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UK Carbon
Markets Forum



THE
GLOBAL
CITY

SCALING THE GLOBAL CARBON MARKETS:
A WAY FORWARD FOR THE VCM AND PARIS MECHANISMS



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PREFACE

The global climate conference COP29 took place in Baku, Azerbaijan on 11-23 November 2024. The 198 countries that have signed the UN Framework Convention on Climate Change met once again in the hope of driving further progress on global climate commitments. The COP29 Presidency's vision for the conference was based on two pillars: enhancing ambition and enabling action. These were described in the following terms:

- **Enhancing ambition:** setting out clear plans to keep 1.5°C within reach, whilst leaving no one behind. Key to this would be the Parties signalling their own determination to act with ambitious, comprehensive and robust Nationally Determined Contributions, National Adaptation Plans and Biennial Transparency Reports, as well as their wider engagement in international cooperation.
- **Enabling action:** putting in place the means of implementation and support – finance, technology and capacity building, and the wider enabling conditions at a national, regional and global level spanning all stakeholders.

International carbon markets received a special mention under the second pillar, with the COP29 President-Designate expressing a commitment to finalise the operationalisation of Article 6 and describing this as a “*long overdue priority*”. That ambition was largely realised, through the adoption of several key decisions on some of the more contentious aspects of the functioning of the Paris mechanisms (meaning, for these purposes, cooperative approaches under Article 6.2 and the Paris Agreement Crediting Mechanism (“**PACM**”) under Article 6.4). In the wake of COP29, the Paris mechanisms are now widely considered to be fully operational and, considering the disappointing outcomes on other key areas of negotiation (notably the New Collective Quantified Goal being set at a level

far lower than many stakeholders had hoped for), finally achieving operationalisation of Article 6 is likely to be cemented as the main legacy of the Baku conference.

In light of the marked developments in effecting Article 6, a question that many stakeholders continue to grapple with is the role that the voluntary carbon market (“**VCM**”) can or should play in the global community seeking to achieve its climate commitments. In this paper, we take a look at what has happened to the Paris mechanisms and the VCM in recent years and consider what needs to be done if both the Paris mechanisms and the VCM are to reach their full capabilities and deliver the climate action so desperately needed.

EXECUTIVE SUMMARY

The need for urgent, effective climate action is more important now than ever before. The first-ever global stocktake of the Paris Agreement at COP28 in Dubai presented a stark warning of just how far the global community still has to go to meet the objectives of the 2015 Paris Agreement and the urgency in achieving these. Among other things, the global stocktake noted a huge implementation gap in meeting the Paris Agreement goal of limiting global warming to 1.5°C, whereby full implementation of all existing NDCs would result in only a 2 per cent. reduction in emissions by 2030 compared with the 2019 level. The global community must utilise all available tools to further climate action if the Paris objectives are to be achieved.

In this paper, we revisit the paper we published following COP27 in Sharm el-Sheikh in collaboration with the City of London and the UK Carbon Markets Forum titled “Enabling the voluntary carbon market in the context of the Paris Agreement” (the “**2022 paper**”). In our 2022 paper, we considered the then emerging market mechanisms under Article 6.2 and Article 6.4 the Paris Agreement, and the interaction between these mechanisms and the VCM, and the role the VCM could have in helping to deliver climate action. Notably, we recognised that the VCM presented an opportunity for immediate climate action while the Paris mechanisms were being operationalised. However, we also recognised that certain issues were at risk of preventing the VCM from realising its full capabilities including concerns about integrity, lack of transparency and certain legal uncertainties. We presented recommendations aimed at addressing these issues and unlocking the true potential of both the Paris mechanisms and the VCM.

We are now more than two years on, and a lot has happened. On the one hand, operationalisation of the Paris mechanisms has advanced to the point of operationalisation, whereas the VCM has suffered a difficult time and has failed to deliver on its promise of plugging the climate action gap pending progress on the Paris mechanisms; Chapter 2 provides a brief market update reflecting on these changes. The purpose of this report is to reflect on and refresh our 2022 recommendations in light of these market developments, considering what (if any) progress has been made against each of these.

An emerging area is the coalescence between domestic compliance markets, the Paris mechanisms and the VCM. Whilst touched on in parts in this report this area is worthy of its own extensive study and so is not dealt with in detail in this report.

Our refreshed recommendations

The following refreshed recommendations are aimed at market participants within both the Paris mechanisms and the VCM and identify actions that these key stakeholders can take to further these market mechanisms. The actions seek to address the prevailing issues currently hampering the Paris mechanisms and the VCM (many of which unfortunately remain unchanged since our 2022 paper); concerns about carbon credit quality and integrity, a lack of transparency and harmonisation, and persisting legal uncertainties. If implemented, these recommended actions should help to secure the future of the VCM, enabling it to continue to play a crucial role in mobilising critical climate finance, whilst also helping the ongoing, and hopefully near final, operationalisation of the Paris mechanisms. In the following table, the recommendations shaded darker green are those where we have seen limited progress, and where significant further work is needed. We expand on these recommendations in Chapter 3 of this paper.

<p>For the COP to the UNFCCC to:</p>	<ul style="list-style-type: none"> Finalise the implementation of the Paris mechanisms post-COP29 by ensuring the necessary regulatory infrastructure is in place and operational to support these mechanisms at both UNFCCC-level (e.g. overseeing the development by the Article 6.4 Supervisory Body of methodologies suitable for the Article 6.4 mechanism) and at national level (e.g. the establishment of national Article 6 registries). Clarify the role of sovereign credits from REDD+ under the Paris mechanisms. This requires clearly distinguishing the different types of “REDD+” and “emissions avoidance” and the COP should consider ways to align with the VCM on this. Issue a decision on whether avoidance credits qualify as ITMOs for the purposes of Article 6.
<p>For governments to:</p>	<ul style="list-style-type: none"> Demonstrate clear support for VCM activities within their jurisdiction and consider opportunities to engage with the VCM in a strategic manner to help achieve their own national decarbonisation goals. This could include confirming the ability to trade internationally carbon credits generated in their country, regulation or policy statements on use of credits and claims companies can make. Demonstrate clear support for the Paris mechanisms within their jurisdictions through policy statements and actions to support the direct or indirect involvement of their country in the mechanisms. Continue implementing the Paris mechanisms at a domestic level. For those Parties yet to do so, this may involve establishing a legal framework (or modifying existing legislative or regulatory frameworks) to provide for the Paris mechanisms in-country. For those Parties that already have implemented such legislative changes, they should continue to maintain, and look for opportunities to further develop, these legal frameworks as the Paris mechanisms are finalised. To the extent governments wish to secure benefit-sharing arrangements, they should do so by setting clear requirements and parameters for such arrangements in their national regulatory frameworks. Care must however be taken to ensure such arrangements are not overly restrictive or burdensome so to discourage investment. Deliver updated NDCs that are “ambitious, comprehensive and robust”. In particular, government should aim to identify sectoral targets and pathways, quantify investment needs, provide for whole of government engagement and achieve greater global harmonisation and consistency. Consider government-to-government or business-to-government arrangements to formalise their position with respect to the Paris mechanisms and the VCM. Such arrangements can foster greater cooperation amongst Parties and key stakeholders, whilst delivering greater clarity and transparency. Governments should consider what learnings may be taken from such arrangements already in existence. Monitor progress by the CMA regarding use authorisations under the Paris mechanisms and consider developing their own clear guidelines for the issuance, scope and rules surrounding use authorisations that align with any such decisions by the CMA. Ensure access to the carbon registries needed to facilitate the Paris mechanisms and independent crediting mechanism activities in their country. This may involve developing their own national carbon registry or ensuring access to the UNFCCC international registry. Either way, such efforts should seek to achieve the interoperability of, and technological innovation within, such registries.

<p>For governments to:</p>	<ul style="list-style-type: none"> • Formalise the legal nature and ownership rights of carbon credits to enhance market certainty and attract broader participation. Such certainty is important if a meaningful secondary market is to develop. • Consider the role that financial regulators and existing financial regulatory frameworks can have in supporting VCM activities. The market has demonstrated that a certain degree of financial regulatory oversight can help drive a meaningful secondary market, but care must be taken not to over-regulate carbon trading activities.
<p>For VCM governing bodies to:</p>	<ul style="list-style-type: none"> • Develop a proactive communications strategy to highlight the integrity improvements in, and overall benefits of, the VCM to counter prevailing negative perceptions and promote its crucial role in global climate action. • Issue clear, definitive guidance on corresponding adjustments and double claiming in the VCM to address ongoing uncertainties. • Continue to develop knowledge-sharing initiatives and enhance capacity building within the VCM. This should include promoting greater collaboration amongst governing bodies, carbon standards and market participants.
<p>For project proponents and buyers to:</p>	<ul style="list-style-type: none"> • Engage early with host governments to ensure project alignment with national climate goals and a shared understanding of expectations, procedures (including use authorisations and the availability of the different carbon trading market mechanisms) and requirements. Consider the role that business-to-government arrangements can play to secure such arrangements. • Foster increased transparency and information sharing within the VCM to improve overall integrity and encourage greater due diligence on behalf of buyers. • Engage in the VCM in an informed and discerning manner, for example, by using the emerging carbon credit labelling tools to seek out higher quality carbon credits whilst ensuring that carbon offsetting remains secondary to emission reduction.

As with the recommendations in our 2022 paper, these recommendations are by no means a perfect, nor complete, solution. Rather, they seek to target the main, as yet unresolved, issues that are holding the Paris mechanisms and the VCM back; namely, lingering concerns about the quality and integrity of carbon credits, the lack of transparency, and persisting legal uncertainties. Our recommendations recognise that everyone has a role to play in helping to address these issues, from the Conference of the Parties serving as the meeting to the Paris Agreement (“CMA”) to VCM governing bodies, market participants (both sellers and buyers), and individual governments. If the global community is to achieve the Paris objectives, it is imperative that all stakeholders actively engage with and contribute to these efforts.

What we hope is that our recommendations provide thought leadership and help to drive continued progress in the right direction. Ultimately, the Paris mechanisms and the VCM are two market tools that are vital for directing finance to essential climate mitigation action and should continue to co-exist and develop in response to current challenges.

An aerial photograph of a dense forest. The foreground is dominated by tall, dark green evergreen trees, likely spruce or fir. The background consists of a vast expanse of lighter green deciduous trees, creating a textured, layered appearance. The lighting is bright, suggesting a sunny day, with some shadows cast across the canopy.

**CHAPTER ONE:
INTRODUCTION**

1. INTRODUCTION

In December 2022, following COP27 in Sharm el-Sheikh we, together with the City of London and UK Carbon Markets Forum, published a paper titled “Enabling the VCM in the context of the Paris Agreement”¹. The purpose of that paper was to consider the emerging mechanisms for trading carbon credits under Articles 6.2 and 6.4 of the 2015 Paris Agreement, their likely interaction with the VCM, and the future role that the VCM could have in delivering climate action. In it, we recognised that the VCM presented an opportunity for immediate climate action while the Paris mechanisms were being operationalised. However, we also recognised that certain issues plagued the VCM which, without resolution, could prevent it realising its full capabilities. These issues were broadly summarised into three key themes:

- **Areas of uncertainty preventing engagement in the Paris mechanisms and the VCM.**
- **Concerns regarding the integrity of carbon credits.**
- **Lack of government support in the VCM.**

Given the need for urgent action from the international community to combat climate change, and the valuable role that the VCM could play in delivering such action, we presented recommendations aimed at unlocking the true potential of the VCM and the Paris mechanisms, asserting that the two could operate effectively and harmoniously alongside each other. Our recommendations were divided between key stakeholder groups. Namely, new governing bodies of the VCM; the Conference of the Parties to the United Nations Framework Convention on Climate Change (“**COP**”), under which the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (“**CMA**”) and various subsidiary and supervisory bodies are also relevant; project proponents; buyers; and governments.

