding adjustement“**

  Das Gastland kann auf die Beanspruchung der Emissionsminderungen aus einem freiwilligen Projekt verzichten, indem es eine entsprechende Anpassung („corresponding adjustment“) bei der Berichterstattung über seine Fortschritte zur Erreichung seines NDC macht, so dass der notwendige eigene Aufwand zur Erreichung seiner Ziele unverändert bleibt. Die Verwaltungsregeln und -verfahren für die Autorisierung von Projekten und die Anwendung solcher Anpassungen müssen jedoch noch festgelegt werden und können zusätzliche Kosten und Risiken, sowie ein Korruptionsrisiko mit sich bringen.

- **Beschränkung des Emissionsminderungsanspruchs auf die Käuferin oder den Käufer: Zertifizierungen außerhalb des Geltungsbereichs des NDC**

  Alternativ könnten sich die freiwilligen Kohlenstoffmärkte darauf konzentrieren, Emissionsminderungen außerhalb des Geltungsbereichs der NDC-Ziele des Gastlandes zu zertifizieren. Grundvoraussetzung für die Funktionsfähigkeit dieses Ansatzes ist dabei eine transparente Kommunikation sowohl der NDC-Ziele des Gastlandes als auch der Aktivitäten zur Emissionszertifizierung. Für viele Länder kann es jedoch schwierig sein, klar zu bestimmen, ob die Emissionsminderungen innerhalb oder außerhalb des Rahmens ihres aktuellen (und möglicherweise zukünftigen) NDC-Ziels erreicht wurden. Diese Option birgt auch das Risiko, dass potenzielle Gastländer davon abgehalten werden, den Geltungsbereich ihres NDC im Laufe der Zeit zu erweitern. Die vollständige Ausweitung der NDC Ziele auf die Emissionen der gesamten Wirtschaft ist eine wichtige Anforderung des ÜvP.

- **Beschränkung des Emissionsminderungsanspruchs auf das Gastland**

  Die Käuferin oder der Käufer der Emissionsminderungsgutschriften kann auch auf die Beanspruchung der Emissionsminderungen verzichten. Dies würde bedeuten, dass der Kauf und das Stilllegen dieser Gutschriften nicht dazu verwendet werden kann, den klimabezogenen Fußabdruck der Käuferin oder des Käufers auszugleichen oder zu neutralisieren. Stattdessen könnte die Käuferin oder der Käufer der Gutschriften nur beanspruchen, zu den im Gastland erzielten Emissionsminderungen und damit zur Erreichung des NDC in diesem Land beigetragen zu haben. In diesem Fall muss sichergestellt sein, dass effektiv kein Anspruch auf die Emissionsminderungen seitens der Käuferin oder des Käufers der Emissionsminderungsgutschriften stattfindet. Hierzu muss die Kommunikation an die eigene Kundschaft oder an andere Stakeholder klarstellen, die von einer solchen Behauptung beeinflusst werden könnten, dass der klimabezogene Fußabdruck seiner Aktivitäten in keiner Weise ausgeglichen wird.

Eine doppelte Anrechnung von Emissionsminderungen führt nicht immer zu negativen Auswirkungen auf das Klima. Dies gilt zum Beispiel, wenn ein Gastland seine Klimaschutzbemühungen infolge eines solchen freiwilligen Minderungsprojekts nicht ändert und infolgedessen sein NDC-Ziel übertrifft. Eine Reihe von bestimmenden Faktoren - wie die relative Wesentlichkeit der Unterstützung durch den freiwilligen Kohlenstoffmarkt, die Sichtbarkeit der Emissionen in den Treibhausgasinventaren, die Absicht der Länder, ihre Zusagen zu erfüllen, und die Ambitionen, die sich sowohl in aktuellen als auch in zukünftigen NDCs widerspiegeln - dürften die Gesamtauswirkung der freiwilligen Kohlenstoffmärkte auf die in die Atmosphäre freigesetzten Emissionen beeinflussen. In Abschnitt 3.3 des Hauptberichts werden diese Überlegungen weiter vertieft. Solche Ergebnisse hängen jedoch vom Verhalten verschiedenster Stakeholder ab, welches in der Regel außerhalb der Kontrolle der Akteure im freiwilligen Kohlenstoffmarkt liegt, wie z.B. Projektentwickler, Standards für die Emissionszertifizierung sowie Käuferinnen und Käufer von Emissionsminderungsgutschriften. Die Klimaauswirkungen können daher nicht garantiert werden, ohne die oben genannten Maßnahmen zur Vermeidung einer doppelten Anrechnung zu ergreifen.

Bewertung von Modellen für freiwillige Kohlenstoffmärkte nach 2020

Wir identifizieren und bewerten fünf Hauptmodelle, die Marktteilnehmer und weitere Interessengruppen für freiwillige Kohlenstoffmärkte nach 2020 vorgeschlagen haben, um die Herausforderungen zu bewältigen, die sich aus dem neuen Kontext des ÜvP ergeben. Die Schlüsselmodelle, die wir als am relevantesten für die Prüfung identifiziert haben, sind aus Veröffentlichungen von zwei parallelen Arbeitsgruppen hervorgegangen, die von der International Carbon Reduction and Offset Alliance (ICROA) und dem nichtstaatlichen Emissionsreduktionsstandard, dem Gold Standard, einberufen wurden.[3] Sowohl bei den an diesen Gruppen beteiligten Stakeholdern als auch bei den vorgestellten Modellen gibt es erhebliche Überschneidungen. Die von uns bewerteten Modelle sind in der ersten Spalte links in Abbildung 4 zusammen mit einer Zusammenfassung ihrer Hauptmerkmale in den folgenden Spalten aufgeführt. Die verschiedenen Modelle lassen sich grob nach ihren fünf Hauptmerkmalen charakterisieren. Diese sind im Folgenden näher beschrieben:

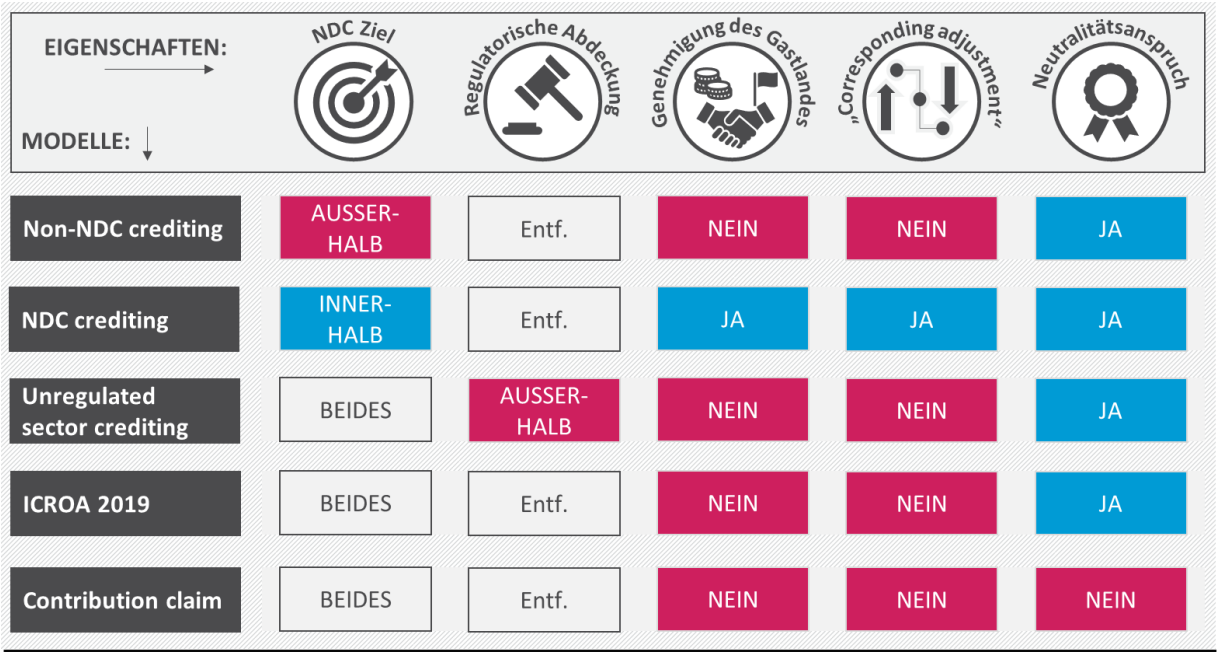
- **Geltungsbereich des NDC-Ziels:** Dies gibt an, ob die Emissionsminderungsgutschriften Emissionsminderungen widerspiegeln, die innerhalb oder außerhalb des Geltungsbereichs des NDC-Ziels des Gastlandes liegen;
- **Umfang der regulatorischen Abdeckung:** Dies gibt an, ob die Emissionsminderungsgutschriften Emissionsminderungen widerspiegeln, die innerhalb oder außerhalb des Geltungsbereichs der Regulierung der THG-Emissionen im Gastland auftreten, unabhängig vom NDC-Geltungsbereich;
- **Genehmigung des Gastlandes:** Dies gibt an, ob das Gastland Emissionsminderungsprojekte und die Ausgabe von Emissionsminderungsgutschriften an den Projektentwickler genehmigen muss, insbesondere wenn mit den Gutschriften ein Anspruch auf CO2-Neutralität geltend gemacht wird;
- **„Corresponding adjustment“:** Dies gibt an, ob das Gastland eine buchhalterische Anpassung seiner berichteten Emissionen bei der Bilanzierung seines NDC vornimmt, um

[3] Basierend auf dem verfügbaren Informationsstand zu Beginn der Forschungsarbeiten Anfang 2019 sowie unter Berücksichtigung weiterer Entwicklungen bis Ende 2019 haben wir eine Auswahl repräsentativer Modelle für die Bewertung identifiziert. Dies stützte sich auf veröffentlichte Aussagen sowie Interviews und einen Workshop mit Marktakteuren.

das Risiko zu vermeiden, dass die gleiche Emissionsminderung doppelt geltend gemacht wird;

- **Neutralitätsanspruch:** Dies gibt an, ob die für Emissionsminderungen ausgestellten Gutschriften im Falle ihrer Stilllegung verwendet werden können, um Emissionen an anderer Stelle auszugleichen und einen Anspruch auf Klimaneutralität geltend zu machen.

Abbildung 4: Überblick über Vorschläge für zukünftige Modelle des freiwilligen Kohlenstoffmarktes



Quelle: NewClimate Institute; Lambert Schneider

Wir bewerten die Hauptmerkmale der Modelle anhand einer Reihe von Kriterien, die einen kritischen Einblick in die möglichen Auswirkungen jedes Modells auf die Eindämmung des Klimawandels, Probleme im Zusammenhang mit ihrer praktischen Umsetzung sowie ihre potenzielle Akzeptanz auf dem Markt bieten sollen. Zu den Kriterien gehören die Betrachtung der Klimaauswirkungen – dazu zählen das Risiko einer doppelten Anrechnung, Anreize für Länder, die Ambitionen ihrer Klimaschutzverpflichtungen im Laufe der Zeit zu erhöhen, und Anreize zur Gewährleistung der Qualität der Emissionsgutschriften –, Herausforderungen bei der praktischen Umsetzung der Modelle, und ihre Akzeptanz auf dem Markt.

Abbildung 5 fasst unsere Bewertung der fünf verschiedenen Modelle zusammen. Sie zeigt, ob die Hauptmerkmale hinsichtlich der Bewertungskriterien im Allgemeinen positive Chancen bieten (grün); Herausforderungen oder wichtige Risiken darstellen (fuschia); oder sowohl Chancen als auch Herausforderungen oder Risiken repräsentieren (gelb). Die Zusammenfassung soll einen vergleichenden Überblick über die Attraktivität der verschiedenen Modelle geben. Viele der Möglichkeiten und Abwägungen sind jedoch entweder etwas nuancierter oder auf spezifische Umstände bezogen, weswegen deren Nachvollziehbarkeit von einer vollständigen Berücksichtigung der in Abschnitt 4.2 des Hauptberichts erörterten Punkte profitiert.

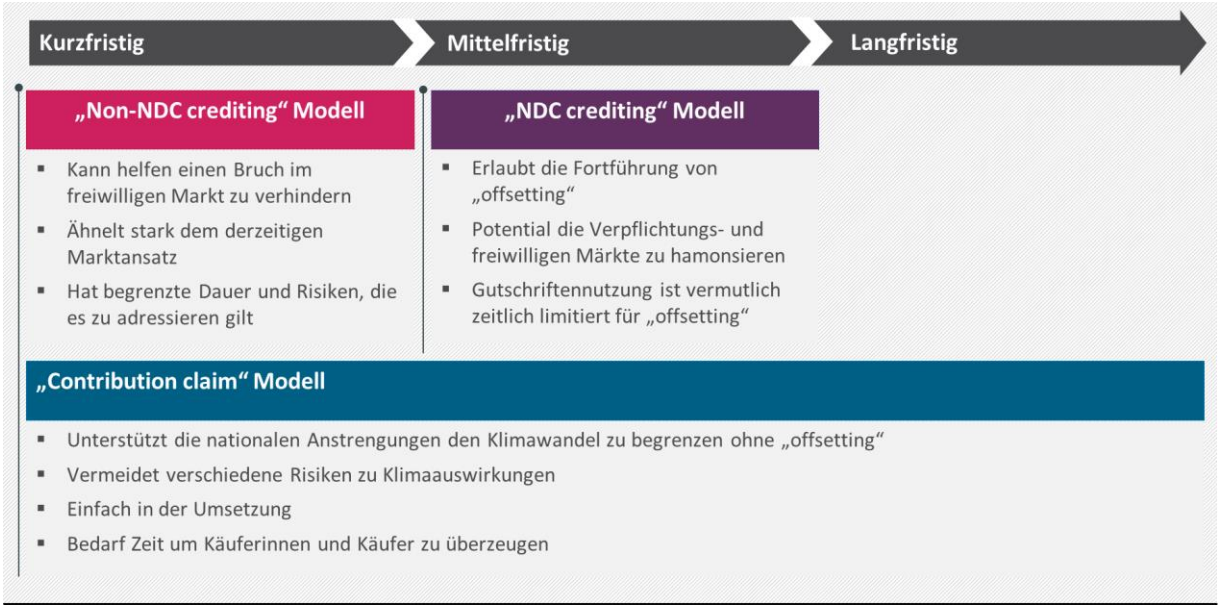
Abbildung 5: Überblick über die Bewertung der Hauptmerkmale der vorgeschlagenen Modelle[4]

Quelle: NewClimate Institute; Lambert Schneider

Basierend auf unserer Auswertung sind unter dem ÜvP nur drei von den fünf Modellen potenziell machbare Optionen: das „contribution claim", das „NDC crediting" und das „non-NDC crediting" Modell mit ihren jeweils eigenen Stärken und Schwächen. Die relative Attraktivität der Modelle dürfte sich im Laufe der Zeit ebenfalls ändern. In Abbildung 6 präsentieren wir die mögliche Gültigkeit der drei Modelle im Zeitverlauf und begründen diese Bewertung. Das „contribution claim" Modell sowie das „non-NDC crediting" Modell könnten sofort implementiert werden, unter Berücksichtigung geeigneter Schutzmaßnahmen, um ihre jeweiligen Risiken zu minimieren, während vor der Implementierung des „NDC crediting" Modells neue Regeln und Verfahren erforderlich sind.

[4] Eine detailliertere Version dieses Überblicks ist mit einer Zusammenfassung der Evaluierung im Hauptteil des Berichtes in Abschnitt 4.3 enthalten.

Abbildung 6: Tragfähige freiwillige Marktmodelle in der Pariser Ära



Quelle: NewClimate Institute; Lambert Schneider

Das Modell des „non-NDC crediting“ könnte eine kurzfristige Option bieten, um ein Ausbremsen des freiwilligen Marktes zu vermeiden, da es dem aktuellen Marktansatz am ähnlichsten ist. Dieses Modell hat jedoch ein begrenztes Potenzial, da die NDC-Ziele schnell erweitert werden müssen, um die gesamte Wirtschaft zu umfassen und der freiwillige Markt vermeiden sollte, diese Erweiterung in irgendeiner Weise zu beeinträchtigen. Um einige der Risiken zu minimieren, die mit dem Gutschriftenansatz von Aktivitäten außerhalb des Geltungsbereichs eines NDC-Ziels verbunden sind, sollte die Umsetzung dieses Modells auf Folgendes beschränkt werden:

- Projektaktivitäten, die eindeutig als außerhalb des NDC-Geltungsbereichs erkennbar sind;
- Projektaktivitäten, die herausfordernde Minderungsoptionen darstellen, die aufstrebende Märkte für kohlenstoffarme Technologien ankurbeln und Hindernisse und Kosten senken können, damit das Gastland sein NDC künftig besser auf diese Bereiche ausweiten kann;
- Quellen von THG-Emissionen, für die sich das Gastland verpflichtet hat, seine künftige NDC-Abdeckung so zu erweitern, dass sie entweder von der anfänglichen Unterstützung von freiwilligen Klimaschutzprojekten abhängig oder unabhängig davon sind.

Das Modell des „NDC crediting“ könnte als mittelfristige Lösung entwickelt werden und den Käuferinnen und Käufern von Emissionsminderungsgutschriften weiterhin die Möglichkeit bieten, einen Anspruch auf Ausgleich der eigenen Emissionen zu erheben. Das Modell ist abhängig von internationalen Regeln für die Genehmigung von Projekten durch das Gastland und die Anwendung entsprechender Anpassungen. Aufgrund langsamer Fortschritte und anhaltender Unsicherheit bei der Festlegung dieser Regeln ist dieses Modell kurzfristig möglicherweise keine praktikable Option. Allerdings erfordert die Verwendung von Emissionsminderungsgutschriften im Rahmen von CORSIA wahrscheinlich auch internationale Regeln und Verfahren, die eine Doppelzählung durch Anwendung eines „corresponding adjustments“ verhindern, um die Anforderungen des Systems auch über die Pilotphase hinaus erfüllen zu können, welche bis 2023 läuft. Angesichts der Tatsache, dass ein solches Produkt wahrscheinlich in den kommenden Jahren benötigt wird, ist es eine attraktive Möglichkeit, die

freiwilligen und verpflichtenden Kohlenstoffmärkte in gewissem Maße zu harmonisieren. Der Hauptvorteil dieses Modells besteht darin, dass es das Risiko einer möglichen doppelten Anrechnung für das Klima adressiert und es den Käuferinnen und Käufern von Emissionsminderungsgutschriften ermöglicht, die Auswirkungen ihrer Emissionen auszugleichen. Der mit der Genehmigung des Gastlandes verbundene Verwaltungsaufwand kann jedoch zusätzliche Kosten und Risiken sowie ein Korruptionsrisiko mit sich bringen.

Letztendlich ist die Verwendung von Emissionsminderungsgutschriften für Ausgleichszwecke zeitlich begrenzt. Das Konzept des Ausgleichs wird bereits von einigen Akteuren als ineffektives Mittel zur Bewältigung der Klimawandelauswirkungen in Frage gestellt. Da alle Länder im Laufe der Zeit den Umfang und die Ambition der Minderungsoptionen in ihren NDC-Zielen erhöhen und viele Institutionen und Einzelpersonen verstärkt der Vermeidung und Reduzierung ihrer eigenen Emissionen Priorität einräumen, werden sowohl die verbleibenden auszugleichenden Emissionen als auch die verfügbaren Optionen zur Bereitstellung zusätzlicher Emissionsminderungsprojekte sinken.

Das Modell des „contribution claims" kann heute eingeführt werden und bietet einen langfristig tragfähigen Ansatz, um die Bemühungen der Länder zur Bekämpfung des Klimawandels zu unterstützen. Es vermeidet einige der Risiken, die mit anderen Modellen in Bezug auf negative Klimaauswirkungen verbunden sind, wie etwa doppelte Anrechnungen und die Einführung von Fehlanreizen, den Umfang der NDC-Ziele zu erhöhen. Außerdem wird vermieden, dass die Genehmigung des Gastlandes für Emissionsminderungsprojekte eingeholt und ein „corresponding adjustment" vorgenommen werden muss. Beide stellen Hindernisse für die Umsetzung des „NDC crediting" Modells dar.

Bei dem „contribution claim" Modell ist die Akzeptanz im Markt zu bedenken, insbesondere bei Käuferinnen und Käufern von Emissionsminderungsgutschriften kann zumindest anfänglich die Akzeptanz eingeschränkt sein. Es wird einige Zeit in Anspruch nehmen, bis die Auswirkungen des ÜvP auf das „Offsetting" kommuniziert und verstanden werden. Unternehmen machen den größten Anteil der Kundschaft von Emissionsminderungsgutschriften auf dem freiwilligen Markt aus. Nach dem „contribution claim" Modell müssten diese ihre Kommunikation an ihre Kundschaft und andere Interessengruppen bezüglich der Aussagen im Zusammenhang mit Emissionsminderungsgutschriften ändern. Diese könnte angepasst werden an die bestehende Kommunikation zu Beiträgen zu den nicht-klimabezogenen Zielen für eine nachhaltige Entwicklung. Die Akzeptanz des Modells auf dem Markt kann sich im Laufe der Zeit verbessern, wenn das Bewusstsein über Unsicherheiten bezüglich der Gewährleistung der Umweltintegrität der Ausgleichmodelle zunimmt.

Unsere Untersuchungen zeigen, dass die Modelle „unregulated sector crediting" und „ICROA 2019" erhebliche Risiken für die Umweltintegrität freiwilliger Kohlenstoffmärkte darstellen. Ihre Vorteile in Bezug auf die Erschließung von mehr Möglichkeiten für die Projektentwicklung durch den freiwilligen Markt gleichen nicht die die erheblichen Risiken aus und werden vermutlich nicht von allen Stakeholdern im Markt getragen.

Im „unregulated sector crediting" Modell besteht ein Risiko der doppelten Anrechnung, wenn die Projektaktivität außerhalb des regulierten Bereichs, jedoch innerhalb des NDC-Geltungsbereichs liegt, da das Gastland kein „corresponding adjustment" in seiner Berichterstattung zur Erfüllung seiner Klimaschutzverpflichtungen vornimmt. Es dürfte auch schwierig sein, den Umfang der Regulierung in vielen Zusammenhängen klar zu bestimmen. Darüber hinaus besteht ein wesentliches Risiko, dass die gezielte Nutzung des Marktes für Aktivitäten und Sektoren außerhalb des Geltungsbereichs der Regulierung tatsächlich dazu

führen könnte, eine Ausweitung der THG-Emissionsvorschriften zu begrenzen oder sogar bestehende Vorschriften zu schwächen.

Das Modell „ICROA 2019“ würde es ermöglichen, Emissionsminderungsgutschriften zur Kompensation von Emissionen zu verwenden, ohne dass eine Genehmigung des Gastlandes oder ein „corresponding adjustment“ erforderlich ist und unabhängig davon, ob die Projektaktivität vom NDC-Ziel des Gastlandes erfasst wird. Dieses Modell birgt ein hohes Risiko für eine doppelte Anrechnung, das unter bestimmten Umständen zu einer insgesamt negativen Auswirkung auf das Klima führen kann.

Um die Klimaauswirkungen freiwilliger Marktaktivitäten zu maximieren und sich gegen einige der Risiken zu schützen, die sich aus den Merkmalen der Modelle ergeben, empfehlen wir außerdem, dass sich der freiwillige Markt unabhängig vom verwendeten Modell auf Folgendes konzentriert:

- **Projektaktivitäten, die herausfordernde Minderungsoptionen darstellen**

  Freiwillige marktbasierte Investitionen, die auf Minderungsoptionen abzielen, die für das Gastland sonst nicht zugänglich sind, können dazu beitragen, die Kosten für neue Technologien zu senken, Hindernisse für deren Einführung zu verringern und die Ambitionen der Länder in zukünftigen NDCs zu erhöhen; anstatt der Realisierung von Minderungen im Bereich der „niedrig hängenden Früchten“, welche für das Gastland ohnehin zugänglich sind.

- **Gastländer mit ehrgeizigen NDC-Zielen**

  Die gezielte Unterstützung auf ehrgeizige Länder, die ihre NDC-Ziele mit geeigneten politischen Maßnahmen untermauern, kann das Risiko verringern, dass der freiwillige Markt perverse Anreize schafft, die NDC-Ziele nicht zu erweitern oder ihre Ambition nicht zu erhöhen. Dieser Ansatz würde potenziellen Gastländern auch ein Signal senden, dass ihre ehrgeizigen Bemühungen durch ergänzende finanzielle Unterstützung der Käuferinnen und Käufer von Emissionsminderungsgutschriften des freiwilligen Marktes belohnt werden können.

Optionen zur Ausweitung des Engagements in freiwilligen Kohlenstoffmärkten

Die Nachfrage von Käuferinnen und Käufern nach Emissionsminderungsgutschriften des freiwilligen Marktes ist im letzten Jahrzehnt jeweils gegenüber dem Vorjahr fast kontinuierlich gestiegen, wobei in den letzten Jahren ein besonders starker Anstieg zu verzeichnen war. Die größte Nachfrage nach Gutschriften auf dem freiwilligen Markt kommt vom privaten Sektor, insbesondere von multinationalen Unternehmen. Das wachsende Bewusstseins für den Klimawandel, die Anerkennung der Dringlichkeit der Klimaschutzherausforderung und die Notwendigkeit von Maßnahmen, die über die nationalen Politiken von Regierungen hinausgehen, scheinen eine wesentliche Rolle bei dem jüngst gewachsenen Engagement auf freiwilligen Kohlenstoffmärkten gespielt zu haben.

Der neue Kontext des ÜvP und die damit verbundenen erhöhten Risiken hinsichtlich einer richtig umgesetzten Kompensation stellen eine Bedrohung für den Erfolg der bisherigen Bemühungen zur Bewusstseinsbildung über den freiwilligen Kohlenstoffmarkt dar. Insbesondere eine Änderung des Modells für das Engagement auf freiwilligen Kohlenstoffmärkten und letztendlich des Produkts, das den Käuferinnen und Käufern zur Verfügung steht, könnte ein neues Hindernis für die Marktteilnahme darstellen. Beispielsweise

äußerten einige Interessengruppen Bedenken, dass ein Nichtverwenden von Emissionsminderungsgutschriften zur Beanspruchung von CO2-Neutralität deren Attraktivität stark verringern würde.

Trotz dieser Herausforderungen bieten die Ambition des ÜvP und das schiere Ausmaß der Herausforderung, seine Temperaturziele zu erreichen, freiwilligen Akteuren die Möglichkeit, die Bemühungen der Regierungen zur Dekarbonisierung zu ergänzen. Die Kohlenstoffmärkte bieten einen möglichen Weg für solche freiwilligen Maßnahmen. Wir empfehlen drei Schwerpunktbereiche zur Ausweitung des Engagements auf dem freiwilligen Kohlenstoffmarkt in der Paris Ära.

- **Freiwillige Kohlenstoffmärkte können eine Rolle bei der Überwindung von Barrieren für neue Technologien und Sektoren spielen.** Wie oben erwähnt, kann dies dazu beitragen, die Kosten für unzugängliche Minderungsoptionen (sogenannte „high-hanging fruits“) über die Zeit zu senken. Wenn Projektentwickler Minderungsoptionen identifizieren, die mit den ehrgeizigen Zielen des ÜvP in Einklang stehen, und ihre transformativen Auswirkungen demonstrieren können, kann dies dazu beitragen, das Ansehen des freiwilligen Kohlenstoffmarktes zu stärken und ein Engagement von neuen und bestehenden Käuferinnen und Käufern von Emissionsminderungsgutschriften hervorrufen.

- **Käuferinnen und Käufer von Emissionsminderungsgutschriften (und die weiteren Stakeholder) sollten die Transparenz über den Beitrag des freiwilligen Marktes erhöhen.** Umfassendere und zugänglichere Informationen sind wichtig, wenn freiwillige Kohlenstoffmärkte bei künftigen Bemühungen zur Bekämpfung des Klimawandels eine herausragende Rolle spielen sollen. Organisationen des privaten und öffentlichen Sektors sollten die mit ihren Aktivitäten verbundenen Emissionen, ihren Umfang und ihre Quantifizierung klar kommunizieren. Käuferinnen und Käufer von Emissionsminderungsgutschriften sollten auch angeben, welche Arten von Gutschriften sie verwendet haben, wie sie stillgelegt wurden und welchen Anspruch sie damit verbinden, damit die Kundschaft selber, die breitere Öffentlichkeit und die Zivilgesellschaft ihre Gesamtauswirkungen auf das Klima bewerten können. Dies gilt insbesondere für freiwillige Akteure, die beanspruchen, ihre Aktivitäten seien klimaneutral. Die Entwicklung eines allgemein anerkannten Leitfadens für bewährte Verfahren zur Ermöglichung von Transparenz bei der Verwendung von Emissionsminderungsgutschriften sowie von Institutionen, die eine unabhängige Aufsicht gewährleisten, könnte die Gelegenheit bieten, das Vertrauen des Marktes zu stärken und das Engagement zu verbessern.

- **Freiwillige Kohlenstoffmarktakteure könnten bestehende Foren für nichtstaatliche Akteure nutzen, um ihre Beiträge im Rahmen des Pariser Prozesses zu berichten.** Eine Teilnahme an Initiativen, die im Rahmen des UNFCCC ins Leben gerufen wurden, könnte den Beiträgen des freiwilligen Marktes die Möglichkeit bieten, sich in den regulären globalen Bestandsaufnahmeprozess („global stocktake process“) einzubringen und die Sichtbarkeit und das Profil als tragfähiger Mechanismus zur Bekämpfung des Klimawandels zu verbessern.

1 Introduction

1.1 Background

The end of the year 2020 marks a fundamental change in the global governance of greenhouse gas (GHG) emissions. For the past two decades the Kyoto Protocol and its Doha Amendment provided the main basis for international cooperation to address climate change. Looking forward, the Paris Agreement – adopted in 2015 – now provides the new framework for the global effort to address climate change. This significantly differs from the approach of the Kyoto Protocol. A key new element is that the Paris Agreement requires *all* countries to pledge climate mitigation targets or actions.

The new context of the Paris Agreement has important implications for the voluntary purchasing and retiring of carbon credits. An increasing number of organisations and individuals are concerned about climate change and are taking voluntary action to both reduce their emissions and to offset those that remain via the use of carbon credits. This *voluntary* carbon market is different from *compliance* markets where carbon credits are used to achieve climate mitigation obligations.

Historically, carbon credits have mostly been generated from projects implemented in developing countries, which did not have GHG emissions targets under the Kyoto Protocol, or in the United States of America and Canada, which, respectively, did not ratify and withdrew from the Kyoto Protocol. In this context, the carbon credit's emission reductions were only claimed by the buyer, and not by the country hosting the mitigation project to achieve a climate mitigation target. Under the Paris Agreement, however, all countries must formulate climate targets or actions. This new context poses important challenges for the role that voluntary offsetting can play in the future, in particular whether and how voluntary purchasing and retirement of carbon credits should go beyond the climate targets pledged by countries.

This report examines the future role of the voluntary carbon market under the Paris Agreement. An important focus is whether and how 'double counting' of emission reductions – using the same emission reduction for voluntary offsetting and to achieve a country's target under the Paris Agreement – is avoided. The report discusses potential new models for how voluntary carbon markets could continue under the Paris Agreement. It also identifies options for increasing engagement in voluntary carbon markets and improving transparency.

1.2 From Kyoto into the Paris era

The Kyoto Protocol – adopted in 1997 – sets out GHG emission targets for countries classified as industrialised (developed) and economies in transition. In contrast, developing countries had no GHG emission targets. The Clean Development Mechanism (CDM) allowed developed countries to emit above their target level if they supported emission reductions in countries without Kyoto targets, by purchasing certified emission reductions (CERs) from these activities and using them to offset their obligations. The basic premise underpinning this system was that developed countries were responsible for driving emission reductions with the option to finance GHG abatement in other countries.

Under the Paris Agreement almost all countries now have climate mitigation targets. These are drawn up in Nationally Determined Contributions (NDCs). All NDCs together should achieve the Paris Agreement's objective of keeping average global warming to well below 2°C above pre-industrial levels with efforts to pursue limiting the temperature increase to 1.5°C (UNFCCC, 2015b). Current NDCs – most of which were drawn up in 2015, prior to the adoption of the Paris

Agreement text at the end of that year – vary markedly in terms of their sectoral coverage, the types of GHGs they include and how the targets are defined. Some countries formulate targets in metrics other than GHGs, such as renewable energy targets, and some only formulate non-quantitative actions. Yet all Parties are expected to move towards economy-wide emission targets over time (Art. 4.4, UNFCCC, 2015b). The achievement of NDCs is, however, not legally binding and there is no penalty mechanism for non-compliance with NDCs, nor is there any agreement on the sharing of efforts between countries to achieve the global temperature goals.

The Paris Agreement is a key departure from the Kyoto approach in several respects that are particularly relevant to considering future models for the voluntary carbon market. The changes include, amongst others, that:

- All countries, rather than just developed countries, have to communicate climate mitigation targets or actions in the form of NDCs (Article 4.2), and all countries are expected to move towards economy wide reduction or limitation targets over time (Article 4.4);
- The NDCs, including the type, ambition and scope of any targets, are self-determined by countries, rather than based on internationally agreed carbon budgets for each country. These should be accompanied by sufficient information to allow for "clarity, transparency and understanding" with regard to the nature of the contribution (Article 4.8); and
- The achievement of NDCs is not legally binding – the mechanism to facilitate implementation and promote compliance with the achievement of NDCs is non adversarial and non-punitive (Article 15).

Furthermore, to stand a reasonable chance of meeting the temperature goals of the Paris Agreement global net GHG emissions will need to fall to zero by mid-century (IPCC, 2018). This requires an urgent ratchet in action to reduce emissions, with considerably more ambitious targets than those set out under the Kyoto Protocol and in current NDCs.

1.3 Key challenges facing future voluntary carbon markets

Voluntary carbon markets face several challenges under the new context of the Paris Agreement. Importantly, however, amidst an urgent need for climate action they may serve as one approach to support global efforts to reduce emissions.

The possible risks from double counting of emission reductions is perhaps the most critical issue that needs to be satisfactorily addressed for the voluntary carbon market after 2020. Double counting means that a single emission reduction is used more than once to achieve climate mitigation targets or goals (Schneider et al., 2019). Double counting can occur in different ways. A key risk is that the same emission reduction is claimed both by the host country of the emission reduction project to achieve its NDC and by the purchaser of the carbon credit to support a claim it has offset the impact of its own emissions. This may occur because the emission reduction project lowers the country's GHG emissions. The host country would therefore report a lower emissions level when demonstrating the achievement of its NDC and the user of the credit would claim the same reduction. A key focus of this paper is an analysis of whether and under which conditions double counting is a concern as well as how any such concerns could be addressed.

It is also important that the future design of voluntary carbon markets ensures that the activities they support do not provide incentives for governments to reduce their mitigation efforts. For example, there is a risk that NDCs are strategically weakened in order to encourage financial

flows into the country from the voluntary market. It is also possible that the voluntary purchase of carbon credits – particularly by companies – is used as an approach to avoid formal regulation of their activities. The paper also discusses these matters.

Another challenge – not discussed in this report – is how the emission reductions should be quantified under NDCs, in particular whether and how NDC targets should be considered in establishing emission baselines and in demonstrating that projects generating carbon credits are additional, i.e. that they would not have been implemented without the voluntary carbon market support.

There is an urgent need to scale up climate change mitigation action. This global challenge offers an important opportunity for the voluntary carbon market to contribute to the flow of climate finance. Collective pledges by national governments included in current NDCs fall well short of the efforts that are needed to keep the global temperature rise to within 2°C of pre-industrial levels, let alone the more ambitious 1.5°C objective (Climate Action Tracker, 2019). Voluntary actions, in part delivered through carbon markets, could play a role in bridging the current mitigation gap to achieve the Paris Agreement temperature goal.

1.4 Overview of the study

The analysis included in this paper is based on relevant literature, input from different stakeholders engaged in voluntary carbon markets as well as the expertise of the authors. In order to solicit a wide range of views and insights, we identified and interviewed different types of stakeholders representing the key interest groups in the voluntary carbon market, including carbon credit standard bodies, project developers, industry associations, retail providers, institutional credit buyers, and civil society. We also discussed initial findings of the research with stakeholders at a workshop held by the German Environment Agency in Berlin in November 2019 and have incorporated relevant feedback into the paper.

Voluntary carbon markets represent the purchase and sale of credits for emission reductions or removals which are not used to fulfil any compliance obligations. In this paper we use 'carbon credit' as a catchall term covering all forms of certificates which represents the reduction of one tonne of carbon dioxide, or equivalent unit of other GHGs, from an activity or project, relative to a baseline. These activities can include, for example, investing in a renewable energy project instead of a coal-fired power plant; providing efficient cook stoves to replace open fires or inefficient, polluting stoves; or planting trees on barren land, amongst a large number of other types of projects. Carbon credits are also referred to as carbon 'offset' credits, in particular if they are used by the holder to offset emissions arising from its own activities. Under the CDM, carbon credits are referred to as 'certified emission reductions', or CERs. Other commonly used labels used more in the voluntary market include, 'verified emission reductions' or 'voluntary emission reductions' (VERs). A common feature across all such units is that the carbon credits are issued for historical emission reductions.

This paper does not consider the use of allowances, or permits, to emit GHGs – for example units issued within a cap-and-trade scheme such as the European Union's Emissions Trading System (EU ETS) – for possible use by voluntary actors to offset their own emissions.

In Chapter 2 we provide further context on the history, functioning, key terminology and more recent trends in voluntary carbon markets. Chapter 3 discusses the main challenge arising from the new context of the Paris Agreement: possible risks from double counting of emission reductions and their implications for the climate. Chapter 4 then identifies and assesses features of potential models for voluntary carbon markets after 2020. In Chapter 5 we consider approaches for enhancing engagement in these markets. Finally, Chapter 6 draws an outlook for

voluntary carbon markets by offering recommendations and concluding thoughts from the study.

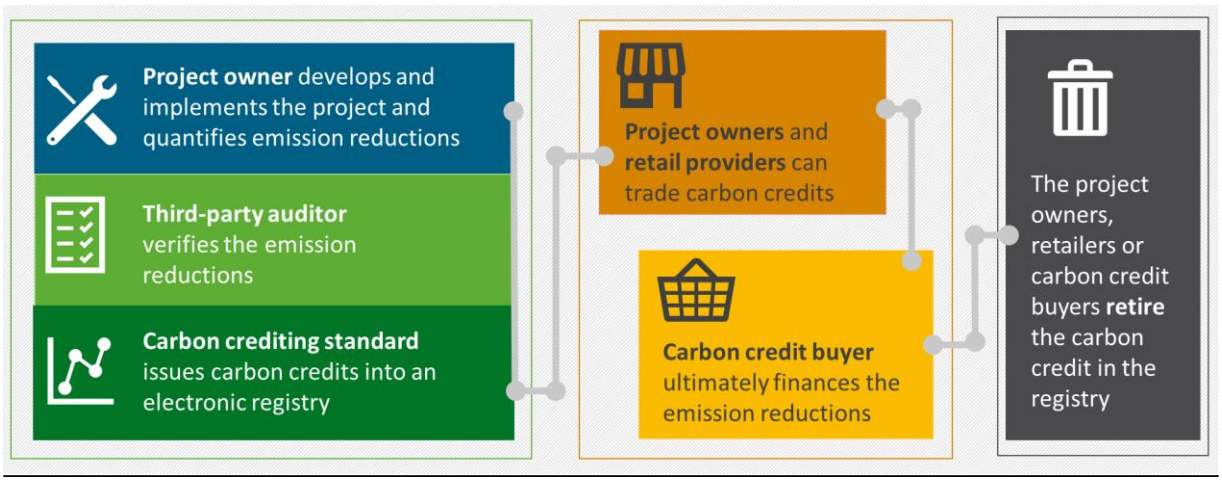
2 Context of the voluntary carbon market

In this chapter we set out further contextual background on the voluntary carbon market. This information – covering how the market works, who the main actors are, how it interacts with the market for carbon credits used for compliance with emission reduction targets, and recent trends – provides a basis for understanding the challenges and opportunities that the Paris Agreement introduces and the potential new models for the voluntary carbon market, which we assess in Chapter 4.

2.1 How does the voluntary carbon market work?

The voluntary carbon market allows institutions and individuals to support the delivery of emission reductions in locations and sectors outside of their direct influence. Financial support is provided in exchange for a carbon credit: a certificate or financial asset, which attributes the reduction of one tonne of GHG emissions to the holder. Figure 7 provides an overview of the lifecycle of a carbon credit.

Figure 7: Overview of voluntary carbon credit lifecycle



Source: NewClimate Institute; Lambert Schneider

There are a number of actors involved in the voluntary carbon market playing roles through different stages of the implementation of an emission reduction project, through to the issuance of carbon credits and ultimately their retirement. Key market participants include the following:

- **Project owners** identify, develop and implement emission reduction projects according to the standards and procedures of a carbon crediting standard. They are often supported by consultants who support the process typically in exchange for a consultancy fee or an agreed share of revenues through the subsequent sale of carbon credits.
- **Carbon crediting standards** establish rules and procedures that emission reduction projects need to meet in order to register and receive carbon credits. This includes, for example, the adoption of methodologies for quantifying emission reductions for different project types. The standard-bodies are responsible for granting approval to projects to be eligible to be issued with carbon credits. They also issue carbon credits and operate (or make use of) registry systems that enable transactions of carbon credits.

- **Third-party auditors** check that projects fulfil the requirements of the relevant standard. They play a role both in checking that the project meets the eligibility criteria of a standard as well as in verifying the quantification of the emission reductions that are reported by the project and used to determine the number of carbon credits awarded.

- **Retail providers** act as market intermediaries, purchasing carbon credits from project owners once they have been issued and sell them on to end buyers (some retail providers also develop projects themselves). They operate platforms with emission calculation tools and further information on voluntary compensation, providing an important communication channel to attract demand to the market.

- **Carbon credit buyers** ultimately provide the source of financing for emission reductions. They buy carbon credits either from project owners or retail providers. In some instances, buyers are actively involved in the development of projects. The types of credit buyers are described in greater detail in section 5.1. They can be broadly categorised into:

    - *Institutional buyers*, which typically procure larger volumes from project owners or via intermediaries. They include companies, governments (acting in a voluntary capacity) or other public institutions, and non-governmental organisations.

    - *Individuals* who typically procure smaller volumes to compensate for certain private activities, such as air travel.

The final stage of the carbon credit lifecycle is for the project owner, retailer or carbon credit buyer to retire (sometimes referred to as 'cancel') the credits by transferring them to a retirement or cancellation account within the applicable registry. Once retired the credits can no longer be transacted or used by another entity.[5]

The carbon credit standards are at the heart of determining the product offerings available in the voluntary market, given their role as arbiters of eligibility and quality. Carbon credit standards are operated and regulated in different ways:

- **Non-governmental standards** are established and run by non-profit organisations or private-sector companies and commonly not regulated by governments or international bodies. A number of non-governmental standards are active on the voluntary market: Verra (who administer the Verified Carbon Standard, or VCS) and Gold Standard are the two most important standards for the sale of carbon credits in terms of value and volume (Hamrick and Gallant, 2018), followed by the Climate Action Reserve, and the American Carbon Registry. In some instances, jurisdictions or international bodies recognise carbon credits from non-governmental standards for compliance with emission reduction policies. We discuss the interaction between voluntary carbon markets and those used for compliance with regulated obligations below in section 2.2.

- **Governmental standards** are established by governments and operate under their supervision. Examples include Australia's Carbon Farming Initiative, the British Columbia Offset Program in Canada or the Woodland Carbon Code in UK. Some governmental

[5] Where carbon credits from the CDM are purchased for voluntary offsetting purposes, they are "cancelled" to prevent further use. CDM credits are "retired" when they are used by a country to meet its Kyoto compliance obligations.

standards allow individuals or institutions to purchase and use their carbon credits for voluntary offsetting purposes.

- **International or bilateral standards** are governed under international or bilateral treaties or agreements and can also allow individuals or institutions to purchase and use their carbon credits for voluntary offsetting purposes. These standards include, for example, the Clean Development Mechanism under the Kyoto Protocol and the new mechanism established under Article 6.4 of the Paris Agreement. Japan initiated the Joint Crediting Mechanism which is a bilaterally governed mechanism between Japan and the host country.

Central to the premise of carbon crediting is that the projects deliver emission reductions that would not have happened without the financial support provided by the credit buyer. All carbon credit standards have procedures to determine whether projects are 'additional', i.e. whether the expected revenues from the future sale of carbon credits are essential to securing the business case for their development. Further requirements include that emission reductions are quantified in a robust manner; that they will not lead to any increase in emissions elsewhere, known as 'leakage'; that any risks of non-permanence, i.e. reversals of emissions or removals at a later time, are appropriately addressed; and that double counting of emission reductions is avoided.

Carbon credit standards set their own criteria for how projects should be set up and managed, including processes such as the involvement of local stakeholders and monitoring, reporting and verification of emission reductions (Lovell, 2010). Some standards require projects to deliver co-benefits beyond climate mitigation, such as reducing air pollution, or enhancing biodiversity, whilst others focus solely on GHG emission reductions. Similarly, certain standards put in place a large number of safeguards to avoid and minimise potential negative impacts, whereas others developed only few. There are also large differences in how standards enforce the implementation of safeguards (Schneider et al., 2018). As a result, the features of carbon credits available on the voluntary market varies widely.

2.2 Interaction between voluntary and compliance markets

The term 'voluntary carbon market' is commonly used for carbon credits that are used to voluntarily offset emissions, regardless of the type of carbon crediting standard they were issued by. In some instances, however, the term is used to refer explicitly to carbon credits issued by *non-governmental* carbon crediting standards. The term 'compliance carbon market' is commonly used for carbon credits that are used to achieve mandatory GHG goals or obligations by governments (e.g. to meet their Kyoto targets) or by public and private entities (e.g. to meet their emission reduction obligations under emission trading schemes or other climate policies). The historical development of both voluntary and compliance markets is intertwined, as some carbon credits may be used for both voluntary and compliance purposes.

Moving from compliance to voluntary markets…

The CDM was originally intended as a compliance instrument under the Kyoto Protocol, allowing developed countries to increase their own emissions beyond their targets by buying carbon credits generated by projects in countries without Kyoto obligations. Notionally this meant that increased emissions were compensated for with reductions elsewhere that would not otherwise have occurred, resulting in the same outcome as if the developed country had simply met its target (but at a cheaper cost).

The international rules governing the CDM, however, subsequently included the option of using CERs for voluntary purposes, by including procedures for voluntary cancellation. This opened the door for using the CDM for other purposes, including voluntary offsetting. After 2012, demand for CERs fell markedly in the wake of the global economic crisis that left many Kyoto countries with surplus units; a thinning of countries taking new reduction targets under the Doha Amendment; questions regarding the environmental integrity of the credits; and a decision to severely limit their use within the EU ETS – the largest cap-and trade market. Supply of CERs far outstripped demand, which led to a dramatic fall in their traded price level. In search of alternative sources of demand, CERs have been increasingly offered to buyers for voluntary compensation. The CDM Executive Board launched a United Nations platform to promote the sale of CERs in the voluntary market in 2015 (UNFCCC, 2015a). However, only a small number of CERs (approximately 1.8 million) have been cancelled by the general public (CDM Registry, 2020).

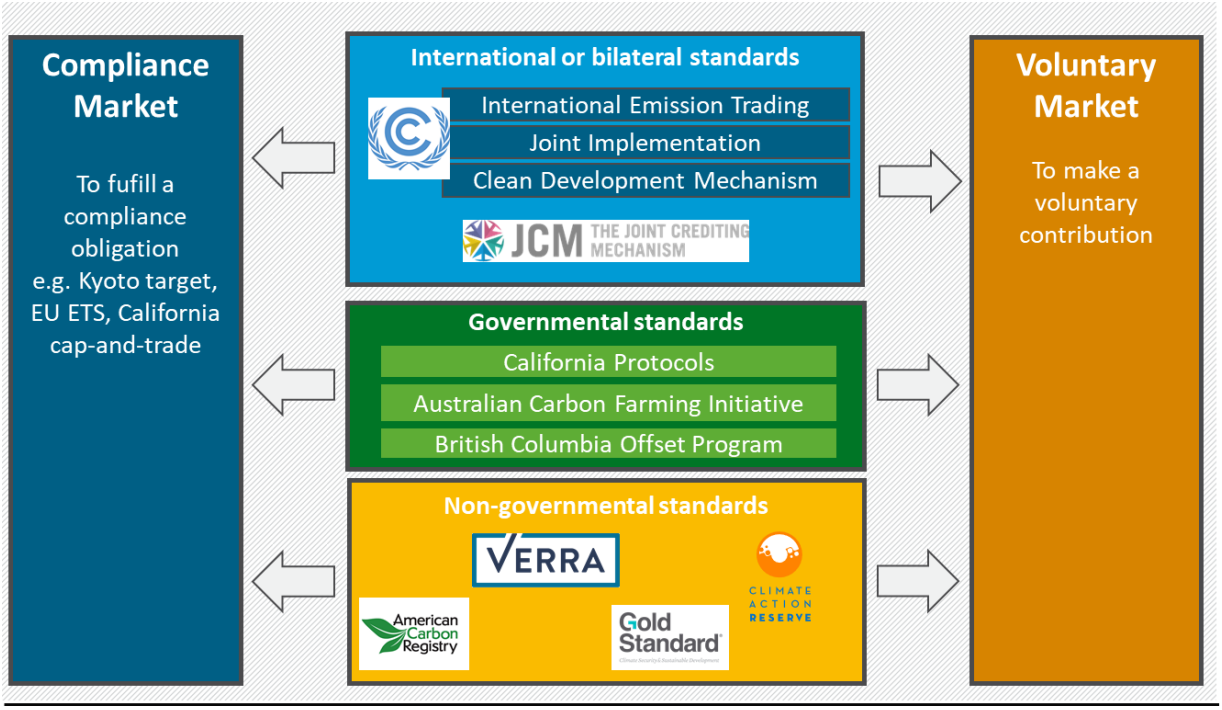
And from voluntary to compliance…

Carbon credits from non-governmental standards were originally only used for voluntary offsetting purposes. Over time, however, some standards became eligible for supplying carbon credits for compliance purposes. For example, some protocols by the Climate Action Reserve and the American Carbon Registry were recognised by Californian authorities to supply eligible carbon credits for compliance under the California cap-and-trade programme. Many of the carbon credits these standards issue can be transferred for use either as a compliance unit or to support voluntary offsetting claims.

In addition, some national governments already allow or are considering allowing carbon credits from non-governmental carbon crediting standards to be eligible for compliance purposes. This includes both the use of carbon credits in emission trading systems – in South Korea – and to reduce carbon taxes obligations, e.g. in Colombia and South Africa.