Significant developments

Much has happened in the two years since our paper was published. ITMO transactions have already taken place under Article 6.2, and, following the conclusion of COP29, the Paris mechanisms of Article 6.2 and 6.4 are now considered to be fully operational. Meanwhile, the VCM has suffered a difficult time, with persistent and high-profile concerns over integrity resulting in a shrinking market and, in extreme cases, the suspension or de-listed of projects by VCM program standards and criminal actions being brought against project developers (see further the VCM market update at section 2.2 below). However, since 2022 much work has been done by the Integrity Council for the Voluntary Carbon Market (ICVCM) establishing an integrity threshold for carbon markets in order to try and restore confidence in the VCM.

The inter-relationship and role of the Paris mechanisms and VCM

Notwithstanding these recent challenges, we consider the VCM still has an important role to play in the global community achieving its climate commitments. The many

benefits of the VCM which we highlighted in our 2022 paper hold true. The VCM both directs funding into projects with considerable climate and sustainable development benefits, and, despite progress in operationalising the Paris mechanisms, many companies and governments will still be looking to the VCM to ensure they meet their net zero targets, at least while they wait for the first Article 6.4 projects to go live (which is expected in mid-late 2025 at the earliest). Under the Paris mechanisms, host governments may choose to authorise Art6.2 ITMOs and Art6.4ERSs for “other international mitigation purposes” including voluntary corporate climate goals, which is generally understood to mean transfer of those credits for voluntary uses. It remains to be seen whether this use authorisation will be used frequently and, if so, what the impact on the VCM may be.

At the same time, major players in the VCM are strategically positioning themselves to benefit from Article 6 developments by seeking to move into and align or merge to some degree with the Article 6 carbon markets. The big VCM program standards, carbon ratings agencies and carbon market

¹ Clifford Chance, December 2022, Enabling the Voluntary Carbon Market in the Context of the Paris Agreement. Available at: <https://www.cliffordchance.com/expertise/services/esg/esg-insights/voluntary-carbon-market-decarbonisation.html>

industry bodies are all vying for roles within the Article 6 carbon markets, which should ultimately mean Article 6 does not 'reinvent the wheel', but rather that it benefits from all the important work that has been put into the market over recent years to improve the quality and integrity of carbon credits. Independent global frameworks, such as the ICVCM's Core Carbon Principles, alongside Article 6 are likely to play a key role in promoting alignment on integrity across carbon markets. Such moves highlight the dynamic nature of carbon market infrastructure.

Ultimately, the nascent Paris mechanisms and the VCM are both key market tools to direct finance to climate mitigation action, and they can and should co-exist in the carbon market ecosystem. This is particularly important because whilst some projects will be ready to go through relatively quickly (i.e. projects transitioning from the Clean Development Mechanism ("CDM") established under the Kyoto Protocol) it will take time to incorporate all types of projects and deliver credits to the market.

Separately, some commentators have stressed that robust implementation of the Article 6.4 mechanism (now referred to as the Paris Agreement Crediting Mechanism ("PACM")) represents an opportunity to spur a 'race to the top', with the PACM methodologies yet-to-be-approved by the SBM able to act as a "lighthouse" across all sections of the carbon market, i.e. both the Paris mechanisms and VCM. To do this, the PACM must ensure high-quality emissions credits, by implementing detailed regulation with no loopholes, stringent additionality tests, and conservative baselines. It is concerning that some market players and governments have

already flagged issues around the implementation of PACM to date². At the same time, there remains a question over whether large-scale corporate demand through the PACM will emerge in the near-to-medium term, amid a wider stagnation in corporate action on climate change, ongoing debates about the role of carbon markets, and the impact of political changes in key geographies.

COP29 was referred to as the "Finance COP" because a primary focus of the conference was to establish a New Collective Quantified Goal concerning the sum of financial resources which will be dedicated to supporting climate action in developing countries. Although many consider the conference to have fallen short in this regard³, it is nevertheless true that in the context of financing goals, carbon markets are important tools to help unlock the trillions needed in private transition finance.

Carbon offsetting and carbon markets are a fundamental component of global (and national) emission reduction policies. They are an effective mechanism for climate change action and achieving carbon emission reductions and provide an important temporary solution for those hard-to-abate sectors where emissions removals at source are not yet an option. The first-ever global stocktake of the Paris Agreement at COP28, was a stark warning of just how far the global community still has to go to meet the Paris Agreement objectives and the urgency in achieving these. Among other things, the global stocktake⁴ noted a huge implementation gap in meeting the Paris Agreement goal of limiting global warming to 1.5°C, whereby full implementation of all existing NDCs would result in only a 2 per cent. reduction in

emissions by 2030 compared with the 2019 level. The stocktake also found that historical cumulative net carbon dioxide emissions already account for about four fifths of the total carbon budget for a 50 per cent. probability of limiting global warming to 1.5°C. Every available resource must be used if the global community is to achieve what it set out to, and this includes the VCM.

Our recommendations

In this report we reflect on our 2022 recommendations, consider what (if any) progress has been made against each of these, and refresh our recommendations in light of current conditions. Our aim is that these recommendations highlight the most pertinent issues concerning the Paris mechanisms and the VCM. We identify actions that key stakeholders can take to ensure that both the Paris mechanisms and the VCM fulfil their maximum climate mitigation and development potential as soon as possible. This requires:

- the Paris mechanisms to be fully finalised and widely used;
- a VCM that is high integrity, and maintains a clearly defined role alongside the Paris mechanisms as they continue to be deployed; and
- continual close collaboration between all stakeholders to build capacity, share knowledge and harmonise their efforts to achieve a clear, detailed and interoperable, international set of frameworks for carbon investment, trading and carbon claims.

² CDM to Article 6.4 PACM Transition: Ensuring Carbon Credit Quality and Environmental Integrity, First wave of Article 6 carbon credits misfire spectacularly - Carbon Market Watch, Analyzing the first credits transitioning to the Article 6.4 Paris Agreement Crediting Mechanism

³ The NCQG at COP29 committed to provide at least US\$300 billion in climate finance to developing countries annually by 2035 – far short of earlier proposals from developing countries for the provisions of US\$1.5 trillion annually by 2035. The final decision at COP29 merely calls on all actors to "scale up" to achieve this higher funding level.

⁴ Available at: <https://unfccc.int/documents/637073>

A low-angle, upward-looking photograph of a forest. The sun is positioned in the upper center, creating a bright starburst effect and casting long, soft rays of light through the dense canopy of green leaves. The tree trunks are dark and slender, reaching towards the sky. The overall atmosphere is bright and fresh, suggesting a clear day in a lush forest.

**CHAPTER TWO:
A BRIEF MARKET UPDATE**

2. A BRIEF MARKET UPDATE

Before revisiting our 2022 recommendations, it is worth considering what the past two years have meant for the Paris mechanisms and the VCM. Before revisiting our 2022 recommendations, it is worth considering what the past two years have meant for the Paris mechanisms and the VCM.

2.1 The Paris mechanisms

Our 2022 paper was published shortly after COP27 in Sharm el-Sheikh. COP27 was expected to be the “implementation COP”. From an Article 6 perspective, COP26 delivered the rulebook such that COP27 was expected to deliver key decisions on definitions, procedures and machinery necessary to enable operationalisation of the Paris mechanisms.

As it turned out, COP27 addressed aspects of Articles 6.2 and 6.4, but significant challenges remained unresolved, hindering full implementation of the Paris mechanisms. COP27 failed to resolve critical issues such as the role of emission avoidance, double counting and double claiming, and the use of mitigation contribution credits. Many of these key issues remained unresolved following COP28 as consensus simply could not be achieved, with the result that no material decisions were reached in respect of Article 6.2 or Article 6.4.

Attention was therefore firmly focused on COP29. The need for clear, decisive resolutions on the persisting uncertainties, methodologies and procedures to finally operationalise the Paris mechanisms was more urgent than ever. In a landmark step forward for global carbon markets, the Baku COP29 conference was indeed able to live up to most expectations

regarding the Paris mechanisms, and were pivotal in finalising the rules for the Article 6 carbon market mechanisms. This success sits alongside the other widely-reported headline outcome of the conference: the agreement of a new global finance target of US\$300 billion annually by 2035 to aid developing nations in transitioning to greener energy, with an aspirational goal to scale up finance to US\$1.3 trillion by the next decade (however opinions on the adequacy of these goals remains mixed).

The most notable developments towards the full operationalisation of the Paris mechanisms at COP29 (set out in further detail at section 3.2.1 below) were:

- more clarity regarding the process for ITMOs’ use authorisations, including how parties can agree changes to such use authorisations;
- the agreement of a “dual-layer” registry system for Article 6.2 transactions; a compromise which resolved long-standing conflict between opposing groups of negotiating parties as to the appropriate form and function of the Article 6.2 registry;
- a more detailed process for annual reporting by parties to ITMO transactions, and technical reviews of such submitted information;

- adoption of the Supervisory Body’s technical rules on methodologies and removals under the PACM;
- endorsement of the “Sustainable Development Tool” which imposes mandatory human rights and environmental safeguards in the context of PACM projects; and
- a clear process from transitioning projects under the CDM to the PACM.

It should be noted that while these developments address almost all of the key unresolved points going into COP29, the final version of the Article 6.2 text refrained from including a definition of “cooperative approach”, instead leaving this to parties to interpret. Regarding Article 6.4, which all the necessary rules have now been agreed at the COP-level, the SBM still has work to do in approving methodologies for credit-generating projects under the PACM. These are expected to emerge over the next one to two years, with certain cookstoves projects potentially coming to market by mid-2025.

In light of the agreements reached, it is estimated that the Paris mechanisms market could be worth US\$12 billion annually by 2030⁵.

⁵ QCI, 1 November 2024, PACM could become 8 times bigger than current VCM: analyst. Available at: <https://www.qcintel.com/carbon/article/pacm-could-become-8-times-bigger-than-current-vcm-analyst-31490.html>

2.2 Voluntary carbon market

The past five years has seen ups and downs for the VCM. In 2022, the VCM was experiencing record growth and being lauded as a US\$2 billion market, with estimates it could reach between US\$5 billion and US\$180 billion by 2030.⁶ Several prominent corporates have announced large-scale purchases of voluntary carbon credits, including market-leader Microsoft (which in May 2024 agreed to buy 3 million credits from re. green's forest restoration carbon removal project in Brazil⁷, and in June 2024 reportedly agreed to buy 8 million credits from the forestry arm of Brazilian investment bank BTG Pactual⁸) and Total Energies (which in August 2024 agreed to invest US\$100 million in US-based credit projects⁹). In early 2025, energy majors including Shell and Eni continue to dominate retirement volumes, alongside the manufacturer Hormann MG.