Figure 8 provides a non-exhaustive overview of some of the interactions and links between compliance and voluntary markets.

Figure 8: Overview of interactions between compliance and voluntary carbon markets



Source: NewClimate Institute; Lambert Schneider

Upcoming regulation of the international aviation sector will further expand the linkages and overlap between voluntary and compliance markets. In 2016, the International Civil Aviation Organization (ICAO) adopted the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) which requires airlines from participating states to buy carbon credits to compensate for some of the sector's emissions growth after 2020, with demand projected to grow year-on-year over the duration of the scheme, set to run to 2035. A number of carbon crediting standards that have so far mainly served the voluntary market have applied to be accepted as eligible programmes under CORSIA (ICAO, 2019b). In March 2020, the ICAO Council approved six programmes to supply eligible emissions units – with certain restrictions on project types and vintages – including an international standard (CDM), a governmental standard (China Greenhouse Gas Voluntary Emission Reduction Program) and four non-governmental standards: Verra, the Gold Standards, the Climate Action Reserve and the American Carbon Registry (ICAO, 2019a).

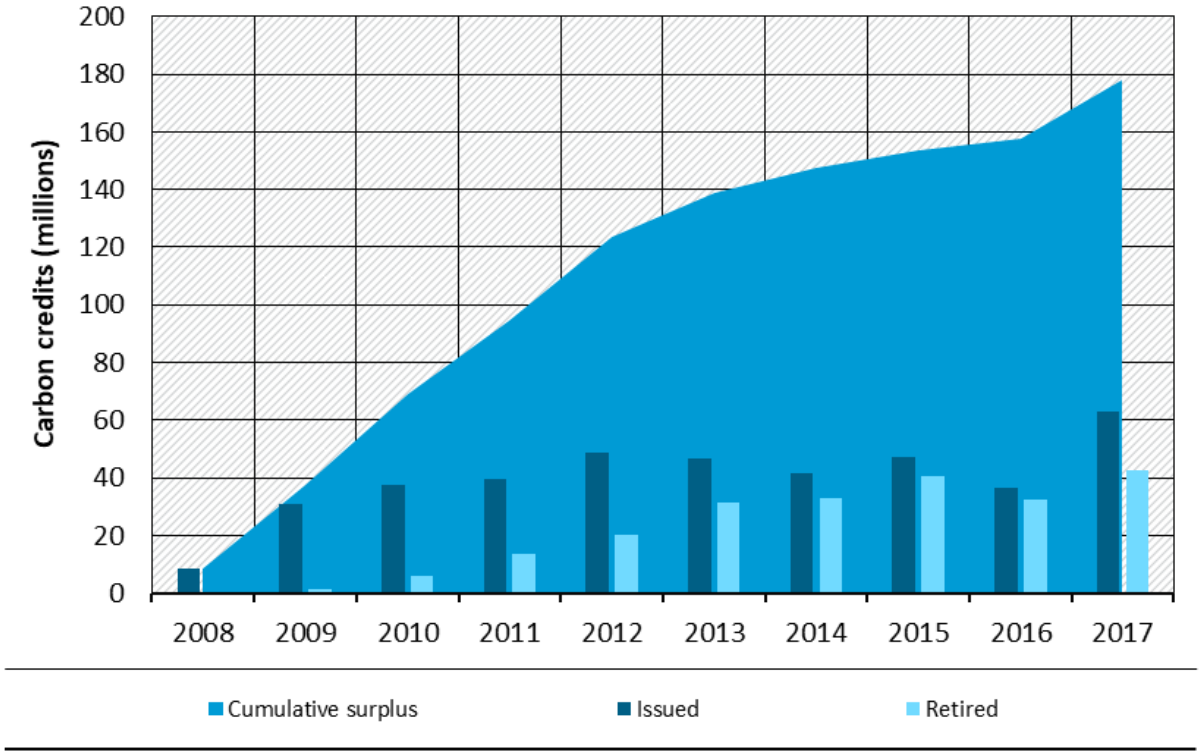
2.3 The voluntary market in numbers

Currently, the voluntary market for carbon credits plays a relatively small role – in comparison to global emissions, as well as in comparison to the compliance carbon market – but one which is growing over time. Analysing carbon credit registries, Hamrick and Gallant (2017) estimate that there has been constant growth in voluntary market transaction volume since 2005. There were approximately 63 million credits issued and 43 million credits retired in 2017; figures that they interpret to represent record annual highs (Hamrick and Gallant, 2018). Figure 9 shows the historical trend in the annual number of carbon credits issued to project developers; the number retired by voluntary market buyers; and the growing cumulative surplus of carbon credits available in the market – because the supply of credits has continuously exceeded demand – from 2008 up to 2017, the last year for which consolidated data is currently available.

For context, global emissions from all sources and GHGs were approximately 54 billion tCO_2eq in 2017 (UN Environment, 2018). Estimates from the World Bank indicate that in the order of 15

percent of global emissions, or approximately 8 billion tCO_2eq, are covered by carbon pricing initiatives, including both emissions trading schemes as well as carbon taxes (World Bank Group, 2020). Voluntary retirements of carbon credits therefore represented less than 0.1 percent of total annual global emissions and in the order of 0.5 percent of the coverage of compliance instruments.[6]

Figure 9: Issuances, retirements and cumulative surplus on the voluntary carbon market



Source: Hamrick and Gallant (2018)

A selected assessment of more recent trends indicate that the market continues to grow. Atmosfair – a retail provider based in Germany – reported in mid-2019 an increase in the value of carbon credit sales by 40% compared to the previous year. And the Swiss carbon credit retailer, MyClimate, reported year-on-year sales growth of 220% for the first quarter of 2019 and 440% for the month of April (Gojdka and Timmler, 2019). Forest Trends' Ecosystem Marketplace (2019) reports that major new sources of demand have materialised in 2018 and 2019, including oil companies and airlines. This may be in part a result of an increasing number of companies committing to set emission reduction targets as part of the "Science Based Targets"[7] initiative. It may also be explained by increasing global awareness of climate change impacts and the need for urgent action stimulated by campaigns such as the Fridays for Futures movement and the Extinction Rebellion series of protests, both of which have increase attention to climate issues across a number of countries. We explore these recent trends further in Chapter 5.

[6] Note that the estimate of the coverage of compliance instruments does not include Kyoto protocol targets or its flexibility mechanisms the CDM and Joint Implementation (JI). A detailed comparison of the relative size of voluntary and compliance carbon markets is beyond the scope of this study and subject to a number of complexities. The estimates here are included to offer an approximate indication of the relative order of magnitudes of the markets.

[7] The following link leads to the Internet: https://sciencebasedtargets.org/

2.4 Recent trends in the voluntary market

This section provides an overview of important recent trends in the voluntary carbon market, some of which are discussed in further detail in Chapter 4 where we discuss challenges and options for increasing engagement in the voluntary market. The information in this section is based on our stakeholder interviews as well as relevant literature.

Companies and individuals move towards prioritising reducing their own emissions

Whilst demand for carbon credits from voluntary actors has increased materially in recent years there is recognition from at least some credit buyers, as well as standards and civil society representatives, that avoiding and reducing one's own emissions should be prioritised over offsetting.

One reason for this trend – highlighted in our interviews and literature review – is an increasing recognition of the uncertainty associated with the impact of offsetting emissions through purchasing carbon credits. One further critique is that offsetting offers a low cost "fix" that may enable buyers to avoid reducing their own emissions. Offsetting is therefore not endorsed by all actors as an effective tool to address climate change. This is a point that we also expand on later in this paper in section 5.2.

Awareness of individual responsibility for tackling climate change is on the rise

Whilst difficult to measure objectively, recent trends indicate that awareness of the urgent need to address climate change is on the rise. At least part of this trend appears to have spurred both individuals as well as companies to take action independently of the ongoing global negotiations and country commitments. This was mentioned in our interviews and is also borne out in recent data on the demand for carbon credits (see section 2.3 above).

Importance of sustainable development benefits

In addition to GHG emission reductions, projects developed for the voluntary market often also aim to deliver wider socioeconomic and environmental benefits such as protecting biodiversity, increasing access to energy and clean water, reducing poverty, or improving health. These have long been a feature of the voluntary carbon market, which could command higher prices for carbon credits. However, recent trends indicate that evidence of a project supporting the achievement of sustainable development goals is increasingly essential for project developers to be able to sell carbon credits and does not automatically allow them to receive premium prices (Forest Trends' Ecosystem Marketplace, 2019).

These "co-benefits" of emission reduction projects are often more tangible, and nearer term, than GHG emission reductions and therefore provide a compelling motivation to carbon credit buyers to engage in the voluntary carbon market.

Non-state actors as innovators to tackle challenging mitigation options

Several stakeholders we interviewed emphasised the importance of focusing voluntary (and compliance-based) finance on projects that are beyond the reach of what host countries can feasibly deliver – so called 'high-hanging fruit'. They also recognised the potential to provide incentives for countries to enhance the ambition of their NDCs by targeting voluntary carbon market support at those countries with Paris Agreement compatible NDC targets. Both of these points can help to avoid disincentivising countries from setting ambitious targets and from increasing their scope over time. However, no clear definition for high-hanging fruit exists and the type of mitigation options will vary across countries, depending on their resources. Similarly, assessing the ambition of NDCs and compatibility with the goals of the Paris Agreement is

challenging and hinge on judgments of equity. Tools such as the Climate Action Tracker[8] have established methodologies to assess this, but do not cover all countries. One project developer we interviewed was in the process of working with national representatives to help host countries develop more ambitious NDCs as a pre-condition for voluntary market assistance.

In some countries, such as the United States, non-state actors are also taking on an increasingly prominent role to address the gaps in national efforts to address climate change (Kuramochi et al., 2017). Some literature also concludes that the voluntary carbon market provides a more innovative tool than compliance carbon markets to tackle challenging mitigation options, due to lower administrative costs amongst other factors (Lovell, 2010; Lang, Blum and Leipold, 2019).

[8] The following link leads to the Internet: https://climateactiontracker.org/

3 Double counting challenges arising from the Paris Agreement

Under the Paris Agreement, all countries have to communicate mitigation targets or actions in their NDCs. This new context raises the question of whether and how to avoid double counting of emission reductions. The Paris Agreement requires countries to avoid double counting in accounting for their NDCs (Article 4.13) and when engaging in international carbon markets mechanisms to achieve their NDCs (Article 6), though there is disagreement among countries how the risk should be addressed for the new crediting mechanism established under Article 6.4 (Schneider et al., 2019). Avoiding double counting is also a requirement if carbon credits are used under CORSIA (ICAO, 2019a).

There is, however, debate regarding the potential impact to the climate if emission reductions resulting from the voluntary carbon market are claimed both by the buyers of the carbon credits and by host countries to achieve their NDCs. This chapter aims to contribute to this debate by unpacking the various arguments put forward, in particular with regard to the underlying circumstances and assumptions made. A thorough understanding of the issues, challenges and possible risks – and under which circumstances and assumptions they are relevant – is important for identifying models under which voluntary carbon markets can operate and achieve their objectives in the Paris era (Chapter 4).

A key question for understanding the challenges and possible risks is what voluntary buyers of carbon credits claim to achieve with the purchase of carbon credits. We first explore this question in section 3.1. We then provide a short overview of the different ways in which double counting can generally occur (section 3.2). We then turn to the heart of the debate and assess whether and under which circumstances there is an environmental integrity risk arising from double claiming between voluntary carbon credit buyers and project host countries (section 3.3). This is followed by a discussion of how such double claiming risks could in principle be avoided and what practical difficulties arise from the diversity of NDCs for avoiding double counting (section 3.4).

3.1 Objectives of voluntary retirement of carbon credits

Carbon credits can be voluntarily retired for different purposes. A key factor relevant to double counting is the type of claim that buyers of carbon credits make when they retire them. The claim reflects the objective that the buyer intends to achieve with the purchase of carbon credits. We distinguish here between two purposes: 'offsetting' climate impacts and 'contributions' towards climate mitigation.

In the voluntary carbon market, carbon credits are mostly used to **offset** GHG emissions associated with the buyers' activities. If all GHG emissions, and wider climate impacts,[9] are offset, the buyers often claim that their activities are **climate neutral**. Typical uses of offset credits include the offsetting of emissions associated with activities (such as business travel or conferences), products (such as selling "carbon neutral" natural gas), services (such as sending parcels), or offsetting the entire emissions of a company, institution or individual.

Carbon credits can, however, also be voluntarily retired for a different purpose: they can offer the buyer an opportunity to **contribute** to emission reductions in a country, or to contribute to the overall goals of the Paris Agreement. For example, the voluntary retirement of carbon credits

[9] For example, aircraft release non-GHG emissions which can trigger radiative forcing climate impacts in addition to the contribution of the carbon dioxide emissions to the overall stock of GHGs in the atmosphere.

is also being used as a vehicle to disburse results-based climate finance (Warnecke et al., 2015). These contributions do not intend to offset the impact of any emissions triggered by the buyer. Instead the credits could simply represent the buyer's contribution to supporting emission reductions, similar to the reporting of contributions to sustainable development objectives by some carbon credit buyers. So far, this option has mostly been used by countries and multinational organisations, e.g. the World Bank's Carbon Initiative for Development (Ci-Dev) fund or the Pilot Auction Facility for Methane and Climate Change Mitigation (PAF).

A number of terms are currently used by voluntary buyers when claiming what they achieved with the purchase of a carbon credit. In the following Box we explore the language of claims, setting out distinct positions and purposes.

The language of claims: Exploring the meaning of offsetting, climate neutrality and contributions and why it matters

Carbon credits are mostly used to **offset** GHG emissions associated with the buyer's activities to reduce the balance of the overall emissions that are released into the atmosphere. In theory, the buyer can report a lower climate footprint, or net GHG emissions, through the combined outcome of the activity itself and the emission reductions represented by the carbon credits. Carbon credits can also be used to offer the buyer an opportunity to **contribute** to emission reductions in a country, or to the overall goals of the Paris Agreement without supporting a claim to balance out any of the buyer's emissions.

To help explore what kinds of claims voluntary carbon credit buyers can make, we set out the definitions and synonyms of both 'offset' and 'contribute' from the Oxford University Press, available on Lexico.com.

TERM	DEFINITION	SYNONYMS
Offset	**Noun** A consideration or amount that diminishes or balances the effect of an opposite one. **Verb** *[with object]* Counteract (something) by having an equal and opposite force or effect.	**counterbalance**, balance, balance out, cancel, cancel out, even out, even up, counteract, counterpoise, countervail, equalise, neutralise, nullify, compensate for, make up for, make good, redeem, indemnify
Contribute	**Verb** *[with object]* Give (something, especially money) in order to help achieve or provide something.	**give**, donate, give a donation of, make a donation of, put up, come up with, subscribe, hand out, grant, bestow, present, gift, accord

Offsetting, neutrality and net-zero

According to these definitions, **offsetting** inherently facilitates neutrality in that, as a noun, it "balances the effect of an opposite one" or as a verb, it implies "having an equal and opposite force". Many of the synonyms imply that, through offsetting an effect, the overall outcome is as if the original effect had not occurred; such as *counterbalance, balance, balance out, equalise, neutralise, nullify*.

Taking a numerical example, if an organisation's activities cause 10 tonnes of carbon dioxide to be released into the atmosphere in a year and it buys 6 carbon credits which it then retires to support a claim to offset its emissions, it would report net emissions of 4 tonnes of carbon dioxide. The reported outcome is identical to the case in which the organisation would not use any carbon credits but reduce the emissions caused by its activities by 6 tonnes, with 4 tonnes of remaining carbon dioxide released into the atmosphere.

Some organisations report that they offset all of their GHG emissions – in this example that could be achieved through buying and retiring 10 carbon credits – in order to claim that their activities are **climate neutral** or have a **net-zero** climate impact. If an act, product, service or organisation as a whole is described as climate neutral this implies that it has no net-effect on the climate. In the

simplest case, a climate neutral action, product or service does not lead to any emissions – no GHGs are released into the atmosphere and the climate is unaffected.

For example, a delivery courier picks up a parcel in one building and carries it, on foot, to its intended destination. Leaving aside considerations of the agricultural and other supply chain emissions associated with the courier's dietary requirements to fuel their journey, this can be considered a climate neutral service with no requirement to offset emissions. In an alternative example, the same courier service could be provided by transporting the parcel using a van with a combustion engine. This service then causes GHGs to be released into the atmosphere, which would need to be balanced out in some way – for example using a carbon credit – in order to claim that the climate is unaffected by the combined outcome of the service and the emission reductions represented by the carbon credit.

The synonyms for offset, shown above, include *compensate for*. The definition of **compensate** provides more of a notion of addressing loss, suffering or injury that has been inflicted, but while 'compensate' does not necessarily imply a balancing or netting-off of an impact, in the lexicon of carbon markets, some use the term interchangeably with 'offset'. Similar sounding works are also used to convey offsetting in a number of non-English languages – for example German (kompensieren), Dutch (compenseren), Spanish (compensar), French (compenser), Italian (compensare) and possibly many more. To avoid nuances in language leading to misinterpretations of claims we would recommend that 'offset' is used if 'neutrality' is claimed.

Contributing (to climate action)

The term **contribution**, on the other hand, is less specific, and merely indicates a purpose; to "help achieve… something". The term on its own does not communicate anything related to magnitude and there is no notion of balancing out an effect. The synonyms infer the clear notion of *giving*. For the purposes of voluntary climate action, a contribution can therefore be seen as a means of support to help achieve the goal of mitigating climate change. Individuals or organisations that report contributions to reduce emissions would need to provide additional information to convey the scale of the contribution or quantify its impact. Whilst the contributions could reflect the purchase and retirement of an equal volume of carbon credits as the volume of GHG emissions caused by an activity, a 'contribution claim' does not suggest that the emissions are balanced-out in any way or that the climate remains unaffected.

Taking the example above, the organisation would report the 10 tonnes of carbon dioxide that its activities lead to. Alongside this, it could report how many carbon credits it purchased. The reporting needs to be clear that the carbon credits are not used to support a claim of 'neutrality', ensuring their audience does not interpret them as a balancing out of the 10 tonnes of carbon dioxide emitted in the first place. Instead the credits could simply represent the buyer's contribution to supporting emission reductions in a country, or to the overall goals of the Paris Agreement, similar to how contributions to sustainable development objectives are currently reported by many carbon credit buyers.

3.2 How can double counting generally occur?

Double counting of emission reductions occurs if a single emission reduction is used more than once to achieve climate mitigation targets or goals (Schneider et al., 2019). It can occur in three main ways (Schneider, Kollmuss and Lazarus, 2014; Prag, Hood and Barata, 2013):

1. **Double issuance** occurs when two carbon credits are issued for the same emission reductions or removals and both are used to achieve climate targets or goals. This could, for example, occur if the same project is registered under two different carbon crediting standards.
2. **Double use** occurs when the same carbon credit is used more than once to achieve climate targets or goals. This could occur if a carbon credit is duplicated in registries or if the retirement of one credit is claimed for achieving two different purposes.
3. **Double claiming** occurs when both the user of a carbon credit and the country where the carbon credit's associated emission reductions occurred claim the emission reductions: the country by reporting lower emissions levels when tracking progress towards its NDC and the user of the carbon credit by claiming to have supported the delivery of the emission reductions.

Our analysis focuses on **double claiming**, as this is the main new challenge arising from the Paris Agreement and as most carbon crediting standards have procedures in place to avoid double issuance and double use.

3.3 Climate impact of double claiming

At the heart of the debate on the need to avoid double claiming between voluntary carbon credit buyers and host countries using the emission reductions to achieve their NDCs is the climate impact of double claiming. The net impact on global GHG emissions depends on the circumstances as well assumptions regarding what would happen without the voluntary carbon market intervention.

In this section, we systematically assess the impact of using voluntary carbon markets on global GHG emissions under various scenarios – assuming that both the buyer of the carbon credit and the country where the emission reduction project is implemented both claim the same emission reduction outcome. The assessment focuses exclusively on the risks presented by double claiming. We do not consider other important factors that determine the environmental integrity of carbon market activity, which are common to all of the scenarios. For the purposes of this assessment, we implicitly assume that the carbon credits have 'quality' – i.e. that the activity is additional and that the emission reductions are accurately estimated – and that that the carbon credit buyer robustly quantifies the actual emissions it intends to offset.

Ultimately the climate impact is determined by comparing the aggregated emissions under two headline scenarios:

- One scenario in which a voluntary buyer purchases and retires a carbon credit; and
- Another counterfactual scenario in which the voluntary carbon market is not used, i.e. no carbon credit is purchased.

For this comparison, it is important to consider the impact on emissions both where the voluntary market project delivers emission reductions ('project host country') as well as where the carbon credit buyer's activities cause their own emissions ('buyer activity country'). Both the project as well as the buyer activity could be confined to a single country or could span multiple

countries. For simplicity we use the term 'country' in the singular in the text below. It is also possible that the project host country and the buyer activity country are, in fact, the same.

3.3.1 Emissions in the project host country

The overall impact on the level of emissions in the project host country as a result of voluntary carbon market support to an emission reduction project depends on the response of the project host country government. Two scenarios are possible:

- The project host country may not alter its own climate action in response to the voluntary market project, continuing its level of climate mitigation effort irrespective of additional emission reduction outcomes delivered by the voluntary market. In this case the voluntary market facilitates a reduction in emissions in the host country relative to the counterfactual case in which the project was not supported through the purchase of the carbon credit.
- The project host country may reduce its level of climate action because the emission reductions delivered by the voluntary carbon market mean that the host country needs to make less climate mitigation effort – e.g. through enacting fewer or less stringent climate policies – in order to achieve the same overall outcome. In this case the emission reductions supported by the voluntary market displace nationally driven climate action and the voluntary market has no overall impact on the level of emissions in the host country.

In both of these cases the project host country's NDC target remains unchanged. We further consider the implications of factors that may influence the country response, such as ambition levels, in section 3.3.4.2 below.

3.3.2 Emissions in the buyer activity country

The impact on the level of emissions in the buyer activity country from using voluntary carbon markets depends on two elements: the actual emissions of the carbon credit buyer; as well as any related response to these emissions by the country their activities are located in.

There are two possible scenarios regarding the carbon credit buyer's emissions. First, the **carbon credit buyer's own emissions could remain unaffected** by the decision to purchase and retire carbon credits. This would be the case if purchasing and retiring carbon credits is not used as an alternative to reducing the carbon credit buyer's own emissions *and* where the carbon credit buyer's consumers do not alter their level of demand for its products or services as a result of the use of carbon credits.

Second, the **carbon credit buyer's own emissions could increase** relative to the counterfactual case in which it did not purchase and retire carbon credits. This could occur if the carbon credit buyer elects to use carbon credits to offset its emissions as an alternative to reducing its own emissions. It could also occur if the carbon credit buyer's consumers switch their demand from a substitute product, or simply demand more of their product, because its climate impact is offset. For example, if a consumer decided to fly using an airline which claimed to offset its emissions rather than take a lower-emissions transport option, such as the train (for a journey of similar duration and cost) this would lead to an increase in the emissions from the journey.

And there are two possible scenarios related to the response of the buyer activity country to a rise in emissions. First, a rise in the carbon credit buyer's emissions could prompt the **buyer activity country's government to increase its climate action**. In this case the increase in

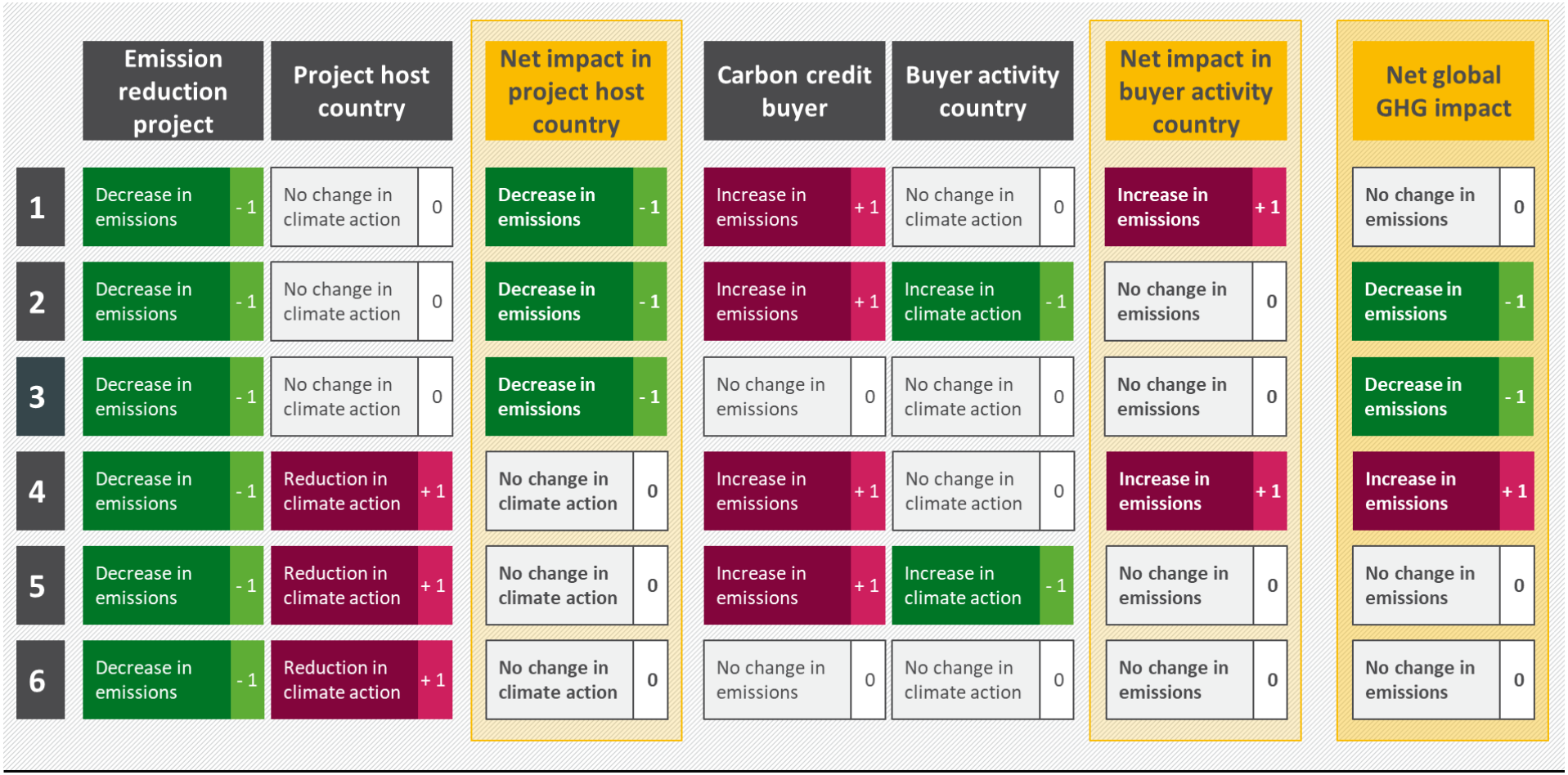
emissions by voluntary market carbon credit buyers would be balanced out by additional emission reductions pursued by the country's government, e.g. through implementing new or more ambitious climate policies. This would lead to no overall impact on the level of emissions in the buyer activity country.