2.2.1 Ongoing integrity concerns

By 2024, much of the growth has been wiped out as a result of alleged integrity issues and negative press. Media reports

of carbon projects allegedly inflating actual emissions and errors in methodologies called into question the quality of carbon credits and integrity of the VCM¹⁰ and, strikingly in the US in October 2024 the CFTC and DOJ announced parallel suits against project developer C-Quest and its former senior executives for the fraudulent generation of 6 million voluntary carbon credits¹¹. These high-profile issues and greenwashing accusations have driven many corporates and financial institutions from the market, and stymied the growth of a meaningful secondary market. In May 2024, Ecosystem Marketplace reported that the carbon market had shrunk by 61% between 2022 and 2023, falling from US\$1.9bn in 2022 to US\$723m in 2023 as a result of this negative press coverage and quality concerns¹².

In 2024 and 2025, various reports have highlighted the ongoing challenges faced by the VCM. Integrity features prominently, but is not the only issue. Reports from both the World Federation of Exchanges¹³ and Nasdaq¹⁴ highlighted ongoing problems including that the VCM's current structure

is too fragmented, lacks standardisation and price transparency (i.e. a lack of trust in how credits are priced), leading to inefficiencies and doubtfulness among market participants. The Nasdaq report further emphasises the need for fundamental changes to address these structural challenges, as the market's complexity increases with a diverse array of carbon credits. It reports that 56% of corporates surveyed would like to double their carbon activity if the market were to become more efficient.

The World Bank¹⁵ identified several bottlenecks which need to be addressed to restore confidence in the VCM, which include (in addition to the problems identified by the WEF and Nasdaq), the slow progress of integrity initiatives, transactional risks (such as non-delivery, reversals and other invalidation risks, reputational and political risks) and lack of legal clarity, as well as an abundance of technical or otherwise unclear terminology which hinders development and deployment of carbon market infrastructure.

6 McKinsey & Company, October 2021, Putting carbon markets to work on the path to net zero. Available at: <https://www.mckinsey.com/capabilities/sustainability/our-insights/putting-carbon-markets-to-work-on-the-path-to-net-zero>

7 ESG News, 10 May 2024, Microsoft Partners with re.green for Largest Carbon Removal Project Worth 3 Million Tons of Carbon Removal Credits. Available at: <https://esgnews.com/microsoft-partners-with-re-green-for-largest-carbon-removal-project-worth-3-million-tons-of-carbon-removal-credits/>

8 Reuters, 18 June 2024, Microsoft to buy 8 million carbon credits from BTG Pactual in largest-ever sale. Available at: <https://www.reuters.com/sustainability/climate-energy/microsoft-buy-8-million-carbon-credits-btg-pactual-largest-ever-sale-2024-06-18/>

9 Reuters, 30 August 2024, TotalEnergies invests US\$100 mln in the US to offset climate emissions. Available at: <https://www.reuters.com/sustainability/totalenergies-invests-100-mln-us-offset-climate-emissions-2024-08-30/>

10 See, for example: the Guardian, 18 January 2023, Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows (available at: <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>); Bloomberg UK, 24 March 2023, Faulty Credits Tarnish Billion-Dollar Carbon Offset Seller (available at: <https://www.bloomberg.com/news/features/2023-03-24/carbon-offset-seller-s-forest-protection-projects-questioned>); and the Guardian, 24 May 2023, 'Worthless': Chevron's carbon offsets are mostly junk and some may harm, research says (available at: <https://www.theguardian.com/environment/2023/may/24/chevron-carbon-offset-climate-crisis>).

11 QCI, 10 October 2024. Available at: <https://www.qcintel.com/carbon/article/editorial-us-doj-criminal-charges-against-ken-newcombe-rock-an-already-rocky-vcm-30397.html>

12 Ecosystem Marketplace, 2024 State of the Voluntary Carbon Market ("**SOVCM**"). Available at: <https://www.ecosystemmarketplace.com/publications/2024-state-of-the-voluntary-carbon-markets-sovcm/>

13 World Economic Forum, February 2025, "The dynamics of voluntary carbon markets: An empirical analysis of the carbon credits lifecycle". Available at: https://wfe-live.lon1.cdn.digitaloceanspaces.com/org_focus/storage/media/Cally%20Billimore/VCM%20credits%20lifecycle%20report%20final.pdf

14 Nasdaq and The Value Exchange, March 2024, "Scaling Today's Carbon Markets: A New Market Blueprint for 2024". Available at: <https://www.nasdaq.com/solutions/fintech/resources/survey/scaling-carbon-markets-report>

15 World Bank, September 2024, "State and Trends of Carbon Pricing: International Carbon Markets 2024". Available at: <https://openknowledge.worldbank.org/server/api/core/bitstreams/b98160d9-ca19-4a75-ad69-4b1d9e9319e3/content>

2.2.2 Potential for improvement

Integrity

Integrity and reputational concerns have been a known issue in the VCM for some time; having a high degree of integrity in the carbon credits issued and retired is central to a well-functioning VCM. To the project developers and communities involved on the ground on the sell-side of the market, integrity means that funds from credit sales go towards (and actually reach) the meaningful and effective climate mitigation and sustainable development projects that are a lifeline for the planet's future. To corporates, governments, and other entities on the buy side of the market, integrity is what enables them to make valid claims about offsetting the emissions they produce and any other community, biodiversity and economic co-benefits associated with the project activities. In light of this, certain industry bodies have been diligently pushing work programmes to improve the overall integrity and perception of the VCM. In this regard, notwithstanding the setbacks, considerable progress has been made.

A key milestone was publication of the ICVCM's Core Carbon Principles ("**CCPs**"), the Assessment Framework and Assessment Procedure, first launched in 2023 and updated in 2024, which sets an integrity threshold for carbon credits.

The CCPs are ten fundamental, science-based principles to identify high-quality carbon credits that create "real, verifiable climate impact". The principles are divided into three key

themes: governance; emissions impact; and sustainable development, and include, for example:

- i. the carbon crediting programme shall have effective programme governance to ensure transparency, accountability, continual improvement and ensure the overall quality of carbon credits;
- ii. GHG emission reductions or removals shall be additional (i.e., would not have occurred in the absence of the incentive created by carbon credit revenues) and permanent or, where there is a risk of reversal, there shall be measures in place to address those risks and compensate reversals. There shall also be no double counting (which for ICVCM purposes refers to only being counted once towards achieving mitigation targets or goals; including no double issuance, double claiming or double use);
- iii. the carbon crediting programme shall have clear guidance, tools and compliance procedures to ensure the mitigation activities conform with or are better than industry best practice and environmental safeguards when delivering sustainable development impacts.

ICVCM is now in the process of assessing different carbon crediting programmes and methodologies against the CCPs. Only once both the programme and its methodologies are approved can programmes label credits as "CCP Approved". To date, 7 programs and 21 methodologies are CCP approved including Verra, Gold Standard, American Carbon Registry ("**ACR**"), Architecture for REDD+ Transaction TREES

(ART), Ecosystem Restoration Standard, Isometric, and Climate Action Reserve. This development filtered down into VCM carbon credit purchase agreements in real time: CCP-approval has quickly become an industry standard quality mark for any carbon credits issued in the VCM.

On the buy-side, in June 2023 the VCMI published the final version of its Claims Code of Practice¹⁶ ("**Claims Code**") following extensive public consultation. The Claims Code seeks to assist buyers with making reputable claims about their use of voluntary carbon credits and details the criteria companies must meet to make a VCMI Silver, Gold or Platinum offsetting claim. The global consultancy firm Bain & Co¹⁷ and the Latin American cosmetics company Natura Cosmetics¹⁸, were two of the first businesses to successfully make a platinum tier claim (requiring the purchase and retirement of high-quality carbon credits for at least 100% of its remaining emissions once it has demonstrated progress against science-aligned, near-term emission reduction targets). As of spring 2025, the VCMI has introduced a Scope 3 Action Code of Practice to help companies identify and address difficult-to-abate Scope 3 emissions, requiring disclosure of barriers to progress and the use of high-quality carbon credits. The VCMI has also launched the Scope 3 Action Challenge, which invites businesses and NGOs to support Scope 3 decarbonisation efforts, and has revised the foundational criteria in its Claims Code of Practice to provide clearer guidance on the credible use of voluntary offsets (aligning with the Greenhouse Gas Protocol and 2050 net zero target).

¹⁶ Available at: <https://vcmin integrity.org/vcmi-claims-code-of-practice/>

¹⁷ VCMI, 26 February 2024. Available at: <https://vcmin integrity.org/bain-company-makes-the-inaugural-vcmi-carbon-integrity-claim/>

¹⁸ VCMI. Available at: <https://vcmin integrity.org/case-study/natura-cosmetics/>

Several governments have demonstrated their support for these VCM initiatives, with the UK government undertaking a consultation¹⁹, proposing that voluntary standards developed by VCM are adopted as best practice for use by companies in the VCM. Also in April 2025, the French government announced its Carbon Credit Charter²⁰ pledging 17 international companies to adhere to principles of high-integrity use of carbon credits, including taking into account VCM's international best practice approach.

Another initiative that has gained considerable traction in recent years is the Oxford Principles for Net Zero Aligned Carbon Offsetting (“**Oxford Offsetting Principles**”). First developed in 2020 and revised in 2024, the Oxford Offsetting Principles provide guidance for companies, cities and other non-state actors in developing offsetting strategies that align with achieving net zero by 2050 or sooner. The Oxford Principles recognise the important role good quality carbon credits should play in achieving net zero and urges a move away from (i) credits for emission reductions and (ii) avoided emissions to credits for carbon removal.

The Science Based Targets initiative (“**SBTi**”), which validates the net zero plans of companies whose climate targets are in line with the Paris Agreement's goals, has also been influential. The organisation was deeply opposed to the use of carbon offsets until April 2024, when its announcement of plans to permit companies to use credits to offset certain

scope 3 emissions caused internal uproar (culminating in the resignation of its CEO), despite being welcomed by many market actors. In the wake of this debacle, the SBTi is currently consulting on refining its approach to removals credits. Three different options for the use of removal credits are under consultation; in each case carbon removals can only be used for up to 10% of baseline Scope 1 emissions. The SBTi also plans to formally recognise companies that invest in Beyond Value Chain Mitigation (“**BVCM**”), which would include purchasing carbon credits in the VCM, but it seems unlikely that this will go far enough to drive demand for carbon credits by SBTi-aligned companies.

Demand and growth

In terms of market dynamics, despite persistent challenges, there remains optimism about the VCM's potential for growth. MSCI predicts that the global carbon credit market could expand significantly by 2030 (to at least \$7 billion by 2030, with a potential to reach \$35 billion), driven by improved project integrity, increased corporate climate commitments, mandatory reporting under the CORSIA programme, as well as the finalisation of Article 6. Within this broader context, AlliedOffsets predicts that the VCM alone will grow slowly until 2032 (due to an expected oversupply of credits until that year), but could grow rapidly from there to a projected market value of around \$40 billion in 2040²¹. It is important to note however that similarly lofty forecasts from other financial or data-driven organisations over the past few years have often

failed to materialise. The successful implementation of Article 6 alongside the work of the ICVCM may be critical for enhancing global cooperation and driving down emissions, providing a much-needed endorsement for carbon markets, and, if robust processes are adopted by the SBM for the PACM, potentially spurring a ‘race to the top’ in terms of integrity across both compliance and voluntary markets.

More recently, in April 2025, data analysis by QCI²² allows room for a more positive outlook. The VCM has seen substantial fundraising efforts, with companies active in the VCM raising over US\$636 million in the first quarter of 2025, increasing to US\$1,485 million when including funds. Project developers have been at the forefront of these investments, with notable raises by companies like Artemeter and Chestnut Carbon. The CO2 removals sector continues to attract significant finance, with investments in innovative technologies and international projects, such as Grow Indigo's carbon farming initiatives in India and Mirova's fund targeting sustainable forestry in emerging markets. These developments highlight the VCM's potential for global expansion and the diverse opportunities available for investors.

Insurance

Insurance products continue to emerge to mitigate some of the risks that hamper the VCM, particularly risks of underperformance, reversals and invalidation. The VCM has,

19 Department for Energy Security & Net Zero, 17 April 2025, Open consultation: Voluntary carbon and nature markets: raising integrity – consultation document. Available at: <https://www.gov.uk/government/consultations/voluntary-carbon-and-nature-markets-raising-integrity/voluntary-carbon-and-nature-markets-raising-integrity-consultation-document-accessible-webpage>

20 Ministry of Ecological Transition, Biodiversity, Forests, Sea and Fisheries, 24 April 2025, Press release: ChangeNow 2025 = Launch of the Carbon Credit Charter. Available at: <https://www.ecologie.gouv.fr/presse/changenow-2025-lancement-charte-credits-carbone>.

21 AlliedOffsets, March 2025, “Forecasting the Voluntary Carbon Market”. Available at: <https://alliedoffsets.com/wp-content/uploads/2025/02/AlliedOffsets-Forecast-Report-March-2025.pdf>

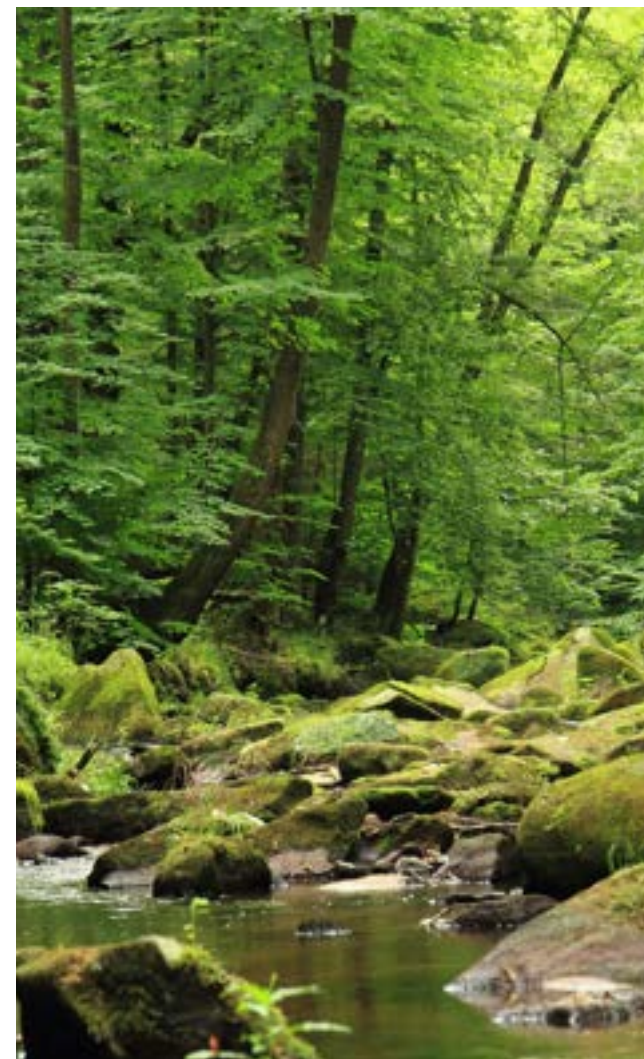
22 QCI, 17 April 2025, ANALYSIS: Billions of dollars continue to flow into the voluntary carbon market. Available at: <https://www.qcintel.com/carbon/article/analysis-billions-of-dollars-continue-to-flow-into-the-voluntary-carbon-market-39611.html>

in the past, suffered from a lack of insurance protection. CFC, a specialist insurance provider focusing on emerging risk and cyber insurance, published a report in 2024²³ titled “An unmissable opportunity in the carbon market” describing this insurance gap as the result of lack of data, a shifting landscape and the long-term nature of carbon projects. However, CFC states that insurers are increasingly innovating products designed to address the VCM’s unique risks. Organisations such as Kita, Oka, AXA XL, CFC, Swiss Re and Howden all now offer a variety of carbon insurance products from carbon delivery insurance, carbon cancellation insurance, insurance for carbon credit forward purchases, and carbon credits warranty and indemnity insurance.

Other key risks include political risks such as changes to carbon credit ownership rights, export bans and revocation of corresponding adjustments, and reputational risks for buyers. Whilst there are few insurance products on the market that

would cover all such risks, it is an area where we expect to see continued growth in the short-term. Notably the World Bank’s insurance arm, the Multilateral Investment Guarantee Agency, announced in November 2024 plans to launch its own insurance products aimed at risks emanating from both the VCM and Paris mechanisms²⁴. In March 2025, MIGA issued its first project-based carbon markets guarantee of approximately US\$180 million to cover investments by KOKO Networks Limited of Mauritius into KOKO Networks Limited of Kenya (which operates bioethanol cooking fuel services in Kenya and Rwanda).²⁵ The guarantee shields the company from risks of expropriation, war and civil disturbance, transfer restrictions and breach of contract for up to 15 years.

We expect carbon insurance will only become increasingly more sophisticated and more commonplace as the insurance market develops and investors, funders and buyers in the market look to mitigate risks.



²³ CFC, 2024, An unmissable opportunity in the carbon market. Available at: <https://www.cfc.com/en-gb/carbon-insurance-report/>.

²⁴ QCI, 7 November 2024, INTERVIEW: World Bank to launch insurance for UN carbon markets. Available at: <https://www.qcintel.com/carbon/article/interview-world-bank-to-launch-insurance-for-un-carbon-markets-31636.html>

²⁵ Miga, 17 March 2025, Press Release: Miga fuels clean cooking innovation in Kenya. Available at: <https://www.miga.org/press-release/miga-fuels-clean-cooking-innovation-kenya>



**CHAPTER THREE:
A REVIEW OF OUR RECOMMENDATIONS**

3. A REVIEW OF OUR RECOMMENDATIONS

Our 2022 report examined in detail the issues and uncertainties concerning the relationship between the VCM and emerging Article 6.2 and 6.4 mechanisms as they stood at that time. Consequently, we set out recommendations for each of (i) new VCM governing bodies, (ii) CMA and the subsidiary and supervisory bodies, (iii) project proponents, (iv) buyers of carbon credits and (v) governments. In this chapter we take each of these recommendations in turn, set out key relevant developments and examine whether our original recommendations need to be adjusted to reflect the current picture of the Paris mechanisms and the VCM.

3.1 New governing bodies

As outlined in Chapter 2, the ICVCM and VCMI continue to lead a variety of workstreams designed to build a high-quality VCM. These initiatives form part of a growing body of work by other stakeholders and not-for-profit organisations seeking to improve integrity in carbon credits and carbon offsetting, such as the Carbon Credit Quality Initiative and the International Carbon Reduction and Offset Alliance.

3.1.1 Implement a communications strategy to promote the benefits of the VCM with the aim of dispelling increasing criticism

What has happened

There are well-recognised benefits of the VCM, including:

- Mobilising significant private capital into projects which provide both climate and social benefits;

- Accelerating climate action, by enabling companies and individuals to voluntarily purchase credits;
- Enhancing corporate responsibility by allowing companies to demonstrate their commitment to climate mitigation and sustainable development;
- Developing rapidly and flexibly to scale and meet market needs without rigid regulatory oversight; and
- Encouraging innovation by supporting the development and implementation of new technologies and practices for carbon reduction and removal.

Despite these benefits, the past couple of years have not been particularly positive for the VCM. Reports of carbon projects allegedly inflating actual emissions, errors in methodologies and recently allegations of fraud within a



prominent carbon credit project developer outfit have called into question the quality of carbon credits and integrity of the VCM²⁶. A 2023 study led by the University of Cambridge and VU Amsterdam²⁷ into voluntary REDD+ projects found that millions of carbon credits are based on crude calculations that inflate the conservation successes of those forestry-based projects. Data collected by independent ratings agency Calyx backs this up, with less than 10% of the credits they have rated over the past 5 years achieving a GHG integrity rating of B or better²⁸.

In addition, over the past couple of years numerous companies have been accused of greenwashing, with some of the accusations being directed at their carbon offsetting programmes. As a result, many corporates and investors have been driven out of the market. In May 2024, Ecosystem Marketplace reported that the carbon market had shrunk by 61% between 2022 and 2023, falling from US\$1.9bn in 2022 to US\$723m in 2023 as result of this negative press coverage and quality concerns²⁹.

However, as set out in Chapter 2, considerable work has been done to address these issues and improve the overall integrity of carbon offsetting. Interestingly, the Supervisory Body tasked with defining the guidelines, rules and methodology under the PACM received a mandate to review existing methodologies for the purpose of developing their own. Others, including governments and certified carbon standards were invited to propose methodologies to the

Supervisory Body. This desire to work with the VCM on harmonising Article 6 with the VCM integrity efforts should be seen as an endorsement by COP of the VCM.

During COP29 in Baku, the VCM program standards Gold Standard and Verra, alongside Singapore's National Climate Change Secretariat, released initial recommendations for developing a carbon crediting protocol under Article 6.2 of the Paris Agreement, which seeks to standardise and streamline procedures for governments to collaborate with independent carbon crediting programmes, reducing the need for countries to create their own standards and ensuring consistent implementation and integrity. Gold Standard has since issued guidance to assist policymakers in regulating national carbon markets, including nine factsheets on aspects like integrity, registries, and coordination with international mechanisms such as Article 6.2. As well as acting as a capacity-building initiative that should serve to increase harmonisation between Parties' approaches to the Paris mechanisms, moves like these serve as a needed advert for the role that independent crediting standards can play in complementing developments at UNFCCC level.

Going forward

Negative public perception is undoubtedly the greatest challenge facing the VCM presently. If the VCM is to thrive, a concerted effort is needed to change this narrative. Hence, the need for a clear communications strategy to promote the benefits of the VCM is more important than ever if it is to

continue to have a role to play in the global action against climate change.

To counter the negative perceptions, a greater understanding is needed of the opportunity that the VCM presents. It is therefore crucial for governing bodies to continue to publicly and actively promote the VCM's role in climate action, to highlight the great work being undertaken to address its flaws. Doing so lessens the risk of "greenhushing" whereby companies adopt a communications strategy that minimises discussion of climate mitigation or other sustainable practices for fear of reputational damage or legal action if their approaches are found to be in some way deficient. A broader uptake of initiatives such as VCMI-aligned offsetting claims should go a considerable way to mollifying some of the fears that are currently holding the VCM back.

3.1.2 Issue guidance on corresponding adjustments and double claiming in the VCM

What has happened

A key concern of carbon offsetting generally, but particularly with respect to the intersect between the emerging Paris mechanisms and the VCM, is the risk of double counting and double claiming. Double counting is an accounting concept for NDC implementation and refers to a scenario where more than one Party counts the same emissions reduction or removal for the purposes of its NDC. The Paris Agreement expressly prohibits double counting, and the accounting mechanism of corresponding adjustments is designed to prevent exactly this.