Alternatively, the **buyer activity country may not alter its climate action** in response to rising emissions from the activities of voluntary market carbon credit buyers, continuing its level of climate mitigation effort irrespective of the increase in emissions.

3.3.3 Net global GHG impact

Figure 10 illustrates the overall net global GHG emissions impact in six scenarios. These scenarios reflect various possible combinations of impacts in the project host country and the buyer activity country. For each scenario, we include an indicative quantification of the impact on emissions; 0 indicates that there is no impact, +1 that there is an increase in emissions, and -1 that there is a decrease in emissions. The scenarios represent a simplified indication of the climate impact as in reality many of the effects may be partial. For example, the project host country might partially reduce its climate impact in response to the emission reduction outcomes from the voluntary market, leading to an emissions impact in the project host country of some value between 0 and -1.

Figure 10: Climate impact of different voluntary carbon market scenarios



Source: NewClimate Institute; Lambert Schneider

In the first three scenarios shown in Figure 10, the project host country does not change its climate mitigation efforts in response to the emission reductions delivered by the voluntary carbon market, leading to an overall decrease in emissions in the project host country. In effect the voluntary carbon market support helps reduce the overall level of emissions in the project host country beyond the emission reductions delivered without its support. If the carbon credit buyer's emissions increase – for example, because carbon credits are used by the buyer as an alternative to reducing its own emissions - and the buyer activity country does not alter its climate action (scenario 1) then the overall impact of engagement in voluntary carbon markets on the climate will be zero. If, on the other hand, the buyer activity country increases its climate action (scenario 2) the net global GHG impact will be a decrease in emissions. Finally, if the carbon credit buyer's emissions remain unaffected – because the carbon credits are not used by the buyer as an alternative to reducing its own emissions and their customers do not alter their level of demand due to the use of carbon credits – there is no reason for the buyer activity country to adjust its climate mitigation efforts (scenario 3) and the net global GHG impact will also be a decrease in emissions.

Across scenarios 4-6 in Figure 10, the project host country reduces its climate action in response to the emission reductions delivered by the voluntary carbon market, leading to no overall impact on emissions in the project host country. In effect the support of the voluntary carbon market displaces national climate action, rather than adding to it. In this case if the carbon credit buyer's emissions increase – for example, because it takes less action to reduce its emissions than it would have done if it were unable to use carbon credits, or because its use of carbon credits served to shift demand for its products or services from lower emission intensive alternatives – and the buyer activity country does not alter its climate action (scenario 4) then the overall impact of engagement in voluntary carbon markets is a net increase in emissions. Alternatively, if the buyer activity country increases its climate action to balance out the rise in the carbon credit buyer's emissions (scenario 5) then the net global GHG impact will be zero. Similarly, if the carbon credit buyer's emissions remain unaffected there is no reason for the buyer activity country to adjust its climate mitigation efforts (scenario 6) and the net global GHG impact will also be zero.

3.3.4 Factors influencing climate impact outcomes

There are a number of different scenarios presented in Figure 10, and depending on the circumstances, the overall impact to the climate can range between a net decrease in emissions to a net increase in emissions, compared to the case in which there is no engagement in voluntary carbon markets. In the following two sub-sections, we identify some of the factors that may influence the respective actions and emissions outcomes of the different stakeholders.

3.3.4.1 Carbon credit buyer's emissions

The use of voluntary carbon markets reduces global GHG emissions most where the carbon credit buyer's own emissions are unaffected by its decision to purchase and retire carbon credits.

The **type of claim** made by the carbon credit buyer may influence whether or not its emissions increase or remain unaffected. Carbon credits that are used to 'offset' emissions may be more likely to serve as a substitute to directly reducing the emissions of the carbon credit buyer than carbon credits which represent a financial 'contribution' to supporting emission reductions. In particular, this may be the case for companies that are focused on reducing their net climate footprint and where using carbon credits for offsetting is cheaper than reducing their own emissions.

In addition, an offset claim made by the carbon credit buyer may persuade its customers that its activities have a reduced impact on the climate, relative to the counterfactual case in which the emissions are not offset. Indeed, many companies advertise their carbon offsetting – for example with carbon neutral claims – as a means to maintain or build demand for their products and services.

Using carbon credits to offset emissions may therefore increase the likelihood that the carbon credit buyer's own emissions increase relative to the counterfactual case that carbon credits are either not used or are used as a means to contribute to the climate action of another country.

3.3.4.2 Country climate action

The use of voluntary carbon markets reduces net global GHG emissions most where the project host country does not alter its climate mitigation efforts in response to voluntary carbon market support. However, for buyer activity countries, net global GHG emissions are reduced most where the country responds to an increase in the carbon credit buyer's emissions by increasing its climate action. In the following paragraphs we set out a number of different factors which may influence the different responses to engagement in voluntary carbon markets of both project host countries as well as buyer activity countries:

- **Coverage of the emissions by NDC targets:** If the emissions – either of the carbon credit buyer's activities or the emission reduction project – are not covered by the scope of the relevant country's NDC target, then a change of the emissions level would not impact the ability of the country to achieve its NDC. In this case, the country may be less likely to alter its climate mitigation efforts as a result of the change. Over time this factor should become less relevant as NDCs in all countries are expanded to economy-wide targets.

- **Visibility of the project's emissions impact in GHG inventories:** An important consideration is whether countries actually observe a change in their national GHG inventory (or other indicators used to track progress towards NDCs, such as the level of renewable electricity generation) from a change in emissions due to the voluntary carbon market. This issue is also referred to as 'GHG inventory visibility' (Prag, Hood and Barata, 2013). Visibility depends on which GHGs are abated and which IPCC methods are used to calculate the GHG inventory. For most emission sources, in particular carbon dioxide emissions from fuel combustion, it is likely that the mitigation outcomes are observed in national GHG inventories. For some other gases, countries need to apply higher 'tiers' of GHG inventory methods to ensure visibility. If the emissions change is not visible in GHG inventories, then the country is less likely to alter its climate mitigation efforts.

- **Ambition of current NDCs:** If a country has an NDC that is more stringent than its business-as-usual emissions, then a change in the country's emissions level could affect the size of its mitigation gap and hence the additional climate action that the country needs to take to achieve its NDC target. If a country has an NDC that is less stringent than its business-as-usual emissions, then it is likely to overachieve its NDC, regardless of whether or not its emissions change as a result of engagement in voluntary carbon markets. Countries with less ambitious NDCs are less likely to alter their climate mitigation efforts.

- **Ambition of future NDCs:** A change in a country's emissions level due to engagement in voluntary carbon markets might also affect the stringency of future NDCs. A lowering of

emissions – for example in the project host country – could bring down costs and other barriers to new technologies and encourage the country to adopt a more ambitious NDC in the future. Alternatively, increasing emissions – for example in the buyer activity country – could lock-in more carbon intensive technologies and make it more difficult for the country to raise the ambition of its future NDC.

- **Intention to achieve NDCs and climate policy planning:** Another factor is whether countries intend to achieve their NDC target. While regular communication of NDCs is an obligation under the Paris Agreement, the achievement of NDCs is not mandatory. However, most countries may still strive to achieve their NDCs and take further mitigation action if they are not on track. If countries do not prioritise achieving their NDCs, however, they are unlikely to alter their climate action in response to changes in their emission levels caused by the voluntary market. In this context the sophistication of climate policy planning of the country may also play a role, i.e. the capacity of countries to prepare emission projections and to assess whether they are on track to achieve their NDCs and to estimate the emissions impact of further climate policies that may be necessary to achieve their NDC.

- **Materiality of voluntary market emission changes:** Lastly, the relative size of the changes in emissions due to the voluntary market may also play a role. If the effect is a very minor share of the country's emissions (or of those covered by the scope of the NDC target), it is less likely that the country changes its climate mitigation efforts in response. However, determining materiality of voluntary market impacts on emissions at the national level requires extensive information on both emission reduction activities as well as carbon credit buyer activities. It also requires consideration of future impacts which will not be known and are likely to be challenging to accurately forecast.

3.3.5 Implications of double claiming for the climate

The six scenarios set out above – reflecting different circumstances and actions on the part of a range of stakeholders – show that, where there is a risk of double claiming the same emission reduction outcome, the use of voluntary carbon markets could lead to a net reduction in global emissions, have no impact, or even lead to a net increase in global emissions.

Crucially, the overall outcome for the climate is not easily controlled by project owners, carbon crediting standards or carbon credit buyers as it depends on the actions of other stakeholders outside of their influence. For example, where double claiming is a risk, a carbon credit buyer cannot determine with certainty that the project it supports leads to an overall decrease in net global GHG emissions (scenarios 2 and 3 in Figure 10 above) as this would require knowing how the project host country, the buyer activity country as well as its customers react to the use of voluntary carbon markets.

It is also important to note that a number of the factors which could – in theory – improve the likelihood of an improved climate impact of voluntary market engagement under specific circumstances (where there is a risk of double claiming) do not constitute recommendations for how and where future voluntary carbon markets should focus their support. For example, the likelihood of the project host country reducing its climate mitigation efforts in response to a voluntary market project may be reduced where the NDC has limited coverage or is unambitious, or where the country does not intend to achieve its NDC. However, targeting support to such countries would likely disincentivise engagement in the Paris Agreement

process, with far wider adverse implications for the climate. Furthermore, in scenario 2 (as in scenario 5) the overall decrease in emissions (or avoidance of an increase in emissions) is only enabled by the buyer activity country balancing out the increase in emissions from the carbon credit buyer. This would be a somewhat perverse justification for using carbon credits by the buyer.

In summary, double claiming of the same emission reduction outcome by both the carbon credit buyer and the project host country, presents a risk to the climate. The actual impact to the climate may depend on a wide number of factors, many of which are likely to be out of the direct control of key stakeholders involved in driving voluntary carbon market activities – such as project owners, carbon crediting standards and carbon credit buyers. Given that, in the worst case, double claiming emission reductions delivered by the voluntary carbon market can lead to a net increase in GHG emissions, future voluntary carbon market models should aim to reduce, and ideally eliminate, double claiming risks.

3.4 How to avoid double claiming

If double claiming between carbon credit buyers and host countries is deemed a risk, there are two main accounting approaches to avoid claiming the same emission reduction outcome more than once:

1. The host country accounts for the use of the carbon credits by the voluntary buyer when tracking progress and accounting for its NDC; or
2. The carbon credits reflect emission reductions or removals in sectors, or from GHGs, that are not covered by the NDC of the host country

3.4.1 Host country accounting adjustment

This section provides an overview of how host countries could account for the use of offset credits by voluntary buyers, considering relevant provisions under the Paris Agreement.

The Paris Agreement does not include any specific provisions that address the use of carbon credits to achieve voluntary goals. It includes, however, various provisions for avoiding double counting. Article 4.13 requires countries to avoid double counting when accounting for their NDC and Article 6 establishes a framework under which allows countries can engage in cooperative action, including international carbon market mechanisms, and to account for any internationally transferred mitigation outcomes when accounting for their NDCs.

Provisions to account for international carbon market mechanisms are included in the draft negotiation text on Article 6 and in the modalities, procedures and guidelines (MPGs) for the enhanced transparency framework adopted in Katowice (decision 18/CMA.1). Under these provisions, double counting of emission reductions should be avoided through the application of 'corresponding adjustments'. They require each country engaging in a cooperative approach under Article 6 to provide an emissions balance, referred to as 'structured summary' (paragraph 77d of the Annex to decision 18/CMA.1). In these 'structured summaries', countries account for the international transfer of mitigation outcomes by making corresponding adjustments to their reported GHG emissions; additions are made for mitigation outcomes that are transferred to other countries and subtractions are made for mitigation outcomes acquired or used from other countries. The resulting balance is then compared with the target level to determine whether a country has achieved its NDC target. This ensures that the country acquiring the emission reductions can use them to achieve its NDC, while the country transferring the emission reductions can no longer use them.

The draft negotiation text on guidance for Article 6.2 includes options that would enable the same approach to be applied in the context of the voluntary market. Internationally transferred mitigation outcomes (ITMOs) are defined to include mitigation outcomes that are authorised by a Party for use for "other purposes, including as determined by the first transferring participating Party". This definition opens the possibility for host countries to authorise project proponents or other entities to use ITMOs for the voluntary carbon market. A consequence of such authorisations is that the country is then obliged to apply corresponding adjustments: section III.D of the draft negotiation text includes provisions that "where a participating Party authorizes mitigation outcomes for other international mitigation purposes, it shall apply a corresponding adjustment, consistent with this guidance, for first transfer, whether or not the mitigation outcomes have been internationally transferred" (UNFCCC, 2019). Authorisation by the host country is therefore a pre-condition for the application of the Article 6.2 provisions. The authorisation thus implies a commitment by the country to account for the use of carbon credits in the voluntary market by making respective additions in its structured summary. This approach would be very similar to the accounting for carbon credits used under CORSIA where it is also envisaged that countries issue letters in which they authorize that emission reductions may be used for CORSIA and declare that they will make the necessary additions to their reported emissions in order to avoid double counting. In practice, this means that the use of carbon credits for voluntary purposes could be accounted for in similar ways as the use of carbon credits under CORSIA.

These provisions raise a number of practical implementation questions that would need to be resolved over the next years:

- **Timing of authorization:** Countries could authorise the use of carbon credits for voluntary purposes *ex-ante* – prior to the issuance of carbon credits – or they could authorize already issued carbon credits to be used for a specific purpose. The timing of the authorization has important implications for market participants. An early authorization may help to provide certainty that the carbon credits can be used for offsetting purposes and that the country will apply the necessary adjustments. However, at this point in time, it is not yet known, how many carbon credits a project will actually issue, and thus involves uncertainty for countries how many adjustments they will need to apply. Countries could therefore also specify in their authorization letters a maximum number of carbon credits that are authorized for achieving voluntary offsetting purposes.

- **Purpose of authorisation:** Countries could authorise the use of carbon credits only for a specific purpose (e.g. for use under CORSIA) or for multiple purposes other than achieving their own NDC (e.g. use in the voluntary market, use under CORSIA, use towards the NDC of another country). An authorization for multiple purposes offers flexibility to project owners to sell to the market where the highest price can be achieved. This could potentially also lead to a fungible market for carbon credits that are "double-counting-risk-free" (i.e. backed by adjustments from the host country). However, this option makes it more complex to track the use of authorized carbon credits and to ensure that adjustments reconcile, i.e. that the additions made by countries due to the authorization for other purposes, matches the subtractions made by other countries, the use under CORSIA and the use for voluntary purposes.

- **Trigger for the application of corresponding adjustments:** The MPGs and the draft negotiation text on Article 6.2 guidance envisage that the application of an adjustment by the host country should be triggered by the international transfer of the mitigation outcome. In the case of a voluntary retirement of carbon credit, however, there is not necessarily any international transfer involved. A carbon credit may simply be retired in the registry of the carbon crediting standard. The rules on Article 6 would therefore need to specify what trigger should be used in the case of offset credits that are used for voluntary purposes. This could potentially include the authorization by the host country, the issuance of the carbon credit, or its retirement. If offset credits are authorized to be used for multiple purposes, and if different triggers are used for international transfers and the use for voluntary purposes, further provisions would be needed to ensure that the host country does not apply an adjustment twice for the same credit (e.g. the first adjustment when it is authorized for purposes other than the achievement of the country's own NDC, and a second adjustment when it is internationally transferred).
- **Application of adjustments to calendar years in structured summaries:** Further clarity would also be needed to which calendar years adjustments are applied in structured summaries. This could be the calendar year when the emission reductions occurred. However, in this case, information would be necessary in which calendar year and offset credit's emission reductions or removals occurred. This information is currently not available under all carbon crediting standards. Other choices include the year in which the credit is issued or retired; however, this brings other challenges, including that offset credits may be cancelled or issued years after the emission reductions occurred.
- **Global warming potentials (GWPs):** In their first NDCs, countries use different GWP values to account for their NDCs, including from the 2nd, 4th and 5th assessment reports of the Intergovernmental Panel on Climate Change (IPCC) (Graichen, Cames and Schneider, 2016). At the same time, carbon crediting standards also use their own GWP values to issue carbon credits. This raises the question how the country can ensure that it accounts consistently in a single metric for its NDC. To ensure consistent use of GWP values, accounting would be simplest if both host countries and carbon-offsetting programs use the values from the 5th assessment report of the Intergovernmental Panel on Climate Change (IPCC) for the period after 31 December 2020. Under the Paris Agreement, this could be implemented through a decision requiring countries authorizing the use of offset credits for other purposes to (i) apply the Article 4.13 accounting guidance in Annex II to decision 4/CMA.1 and (ii) to include in their authorization letters a condition that offset credits must be issued using the GWP values from the 5th assessment report.

In conclusion, if countries authorise the use of ITMOs for the voluntary market, the practical application of adjustments to account for the use of carbon credits for voluntary purposes could be implemented in similar ways as adjustments applied in the context of CORSIA.[10] Ideally,

[10] At the time of finalising this study both Gold Standard and Verra, two of the largest carbon crediting standards for the voluntary carbon market, were conducting public consultations on establishing a clear differentiation between carbon credits for which a project host country corresponding adjustment is applied (for example, for use under Article 6 of the Paris Agreement or CORSIA) and those for which no adjustment is applied (for other uses or differentiated claims). See: https://www.goldstandard.org/our-

countries could authorise carbon credits to be used for any purpose other than achieving their own NDCs. This would create a market for "double-counting-risk-free" carbon credits that could be used for multiple purposes. Practically, however, a number of outstanding issues need to be addressed to ensure robust accounting for such purposes in structured summaries.

3.4.2 Crediting emission reductions outside the scope of country targets

An alternative means of avoiding the risk of double claiming is for carbon credits to reflect emission reductions or removals in sectors, or from GHGs, that are not covered by the NDC of the host country. Double claiming would not occur because only the buyer, but not the host country, would use the emission reductions to achieve a climate mitigation target or goal.

This option, however, also raises challenges and concerns related to the identification of current and future coverage of NDCs, as well as possibly offering a disincentive for countries to increase the scope of their NDCs.

Challenges to identify the coverage of NDCs

Under the Kyoto Protocol, countries either had targets that were economy-wide, included all GHGs, applied to common, continuous multi-year target periods and were expressed as absolute levels of GHG emissions in relation to a historical base year, using common metrics for global warming potential (GWP values), or they had no climate targets at all. Accounting for the international transfer of carbon market units, or the use for voluntary purposes, was therefore relatively straight-forward.

Under the Paris Agreement, NDCs are defined individually by each country, including the type and scope of mitigation targets or actions. As discussed in Schneider et al. (2019): "*Many countries have formulated their pledges as some form of GHG emissions targets, whereas others have used different metrics, such as targets for the penetration of renewable sources. Some pledges do not cover all sectors of the economy or all GHGs; some are conditional on the provision of support from other countries; and some have no quantitative targets whatsoever, only qualitative descriptions of actions or strategies. Countries have also chosen different time periods for their targets; many have pledged targets for a single year – most 2030, some 2025 – whereas some have chosen a multi-year period, such as 2021 to 2030. And some pledges are simply unclear; for example, they lack a clearly defined scope of the target or express a target as a deviation from business as usual without having determined their business-as-usual emissions. All these factors make accounting complex.*" (Schneider et al., 2019)

There is also a time dimension to the identification challenge. The Paris Agreement requires all countries to move towards economy-wide GHG targets as soon as possible. This both narrows the potential space for projects outside of the scope of targets and means that activities initially outside the NDC scope could still enter within its scope during the project's lifetime (or crediting period), thereby presenting a double claiming risk.

Disincentives to increase NDC target scope

Most NDCs were developed in advance of the adoption of the Paris Agreement text. As we note above, they reflect a patchwork of differently formulated commitments that were put forward prior to countries knowing what the new global agreement would look like. They should therefore be seen as an initial step towards the development of national commitments that are

work/innovations-consultations/operationalising-and-scaling-post-2020-voluntary-carbon-market; and https://verra.org/public-consultation-proposal-for-scaling-voluntary-carbon-markets-and-avoiding-double-counting-post-2020/

truly reflective of what is needed to deliver on the ambitious temperature goals signed up to by nearly all countries.

Distinguishing between the treatment of activities inside or outside the NDC scope could introduce perverse incentives for countries to avoid expanding the scope of their NDC in the expectation that this facilitates an increase in foreign investment via the carbon market. We elaborate on these incentives in our evaluation in Chapter 4.

4 Assessing models for voluntary carbon markets after 2020

From the beginning of 2021, the Paris Agreement infrastructure will govern the global approach to addressing climate change. This new framework has spurred considerations of how public, institutional and private actors may continue to engage in the voluntary carbon market as part of their efforts to address climate change. In this Chapter we identify and assess a range of different models for the use of voluntary carbon markets as a means for institutions and individuals to take action beyond the boundaries their climate footprint.

4.1 Identification of future models of the voluntary carbon market

4.1.1 Development of proposals for future models

As a first step we identify the main models that market participants and wider stakeholders have proposed for voluntary carbon markets after 2020. This is based on both a review of literature as well as the stakeholder interviews we carried out to inform the study. The key models that we identified as most relevant for consideration have emerged from publications by two parallel working groups convened by the International Carbon Reduction and Offset Alliance (ICROA) and the non-governmental carbon crediting standard, Gold Standard. There is considerable overlap in both the stakeholders participating within these groups as well as the models put forward.

ICROA led process

ICROA represents various stakeholders to the voluntary carbon market and advocates for the use of offsetting and carbon finance to mitigate climate change. ICROA's membership has considered the future role for the voluntary carbon market at a number of forums in recent years, engaging market participants and observers to contribute to the process. The options that ICROA has proposed for consideration and feedback among voluntary market stakeholders have evolved over time, reflecting updated analysis and developments through the consultation process. To some extent they are also informed by related work and proposals from organisations outside of its membership.

In October 2017, ICROA published a guidance document that outlined three potential models for "pathways to increased voluntary action by non-state actors" (ICROA, 2017), essentially regarding claims for voluntary carbon unit buyers after 2020. These models were labelled: "Non-NDC crediting model"; "NDC crediting model"; and the "Financing Emission Reductions model".

At COP24 in December 2018, ICROA presented and discussed modifications to these options noting its evolving thinking (ICROA, 2018). The three models presented were labelled: "Net-zero claim in unregulated sectors"; "Net-zero claim in regulated sectors"; and "Contribution claim" (similar to the previously labelled "Financing Emission Reductions model").

In June 2019, ICROA further updated its position with a short paper to which it solicited feedback (ICROA, 2019). This paper presented a single option, or model, which abstracts from some of the features of the options presented in 2017 and 2018. The paper does not distinguish between emission reduction activities inside or outside of the scope of host countries' NDC targets, or the scope of regulation.

Gold Standard led process

Gold Standard first presented a model focusing on financing emission reductions without an associated claim to offset emissions with its "Reduce within, finance beyond" concept in 2017

(Gold Standard, 2017a). This recognised in particular the heightened risk of double counting emission reductions in the period after 2020. The "Reduce within, finance beyond" concept proposed to offer voluntary actors a product labelled as a "statement of emission reductions" instead of a "carbon credit", which could be used to claim a contribution to climate finance and national sustainable development priorities.

Following on from this, in a parallel initiative to the June 2019 ICROA position paper, a group of experts convened by Gold Standard and comprising of representatives from other carbon crediting standards, ICROA, project developers and observers, published a "working group statement for consultation on the future role and design of the voluntary carbon market to support the goals of the Paris Agreement" in June 2019 (Gold Standard, 2019a). This statement set out a position in which the voluntary purchase and retirement of an emission reduction credit *may* represent the financing of an emission reduction, rather than the ownership of it.