26 See Chapter 1 and, for example, QCI, 17 October 2024, C-Quest cancels 5m clean cookstove credits after review. Available at: <https://www.qcintel.com/carbon/article/c-quest-cancels-5m-clean-cookstove-credits-after-review-30742.html>

27 Science, 24 August 2024, Action needed to make carbon offsets from forest conservation work for climate change mitigation. Available at: <https://www.science.org/doi/10.1126/science.ade3535>

28 Calyx Global, June 2024, The State of Quality in the VCM 2024. Available at: <https://calyxglobal.com/resource-post?q=20>

29 Ecosystem Marketplace, 2024 SOVCM.

Double claiming, on the other hand, refers to when a carbon credit is used to satisfy multiple climate goals simultaneously – such as a corporation using a credit towards its emissions reduction target while a Party counts that same credit towards achievement of its NDC. Whilst not prohibited, some consider double claiming a problem alleging that it can result in reduced overall climate mitigation action, as the benefit of a climate mitigation action is claimed twice, artificially inflating the perceived level of climate effort. Others view corresponding adjustments as unnecessary in the VCM, arguing that the VCM and the Paris mechanisms are fundamentally different systems with different purposes and ‘target audiences’ (i.e., voluntary responsible action by private entities is the focus of the VCM, as opposed to the Paris mechanisms’ aim of enabling host Parties to meet treaty-based international legal obligations). In light of this, some stakeholders suggest that mandatory corresponding adjustments for VCM transactions could place an undue administrative burden on host countries, as well as limit a host country’s means of achieving its NDC (especially as they are revised to reflect greater ambition). These factors could discourage Parties from participating in the VCM and benefiting from associated financial flows. Meanwhile, ongoing confusion on the part of several Parties to the Paris Agreement as to when corresponding adjustments must be made can itself be detrimental. For example, until recently Indonesia has operated under the assumption that all sales of credits international require corresponding adjustments, leading it to impose a block on the sale of voluntary carbon

credits since 2021, a move which has cost it valuable climate finance.

In our 2022 report, we raised concerns about the lack of clarity and inconsistencies regarding what constitutes double counting and double claiming, and identified a need for clearer guidance and a more unified approach across the VCM and Paris mechanisms to addressing these risks. To this end, some progress has been made.

Double counting/ corresponding adjustments

The major carbon standards now mandate corresponding adjustments for ITMOs (i.e., where authorised by the host Party for certain uses under Article 6, including NDC use or for other international mitigation purposes, including voluntary offsetting). Verra has started applying Article 6 labels for credits on its registry that are authorised for such uses, and which therefore require corresponding adjustments (and such labels are revoked if the host country fails to apply corresponding adjustments).

ICVCM has run a continuous improvement work programme focusing on Paris Agreement alignment, considering (amongst other things) scenarios where corresponding adjustments might be necessary in the voluntary use of credits, and the impacts of corresponding adjustments for carbon credit integrity³⁰. A report outlining the recommendations will be published in the second half of 2025. Until now, the position of both bodies has been that corresponding adjustments should not be mandatory in the

VCM, emphasising instead the importance of registries’ transparency as to whether or not a particular credit is associated with a corresponding adjustment. Such work will help carbon standards reach an aligned position and clarify the status of corresponding adjustments within the VCM.

It should also be noted that while the Subsidiary Body on Scientific and Technological Advancement to the CMA (“**SBSTA**”) has a mandate as a result of Decision 6/CMA.4 to provide recommendations on corresponding adjustments, no guidance or definitive position has yet been reached. Co-ordination work between VCM governing bodies and carbon standards is therefore even more important in the short term.

Double claiming

While the Paris Agreement does not explicitly refer to “double claiming”, the emerging market consensus appears to be that preventing double claiming is necessary to achieve and maintain a high integrity VCM. To this end, each of the ICVCM, Verra and Gold Standard now expressly define “double counting” to include “double claiming”. Verra’s VCS standard document³¹ sets out the requirements for project proponents to demonstrate how they have ensured credits will not be double claimed and includes specific guidance to avoid double claiming of credits targeting scope 3 emissions. Similarly, Gold Standards’ 2023 guidelines³² stipulate clear tracking mechanisms to ensure transparency in credit ownership and usage to avoid double claiming.

30 ICVCM, January 2024, Summary for Decision Makers (Version 2). Available at: <https://icvcm.org/wp-content/uploads/2024/02/CCP-Section-3-V2-FINAL-6Feb24.pdf>

31 Available at: <https://verra.org/wp-content/uploads/2024/04/VCS-Standard-v4.7-FINAL-4.15.24.pdf> (16April 2024 version)

32 Available at: <https://www.goldstandard.org/publications/our-new-double-counting-guidelines>

Going forward

Whilst progress has been made in the VCM in recognising and tackling the risks of double counting and double claiming, there is still far to go in clearly differentiating between the two and engineering solutions accordingly. Further, tailored guidance on each is needed, as is a clear consensus amongst market participants as to what the most appropriate solution(s) for addressing these risks are. Consideration should also be had of the extent to which such guidance should be aligned with the further work being carried out by the ICVCM and VCMI on corresponding adjustments in the VCM.

3.1.3 Facilitate knowledge-sharing initiatives to support capacity building within the VCM

What has happened

Capacity building remains one of the key focuses for climate action including within the VCM. The sooner and more widespread the deployment of meaningful and effective emission reduction and removal projects the greater impact such efforts will have on global climate commitments, and knowledge sharing is key to this. Thankfully, there has been some progress by the governing bodies in this respect.

The ICVCM and VCMI have advanced their initiatives by setting, communicating and facilitating expected best practice for participation in the VCM. The VCMI's Claims Code is supported by documents assisting practical implementation of the Code, including a Monitoring, Reporting and Assurance (MRA) Framework, the VCMI Claims Reporting Platform,

Carbon Integrity Brand Guidelines, and a Beta version of the Scope 3 Flexibility Claim (which aims to help companies that cannot reduce their scope 3 emissions (for example due to complex supply chains) to use offsets appropriately).

The Claims Code is itself a collaborative effort involving the ICVCM and SBTi: part of the Claims Code's foundational criteria requires companies to set science-based targets in accordance with the SBTi. From 1 January 2026, companies must only use CCP-approved credits to offset their residual emissions. This is a good example of governing bodies working together to avoid duplication of work and collaborating efficiently to maximise the potential of their initiatives.

The VCMI's other flagship initiative is the VCM Access Strategy Toolkit³³. Published in May 2023 in partnership with the UN Development Programme and Climate Focus, the toolkit sets out key considerations for governments and policymakers considering participating in the VCM and guidance on unlocking their country's potential for high integrity credits and socio-economic prosperity.

Examples of recent capacity-building initiatives by the VCMI include partnerships with the Climate Vulnerable Forum's V20 Finance Ministers³⁴ aimed at maximising their carbon finance opportunities (announced in June 2024), with the Mexican state of Yucatan³⁵ to develop a best practice guide to developing VCM projects in the region and the ACMI (announced in September 2024) to scale up high integrity

carbon markets across Africa. More recently, in 2025, the VCMI has commissioned an independent evaluation of its Access Strategies Programme ("ACP") to assess its impact on helping low- and middle-income countries access the VCM, and, under the ACP, has partnered with the government of Benin to develop a 'high-integrity' VCM to strengthen the country's climate strategy and financial flows.

The ICVCM has launched 13 Continuous Improvement Work Programs to study complex challenges and opportunities in the market, in recognition that approaches and best practice in the carbon market are constantly evolving. These groups bring together a wide range of stakeholders throughout the carbon market space including representatives from indigenous peoples and local communities. ICVCM also runs a market consultation working group where the ICVCM shares information on their workstreams and latest news as well as providing a channel for it to receive feedback on its infrastructure and processes. Publishing the original CCPs and Assessment Framework, while maintaining further work in the background, represents a pragmatic approach to iterative construction of a well-functioning VCM. The ICVCM also engages directly with indigenous peoples and local communities and in 2024 established an engagement forum to enable representatives to collaborate more closely with the VCM's other stakeholders and so elevate their voices.

In addition to these initial governing bodies of the VCM, six of the biggest carbon standards have adopted a quasi-governing role for themselves by agreeing to

³³ Available at: <https://vcmintegrity.org/wp-content/uploads/2023/05/VCMI-VCM-Access-Strategy-Toolkit.pdf>

³⁴ VCMI, 13 June 2024, The Voluntary Carbon Markets Integrity Initiative and Climate Vulnerable Forum and its V20 Finance Ministers Partner to Leverage Carbon Markets in Support of Climate Prosperity. Available at: <https://vcmintegrity.org/vcmi-cvf-v20-partnership/>

³⁵ VCMI, 11 September 2024, Yucatán Government Launches Innovative Guide for Carbon Project Development in the Voluntary Carbon Market. Available at: <https://vcmintegrity.org/yucatan-government-launches-innovative-guide-for-carbon-project-development-in-the-voluntary-carbon-market/>

collaborate³⁶ to share and learn from each other's best practices and align their approaches to critical topics like removals, durability, and community benefits. The six standards – Verra, Gold Standard, American Carbon Standard, Climate Action Reserve, Global Carbon Council and Architecture for REDD+ Transactions – agreed to this knowledge-sharing initiative at COP28. Importantly, one aspect of their agreed collaborations is to support the ICVCM's effort to assess carbon standards and their programmes in line with the CCPs, signalling widespread support for the initiative and evidencing the increasing productive cross-fertilisation of ideas between the VCM's core bodies.

Going forward

Whilst progress has certainly been made, there is still scope for increased knowledge sharing to support capacity building. Governing bodies, alongside industry and thought-leadership groups, should continue to bolster information sharing and capacity-building efforts to help repair and thereafter maintain a high integrity VCM.

As we suggested in our 2022 paper, this could involve disseminating detailed information about the VCM and Paris mechanisms, be that in the form of overview papers, policy briefs and/or template documents. Training courses and practical workshops could also be offered to facilitate understanding and engagement. The recent initiatives mentioned above, such as the best practice guide developed in Mexico, could be further expanded to include lessons learned and decision-making tools for policymakers, ensuring

countries can navigate carbon markets effectively, or adapted for and disseminated to other jurisdictions.

3.1.4 Determine the role of sovereign credits issued under REDD+ and the ACMI in the VCM

What has happened

At the time of our 2022 report, there was concern that large scale crediting programmes would flood the voluntary carbon market with millions of credits, potentially undermining credit prices and destabilising the market. Concerns centred on initiatives such as the Africa Carbon Markets Initiative (“ACMI”) and various programmes under the REDD+ umbrella (Reducing Emissions from Deforestation and forest Degradation, plus associated sustainable development activities). The ACMI aimed to retire 300 million credits annually in Africa by 2030, while forestry-based programmes like REDD+ were suggesting they could deliver millions of credits.

Since 2022, ACMI secured US\$200 million in advance market commitments from global corporates at COP27, and seven African nations committed to developing “carbon activation plans”³⁷. In June 2024, the UAE Carbon Alliance pledged to purchase US\$450 million in African carbon credits by 2030³⁸.

REDD+ has seen several large issuances, with the pipeline for certain projects set to expand, raising pricing and demand concerns. Market developments have focused on differentiating the term “REDD+” between project based, jurisdictional and sovereign REDD+ and debating whether certain REDD+ credits qualify as ITMOs under Article 6.