4.1.2 Description of possible models for voluntary carbon markets in the Paris era

The ICROA and Gold Standard led processes proposed different potential models for the future role of voluntary carbon markets. The various models put forward can broadly be categorised across five headline features:

- **Scope of NDC target:** Whether the carbon credits reflect emission reductions that occur *within* or *outside* of the scope of the host country's NDC target;
- **Scope of regulatory coverage:** Whether the carbon credits reflect emission reductions that occur *within* or *outside* of the scope of the regulation of GHG emissions in the host country, regardless of the NDC scope;
- **Host country authorisation:** Whether the host country is required to authorise emission reduction projects and the issuance of carbon credits to the project developer, particularly if the credits will be used to support a claim of carbon neutrality;
- **Corresponding adjustment**: Whether an accounting adjustment is made by the host country to its reported emissions related to the achievement of its NDC, to avoid the risk of double claiming the same emission reduction outcome;
- **Neutrality claim**: Whether the carbon credits issued for emission reductions can be used – upon their retirement – to offset emissions elsewhere and support a claim of climate neutrality.

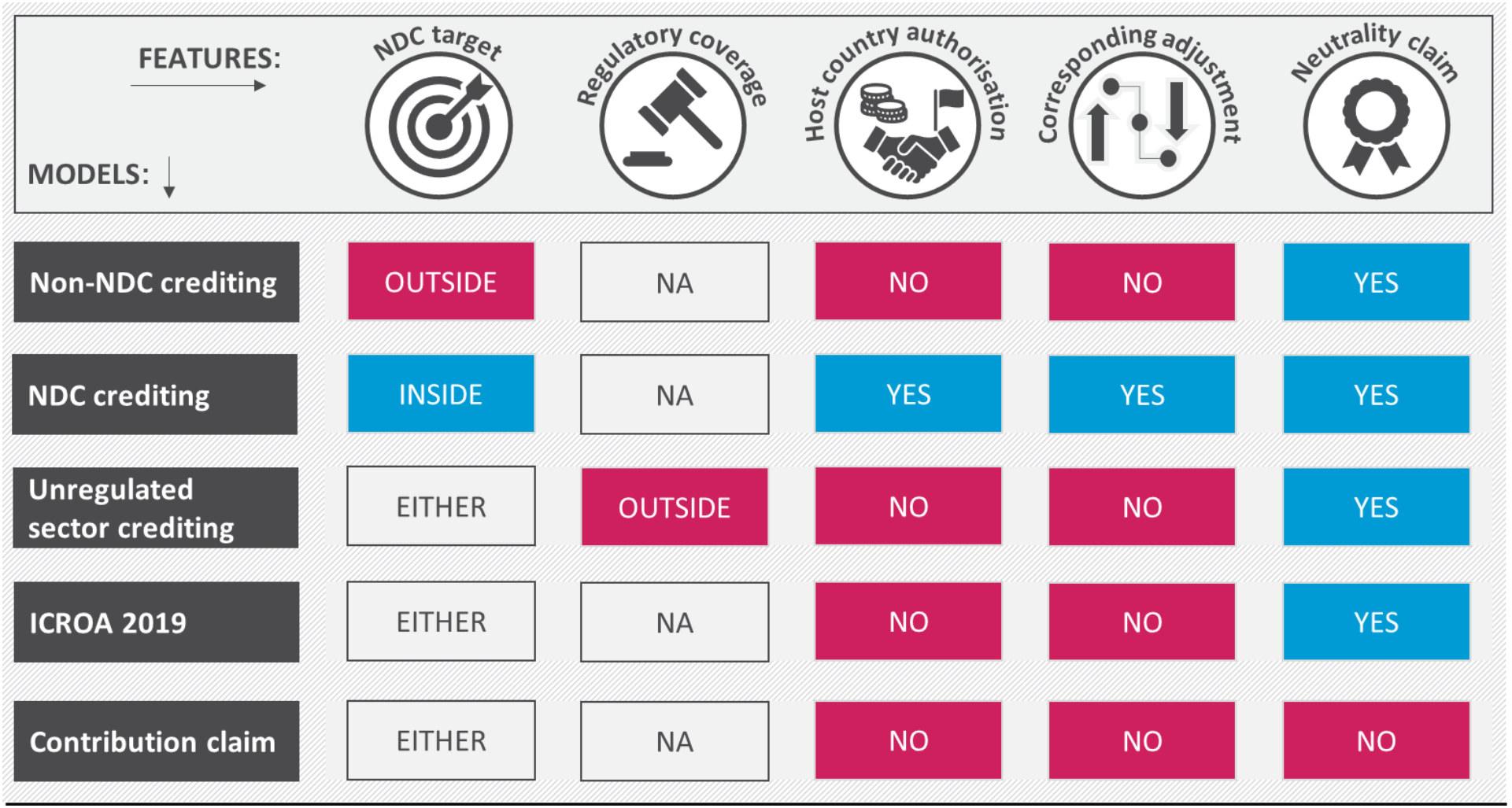
Any combination of these headline features could be used to establish a model for voluntary carbon markets after 2020. Based on the various models that emerged from the ICROA and Gold Standard-led processes, we have identified five possible models for the voluntary carbon market after 2020 which we label as follows:

1. Non-NDC crediting;
2. NDC crediting;
3. Unregulated sector crediting;
4. ICROA 2019; and
5. Contribution claim.

These models reflect the range of different combinations of the features proposed in the ICROA and Gold Standard-led processes and which our stakeholder interviews indicated were pertinent

to assess. An overview of the models is set out in Figure 11 with more detailed description following in the text below.

Figure 11: Overview of proposals for future models of the voluntary carbon market

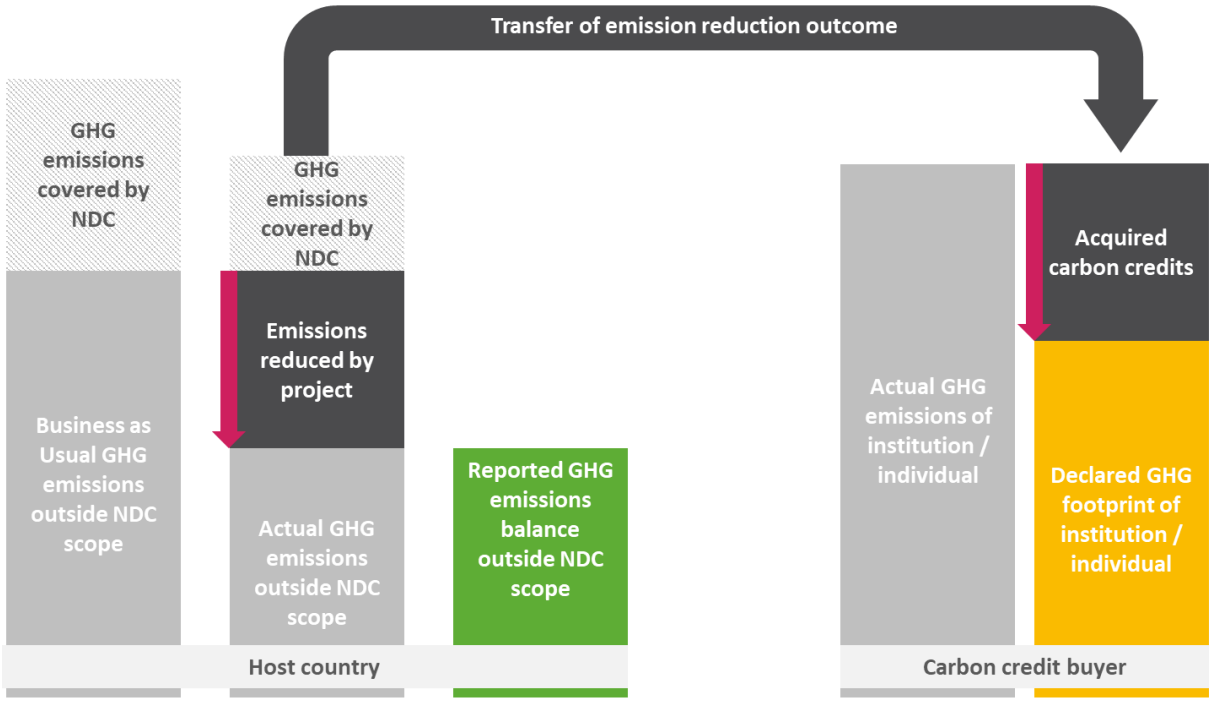


Source: NewClimate Institute; Lambert Schneider

Non-NDC crediting

The non-NDC crediting model was proposed by ICROA in 2017 and limits eligible emission reduction project activities to those outside of the scope of existing NDC targets. This implicitly restricts projects to countries with NDC targets that do not cover all GHG emissions, with either certain sectors or gases excluded. Under this model neither a host country approval for voluntary market project activities is required, nor does the host country need to apply corresponding adjustment to its reporting of progress towards the achievement of its NDC. Carbon credits issued for emission reductions can be used – upon their retirement – to offset emissions and support a claim of neutrality. Figure 12 provides a graphical illustration of the model, depicting GHG emissions not covered under the scope of the NDC target in the host country and the actual and declared GHG emissions of a company buying and retiring carbon credits.

Figure 12: Illustration of non-NDC crediting model



Source: NewClimate Institute; Lambert Schneider

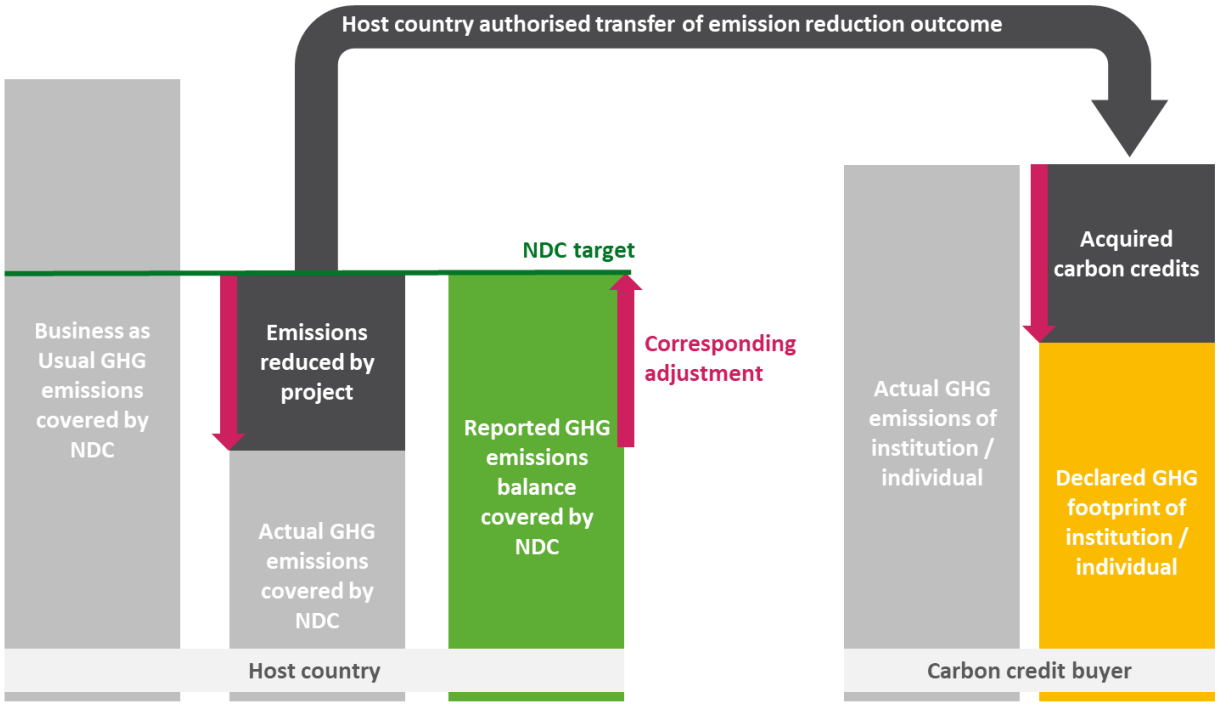
The non-NDC crediting model is most aligned with a continuation of the CDM approach in the period up to 2020 in which carbon credits are sourced from activities in countries without emission reduction targets under the Kyoto Protocol, i.e. from the "uncapped environment".

NDC crediting

Under the NDC crediting model – also proposed by ICROA in 2017 – voluntary actors can purchase carbon credits from emission reduction projects implemented in sectors and in relation to gases that are within the scope of the host country's NDC target. The host country government is required to authorise the project activity and the associated issuance of carbon credits for emission reductions delivered within its jurisdiction. The host country also needs to apply a corresponding adjustment to its emissions in reporting its progress towards the achievement of its NDC to reflect the fact that another party – the buyer of the carbon credit – would claim the emission reductions to offset its own climate footprint. Figure 13 illustrates the

implications of the NDC crediting model for both the host country as well as the carbon credit buyer.

Figure 13: Illustration of NDC crediting model with corresponding adjustment



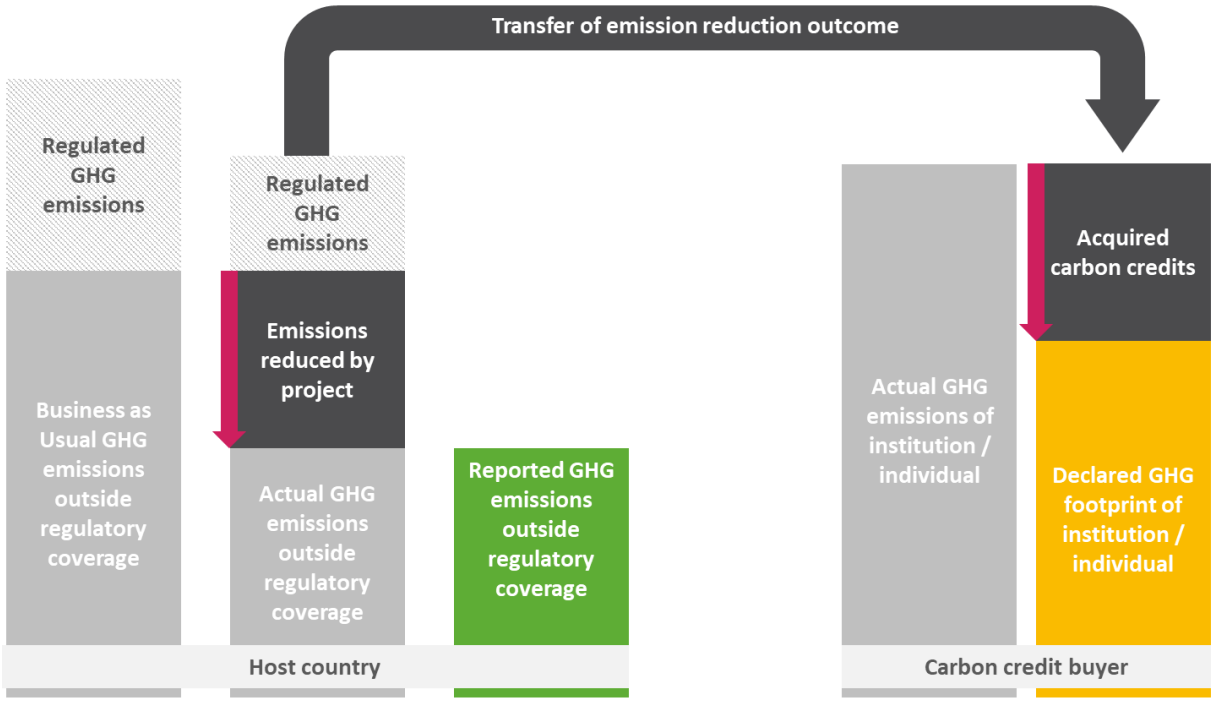
Source: NewClimate Institute; Lambert Schneider

The NDC crediting model avoids the host country claiming the emission reductions delivered by the voluntary carbon market project by applying an adjustment to the emissions it reports towards achievement of its NDC target

Unregulated sector crediting

The unregulated sector crediting model reflects the "Net-zero claim in unregulated sectors" proposed by ICROA in 2018. Under this option, emission reduction projects implemented in sectors with no existing or planned policy measures in place to regulate GHG emissions can be issued with carbon credits, regardless of the project's relationship to the NDC scope coverage. No project authorisation or corresponding adjustment is required of the host country government, yet the carbon credits can be used – upon retirement – to offset emissions and support a claim of neutrality. Figure 14 provides an illustration of the model where the voluntary market delivers emission reductions outside of regulatory coverage.

Figure 14: Illustration of unregulated sector crediting model



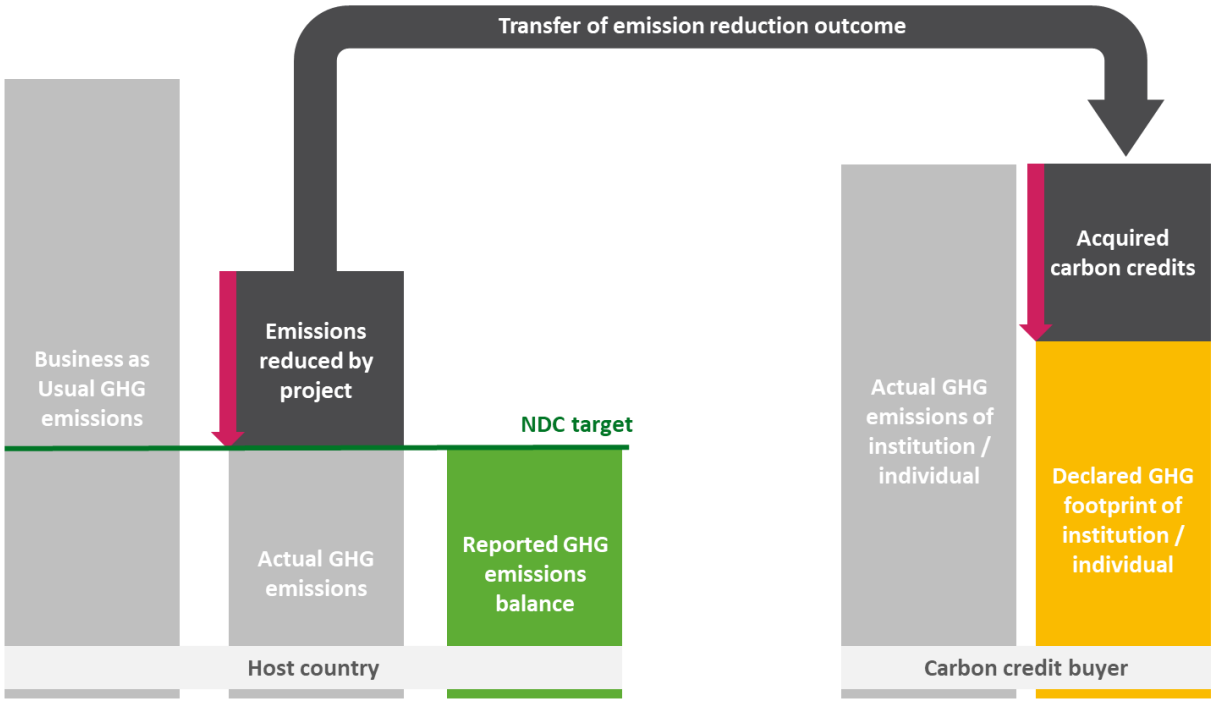
Source: NewClimate Institute; Lambert Schneider

For projects in unregulated sectors, delivering emission reductions *within* the scope of the NDC target, this model resembles the NDC crediting model in its headline features with an important distinction: host country authorisation is not required and no corresponding adjustment is applied to the country's emissions reported towards its NDC target. For projects in unregulated sectors, delivering emission reductions *outside* the scope of an NDC, this is effectively equivalent to the non-NDC crediting model.

ICROA 2019

The ICROA 2019 model does not restrict the eligibility of emission reduction project activities based on either the scope of the NDC target or regulatory coverage in the host country. No project authorisation or corresponding adjustment is required of the host country government, yet the carbon credits can be used – upon retirement – to offset emissions and support a claim of neutrality.

Figure 15: Illustration of ICROA 2019 model for emission reductions within scope of NDC target



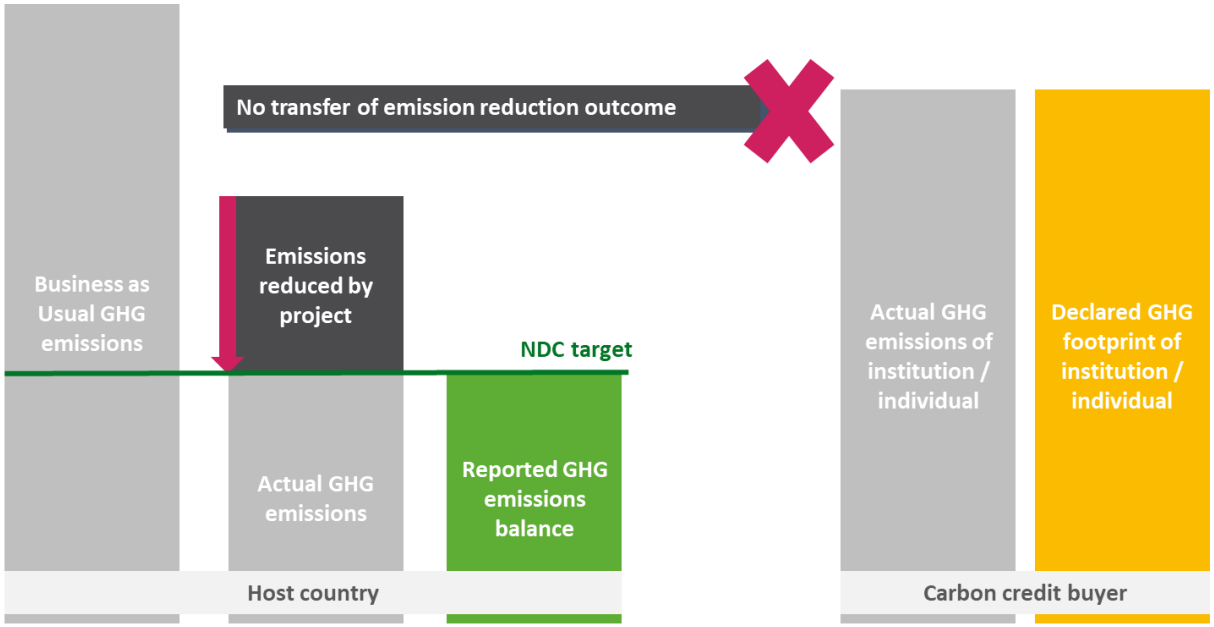
Source: NewClimate Institute; Lambert Schneider

For emission reduction project activities outside the scope of a country's NDC target, this model is equivalent to the non-NDC crediting model. Figure 15 shows an illustration of the model for emission reductions within the scope of a host country's NDC target in which both the emissions reported by the country towards achievement of its NDC target and the declared GHG footprint of the carbon credit buyer are reduced.

Contribution claim

Finally, the contribution claim model reflects the proposals made by Gold Standard (and the Gold Standard led working group) and which were also put forward as options by ICROA under the respective labels "Financing emission reductions" (in 2017) and "Contribution claim" (in 2018). Similar to the ICROA 2019 model, the contribution claim model does not restrict the eligibility of emission reduction project activities based on either the scope of the NDC target or regulatory coverage in the host country. And no project authorisation or corresponding adjustment is required of the host country government. This model differs, however, from the others in that it offers a product that does not allow carbon credits to be used to offset, or neutralise, emissions. This is depicted in Figure 16 with no transfer of the emission reduction outcome.

Figure 16: Illustration of contribution claim model



Source: NewClimate Institute; Lambert Schneider

Under the model the carbon credit buyer's declared GHG footprint remains unadjusted, reflected the actual GHG emissions of the company. However, the carbon credit buyer could claim to have supported the country in its efforts to reduce emissions and potentially towards helping achieve its NDC target.

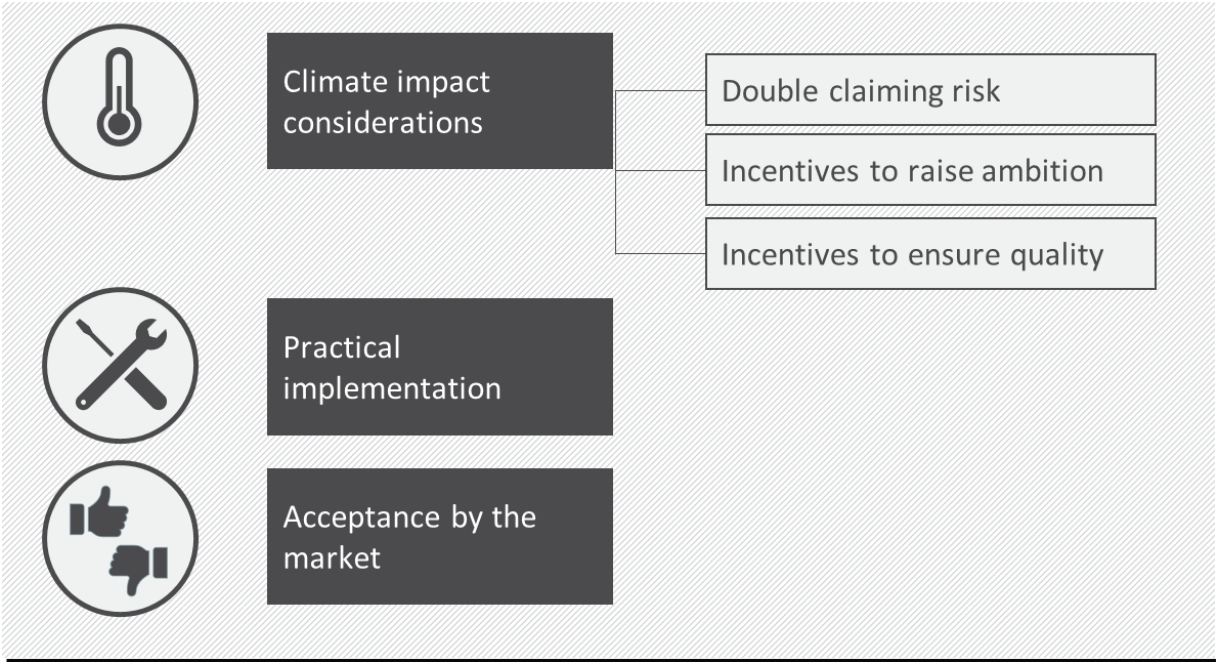
Under a version of this model it may not be necessary to quantify the contributions based on emission reduction units but to communicate the voluntary contribution through a monetary value or contribution in the form of other results (e.g. number of clean cookers installed).