Background and terminology

The concept of reducing and removing carbon emissions through forestry activities was introduced by the 1997 Kyoto Protocol's Joint Implementation. It evolved through UNFCCC processes in the 2010s, with methodology and financing formalised at COP19 in 2013 under the “Warsaw Framework for REDD plus” and was incorporated into Article 5 of the Paris Agreement in 2015. It allows host countries with significant forests to maintain ecosystems in return for REDD+ Results Units (“RRUs”) which they can sell, a form of results-based finance. These are also known as “sovereign” REDD+ credits.

The term “REDD+” is also used colloquially in the VCM without Article 5 oversight, typically within agriculture, forestry, and land use (“AFOLU”) or land-use change and forestry (“LULUCF”) categories. The REDD+ projects could refer to afforestation (including plantations), enhanced forest management, or avoided deforestation projects. These are often project-level activities focused on specific forest areas (“project-based REDD+”). In contrast, “jurisdictional REDD+” considers all forests in a national or subnational area to reduce risks like leakage and inflated baselines. Key bodies implementing jurisdictional REDD+ include Architecture for REDD+ Transactions (“ART”), which issues “TREES” credits, and the World Bank's Forest Carbon Partnership Facility (“FCPF”). In 2023, Guyana was issued over 30 million ART-TREES credits.

36 Verra, 4 December 2023, Independent Crediting Programmes Announce Ground-Breaking Collaboration to Increase the Positive Impact of Carbon Markets. Available at: <https://verra.org/independent-crediting-programmes-announce-ground-breaking-collaboration-to-increase-the-positive-impact-of-carbon-markets/#:~:text=COP%2028%2C%20Dubai%20%E2%80%93%20December%204,and%20consistency%20across%20the%20market>.

37 Global Energy Alliance for People and Planet, 16 January 2023, Africa Carbon Markets Initiative builds on momentum from COP27, announces 13 action programs. Available at: <https://energyalliance.org/acmi-adsw/>

38 Zawya, 26 June 2024, UAE Carbon Alliance to purchase US\$450m in African carbon credits by 2030. Available at: <https://www.zawya.com/en/world/africa/uae-carbon-alliance-to-purchase-us450m-in-african-carbon-credits-by-2030-ww44ix23>

Integrity concerns

Forestry-based projects in the VCM have faced significant integrity-related criticism. Key issues include impermanence, complexities in assessing additionality and baselines, leakage, and unreliable funding for local communities. A Calyx report³⁹ found most forestry-based credit projects fall into the very low “E” ratings category.

Indigenous rights are a focal point for criticism. The World Rainforest Movement is leading a campaign against REDD+ initiatives across Africa, Asia, and Latin America, criticising REDD+ as exploitation of indigenous communities disguised as climate action. Similarly, in April this year, a study by the Center for International Forestry Research and World Agroforestry (“CIFOR-ICRAF”) pointed to significant violations of the rights of indigenous peoples and local communities within forest carbon market initiatives, highlighting a lack of empirical evidence on the implementation of necessary safeguards.

Several Brazilian states have long-faced resistance to forest-based carbon projects on similar grounds, in particular the absence of appropriate consultations with affected communities. This has led on occasion to the intervention of prosecutors, and even project annulment. To improve matters, the Brazilian state of Pará has initiated a task force

to conduct free, prior, and informed consultations (“**FPIC**”) with over 30 indigenous and traditional communities in order to advance its jurisdictional REDD+ programme. CIFOR-ICRAF’s report proposed eight principles to act as a framework for REDD projects and to evaluate the effectiveness of safeguarding the rights of indigenous peoples and local communities. In addition to FPIC, these principles include securing land rights, securing livelihoods for participants and transparent benefit-sharing arrangements, robust governance and accountability, and integration of traditional knowledge.

In response, the VCM has improved practices; for instance, Verra overhauled its REDD+ methodologies⁴⁰ in November 2023 and continued aligning with the ICVCM’s CCPs in 2024⁴¹.

Integrity concerns extend beyond project-based approaches in the VCM. A Rainforest Foundation report⁴² concluded that no REDD+ programme meets UN requirements on benefit distribution or requires offset users to reduce fossil fuel emissions first, posing a high risk of greenwashing. Questions about RRUs’ effectiveness persist, as reporting on RRUs, recorded in the Lima REDD+ Information Hub, shows that two thirds of results generated have received no funding. Despite the FCPF’s existence since 2007, it has only agreed

on two ERPA’s. The report found little evidence that REDD+ has significantly reduced deforestation, degradation, or global carbon emissions.

Poor uptake of sovereign credits

Until recently, most REDD+ credits sold were VCM project-level credits. However, in recent years the Article 5 process has seen large issuances of “sovereign” credits, notably by Papua New Guinea in 2021 and Gabon in late 2022. Due to poor market perception and integrity concerns, these sales struggled: Papua New Guinea sold just over 20,000 of 9 million RRUs listed on the redd.plus platform (established by Coalition for Rainforest Nations (“**CFRN**”)), while Gabon’s Forest Minister reported “no interest” in its 90 million RRUs issued in February 2023⁴³.

Sovereign credits could be set to increase in popularity, since the UN Green Climate Fund (“GCF”) decision in November 2024 to permanently integrate results-based payments for REDD+ projects into its regular project activity cycle. This is intended to enhance the predictability of REDD+ financing, incentivising developing countries to reduce emissions from deforestation while ensuring compliance with GCF policies and the Cancun Safeguards, and thereby potentially directing hundreds of millions in payments to developing countries from 2024 to 2027.

39 Calyx Global, June 2024, The State of Quality in the VCM 2024. Available at: <https://calyxglobal.com/resource-post?q=20>

40 Mongabay, 28 November 2023, Carbon credit certifier Verra updates accounting method amid growing criticism. Available at: <https://news.mongabay.com/2023/11/carbon-credit-certifier-verra-updates-accounting-method-amid-growingcriticism/#:~:text=However%20recent%20criticisms%20of%20REDD%2B,a%20metric%20on%20of%20CO2.>; Climate Impact Partners, 30 November 2023, Are you REDDy for Verra’s new methodology? Available at: <https://www.climateimpact.com/news-insights/insights/are-you-reddy-for-verras-new-methodology/>

41 Carbon Pulse, 7 August 2024, Verra updates voluntary carbon REDD methodology to match CCP definition. Available at: <https://carbon-pulse.com/311125/>; <https://www.qcintel.com/carbon/article/verra-expands-data-collection-for-new-redd-methodology-28516.html>

42 Rainforest Foundation UK, July 2023, Credits where they are not due: A critical analysis of the major REDD+ schemes. Available at: https://www.rainforestfoundationuk.org/wp-content/uploads/2023/07/Carbon-Credits_final_ENG.pdf.

43 QCI, 22 February 2023, “No interest” in Gabon sovereign credits after 3 months: Minister”. Available at: <https://www.qcintel.com/carbon/article/no-interest-in-gabon-sovereign-credits-after-3-months-minister-11960.html>

Demand dynamics

Demand for forest-based offsets peaked in 2021-22, driven by factors including clarity on using carbon credits toward achievement of NDCs, increased mandatory corporate emissions reporting, and rising activist voices and extreme weather events. A sharp rise in demand was accompanied by a rapid increase in the REDD+ project pipeline. Despite recent concerns about demand dropping, data from November 2024 shows increased issuances and retirements of credits year-on-year⁴⁴, with REDD+ retirements rising from 22% to 30% of total retirements⁴⁵. However, the integrity concerns besetting the VCM, the potential volume of jurisdictional and sovereign credits, and the number of credits which could be delivered by Verra's projects that are currently "under validation", all mean future demand dynamics and pricing remain uncertain.

A noticeable trend is the market's preference for REDD+ initiatives that remove carbon emissions, like forest restoration, over those avoiding future emissions. There has been relatively strong demand for afforestation, reforestation and revegetation ("**ARR**") projects in the past two years, which looks set to continue in light of a stated intention on the part of Symbiosis (a buyers' coalition including Google, Meta, McKinsey, Microsoft and Salesforce) to contract up to 20 million "high quality" nature-based CO2 removals by 2030⁴⁶. Meanwhile, evidence of the distinctive downturn in the market for project-based and jurisdictional REDD+ credits is seen in project withdrawals and cancellations. 14 REDD projects withdrew from the VCS between March and



44 QCI, 4 November 2024, Voluntary carbon credit issuances, retirements rise yoy in October. Available at: <https://www.qcintel.com/carbon/article/voluntary-carbon-credit-issuances-retirements-rise-yoy-in-october-31511.html>

45 Environmental Defense Fund, 25 June 2024, Average Prices for Jurisdictional REDD+ Credits to Reach \$15 in 2028. Available at: <https://www.edf.org/media/average-prices-jurisdictional-redd-credits-reach-15-2028>

46 QCI, 16 May 2025, Tech buyers pay up to US\$45-70/t for ARR credits: sources. Available at: <https://www.qcintel.com/carbon/article/tech-buyers-pay-up-to-45-70-t-for-arr-credits-sources-41231.html>

December 2024, nine of which (representing an estimated 6.7 million tonnes of CO₂ equivalent) withdrew in November and December alone.

The shift towards ARR is occurring despite such projects having higher costs and longer breakeven periods. The trend has attracted criticism from some project developers, who have characterised the turn away from protecting existing forest to planting new trees as a ‘crime’, especially as such new plantations often use monoculture crops that don’t replicate the full set of benefits offered by native forest.

This trend may strengthen following the Supervisory Body’s June 2024 decision that emission avoidance is ineligible under Article 6.

The rollout of the VM0048 methodology may improve demand for avoided deforestation projects, as the methodology, released in 2023, has already been approved by the ICVCM as aligning with the CCPs. While carbon projects using this methodology are not yet underway, an early sign of its uptake is mining giant Rio Tinto’s partnership with Wildlife Conservation Society and Everland to invest US\$16 million in the Makira Natural Park REDD+ project in Madagascar, using VM0048 for verification.

RRUs as ITMOs?

Poor demand for RRUs has severely limited funding for forest protection in nations like Papua New Guinea and Gabon. As an alternative method to channel funds into these essential ecosystems, in mid-2023, CfRN advocated for the capacity

of RRUs generated through Article 5 to be sold as ITMOs under the Paris mechanisms, arguing they could be treated as carbon credits in both Paris and VCM contexts. This has sparked debate, with some in the VCM raising concerns about integrity, independent verification and lack of enforceability of improvement recommendations by the UN inspectors.

In contrast, CfRN have published a detailed think piece⁴⁷ showing how RRUs could become ITMOs under Article 6.2 by adhering to CMA guidance and meeting the detailed participation, assessment, reporting, and verification requirements. This would allow ITMOs to be traded internationally and contribute to NDCs, driving climate finance to sovereign nations for rainforest conservation. CfRN emphasises the strength of additionality and reversals measures (provided for through the setting of forest reference levels and hosts’ reporting through Biennial Transparency Reports) and the strength of independent validation processes under Article 5. They highlight that no host country has ignored the improvement recommendations of the United Nations Framework Convention on Climate Change (“**UNFCCC**”), and 48% of countries have resubmitted their national strategies to address critical comments from expert reviewers. In the Article 6.2 negotiations CfRN have sided with the EU in pushing for all of the requirements in the COP decisions to be met before a country can authorise emissions reductions or removals for international transfer (i.e., as ITMOs).

Certain developments suggest RRUs being sold as ITMOs may become reality. In September 2023, Suriname announced plans to sell Article 5-generated credits as ITMOs via CfRN’s ITMO Ltd⁴⁸, issuing a Letter of Authorisation for NDC use⁴⁹. CfRN indicated Honduras and Belize may follow, signing MoUs with both countries⁵⁰. The Article 6 technical expert review report for the Suriname project was expected to be published in March 2025, but has still not been provided in the CARP.

Going forward

The VCM must address persisting integrity concerns by critically assessing forestry and land-use projects. Only high-integrity jurisdictional or project REDD+ credits should be supported.

Significant work is needed from the UNFCCC and VCM governing bodies to define REDD+ roles in Paris mechanisms and VCM. Developing a definition of “emissions avoidance” is key, given its exclusion under Article 6. As the line between avoidance as opposed to reductions or removals is hazy, there is a risk that excluding avoidance projects will lead to a suspension of essential funding for projects that maintain, protect and restore vital forest ecosystems.

The CMA has left the relationship between Article 5 RRUs and Article 6 Paris mechanisms unresolved. Although, if Suriname issues and transfers its RRU based ITMOs having gone through all of the procedures and requirements of the decisions under Article 5, 6 and 13 this will be seen as the

47 CfRN 2024, “How Article 6 brings Article 5.2 REDD+ to Global Carbon Markets”. Available at: <https://www.rainforestcoalition.org/publications/>

48 QCI, 13 September 2024, OPINION: How Suriname will sell ITMOs under UN REDD+. Available at: <https://www.qcintel.com/carbon/article/opinion-how-suriname-will-sell-itmos-under-un-redd-29297.html>

49 IETA, Visualising Article 6 implementation: <https://www.ieta.org/resources/visualising-article-6-implementation/>

50 QCI, 21 September 2023, Rainforest nations start new effort to sell sovereign units. Available at: <https://www.qcintel.com/carbon/article/rainforest-nations-start-new-effort-to-sell-sovereign-units-17095.html>

UNFCCC approving sovereign credits and the relationship between Article 5 RRUs and the Paris mechanisms.

3.2 COP and Supervisory Body

The CMA oversees implementation of the Paris Agreement. It is supported by several subsidiary bodies and supervisory bodies tasked with assisting this implementation. This includes the SBSTA who provide scientific and technical support, and the Supervisory Body which focuses on implementation of the Paris Agreement Crediting Mechanism (“PACM”).

3.2.1 Continue driving forward operationalisation of the Paris mechanisms whilst working collaboratively with the new governing bodies of the VCM What has happened

In our 2022 paper, we recognised that much of the uncertainty surrounding the VCM was due to the Paris mechanisms still being in their infancy. So long as the Paris mechanisms remain in an operationalisation phase, questions will remain as to exactly how the VCM should fit alongside it. This is why in our 2022 paper we stressed the importance of stakeholders continuing to drive forward the operationalisation of the Paris mechanisms.

In Chapter 2, we provided a brief market update on the Paris mechanisms. As outlined, there has been significant progress. With decisions taken at COP27 in Sharm el-Sheikh providing some additional clarity and guidance on matters such as reporting requirements for countries trading ITMOs and introducing the concept of Article 6.4 “mitigation contribution emission reductions”. COP27 also saw the milestone of the

first bilaterally authorised project to be implemented under a cooperative approach, which took place between Ghana and Switzerland⁵¹. However, important issues regarding baselines, additionality and removals were left outstanding and deferred to COP28. COP28 in Dubai also failed to deliver, with the Parties unable to reach a consensus on the definition of an Article 6.2 cooperative approach, Article 6.4 methodologies and removals, certain aspects of ITMOs’ use authorisation, or whether secondary trading in ITMOs should be permitted (among other things). The treatment of avoidance credits was also left unresolved (albeit progress has since been made (see below)).

In an effort to avoid another failure to resolve these issues at COP29, the Supervisory Body and Subsidiary Bodies ramped up attention on Article 6 in the lead-up to the 2024 conference. The Article 6.4 Supervisory Body had made significant progress in transitioning CDM activities to the PACM, receiving almost 1,500 transition requests by the deadline of 31 December 2023, and adopting numerous procedures, standards and forms throughout 2023 and 2024 to enable transition. This means that a pipeline of activities for the PACM was already in place going into COP29. However, details pertaining to the operation of the Article 6.4 registry, and outstanding discussions on a new sustainable development tool to complement the mechanism, remained to be finalised.

Practical steps were also taken to support the ongoing operationalisation of the Paris mechanisms. The UNFCCC, for example, established an interim platform to support and facilitate the submission of reports and publication of non-

confidential information according to Decision 2/CMA.3, annex, chapter IV (Reporting). This interim platform was a step towards development of CARP as required by Decision 6/CMA.4 (which requests a first version be finalised by June 2025).

Further, at the pre-COP meeting of the Subsidiary Bodies in Bonn in June 2024 (known as SB60), Article 6 (particularly use authorisations, registry design, and emissions avoidance) was agreed as a focus area for discussion. Later, at a meeting in Baku in October 2024, the Article 6.4 Supervisory Body took a novel approach by adopting standards for carbon dioxide removal and methodology requirements under the PACM. The move to adopt standards themselves (rather than making full recommendations to COP29 and asking the CMA for approval) was an attempt to avoid the log-jam that their previous recommendations have encountered. Despite attracting some criticism as an effort to circumvent the proper scrutiny and governance processes of the CMA, the Supervisory Body’s pragmatic approach was purely symbolic in nature (as nothing prevented the CMA reopening the adopted text). The Supervisory Body’s strategy was ultimately successful, as on the very first day of COP29 the CMA recognised and thereby endorsed the Supervisory Body’s newly adopted standards on methodologies and removals. This early win at the conference arguably built momentum to fuel the negotiation and adoption of the final Article 6.2 and 6.4 texts.

The “11th hour” decisions on Article 6.2 and 6.4 agreed by negotiators on the final day of the conference, in a session which far overran its schedule, drew together the threads of

51 UNDP, 12 November 2022, Ghana, Vanuatu, and Switzerland launch world’s first projects under new carbon market mechanism set out in Article 6.2 of the Paris Agreement. Available at: <https://www.undp.org/geneva/press-releases/ghana-vanuatu-and-switzerland-launch-worlds-first-projects-under-new-carbon-market-mechanism-set-out-article-62-paris-agreement>

earlier COPs and finally resolved many of the contentions which had plagued these mechanisms since COP26.

Article 6.2

Article 6.2 of the Paris Agreement provides for cooperative approaches such as bilateral trading of ITMOs, use of ITMOs in international schemes such as CORSIA or in domestic schemes. The final decision was widely viewed as complex, but necessarily so given the multiple technical elements which remained to be fully fleshed out and which are essential to the tracking of credits and how they are transferred. Key elements of the final Article 6.2 decision include:

- A “dual-layer” approach to registries with a UN international repository alongside a looser, less formal and decentralised “pull-and-view” listing of projects. The international registry for Article 6 transactions will be linked to both (i) individual Parties’ registries, and (ii) the PACM registry. Registry function was contentious during negotiations, reflecting underlying longstanding divergences on the role of Article 6.2. For example, US negotiators opposed detailed registry functions that conflict with the decentralised nature of Article 6.2 and raised concerns that a UN-hosted registry could be misinterpreted as a UN endorsement of the quality and environmental integrity of mitigation outcomes. In contrast, the EU and other parties, including the Coalition for Rainforest Nations (CfRN), advocated for a UN-administered repository to ensure environmental integrity and prevent double counting. The text reflects these longstanding divergences on the roles of Article 6.2: Primarily, the registry is restricted to a “pull and view” system akin to a transaction log (representing a win for the



negotiating bloc led by the US who were keen to oppose the registry becoming a live transaction database), but for those Parties who request it, it has the additional functionality to issue mitigation outcomes and track the first transfer, acquisition and use of Article 6 credits towards NDCs and other mitigation purposes. To address the concerns about a UN registry being misinterpreting as a UN endorsement, the decision text included a clarificatory statement that such registry services do not constitute an endorsement by the secretariat or by parties to the Paris Agreement of the quality or environmental integrity of any mitigation outcomes involved. The “dual layer” approach is therefore a compromise position.

- A high threshold of transparency embedded through new requirements on reporting bilateral deals, to safeguard against double counting and environmental harms. However, NGOs have criticised the text for lacking enforcement mechanisms. While breaches can be flagged, they are not penalised, and the authorisation of credits could be delayed until just before their use in international mitigation efforts, such as the CORSIA or for voluntary purposes.
- Clear provisions on sequencing of credits (i.e., the consecutive procedural steps of reporting, issuance and transfer).
- Further detail on what must be covered by an authorisation, including the vintage of a credit, its unique identifier, uses, and an outline of a process for a potential change to the authorisation.

Article 6.4

The Article 6.4 mechanism (also known as the PACM), saw similarly productive outcomes. The key elements of the decisions on the PACM (5/CMA.6 and 6/CMA.6) were:

- Adoption by the COP of standards on methodologies and removals previously agreed by the SBM.
- Further detail on authorisation, in particular the decision to permit mitigation contribution units (MCUs, those credits which are not authorised for use towards NDCs or OIMP), to be authorised at a later stage for use towards NDCs or OIMP, thereby giving host countries more flexibility.
- Deciding that participating country-level registries may voluntarily connect to the PACM registry, such connection enabling the transfer of authorised Art6.4ERs.
- A sustainable development tool, which imposes mandatory human rights and environmental safeguards on project development. Measures to prevent or mitigate risks include comprehensive risk assessments, ongoing monitoring of potential adverse impacts, stakeholder engagement, and indigenous peoples’ free, prior, and informed consent. This is complemented by a new appeal and grievance process for those negatively affected by a project.
- COP elaborated on the mandatory contributions under Article 6.4; these being, the mandatory cancellation of a minimum of 2% of the issued Art6.4ERs from a PACM project to contribute to the overall mitigation of global emissions (“**OMGE**”), and the 5% share of proceeds levy on issued Art6.4ERs which must be transferred to an account held by the Adaptation Fund to support adaptation finance.

More recently, at the SBM’s meeting in May 2025, it agreed two important new standards to guide how emission reduction projects measure their impact. Specifically, the SBM agreed (i) a standard for estimating the emissions that would have happened without a project under the mechanism, which includes a requirement for downward adjustments that will drive ongoing improvements, and (ii) a standard for accounting for any unintended increases in emissions that might happen elsewhere as a result of a project (i.e. leakage). Both these moves reinforce the credibility of emission reductions and reflect the ambition of the Paris Agreement.

Going forward

The emergence of a UNFCCC-backed, complete set of standardised rules for Article 6 is anticipated to alleviate transparency concerns and foster greater trust in the carbon market. In a clear and positive sign of rising confidence and involvement in the newly-finalised mechanisms, Norway announced at COP29 that it would invest \$740 million in Article 6-eligible programmes (see further below). In the EU, Germany is calling for the European Commission to allow Article 6 credits to be used to meet its 2040 climate targets. Reactions of EU member states have been mixed with Poland coming out in support whereas Denmark has expressed a reluctance “for now” to support the proposal. The debate is ongoing but, if approved, it would signal a long-term demand for Article 6 credits. Nevertheless, some reporting has indicated that major emitting countries like the US, certain EU member states (as above), and those in the Asia-Pacific region may remain unwilling to buy Article 6 credits.