4.2 Evaluation of potential future voluntary carbon market models

In this section we evaluate the key features of the models we have identified based on a set of criteria. We selected the criteria – set out in Figure 17 – to offer critical insight into the possible implications of each model for mitigating climate change, issues related to their practical implementation as well as their potential acceptance by the market. We discuss each criterion in turn, including a brief description of its relevance at the beginning of the respective sub-section. We then summarise the evaluation of the different models in section 4.3. The evaluation is based on available literature, the experience and analysis of the authors and is informed by the stakeholder interviews we held.

Although the procedures for assessing project eligibility and quantifying emission reductions differ between carbon crediting standards – such as approaches to determining additionality, methodologies for establishing baselines and measuring emission reductions, safeguarding against leakage of emissions and other social or environmental harms, or considerations of sustainable development "co-benefits" – we do not evaluate these elements other than where they are potentially influenced by the model features.

Figure 17: Evaluation criteria for assessing future models for the voluntary carbon market



Source: NewClimate Institute; Lambert Schneider

4.2.1 Climate impact considerations

Voluntary carbon markets serve as a vehicle to channel support to emission reduction projects with an overarching purpose to mitigate climate change. Whilst different stakeholders will have different individual and collective objectives for using carbon markets, a critical determinant of their success hinges on their overall impact on the climate. We have identified three elements that we consider most important to evaluate in terms of the potential implications of the models for the overall global effort to reduce GHG emissions.

4.2.1.1 Double claiming risk

If the emission reduction outcomes delivered by a voluntary carbon market project could be claimed both by the project host country, in tracking progress towards the achievement of its NDC target, as well as by the carbon credit buyer, this presents a double claiming risk. As discussed above in Chapter 3, section 3.3, depending on the circumstances double claiming the same emission reduction outcome can – in the worst case – mean that the voluntary carbon market facilitates an overall (net) impact of increasing GHG emissions released into the atmosphere. Under other circumstances the voluntary carbon market may facilitate no overall reduction in emissions or a more limited impact than where double claiming is avoided altogether. Double claiming of the same emission reduction outcome undermines the environmental integrity of either the claim of the host country or that of the voluntary carbon credit holder.

The risk of double claiming and the potential implications for the climate can depend on the following key features of the models: the relationship between the emission reduction project activities and the host country **NDC target scope**; if a **claim of neutrality** is made by the individual or institution retiring the carbon credit; and if a **corresponding adjustment** is made by the host country to its reporting of emissions in relation to achievement of its NDC target.

Non-NDC crediting

In principal the non-NDC crediting model avoids a double claiming risk as the emission reductions are not claimed by the host country as evidence of progress towards its climate target. This is the case where carbon credits are issued for activities that are clearly outside the scope of an NDC target.

However, a key issue under the non-NDC crediting model is that, for many countries, clearly identifying the boundaries of the scope of existing NDC targets is challenging. As we discuss above in Chapter 3, section 3.4.2, the current stock of NDCs were put together prior to the adoption of the Paris Agreement text and are formulated in very different ways. There is material risk that voluntary market project activities are judged by carbon crediting standards to be outside an NDC target scope, but due to accounting complexities, their emission reductions end up fully or partially contributing towards the climate efforts reported by the host country, thereby presenting a double claiming risk.

Additionally, over time the options for delivering emission reductions outside of the NDC scope will fall as the coverage of NDCs is updated at least every five years (Articles 14.2 - 14.3 of the Paris Agreement). Developing countries are supposed to gradually expand the scope of their NDCs to eventually cover the whole economy (Article 4.4). Thus, an activity that was initially assessed to be outside of the scope of an NDC target may subsequently find itself included within the scope of an expanded target. Emission reductions from voluntary market projects that are then covered by a revised NDC with increased scope would be at risk of double claiming for the remainder of the project's crediting period.

To mitigate the risk of double claiming under this model, one option could be to apply a corresponding adjustment if the NDC target is expanded during its crediting period of the project such that the project then enters the NDC scope. Alternatively, the duration of project crediting periods could be shortened, or aligned with the five-year NDC cycles. Aligning the timeframe would however likely be unattractive as it would mean new projects could only begin when the NDC is revised and crediting periods would become quite short.

NDC crediting

Where voluntary market project activities are carried out within the scope of the host country's NDC there is a risk that they appear in that country's emissions inventory and are claimed in its reporting of achievement towards an NDC target. The host country could reduce its efforts in proportion to the contributions from voluntary market project outcomes without impacting its reported progress towards achieving the NDC target. In this case the overall impact of the voluntary market contribution towards the host country's emission reduction achievements would be negligible.

The NDC crediting model addresses the double claiming risk via the application of a corresponding adjustment (described above in Chapter 3, section 3.4.1) to the emissions reported by the host country in relation to achievement of its NDC target. In doing so, the host country forgoes its claim to the emission reduction outcomes; essentially by rebasing the level of its target to recognise that the carbon credits issued to the voluntary market project are instead used to offset the emissions of the buyer.

Unregulated sector crediting

In the unregulated sector crediting model, there is a double claiming risk if the voluntary market project activity is outside of the coverage of regulation but within the scope of the host country's NDC target. This is because the host country could claim the emission reductions in support of the achievement of its NDC target (and no corresponding adjustment is applied under this

model) and, in parallel, the carbon credit buyer could claim the same emission reduction outcomes to offset its own emissions.

If the project activity clearly lies outside of the scope of the NDC target, then there would not be a double claiming risk. However, as noted above, for the non-NDC crediting model, there remains the risk of either mis-identification of the relationship of the project to the country's NDC scope as well as the possibility that, over the duration of the project's crediting period, the activity enters the scope of an expanded NDC target.

ICROA 2019

The ICROA 2019 model allows emission reduction outcomes to be used to offset the carbon credit buyer's own emissions without requiring a corresponding adjustment by the host country, regardless of how the project activity relates to the scope of the country's NDC target. This model presents perhaps the highest risk of double claiming the same emission reduction which would be the case for project activities that are within the scope of the host country's NDC target. If this risk materialises and the same emission reduction is claimed by both the host country as well as the carbon credit buyer, it could mean that the voluntary carbon market facilitates a negligible – and possibly even a detrimental – overall impact to the climate.

Contribution claim

The contribution claim model addresses the double claiming risk because the credit buyer makes no claim to use the emission reduction outcomes to offset its own emissions, thereby allowing the host country to be the sole claimant of the emission reductions in the reporting of progress towards its NDC target.

The type of claim made by the carbon credit buyer may be nuanced and open to different interpretations by its audience (customers, shareholders, regulators, voters, etc.). To avoid the risk of double claiming it is important that the credit buyer is clear in its messaging that the voluntary action does not neutralise its own emissions. If others were to interpret the messaging around the reported purchasing of carbon credits as equivalent to offsetting, then this could lead to the same outcome as if an offsetting claim were made by the credit buyer.

4.2.1.2 Incentives to raise ambition

The features of the voluntary carbon market models can present different (dis)incentives for countries to raise the ambition of their climate mitigation commitments over time. Increasing the ambition of country NDC targets can be achieved through widening their scope as well as committing to tackle more challenging mitigation options. This is a critical requirement for all countries if global climate action is to be scaled up to the levels required to stay within the temperature limit goals set out in the Paris Agreement. In this context it is important that voluntary market activities complement government driven climate action efforts, rather than undermine, or risk displacing them.

A central premise of carbon markets in general is that they address more costly and challenging mitigation options than the host country would have done without the additional voluntary support. Across all of the potential future models, voluntary market investment targeted at mitigation options that are inaccessible to the host country can help bring down the cost of nascent technologies, lower barriers to adoption and facilitate raising country ambition in subsequent NDCs.

On the other hand there is a general risk across all models that the possibility of voluntary market financing of projects – either within or outside the scope of the NDC – introduces a perverse incentive for countries to limit the ambition of their NDC targets and accompanying

regulation to incentivise climate action (NewClimate Institute, 2018). By constraining their ambition levels, countries implicitly expand the potential scope of additional emission reduction opportunities that could be developed with carbon market support.

A means to limit any perverse incentives for host countries to constrain the ambition of their NDC targets is to focus voluntary market project activities in countries which demonstrate relatively high levels of ambition, backed up by policy measures. However, as we discuss above in section 2.4, objectively assessing country ambition levels is challenging. Publicly available tools such as the Climate Action Tracker[11] use a peer-reviewed methodology to assess this, but do not cover all countries. It may therefore be necessary for carbon crediting standards or an independent body to define a set of indicators and thresholds which countries need to meet in order to qualify as eligible for voluntary market support.

Turning more specifically to the models under evaluation, (dis)incentives to raise the ambition of climate action can depend primarily on the following key features: the relationship between the eligibility of emission reduction project activities and the host country **NDC target scope or regulatory coverage**; and also if a **claim of neutrality** is made by the individual or institution retiring the carbon credit.

Non-NDC crediting

Under the non-NDC crediting model voluntary market projects can only be supported outside of the scope of the host country's NDC target. Building on the general point regarding perverse incentives described in the paragraphs above, restricting support for emission reduction project activities outside the scope of the NDC target may signal to host countries that it is in their interest to limit the expansion of their NDC scope coverage. This would leave more space in the "uncapped environment" for project developers to maintain a flow of voluntary market finance. This model – which creates a somewhat artificial distinction between sources of emissions based on their inclusion in NDC targets – could disincentivise countries from moving towards economy-wide NDC targets; a key requirement of the Paris Agreement.

This disincentive to expand the scope of the NDC target can be mitigated if voluntary market project developers are able to tie their investments to host country government commitments to the future expansion the scope of their NDC target. For example, a host country could agree to expand the coverage of an updated NDC target on the condition that the voluntary market were able to deliver a certain number of pilot projects, install a certain capacity of a nascent technology, or help drive down costs by a certain percentage, which made further mitigation projects accessible to the host country. Such private-public partnerships could add administrative burden to developing projects and rely on a degree of trust in future commitments. Nonetheless, they provide an opportunity to raise the ambition of climate action in host countries.

The neutrality claim made by the carbon credit buyer – on retiring the units – under this model (and others) could also influence climate action ambition in the countries where the carbon credit buyer claims to offset its emissions. There is a risk that institutions which use carbon credits to offset their emissions manage to avoid or dampen regulation of their own activities. If the carbon credit buyer presents its activities as climate neutral, or at least that some of its emissions are offset, this could persuade regulators that there is less need to implement policy measures to incentive emission reductions. There is therefore a risk that models which allow the carbon credit buyer to claim to offset its emissions dampen the ambition levels in the countries in which they operate and where their supply chains are located. As regulation is typically

[11] The following link leads to the Internet: https://climateactiontracker.org/

applied at sectoral level, rather than to individual institutions, such a risk is more likely to be an issue in consolidated industries with few companies or where a large share of companies in a sector engage in offsetting their emissions.

NDC crediting

As noted in the introductory paragraphs to this criterion, in general voluntary carbon market activities can in theory offer disincentives for host countries to raise their climate action ambition. Under the NDC crediting model the host country may face an incentive to limit the ambition of its NDC target in order to make it more attractive (i.e. easier or cheaper) for voluntary market project developers to deliver projects that are additional to an assessment of what would be delivered in the absence of voluntary market support. For example, instead of setting itself a target to meet 50% of electricity demand from renewable sources, the host country could limit the ambition of its NDC target to source just 30% of demand from renewables. In this case, voluntary market projects that take the share of renewable supply just over 30%, rather than those required to take the share over 50% may be judged additional and are likely to be delivered at lower cost.

This risk can be mitigated by ensuring that voluntary market support is restricted to countries with relatively ambitious NDC targets, which are in-line with their fair share of effort required to deliver the emission reductions compatible with the Paris Agreement temperature goals. As we note above, this judgement is challenging, and assessments only exist for a selection of countries.

Under this model the carbon credit buyer is able to claim to offset its emissions. As described above for the non-NDC crediting model, the neutrality claim feature of the model introduces a further risk of dampening the ambition levels in the countries in which the carbon credit buyer operates and where its supply chains are located.

Unregulated sector crediting

In a similar vein to the non-NDC crediting and NDC crediting models evaluated above, under the unregulated sector crediting model there is a risk that targeting voluntary market support to activities outside the scope of regulatory coverage could in fact disincentivise any expansion of GHG emission regulations, or even weaken existing regulations, in the host country.

Disincentives to expand regulation of emissions may not be limited to the host country. As described above for the non-NDC crediting model, the neutrality claim feature of the model introduces a further risk of dampening the ambition levels in the countries in which the carbon credit buyer operates and where its supply chains are located.

ICROA 2019

Under the ICROA 2019 model there is no distinction made in relation to the scope of the host country's NDC target or regulatory coverage in deciding which voluntary market project activities are eligible. The features of the model therefore do not present any specific incentives or disincentives to the climate action ambition of the host country beyond the general risks we note in the introductory paragraphs to the criterion.

As described above for the non-NDC crediting model (and also relevant to the other models presented above), the neutrality claim feature of the model introduces a risk of dampening the ambition levels in the countries in which the carbon credit buyer operates and where its supply chains are located.

Contribution claim

As the contribution claim model – similar to the ICROA 2019 model – makes no distinction in relation to the scope of the host country's NDC target or regulatory coverage, the features of the model do not present any specific incentives or disincentives to the climate action ambition of the host country beyond the general risks we note in the introductory paragraphs to the criterion.

Unlike the other models, there is no neutrality claim. Provided that the carbon credit buyer clearly communicates to its stakeholders that it is not offsetting any of its own emissions, then this model does not provide any specific incentives that might influence the climate action ambition of the countries in which the carbon credit buyer operates and where its supply chains are located.

4.2.1.3 Incentives to ensure carbon credit quality

Financial support, channelled via voluntary carbon markets, can provide valuable assistance in unlocking the potential of new technologies and driving emission reductions that are otherwise inaccessible to host countries, particularly in developing countries. Under this criterion we consider if the features of the different models offer incentives to ensure that the voluntary market delivers high quality projects in terms of their climate impact; for example, with a high likelihood that they represent permanent net emission reductions that would not otherwise have occurred.

The carbon crediting standards are the principal arbiters of the quality of carbon credits they issue. Whilst their determination of the thresholds for "quality" can vary – both across different standards as well as across different projects accredited under the same standard – these considerations are largely independent of the headline features of possible future voluntary market models we evaluate here.

However, project host countries could also play a role in assuring quality. We find that the requirement for **host country authorisation** of voluntary market project activities and the application of a **corresponding adjustment** to their NDC target are the critical headline features of the models which can offer incentives to ensure carbon credit quality.

Non-NDC crediting

Under the non-NDC crediting model host countries are not required to authorise voluntary market projects, nor apply adjustments to their reported emissions in accounting for their progress towards the achievement of NDC targets. The host country is unlikely to have an incentive to ensure the quality of carbon credits transferred to voluntary market buyers and – in the absence of a formal role in establishing project eligibility – may anyway struggle to exert significant influence. Instead the host country may well endorse any activities that introduce a flow of foreign direct investment into the country and potentially support their wider sustainable development objectives.

NDC crediting

Under the NDC crediting model the requirements for a host country to both authorise a project activity as eligible to receive carbon credits and apply a corresponding adjustment to their reported emissions, sets an incentive for it to verify elements of "quality". In agreeing to adjust its reported GHG balance in relation to achieving its NDC target, the host country will want to guarantee that the voluntary carbon market project is additional, that the quantification of emission reductions relative to a baseline are appropriate and that they are permanent. If any of these quality-related conditions do not hold then the host country may face additional effort to

achieve its adjusted NDC target than would have been the case in the absence of the voluntary market support.

For example, consider an emission reduction project that is assessed as eligible to receive voluntary market support even though it would have likely gone ahead anyway as it was commercially viable based on domestic policy measures, i.e. its degree of additionality is questionable. Under this model the host country applies an accounting adjustment corresponding to the carbon credits issued to the project. To achieve its adjusted NDC target could require the host country to implement abatement measures that are more costly or otherwise challenging than it would have had to by simply delivering the commercially viable emission reduction project without voluntary market finance. Similarly, if emission reductions from the voluntary market project turn out to be only temporary, then the host country's GHG inventory would at some point in the future include higher emission levels than if the reductions were permanent. The host country would then need to increase its own efforts just to meet its adjusted NDC target.

This incentive for the host country to ensure quality under the NDC crediting model is increasingly relevant the more ambitious the country's NDC target is. It is likely more costly and challenging to make up for emission reduction shortfalls via measures that go beyond an already ambitious target. If achieving the NDC target, or even an adjusted target, is relatively easy for the host country then the incentive to ensure quality may be limited, or non-existent.

Unregulated sector crediting; ICROA 2019; and Contribution claim

The unregulated sector crediting, ICROA 2019 or contribution claim models neither require host country authorisation for projects, nor the application of a corresponding adjustment. As per the non-NDC crediting model we find that their features are unlikely to offer any particular incentives to ensure carbon credit quality beyond the requirements established by carbon crediting standards.

4.2.2 Practical implementation

Any change to the existing model for voluntary carbon markets will entail the development of new products and associated processes. The use of voluntary markets is likely to be enabled if barriers to establishing new processes are limited. Practical implementation challenges can raise the resources needed to participate in voluntary carbon markets, along with related transaction costs. Under this criterion we consider what processes or new steps are required to support the implementation of different models and whether these either present opportunities by reducing existing barriers or introduce further challenges.

Issues related to the practical implementation of the models depend primarily on the following key features: the relationship between the eligibility of emission reduction project activities and the host country **NDC target scope or regulatory coverage**; as well as the requirement for **host country authorisation** of voluntary market project activities and the application of a **corresponding adjustment** to their NDC target.

The critical implementation issues related to the application of corresponding adjustments as well as the identification of scope of NDC targets or regulatory coverage are discussed above in Chapter 3, sections 3.4.1 and 3.4.2, respectively. Some features of the potential future models for the voluntary carbon market are likely to require alignment with, as yet undecided, rules and processes implemented under the Paris Agreement. Similarly, the precise rules for using carbon credits for compliance under CORSIA are likely to be relevant to the voluntary market. Alignment of the voluntary carbon market models to parallel carbon market structures under the Paris Agreement and CORSIA could reduce practical implementation challenges for

voluntary market actors because the necessary processes would anyway be established. Timing is, however, important. Many voluntary market actors are reluctant for the definition of future voluntary market models to await the outcome of the ongoing negotiations of CORSIA and Paris Agreement rules due to the risk of delay causing a hiatus in voluntary market activities.

Non-NDC crediting

The non-NDC crediting model does not require a host country authorisation for the project activity or the application of a corresponding adjustment. It therefore avoids a key implementation challenge. This is seen as a large advantage in terms of practicability for project developers and carbon crediting standards.

However, the key challenge to implementing such a model relates to the identification of what is considered inside and outside of the NDC scope. Given the great diversity in the formulation of NDCs and climate goals this assessment is particularly complex (see section 3.4.2 above for further details). If a project activity is mis-judged by a standard to lie outside the scope of an NDC target – yet the emission reduction outcomes are used to support the country's justification of meeting its NDC target – there is a risk of double claiming.

To minimise the risk that a project is mistakenly categorised as outside the scope of the NDC target, carbon crediting standards may need to require a higher burden of proof on the part of project developers to ensure there is clear evidence that the project activity would not contribute to achieving the host country's NDC.

NDC crediting

The NDC crediting model requires host country authorisation of projects and the application of a corresponding adjustment. Both elements add an increased administrative burden that are likely to require resource investment on the part of host country governments, project developers and potentially carbon crediting standards. Furthermore, the application of a corresponding adjustment requires a number of potential issues related to accounting progress towards achievement of an NDC target to be addressed (see section 3.4.1 above for further details).

The host country authorisation of voluntary market project activities introduces the potential for corrupt practices – potentially adding delay, financial cost and risk to project developers by increasing uncertainty as to whether they can actually receive and sell carbon credits for emission reductions delivered by their projects. The authorisation process would need to be well designed to safeguard against adding unnecessary financial cost and risk.

However, carbon credits for emission reductions that are eligible for compliance with CORSIA and possibly under Article 6 of the Paris Agreement are likely to require host country authorisation and the application of a corresponding adjustment. It is therefore likely that a version of the NDC crediting model will be established by carbon crediting standards for one or both of these compliance markets in the coming few years. In the case of CORSIA, this would be a product that is used by the private sector as aeroplane operators are the principle subject of the regulation. Once such a product is established and necessary procedures in place, it is reasonable to expect that it could be accessible to voluntary carbon credit buyers. This would be available with little, or no, additional barriers to implementation specific to the voluntary market. However, it is currently unclear how long implementation may take and certainly risks stalling the market for a period of time.

Unregulated sector crediting

The key practical implementation challenge for the unregulated sector crediting model is in determining what constitutes relevant current regulation of emissions as well as the scope of the application of regulation in the future. Determining the boundaries of regulation in a host country is unlikely to be able to be assessed objectively and consistently across different sectors and by different carbon crediting standards. The assessment of the regulated coverage would also require continual review and updating as policies are announced, which would not necessarily be as regular as the 5-year cycle for revising NDCs. Judging the relationship between voluntary market project activities and both current and planned regulatory coverage could prove cumbersome with important risks for environmental integrity.

ICROA 2019

We find that the headline features of the ICROA 2019 model do not pose any specific practical implementation challenges. It does not require a host country authorisation for the project activity or the application of a corresponding adjustment. It also avoids any need for project developers and carbon crediting standards to identify and distinguish between the boundaries of the scope of the NDC target or regulatory coverage to determine the type of product the carbon credit falls into.

Contribution claim

Similarly, we find that the headline features of the contribution claim model do not pose any specific practical implementation challenges. As per the ICROA 2019 model, it does not require a host country authorisation for the project activity or the application of a corresponding adjustment. It also avoids any need for project developers and carbon crediting standards to identify and distinguish between the boundaries of the scope of the NDC target or regulatory coverage to determine the type of product the carbon credit falls into.

As we note in the description of the model in the previous section, a version of the contribution claim model could also depart from the existing voluntary carbon market structure of quantifying emission reductions to simply provide an investment channel to emission reduction initiatives without the need for estimating emission baselines, measuring emission reductions and issuing credits. This could reduce a lot of the administrative burden associated with the current structure of the voluntary market, although at the risk of weakening important elements such as transparency, independent validation of the robustness of emission reduction activities as well as the ability to assess the impact of voluntary contributions.

4.2.3 Acceptance by the market

For voluntary carbon markets to thrive the approach(es) need broad acceptance across stakeholders. This includes the institutions and individuals that ultimately drive the financing of emission reduction projects as well as their customers, shareholders and, in the case of voluntary government initiatives, their voters. It also includes project developers, carbon crediting standards, host countries, retail providers as well as civil society. Under this criterion we assess the challenges and opportunities presented by the different model features based largely on our interviews and wider discussions with market stakeholders.

The acceptance by the market of the models can depend on all of their key features: the relationship between the eligibility of emission reduction project activities and the host country **NDC target scope or regulatory coverage**; the requirement for **host country authorisation** of voluntary market project activities and the application of a **corresponding adjustment** to their

NDC target; as well as whether or not a **claim of neutrality** is made by the individual or institution retiring the carbon credit.

We evaluate several different potential models, which present their own opportunities as well as trade-offs. It is feasible that more than one of the models is developed into a product by carbon crediting standards in the period after 2020. As a general observation, splitting the future voluntary carbon market between several product offerings could decrease transparency and increase complexity, with different groups of market participant holding diverse preferences depending on their specific requirements and interest.

Non-NDC crediting

The non-NDC crediting is considered attractive by many voluntary market stakeholders because it is closest to the existing operating model for voluntary (and compliance) offsetting and therefore now relatively well-understood.

That said, the landscape of the global approach to addressing climate change is changing in the Paris era and what exists today may not ensure broad acceptance after 2020. The disincentive to host countries expanding the scope of their NDC target introduced by the model (section 4.2.1.2) could damage credibility in the environmental integrity of voluntary market activities if not properly safeguarded against by, for example, tying project investments to future NDC expansion.

In any case, the key focus of the model on crediting outside the scope of NDC targets means that the approach is time-limited as all countries move towards putting in place economy-wide NDC targets. Whilst it may offer a short-term approach to continue voluntary market activities the model does not present a long-term option for the design of the future structure of voluntary carbon markets.

Furthermore, some stakeholders expressed concern about the long-term acceptability of individuals or institutions claiming to offset, or neutralise, emissions in the Paris era as all countries and sectors need to move towards reducing their emissions to zero.

NDC crediting

The NDC crediting model departs from the existing voluntary market approach of basing project activities in areas without GHG targets but maintains the options for carbon credit buyers to claim to offset their own emissions. Under this model stakeholders appear most concerned about the practical implementation challenges of obtaining host country authorisation for project activities and the application of corresponding adjustments. These include additional administrative burden, the complexity of implementation, as well as the potential for corruption (section 4.2.2).

Amongst those we discussed the models with there was recognition that a version of the NDC crediting model is needed to serve compliance carbon markets – e.g. CORSIA and under Article 6 mechanisms – which could provide an attractive "off-the-shelf" option for the voluntary carbon market. Some highlighted that moving ahead with developing projects for the voluntary market in the Paris era without waiting to align with the compliance market risked undermining the environmental integrity of voluntary carbon credits. Other market participants were concerned that delaying the design of products for the future voluntary market until necessary rules and procedures are in place for compliance markets could put at risk the continuation of the pipeline of voluntary market projects.

As we note for the non-NDC crediting model, some stakeholders questioned the long-term viability of individuals or institutions claiming to offset, or neutralise, their emissions. On the

one hand the opportunities for developing emission reduction projects will fall as host countries ratchet up the ambition of their NDC targets. On the other hand, potential carbon credit buyers need to focus on reducing their own emissions with increasingly fewer remaining emissions left to offset.

Unregulated sector crediting

Stakeholders were in broad agreement that the unregulated sector crediting model would be extremely difficult to operationalise due to the complexity of identifying the scope of relevant regulation of emissions in the host country. They also recognised that it could provide a strong incentive to prevent regulatory expansion, or even weaken existing policy measures. Representatives for ICROA, who initially proposed the model for consideration, appear to agree that it is not an option that would be broadly accepted by the market.

Similar to the non-NDC crediting model, the opportunities for developing projects outside of the scope of regulatory coverage would diminish over time as regulations expand to cover all sources of emissions. Additionally, the concerns of some stakeholders regarding the long-term viability of individuals or institutions claiming to offset, or neutralise, their emissions (as noted above for the non-NDC crediting and NDC crediting models) is applicable to this model.

ICROA 2019

The ICROA 2019 model avoids challenges in identifying emission reduction activities that are either within or outside the scope of a host country's NDC target or regulatory coverage. It also avoids the practical implementation challenges associated with host country authorisation of projects and the application of a corresponding adjustment. Furthermore, allowing a claim of neutrality makes it attractive to some market participants, particularly buyers (and retail providers who supply them) who attach a lot of importance to their ability to claim to offset their own emissions.

However, the double claiming risk discussed above where voluntary market project activities are included within the scope of the host country's NDC target (section 4.2.1.1) poses a challenge for the environmental integrity of this model. It is therefore unlikely to gain broad acceptance as an approach that can build trust and spur engagement in the voluntary carbon market. Albeit, representatives from ICROA expressed in our stakeholder engagement that they do not themselves see the risk of double claiming under this approach.

Contribution claim

The contribution claim model – as per the ICROA 2019 model – avoids challenges in identifying emission reduction activities that are either within or outside the scope of a host country's NDC target or regulatory coverage as well as the practical implementation challenges associated with host country authorisation of projects and the application of a corresponding adjustment.

The contribution claim model represents a clear departure from the current approach to offsetting under voluntary markets as the carbon credits cannot be used to support a claim of neutralising emissions. It therefore avoids many of the criticisms levelled at offsetting, particularly regarding the quality of units and the environmental integrity of offsetting as a substitute for reducing one's own emissions. As such the model is also more robust over the long term to the changes in the approach to address climate change introduced by the Paris Agreement.

In our engagement with stakeholders regarding the contribution claim both retail providers and businesses were concerned that they would have to change the messaging associated with their claims and were unsure how removing a climate neutral claim would be perceived by their

customers. Some interviewees highlighted that if a claim of carbon neutrality were no longer possible this could reduce interest in the market from carbon credit buyers, reducing the overall financial contribution of the voluntary carbon market to supporting emission reductions.

Other stakeholders noted that many companies already communicate contributions to non-climate related sustainable development goals within their Corporate Social Responsibility reports or donate to other charitable causes, neither of which represent claims to offset, or balance out, negative impacts of their activities. This existing approach of contributing to broader sustainable development objectives suggests there is therefore still likely to be interest in claiming a contribution to supporting climate action and the goals of the Paris Agreement amongst potential carbon credit buyers.

4.3 Summary of model evaluation

Our evaluation of the five different potential models for voluntary carbon markets in the Paris era, set out in section 4.2 above, is summarised in Figure 18. We include a short description of the most pertinent points from the evaluation as well as an indication of whether the key features generally present positive opportunities, relative to the evaluation criteria (green); challenges or key risks (fuchsia); or both opportunities as well as challenges or risks (gold). The summary is intended to offer an overview of the relative attractiveness of the different models. However, many of the opportunities and trade-offs are either somewhat nuanced or specific to a certain set of circumstances and therefore benefit from a full consideration of the points discussed in section 4.2.

Figure 18: Overview of evaluation of key features of the proposed models

CRITERIA: → / MODELS: ↓	Double claiming	Ambition raising incentive	Incentive to ensure quality	Practical implementation	Acceptance by the market
Non-NDC crediting	+ No risk where activities clearly outside scope of NDC target – Identification of NDC scope is challenging and subject to revision	– Disincentive to expand NDC scope	Neutral impact of model (no host country approval)	+ No host country approval or corresponding adjustment required – Challenging to determine NDC scope	+ Close resemblance to existing market approach
NDC crediting	+ Corresponding adjustment means that only carbon credit buyer claims emission reduction outcome	Neutral impact of model	+ Host country approval provides an incentive to ensure that high-quality carbon credits are transferred	– Increased administrative burden and potential for corruption + Likely to be introduced anyway for CORSIA (with delay)	+ Allows continuation of offsetting – Concerns relate to practical implementation risks as well as delay
Unregulated sector crediting	– Emission reductions could be used by host country and credit buyer to support separate climate mitigation targets or goals	– Disincentive to expand regulation of GHG emissions (existing regulation could even be weakened)	Neutral impact of model (no host country approval)	+ No host country approval or corresponding adjustment required – Challenging to determine regulatory coverage; needs continuous assessment	+ Allows continuation of offsetting – Climate impact implications unlikely to receive broad acceptance
ICROA 2019	– Emission reductions could be used by host country and credit buyer to support separate climate mitigation targets or goals	Neutral impact of model	Neutral impact of model (no host country approval)	+ No host country approval or corresponding adjustment required + No scope determination challenges	+ Allows continuation of offsetting – Climate impact implications unlikely to receive broad acceptance
Contribution claim	+ Only host country uses emission reductions to support climate mitigation target or goal	Neutral impact of model	Neutral impact of model (no host country approval)	+ No host country approval or corresponding adjustment required + No scope determination challenges	+ Avoids offsetting concerns; claim similar to contributions to SDGs – Credit buyers may need to adjust their messaging

Source: NewClimate Institute; Lambert Schneider

5 Enhancing engagement in the voluntary carbon market

In this chapter we examine general awareness of the voluntary carbon market, particularly amongst potential credit buyers, and consider possible approaches to enhancing market engagement and its impact in addressing climate change into the future. The future success of the voluntary carbon market may depend to a large extent on how well carbon credit buyers understand the products available in the market and how they are perceived, both by buyers, but also wider stakeholders whose views can directly influence the attractiveness of voluntarily engaging in the market for carbon credits.

We draw on the experiences with the market to date and our consideration of the different future models in the Paris era. Whilst the role of the voluntary carbon market may need to change after 2020, it is clear that there remains a critical need for further financing of emission reduction activities beyond those set out in current NDCs and beyond additional financing commitments made by (mostly) developed countries.

The assessment is informed by the interviews we carried out with a number of market participants, discussions at the workshop conducted in November 2019 to garner further feedback and insights from stakeholders, in addition to relevant literature.

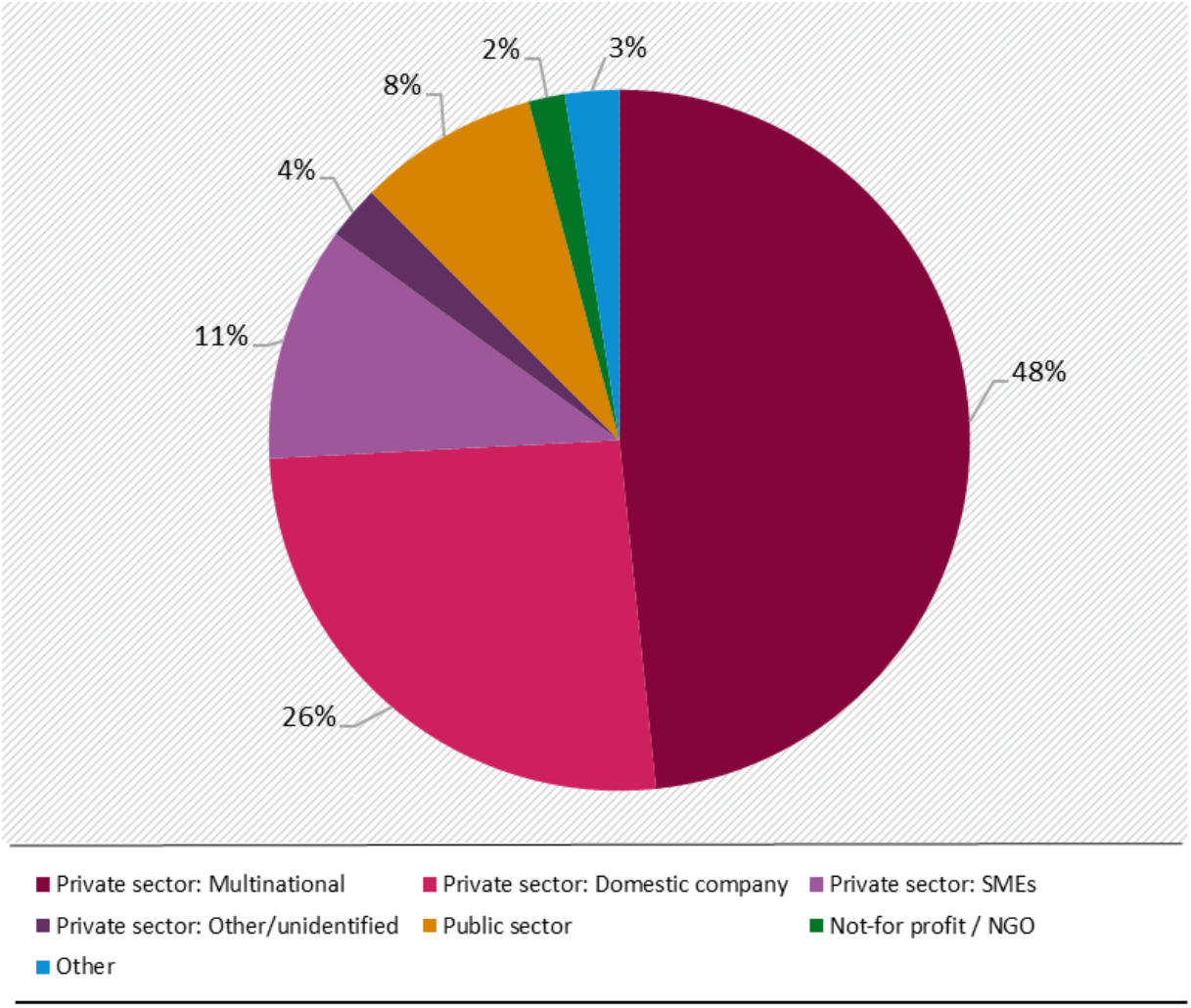
5.1 Overview of current approaches

The demand for carbon credits from voluntary buyers has grown year-on-year almost continuously over the past decade with a particularly pronounced increase in recent years (see Chapter 2, section 2.3). In this section we consider what factors may have driven awareness of, and engagement in, the voluntary carbon market to date.

Multinational companies and the energy sector provide the main source of voluntary demand

Most demand for carbon credits on the voluntary market comes from the private sector, representing 88% of total volume of demand in 2016. Figure 19 shows that within the private sector, multinationals were the most important buyer, accounting for almost half of the total demand, followed by domestic companies and small to medium enterprises. Larger companies generally purchase higher volumes of carbon credits at a lower unit price than smaller companies (Hamrick and Gallant, 2017). The public sector and non-governmental organisations bought 8% and 2% of the carbon credits on the voluntary market. The purchase of carbon credits from individuals in 2016 accounted for a very small share of the market (included within the 3% of demand under 'Other' in Figure 19).

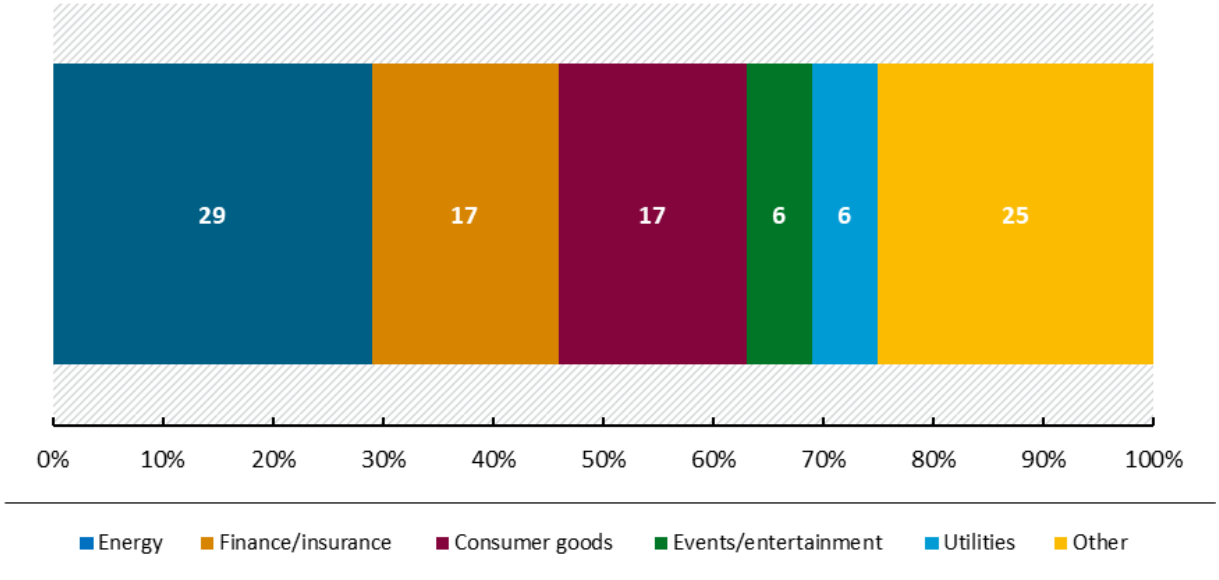
Figure 19: Sources of demand for carbon credits on the voluntary market



Source: Based on Hamrick and Gallant (2017)

Private sector voluntary demand for carbon credits comes from companies involved in different types of economic activity. In 2016, the energy sector was the largest carbon credit buyer, followed respectively by the financial, and consumer goods, sectors (Figure 20). Interestingly, airlines only accounted for demand of approximately 3% of the market total (not shown).

Figure 20: Share of private sector voluntary demand for carbon credits by industry



Source: Based on Hamrick and Gallant (2017)

Buyers are influenced by the type of project, non-climate benefits and price

Amongst buyers on the voluntary market, carbon credits from renewable energy and forestry and land use projects are in particularly high demand (Hamrick and Gallant, 2018). This may be a reflection of the available supply of credits in the market, price considerations and features of these projects that appeal to buyers, such as their fit with the activities of the buyer and wider sustainable development objectives. The second largest carbon crediting standard in the voluntary market, Gold Standard, reports that carbon credits from cookstove and wind power projects were most sought after in 2016 and 2017 and are also among the project categories generating most credits (Gold Standard, 2016, 2017b, 2018, 2019b).

Buyers purchase carbon credits for a variety of reasons, notably to demonstrate climate leadership, to achieve voluntary GHG targets, in pursuit of a climate-driven mission, and to engage customers or clients to offset emissions associated with their purchase. In many cases, the underlying aim for private-sector companies is to attract climate-conscious customers (Hamrick and Gallant, 2017) . In addition to the evidence from the market survey conducted by Hamrick and Gallant, the importance of using carbon credits to offset emissions for corporate marketing purposes was highlighted by our interviewees as a key reason to be active on the voluntary market.

Closely related to the importance of the branding narrative used by buyers is the strong appeal of sustainable development impacts, or 'co-benefits', associated with emission reduction projects. Both our interviews and literature review confirm that co-benefits associated with carbon credits play an important role in buyers' decision to enter the voluntary market and influence their choice of project to support (Hamrick and Gallant, 2017). Product offerings have also developed to reflect this interest. The two largest carbon crediting standards in the voluntary market adopted new standards in 2017 with an increased focus on sustainable development objectives within their assessment of projects: Gold Standard launched their "Gold Standard for the Global Goals" and Verra announced the "Sustainable Development Verified Impact Standard" programme.

Some buyers are willing to pay higher prices for carbon credits that have co-benefits, especially related to community benefits, environmental protection and biodiversity (MacKerron *et al.*,

2009; Hamrick and Gallant, 2018). Indeed, co-benefits allow companies to distinguish themselves from competitors (MacKerron et al., 2009) and gain a larger market share. For private individuals and charitable organisations, who want to support the development agenda, co-benefits are also attractive because they allow credit buyers to achieve multiple goals with one action (e.g. decrease GHG emissions and improve the livelihoods of communities benefiting from the project).

The price of carbon credits is influenced by various factors. These include the GHG abatement and transaction costs, the project´s co-benefits, the project location (prices are generally higher for credits generated in countries with limited infrastructure or resources), to what extent project developers market their credits, and the size of the transaction (buyers who purchase small amounts of credits generally pay relatively higher transaction costs) (Hamrick and Gallant, 2017). Average prices for carbon credits also vary widely between countries.

Developing an understanding of the rationale for offsetting has been a long process

Markets for carbon credits are relative complex and abstract. Internationally regulated markets, such as the CDM, perhaps added some legitimacy to the concept of developing emission reduction projects, quantifying and issuing credits to reflect these reductions and selling them within a marketplace. However, the idea is difficult to grasp for non-experts and therefore a risk to engage in.

Our interviews highlighted that credit retailers, industry associations and other stakeholders with an interest in promoting voluntary demand for carbon credits have invested heavily in helping buyers to understand the rationale for offsetting over the past decade. Their approach to raise awareness of the market has been through information campaigns, implemented through a variety of channels to improve both general understanding of the market as well as understanding of the potential advantages for buyers. Our interviewees reported – and that is evidenced in the growth in participation in the market – that only in recent years has the notion of offsetting emissions by investing in projects typically in other countries and sectors become more widely understood and accepted as an attractive tool for buyers aiming to address their polluting activities.

Increased climate change awareness appears to be boosting voluntary carbon market

The broader uptick in climate change awareness, appreciation of the urgency of the climate challenge and the responsibility for action beyond just national governments also seem to have played a material role in enhancing recent engagement in voluntary carbon markets. These influences include, for instance, the science-based target initiative, which is a collaboration between four NGOs that started in 2015 in the lead-up to COP21 in Paris. The initiative provides companies with a clear framework to set ambitious, science-based GHG mitigation targets that are aligned with the Paris Agreement temperature goal. Whereas the focus amongst businesses used to be on offsetting emissions, the science-based target initiative encourages companies to prioritise reducing their emissions and only offset what emissions remain.

In this regard, the IPCC Special Report on 1.5˚C (IPCC, 2018) played an important role in emphasising individual responsibility to limit global warming and creating climate change awareness among the wider public. Further, Greta Thunberg and the Fridays for Future movement, as well as the Extinction Rebellion series of protests, may have helped to put climate change action higher on the agenda of governments as well as organisations and individuals. Indeed, surveys in various countries indicate that larger shares of the public are concerned about climate change and consider it one of today's greatest threats (see e.g. Leiserowitz et al., 2018; Client Earth and Opinium, 2019; I&O Research, 2019).

Whilst these influences are not necessarily a direct result of a strategic approach to increase engagement in voluntary carbon markets, this wider increase in climate awareness appears to have had a positive effect on demand for carbon credits in the voluntary market.

5.2 Challenges for future market engagement

We now turn to consider what challenges to engagement exist or are likely to emerge as we look to voluntary carbon market activities after 2020. Certain challenges relate generally to the fundamental shift in the global framework for addressing climate change as we shift from Kyoto to Paris eras, and more specifically to the choice of model for voluntary markets. Other challenges to engagement in carbon markets already exist today and may prove obstacles to more widespread uptake of voluntary participation.

Change in market context and choice of model

In recent years many market actors have invested considerable effort in informing potential voluntary carbon credit buyers of the merits of engaging in the market, as discussed in the previous section. This narrative has largely focused around helping buyers understand the appeal of offsetting their own emissions as a means to improving their image amongst customers, shareholders, voters or even within a more private social context.

The new context of the Paris Agreement and the increased risks it introduces regarding the appropriateness of offsetting poses a threat to the success of efforts to date to help raise awareness of the voluntary carbon market. Stakeholders we interviewed emphasised this as a frustration. They noted that a change in approach now – such as moving away from products offering to offset emissions and the ability to use credits to support claims of carbon neutrality – could lead to a significant slow-down and even decline in voluntary market participation.

As discussed above, carbon credit retailer's and buyers expressed two main concerns. First, if host country authorisation and corresponding adjustments are required to avoid double claiming risks, this will raise both the administrative cost as well as the risk involved in developing such projects (related to the complexity of the accounting process as well as the potential for corruption). It may also significantly constrain the scope for developing projects to a limited number of countries and sectors. Second, if the claim that can be made by buyers deviates from what is used today – one of offsetting emissions and branding activities as climate neutral – this could introduce a critical new barrier to market participation.

A further related challenge highlighted through our interviews and wider discussions with market stakeholders stems from the possibility of further fragmenting the voluntary market into two or more distinct products. Based on the models we assess in Chapter 4, there are several possible products that could emerge, which either do, or do not, address the risks we note in this study. Certain carbon crediting standards and retailers may endorse a move away from offsetting towards the contribution claim model without an associated claim by the buyer to net-off the impacts of its own emissions. Others may advocate for applying corresponding adjustments and allow the credit buyer to make a claim that its emissions are offset. Some may continue to promote offsetting claims even if no corresponding adjustment is applied. This fragmentation would undoubtably add further complexity to navigating what is already a challenging market to understand. Complexity can add to the effort required on the part of buyers and may also increase distrust in at least some – and potentially all – of the products available; both of which risk undermining engagement in the market.

Acceptance of offsetting

Taking a step back to the current situation, even before considering the implications of the Paris Agreement, a continual challenge facing the voluntary market is that offsetting emissions is not fully endorsed by a broad range of actors as an effective tool to address climate change.

A common criticism is that carbon credits give the illusion of a "fix", which can lead to complacency in addressing climate change (UNEP, 2019), delay infrastructure changes (Bullock, Childs and Picken, 2009) and hinder investments in the development of zero- or low-carbon technologies. Others raise concerns that offsetting can give customers a misleading impression that their purchasing decisions lead to fewer, or zero, emissions actually released into the atmosphere in the production of the product or service they are buying – for example, by deflecting attention from the fact that transporting a package by air and road, via a "carbon neutral" service, does in fact lead to emissions from the aircraft and lorry – even if these emissions are offset elsewhere.

Another criticism that hinders acceptance of the value of the concept of offsetting concerns the quality of carbon credits, i.e. the extent to which they guarantee the delivery of emission reductions that would not otherwise have happened and avoid wider socioeconomic and environmental harm.

Against these concerns, purchasing and using carbon credits presents a degree of reputational risk to buyers. The voluntary carbon market is not commoditised in the way that compliance markets are. Carbon credits are not traded on open exchanges (although they are often transacted multiple times before they are retired). In fact, a carbon credit can reflect different degrees of certainty in terms of the emission reductions it guarantees as well as different non-climate impacts that are associated with the activity it derives from.

Transparency

A lack of transparency, both on the part of the retailers and the carbon credit buyers, can exacerbate the challenge of building trust, and ultimately engagement, in the voluntary market. Whilst not universally the case, many retailers and buyers of carbon credits provide limited, or no information about their carbon credit transactions and offsetting activities. Becken and Mackey (2017) analysed the carbon offsetting activities of 139 airlines. They found that of the forty-four airlines that actively engaged in offsetting, most offered only generic and minimal information on the types of carbon credits used (e.g. specific projects and carbon crediting standards). Further, only ten airlines stated the quantity of carbon emissions they had offset, but they provided mostly dated information, so it is not clear what amount of carbon emissions they have offset in recent years.

Although we have not conducted a full review of company reporting (such as annual Corporate Social Responsibility publications) for this project, feedback from our stakeholder interviews and a selected review of public reports from a number of prominent companies that claim to offset their emissions, also indicate a lack of transparency. Whilst various companies outline what projects they purchase credits from and how many tonnes of GHGs they have offset since they started to buy carbon credits, there appeared to be almost no disclosure of how many carbon credits were purchased in each year, the price paid, or when the emission reductions took place. Further, companies do not provide proof that the credits they claim to have bought were retired.

Whilst a climate neutral claim is simple to communicate it can entail different levels of effort and environmental impact. For example, one company could reduce its actual emissions in line with a science-based target and use carbon credits to offset its residual emissions from projects with

a high likelihood of delivering permanent emission reductions that would not otherwise have occurred Another company may avoid implementing any measures to reduce its own emissions and instead purchase carbon credits to cover all of its emissions from projects with question marks over the environmental integrity of the units. Both companies may claim their activities are climate neutral, but further detail setting out their approach is needed for their customers, shareholders and civil society to assess their actual effort and contribution to addressing climate change and supporting the goals of the Paris Agreement.

As the voluntary market for carbon credits is unregulated, many buyers seem to require observers and, crucially, their customers and shareholders to place trust in the accuracy and robustness of their approach to both measuring emissions, procuring high-quality credits and retiring them to avoid further use. Looking to the future, the combination of rising awareness of the need to take urgent action to address climate change, the complexity of the products offered by the voluntary market and the lack of universal acceptance in the concept of offsetting, may increase scrutiny of the claims made by buyers. This challenge may also be heightened should engagement in the voluntary carbon market increase.

5.3 Opportunities to promote voluntary carbon markets after 2020

The ambition of the Paris Agreement and the sheer scale of the challenge to meet its temperature goals presents an opportunity for voluntary actors to complement governmental decarbonisation efforts. Carbon markets offer a possible channel for such voluntary actions. In the following paragraphs we set out options to leverage the opportunities for increasing engagement in voluntary carbon market after 2020.

An innovator to tackle nascent technologies and high-hanging fruit

Voluntary carbon markets can play a role in overcoming barriers in nascent technologies and sectors. Compared to the highly-regulated structures governing compliance markets, actors on the voluntary markets can use a range of approaches to source projects and generate carbon credits (Lovell, 2010). This greater flexibility of the voluntary market could help channel investments to innovative, high-risk projects (MacKerron *et al.*, 2009), which for instance deploy novel technologies with high upfront costs. This helps allow project developers to test and promote new GHG mitigation methods and address more emission sources, as well as develop methodologies to quantify and account for emission reductions (Bumpus, Liverman and Lovell, 2010; Hamrick and Gallant, 2018; Lang, Blum and Leipold, 2019). In this way, voluntary markets can help develop and bring down the costs of nascent technologies, which should enable countries to increase their ambition in subsequent NDCs, by improving accessibility over time to what are currently challenging mitigation options.

Enhancing transparency to build market trust

Creating transparency around the contribution of the voluntary market is important if it is to play a prominent role in future efforts to address climate change. Transparency alone is of course not sufficient to build credibility in the market. That ultimately depends on the actions taken by project owners, retailers, carbon crediting standards and carbon credit buyers. However, enhancing transparency requirements can provide a strong incentive for adopting good practice approaches.

It is important for companies and institutions to clearly communicate both the emissions associated with their activities as well as their voluntary contributions to enable their customers and civil society to assess their overall impact on the climate. It is particularly salient for voluntary actors claiming that their activities are climate neutral to report how much of this

claim is reliant on the company's own emission reduction efforts, versus the use of carbon credits.

Developing a widely accepted 'good practice' guidance to enhance transparency in the use of carbon credits could provide an opportunity to build market trust and enhance engagement. Guidance could be particularly relevant where carbon credit buyers make a claim to offset their emissions. The following Box provides recommendations for the type of information that carbon crediting standards, retailers and buyers could be required to report.

Reporting recommendations to enhance transparency in the use of carbon credits

To enhance transparency, enable scrutiny and improve the credibility of offsetting and climate neutral claims, we suggest **companies** set a science-based emission reduction target for all the GHG emissions that their activities lead to, and outline in their regular reporting the following information as a minimum:

1. A time series of all the GHG emissions their activities lead to[12], along with a documentation of the methodological approaches, assumptions and data sources used;
2. Information on their GHG mitigation activities, including the type of mitigation actions taken, the resulting emission reductions (as a time series) and the methods used to estimate the emission reductions;
3. Detailed information on the carbon credits purchased and retired, including the carbon credit standards, the projects and the serial numbers of the carbon credits; and
4. The price range the carbon credits fall into.

Furthermore, **companies and carbon crediting standards** should make evidence of carbon credit retirement (or cancellation) publicly available and accessible. Also, the purpose of retirement should be unambiguously and clearly documented (e.g. which emissions, for which years and from which exact emission sources, etc).

An improved approach to transparency could materially increase the availability of information around the use of voluntary carbon markets and enable better appraisal of buyers by market observers, as well as those who potentially endorse or support their activities; e.g. customers, investors and shareholders, or, in the case of public organisations, voters. It would also make it easier to establish some form of independent oversight to control and evaluate voluntary carbon market activities.

Recognised role within the Paris process

The Paris Agreement provides a framework for countries to take climate action and to report on their actions. Action by non-state actors is, however, recognised under the United Nations Framework Convention on Climate Change (UNFCCC) in various ways, such as under the Marrakech Partnership for Global Climate Action. Such fora could be used to establish means for actors in the voluntary carbon market to regularly report on their actions. This information could feed into various processes, in particular the global stocktake (referred to in Article 14 of the Paris Agreement), but possibly also into information considered under Article 6 of the Paris Agreement. The UNFCCC secretariat could compile and aggregate information in a way that the

[12] This would include scope 1 (direct emissions from owned or controlled sources); scope 2 (indirect emissions from the generation of purchased electricity); and scope 3 (further indirect emissions throughout the value chain – both upstream and downstream) GHG emissions.

efforts from the voluntary carbon market become visible. This could, for example, allow countries (and observers) to better understand to what extent the voluntary carbon market has helped reduce their national emissions.

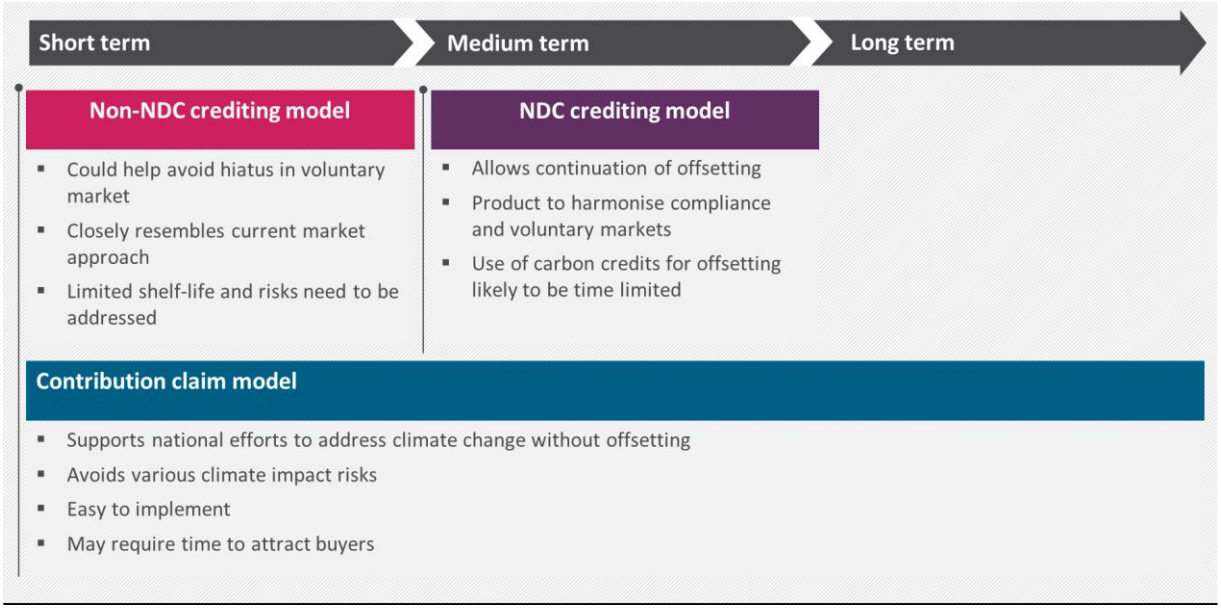
6 Concluding recommendations for voluntary carbon market approaches after 2020

In this final Chapter we draw on the evaluation of different models for the future role of voluntary carbon markets (Chapter 4), as well as our considerations for increasing engagement in the market (Chapter 5), to derive a set of recommendations for voluntary market actors to enhance their role and the overall impact of their activities in addressing climate change.

6.1 Recommendations regarding future voluntary market models

According to our evaluation, the contribution claim, NDC crediting and non-NDC crediting models emerge as potentially viable options for voluntary carbon markets in the Paris era, each with their own respective strengths and weaknesses. The relative attractiveness of the models is also likely to change over time. In Figure 21 we present the three models with an indication of their possible validity over time along with key justifications for this assessment. The contribution claim model as well as the non-NDC crediting models could be implemented today with appropriate safeguards to mitigate their respective risks, whereas new rules and procedures are needed prior to the implementation of the NDC crediting model.

Figure 21: Viable voluntary market models in the Paris era



Source: NewClimate Institute; Lambert Schneider

The non-NDC crediting model could offer a short-term option to avoid hiatus in the voluntary market as it bears the closest resemblance to the current market approach. However, this model has a limited potential as NDCs need to rapidly expand to economy-wide targets and the voluntary market should avoid disincentivising this expansion in any way. To minimise some of the risks associated with the approach of crediting activities outside the scope of an NDC target, support should be restricted to:

- Project activities that are clearly identifiable as outside of the NDC scope;

- Project activities that represent challenging mitigation options that can kick-start nascent markets for low carbon technologies, bringing down barriers and costs to better enable the host country to expand its NDC to these areas in the future;
- Sources of GHG emissions for which the host country has committed to expand its future NDC coverage to either contingent on initial voluntary market project support or independent of it.

The NDC crediting model could be developed as a medium-term solution, still providing the option for carbon credit buyers to make a claim to offset their own emissions. The model is dependent on international rules for host country authorisation of projects and the application of corresponding adjustments. Due to slow progress and continued uncertainty in establishing these rules, this model may not be a viable option in the short term. However, given that such a product is likely anyway needed in the coming years, in particular for carbon credits that would be eligible for CORSIA, it is an attractive way of harmonising both voluntary and compliance carbon markets, avoiding separate administrative processes and diverging products across these markets. The main advantage of this model is that it addresses risks to the climate associated with the possibility of double claiming, whilst allowing carbon credit buyers to claim to neutralise the impact of their emissions. However, the administrative burden associated with host country authorisation can introduce additional cost and risk as well as the potential for corrupt practices.

Ultimately, the use of carbon credits for offsetting purposes is time limited. The concept is already challenged by some as an ineffective means to address climate change impacts. As all countries increase the scope and degree of challenging mitigation options in their NDC targets over time, and many institutions and individuals continue to prioritise avoiding and reducing their own emissions, both the remaining emissions to offset, as well as the available options to deliver additional emission reduction projects, will decline.

The contribution claim model can be introduced today and offers an approach that is viable over the long term to support countries' efforts to address climate change. It avoids some of the risks associated with other models in relation to negative climate impacts, such as double claiming and the introduction of disincentives to raise the scope of NDC targets. It also avoids the need to seek host country authorisation for emission reduction projects and apply a corresponding adjustment – both of which provide barriers to implementation of the NDC crediting model.

A key concern in relation to the contribution claim model is that its acceptance by the market, in particular by carbon credit buyers, may be limited at least initially as understanding of the implications of the Paris Agreement for offsetting take time to communicate and evolve. Businesses account for the largest share of carbon credit buyers in the voluntary market and – under the contribution claim model – many would need to alter their current messaging to their consumers and wider stakeholders around claims associated with carbon credits. This could align more with how contributions to non-climate sustainable development objectives are reported. The model's acceptance by the market may improve over time as awareness of the uncertainties associated with guaranteeing the environmental integrity of offsetting increase.

We find that the unregulated sector crediting and ICROA 2019 models present significant risks to the environmental integrity of voluntary carbon markets. Their advantages in terms of opening up more opportunities for project development by the voluntary market do not outweigh the notable risks and are unlikely to receive broad acceptance by stakeholders.

In the unregulated sector crediting model, there is a double claiming risk if the project activity is outside of regulatory coverage but within the NDC scope, as no corresponding adjustment is applied by the host country in their reporting towards achievement of their climate commitments. It is also likely to be challenging to clearly identify the scope of regulation in many contexts. Furthermore, there is a material risk that targeting voluntary market support to activities and sectors outside the scope of regulatory coverage could in fact serve to limit any expansion of GHG emission regulations, or even weaken existing regulations.

The ICROA 2019 model would allow carbon credits to be used to support offsetting claims without requiring a host country authorisation or corresponding adjustment, regardless of how the project activity relates to the scope of the host countries NDC target. This model presents a high risk of double claiming, which – under certain circumstances – could lead to an overall negative impact to the climate.

To help maximise the climate impact of voluntary market activities and safeguard against some of the risks presented by features of the models, we also recommend that the voluntary market should, irrespective of the model used, seek to focus on:

- **Project activities representing challenging mitigation options**

  Voluntary market investment targeted at mitigation options that are inaccessible to the host country can help bring down the cost of nascent technologies, lower barriers to adoption and facilitate raising country ambition in subsequent NDCs.

- **Host countries with ambitious NDC targets**

  Focusing support in ambitious countries, which back up their NDC targets with appropriate policy measures, can mitigate the risk of the voluntary market creating perverse incentives against expanding the scope or abatement levels of NDC targets and send a signal to potential host countries that their ambitious efforts can be rewarded by complementary financial support from voluntary carbon credit buyers.

6.2 Recommendations regarding enhancing market engagement

Recent evidence suggests that the broader uptick in awareness of the urgency for action in addressing climate change has significantly increased demand for carbon credits in the voluntary market, albeit not necessarily as a result of a strategic approach by market participants.

The ambition of the Paris Agreement and the sheer scale of the challenge to meet its temperature goals presents an opportunity for voluntary actors to complement national decarbonisation efforts. Carbon markets offer a possible channel for such voluntary actions. We recommend three areas of focus to enhance engagement in the voluntary carbon market in the Paris era.

Voluntary carbon markets can showcase their role in overcoming barriers in nascent technologies and sectors. As we note above this can help develop and bring down the costs of inaccessible mitigation options (so-called 'high-hanging fruits'). If project developers can identify opportunities that are aligned with the ambitious goals of the Paris Agreement and demonstrate their transformational impact this can help build the reputation of the voluntary carbon market and engage new and existing carbon credit buyers.

Carbon credit buyers (and other stakeholders) should increase transparency about the contribution of the voluntary market. More comprehensive and accessible information is important if voluntary carbon markets are to play a prominent role in future efforts to address climate change. Private and public sector organisations should clearly communicate the emissions associated with their activities, what scope they relate to and how they were quantified. And carbon credit buyers should also set out the types of carbon credits they used, how they were retired and what claim they attach to them, to enable their customers, wider audience and civil society to assess their overall impact on the climate. This is particularly salient for voluntary actors claiming that their activities are climate neutral. Developing a widely accepted 'good practice' guidance to enable transparency in the use of carbon credits, along with institutions providing independent oversight, could provide an opportunity to build market trust and enhance engagement.

Voluntary carbon market actors could leverage existing fora for non-state actors to report their contributions within the Paris process. Engaging in initiatives set up under the UNFCCC could provide an opportunity for the contributions of the voluntary market to feed into the regular global stocktake process, enhancing their visibility and profile as a viable mechanism to address climate change.

7 References

Becken, S. and Mackey, B. (2017) 'What role for offsetting aviation greenhouse gas emissions in a deep-cut carbon world?', Journal of Air Transport Management, 63, pp. 71–83. doi: 10.1016/j.jairtraman.2017.05.009.

Bullock, S., Childs, M. and Picken, T. (2009) A dangerous distraction: Why offsetting is failing the climate and people: the evidence. Available at: https://www.foei.org/wp-content/uploads/2014/02/dangerous_distraction.pdf.

Bumpus, A. G., Liverman, D. M. and Lovell, H. (2010) 'The Rise of Voluntary Carbon Ooffset Standards: Self-Regulation, Legitimacy and Multi-Scalar Governance', SSRN Electronic Journal. Available at: https://www.researchgate.net/publication/228263897_The_Rise_of_Voluntary_Carbon_Offset_Standards_Self-Regulation_Legitimacy_and_Multi-Scalar_Governance.

CDM Registry (2020) Voluntarily cancelled units as of 31 May 2020. Available at: https://cdm.unfccc.int/Registry/index.html (Accessed: 8 June 2020).

Client Earth and Opinium (2019) ClientEarth's Climate Snapshot 2019: A survey of UK attitudes towards climate change and its impacts. London.

Climate Action Tracker (2019) Warming projections global update: Governments still showing little sign of acting on climate crisis. Available at: https://climateactiontracker.org/documents/698/CAT_2019-12-10_BriefingCOP25_WarmingProjectionsGlobalUpdate_Dec2019.pdf.

Forest Trends' Ecosystem Marketplace (2019) Financing Emissions Reductions for the Future: State of Voluntary Carbon Markets 2019. Washington.

Gojdka, V. and Timmler, V. (2019) 'Das Geschäft mit dem schlechten Gewissen boomt', Süddeutsche Zeitung.

Gold Standard (2016) Annual Report 2015. Gold Standard. Available at: https://www.goldstandard.org/sites/default/files/documents/gs_annual_report_2015.pdf

Gold Standard (2017a) A New Paradigm for Voluntary Climate Action: 'Reduce Within, Finance Beyond'. Geneva. Available at: https://www.goldstandard.org/sites/default/files/documents/a_new_paradigm_for_voluntary_climate_action.pdf (Accessed: 2 August 2019).

Gold Standard (2017b) Annual Report 2016: Building the Foundation Partnerships and infrastructure for Gold Standard for the Global Goals. Gold Standard. Available at: https://www.goldstandard.org/sites/default/files/documents/gs_annual_report_2016.pdf

Gold Standard (2018) Lift off: Annual Report 2017. Gold Standard. Available at: https://www.goldstandard.org/sites/default/files/documents/gs_annual_report_2017.pdf

Gold Standard (2019a) Envisioning the Voluntary Carbon Market Post-2020. Available at: https://www.goldstandard.org/sites/default/files/documents/2019_06_envisioning_the_vcm_statement_consultation_0.pdf (Accessed: 2 August 2019).

Gold Standard (2019b) Pathways to Scale: Annual Report 2018. Gold Standard. Available at: https://www.goldstandard.org/sites/default/files/gold_standard_annual_report_2018.pdf

Graichen, J., Cames, M. and Schneider, L. (2016) Categorization of INDCs in the light of Art. 6 of the Paris Agreement. Available at: http://www.carbon-mechanisms.de/fileadmin/media/dokumente/Publikationen/Studie/Studie_2016_Categorization_of_INDCs_Paris_Agreement.pdf.

Hamrick, K. and Gallant, M. (2017) Unlocking Potential: State of the Voluntary Carbon Markets 2017: Buyers Analysis. Washington D.C: Forest Trends' Ecosystem Marketplace.

Hamrick, K. and Gallant, M. (2018) Voluntary Carbon Markets Insights: 2018 Outlook and First-Quarter Trends. Washington DC.

I&O Research (2019) Duurzaam Denken is nog niet Duurzaam Doen: De CO2 Voetafdruk van Nederland. Amsterdam, Enschede. Available at: https://ioresearch.nl/Home/Nieuws/duurzaam-denken-is-nog-niet-duurzaam-doen.

ICAO (2019a) CORSIA Emissions Unit Eligibility Criteria. Montreal.

ICAO (2019b) Technical Advisory Body. Available at: https://www.icao.int/environmental-protection/CORSIA/Pages/TAB.aspx (Accessed: 8 June 2020).

ICROA (2017) 'ICROA releases guidance report on pathways to increased voluntary action by non-state actors'. Geneva: ICROA. Available at: https://www.icroa.org/News/5334788.

ICROA (2018) '4th ICROA Workshop at COP24 explores options to accelerate voluntary action in a Paris world'. Katowice: ICROA. Available at: https://www.icroa.org/News/6957048.

ICROA (2019) ICROA's position on scaling private sector voluntary action post-2020. Available at: https://www.icroa.org/resources/Documents/ICROA_Voluntary_Action_Post_2020_Position_Paper_July_2019.pdf.

IPCC (2018) Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change. Intergovernmental Panel on Climate Change.

Kuramochi, T. et al. (2017) States, cities and businesses leading the way: a first look at decentralized climate commitments in the US. Cologne, Germany: NewClimate Institute, The Climate Group. Available at: https://newclimateinstitute.files.wordpress.com/2017/09/states-cities-and-regions-leading-the-way.pdf.

Lang, S., Blum, M. and Leipold, S. (2019) 'What future for the voluntary carbon offset market after Paris? An explorative study based on the Discursive Agency Approach', Climate Policy. Taylor & Francis, 19(4), pp. 414–426. doi: 10.1080/14693062.2018.1556152.

Leiserowitz, A. et al. (2018) Climate change in the American mind: December 2018. New Haven, CT: Yale Program on Climate CHange Communication. Available at: https://climatecommunication.yale.edu/wp-content/uploads/2019/01/Climate-Change-American-Mind-December-2018.pdf.

Lovell, H. C. (2010) 'Governing the carbon offset market', Wiley Interdisciplinary Reviews: Climate Change, 1(3), pp. 353–362. doi: 10.1002/wcc.43.

MacKerron, G. J. et al. (2009) 'Willingness to pay for carbon offset certification and co-benefits among (high-) flying young adults in the UK', Energy Policy, 37, pp. 1372–1381. doi: 10.1016/j.enpol.2008.11.023.

NewClimate Institute (2018) Opportunities and safeguards for ambition raising through Article 6: The perspective of countries transferring mitigation outcomes. Berlin: NewClimate Institute. Available at: https://newclimate.org/wp-content/uploads/2018/05/180508_AmbitionRaising-Article6Paper.pdf.

Prag, A., Hood, C. and Barata, P. M. (2013) Made to Measure: Options for Emissions Accounting under the UNFCCC. Available at: https://doi.org/10.1787/5jzbb2tp8ptg-en.

Schneider, L. et al. (2018) Crediting Forest-related Mitigation under International Carbon Market Mechanisms: A Synthesis of Environmental Integrity Risks and Options to Address Them. Available at: https://newclimate.org/2018/09/19/crediting-forest-related-mitigation-under-international-carbon-market-mechanisms/

Schneider, L. et al. (2019) 'Double counting and the Paris Agreement rulebook', Science, 366(6462), pp. 180–183.

Schneider, L., Kollmuss, A. and Lazarus, M. (2014) Addressing the risk of double counting emission reductions under the UNFCCC. Available at: https://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-WP-2014-02-Double-counting-risks-UNFCCC.pdf.

UN Environment (2018) Emissions Gap Report 2018. Available at: https://www.unenvironment.org/resources/emissions-gap-report-2018 (Accessed: 12 July 2019).

UNEP (2019) Carbon offsets are not our get-out-of-jail free card. Available at: https://www.unenvironment.org/news-and-stories/story/carbon-offsets-are-not-our-get-out-jail-free-card.

UNFCCC (2015a) 'New UN Initiative to Drive More Voluntary Action to Combat Climate Change'. Bonn: UNFCCC. Available at: http://climateneutralnow.org/ (Accessed: 8 June 2020).

UNFCCC (2015b) The Paris Agreement, Draft Decision -/ CP.21. FCCC/CP/2015/L.9. Available at: https://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf (Accessed: 7 April 2016).

UNFCCC (2019) Draft text on Matters relating to Article 6 of the Paris Agreement: Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement, Version 3 of 15 December 00:50hrs. Available at: https://unfccc.int/sites/default/files/resource/DT.CMA2_.i11a.v3_0.pdf.

Warnecke, C. et al. (2015) Connecting the dots - Results-based financing in climate policy. Cologne, Germany. Available at: https://newclimateinstitute.files.wordpress.com/2015/08/newclimate-finalreport_rbfandcarbonmarkets14011.pdf.

World Bank Group (2020) State and Trends of Carbon Pricing 2020, State and Trends of Carbon Pricing. Washington D.C. doi: 10.1596/978-1-4648-0268-3.

Annex I: List of stakeholder interviews

We are grateful to the valuable insights shared by the following voluntary carbon market stakeholders as well as a wider group of market actors who participated in a workshop to discuss initial findings from the study in Berlin in November 2019.

Table 1: List of stakeholder interviews

Name	Title	Affiliation	Date
Stefanie Böther	Scientific Policy Adviser	Umweltbundesamt/DEHSt	25 Feb 2019
Mischa Classen	Dir. Carbon Procurement	Klik Foundation	03 Apr 2019
Max DuBuisson	Sr. Policy Manager	Climate Action Reserve	28 Mar 2019
Gilles DuFrasne	Policy Officer	Carbon Market Watch	29 Mar 2019
Craig Ebert	President	Climate Action Reserve	28 Mar 2019
Florian Eickhold	CDM Expert	Atmosfair	12 Jul 2019
Jochen Gassner	CEO	First Climate	28 Jun 2019
Owen Hewlett	Chief Technical Officer	Gold Standard	14 Mar 2019
John Kadyszewski	Director	ACR	15 Apr 2019
Marcel Kruse	Scientific Policy Adviser	Umweltbundesamt/DEHSt	25 Feb 2019
Joachim Kunz	Sr. Expert Go Green	DHL	01 Apr 2019
Arjun Patney	Policy Director	ACR	15 Apr 2019
Jeff Schwarz	Director Policy & Markets	South Pole Carbon	09 Apr 2019
Jonathan Shopley	Managing Director	Natural Capital Partners	29 Mar 2019
Ralph Westermann	Project Developer	Independent	30 Apr 2019
Matthias Wohlfahrt	Senior Manager	Bearingpoint	03 May 2019