Article 6.2

The operational phase of Article 6.2 has heightened expectations for global carbon trading, with countries like Indonesia poised to export significant carbon credits. Norway has launched a US\$740 million initiative, the Norwegian Global Emission Reduction (NOGER), to purchase Article 6.2 credits, focusing on renewable energy and fossil fuel subsidy phase-outs. Norway has already established Article 6 agreements with several countries, including Benin, Jordan, Morocco, Senegal, Zambia, and Indonesia. Other countries, such as Japan, Switzerland, Sweden, Singapore, and South Korea, have also committed to buying Article 6 credits, each with varying targets and agreements. For instance, Japan aims to procure 100 million tCO₂e by 2030 through its Joint Crediting Mechanism, while Switzerland's KLIK Foundation seeks 30-40 million credits by the end of 2030.

Indonesia, in particular, has reported a surplus in emissions reductions, notably in the forestry and energy sectors, and is exploring international carbon credit trading agreements with countries like Japan and South Korea. These agreements will utilise Indonesia's surplus under Article 6 of the Paris Agreement. Mutual recognition agreements (MRA) between Indonesia and Japan mean that all projects developed under Japan's Joint Crediting Mechanism (JCM) must be registered in Indonesia's national carbon registry and use the SPEI system, ensuring full recording in the host country's registry.

The Article 6.2 mechanism may be characterised as more flexible (e.g. participating countries may agree between them on how to collaborate and on the types of projects they want to draw credits from). In the weeks after COP29, this sparked some debate about the quality of credits traded under Article

6.2 (ITMOs), and knock-on integrity concerns for the Article 6.4 mechanism (which also trades ITMOs). To counter such risk, it is hoped that governments participating in the Article 6.2 mechanism will adhere to accepted integrity guidelines to avoid reputational risks, such as approved Article 6.4 methodologies or the ICVCM's CCP label.

Article 6.4

At the time of the COP29 conference, 95 nations had submitted information on their designated national authority for the PACM to the UNFCCC which indicates a good level of engagement.

The PACM is poised for significant growth, with projections suggesting it could expand to a \$12 billion market by 2030, potentially becoming eight times larger than the current voluntary carbon market (VCM), which is valued at approximately \$1.5 billion. This expansion is driven by the expectation that many countries will fall short of their 2030 climate targets, necessitating the purchase of UN-compatible carbon credits. Some commentators have suggested this anticipated demand could see PACM credits reach prices toward \$40 per tonne, with additional demand from corporates and airlines potentially increasing the market value further. Notably, there is growing support within the EU, and particularly from Germany, for using PACM credits to meet the EU's 2040 carbon targets.

Current status and further work:

Although the groundwork has now successfully been laid for the full operationalisation of the Paris mechanisms, and cooperative approaches are already underway, some further

work remains to be done before the PACM can actually be utilised.

This includes establishing an Article 6.4 registry, and transitioning projects from the Kyoto Protocol's Clean Development Mechanism (CDM) to the Paris Agreement Crediting Mechanism. Of the 1,400 activities from the Kyoto Protocol's Clean Development Mechanism that have requested transition to Article 6, only nine so far have host party approval for transition. The first project to transition under this framework is a cookstove programme in Myanmar. This has been approved and is expected to issue credits by July or August, pending the issuance of a Letter of Approval. In February this year, The Supervisory Body approved Carbon Check (India) as the first independent auditor for Article 6.4 projects, and agreed on an interim registry.

Additionally, the SBM must now work to approve methodologies for credits issued under the PACM. These are expected to emerge over the next 1-2 years, supported by the UN climate secretariat and external experts. Methodologies for removals, and especially nature-based removals, are expected to take the longest, but methodologies for renewable energy, landfill gas and industrial gas projects may be available in the second half of 2025. Stakeholders, including IETA, Perspectives, and Conservation International, have submitted comments on the methodologies and rules being developed by the Article 6.4 Supervisory Body to enhance clarity for project developers.

Partly in light of this outstanding work, some commentators have stressed that robust implementation of the PACM represents an opportunity to spur a 'race to the top' and

ensure high-quality credits across both the Paris mechanisms as well as the VCM, by implementing detailed regulation with no loopholes, stringent additionality tests, conservative baselines, and high-quality first methodologies.

Meanwhile, in an effort to streamline the issuance of credits under Article 6.4, the UNFCCC has released a comprehensive set of document templates for project developers, covering stages such as registration, monitoring, validation, verification, and issuance. These templates aim to address concerns about the lack of clarity on project registration following COP29 by specifying the processes and document formats required for various stages, including changes, crediting period renewal, and project de-registration.

3.2.2 Issue a decision on whether avoidance credits qualify as ITMOs for the purposes of Article 6

What has happened

At the time of our 2022 paper, a key uncertainty for the VCM and the Paris mechanisms was the role that avoidance emissions and avoidance credits could play in carbon offsetting. There were differing views as to the merits of such mitigation methods. Some argued that avoidance credits do not represent any actual additional sequestration of GHG from the atmosphere, whereas others argue that avoided emissions are just as important to global climate change efforts as reducing or removing emissions and should therefore be recognised.

At the 2024 Bonn Climate Change Conference, following a request by the CMA (Decision 7/CMA.4), the SBSTA

considered whether Article 6.4 activities could include emission avoidance. Following considerable debate, the SBSTA decided to exclude emission avoidance as an eligible activity type under the Article 6.2 and 6.4 mechanisms, citing the absence of consensus on the issue and a general lack of alignment on what the definition of “emissions avoidance” is. It did, however, agree to revisit the matter in 2028.

A related issue has been whether conservation enhancement activities have a role in Article 6.4. In this respect, the Parties at Bonn also decided that “conservation enhancement activities” (which is undefined but broadly understood to mean credits generated by projects which enhance biodiversity and restore ecosystems) should not be considered a separate activity type but should be considered emissions reductions or removals, depending on the specific project. This means that, in the context of Article 6.4, it will be for the Supervisory Body to determine the eligibility of conservation enhancement activities as emission reductions or removals. For the Article 6.2 cooperative approach, that determination will be for the Parties.

Whilst these issues would appear settled, and no further discussion occurred at COP29, there remains a certain degree of uncertainty around emission avoidance and the implications of these decisions on avoided deforestation activities in the Paris Agreement context. The International Emissions Trading Association (“**IETA**”) published a paper⁵² which considered emissions avoidance. It identified various possible interpretations of emission avoidance (and emission reduction). Contrary to what some stakeholders have argued,



52 IETA, October 2024, Finalising the Article 6 Rulebook at COP29. Available at: https://ieta.b-cdn.net/wp-content/uploads/2024/10/IETA-Article-6-Position-Briefs-ahead-of-COP29_Oct2024.pdf

IETA suggested that these interpretations permit the continuation of forestry and land-based carbon projects (including those based on REDD+ related methodologies) as they may be classified as emission reduction or removal activities rather than as emission avoidance. Such discussion poses additional challenge and nuance to the fierce debate on the role of REDD+ credits, which is explored further below.

Going forward

On the face of the SBSTA's direction, it would seem that the debate as to whether emission avoidance qualifies as ITMOs has been settled, for now at least. SBSTA has directed that emission avoidance does not fall within the Paris mechanisms pending any further guidance from the CMA. Whilst the SBSTA has left the door open to reconsidering the matter in 2028, some market commentators, including Carbon Market Watch, have suggested that the position is unlikely to change because most countries oppose emission avoidance due to the integrity concerns associated with issuing credits for avoided emissions.

However, persisting uncertainties as to how “emissions avoidance” is or should be defined, as highlighted by IETA, has the potential to undermine this blanket disqualification. It would seem that the only way this issue will be resolved definitively is if the CMA can adopt a clear, agreed definition of “emission avoidance”.

3.3 Market participants (i.e. project proponents and buyers)

Market participants sit at the core of carbon markets. Their actions, whether sell-side or buy-side, will ultimately shape the VCM and the Article 6 carbon market, and will have a defining impact on the integrity, credibility and perception of the carbon markets. Market participants must be cognisant of the impact that their actions have, and should act with appropriate foresight and care if the VCM and the Article 6 carbon market are to co-exist and thrive.

3.3.1 Project proponents should engage early with host governments to ensure a shared understanding of expectations, procedures and requirements

What has happened

Our 2022 report outlined the importance of host countries communicating certainty around their plans for implementing the Paris mechanisms and/or VCM in their jurisdictions in order to attract investment. We suggested B2G arrangements in the form of memoranda of understanding (“MoUs”) were likely a preferred approach to formalising intentions, due to the speed and simplicity with which they can be prepared, their flexibility in terms of ease of amendment and the ability to include non-state parties, and they are usually taken very seriously by signatories despite not being formally binding. Since 2022, many countries have progressed their national frameworks and the domestic policies needed to implement the Paris mechanisms (and many have included aspects of the VCM), which provides clarity without the need for numerous MoUs. As such frameworks and policies continue

to take place, the role of MoUs will decline; however, it is still worth briefly exploring the uptake of MoUs around the world.

We have seen evidence of MoU arrangements being put in place. One notable example is the MoU between Panama and Verra, signed in 2023, whereby Verra agreed to assist with establishing a national carbon market in Panama to support its NDC. Recent reporting⁵³ indicates that Panama is on track to launch its national market by the end of 2024 and is currently finalising necessary domestic regulation. Another set of MoUs which received considerable attention were those signed between Blue Carbon – a carbon crediting company owned by a UAE-based sheikh – and almost a dozen developing countries across Africa and the Caribbean. While the number of agreements reached is impressive, the projects demonstrate the long lead times and uncertainties that persist even after an MoU is signed: only the Zimbabwe project is under development, and the implementation of several is threatened by local opposition to some projects over land rights and community control.

With the operationalisation of the Paris mechanisms and the issuing of letters of authorisation under the Article 6 to private project developers granting them the ability to generate and issue ITMOs (see further below) the use of MoUs is likely to decline further.

In a number of other cases, B2G arrangements are being agreed following competitive tender process involving a number of private project developers submitting bids for projects proposed by governments. This structure has been used in the northern Brazilian state of Maranhão, and

53 QCI, 9 September 2024; Panama reactivates committee to establish carbon market rules. Available at: <https://www.qcintel.com/carbon/article/panama-reactivates-committee-to-establish-carbon-market-rules-29022.html>

arguably should achieve a reasonable level of confidence and certainty for prospective investors as the chosen developer has been selected according to established criteria (often including how they address land tenure issues, social benefit sharing, and their legal framework).

Going forward

Early engagement between project proponents and host countries should remain a priority. Such alignment will ensure a greater understanding of how proposed projects align with the host country's NDC and whether carbon credits issued by those projects will be available via the Paris mechanisms, the VCM or both, and, importantly, whether corresponding adjustments will be available for such carbon credits.

Such early engagement should also mean greater levels of compliance by projects with any requirements imposed on them when proceeding under (in whole or part) the Paris mechanisms. In addition to MoUs, letters of authorisation by host countries (discussed further below) represent another useful tool for formalising these arrangements.

3.3.2 Facilitate information sharing by establishing and maintaining open and transparent lines of communication regarding carbon projects

What has happened

In our 2022 paper, we suggested project proponents and sellers of carbon credits should seek to establish and maintain open and transparent lines of communication and information sharing with prospective investors or buyers. It is difficult to comment on the extent to which this has

happened but the negative press that has tarnished the VCM in recent years would suggest there is considerable room for improvement in this respect.

Nevertheless, there are several ways in which information concerning carbon projects is shared. One is the public information available on standards' websites, which often details project specifications and methodologies in respect of every project, as well as highlighting successful case studies and outlining pipeline projects. Gold Standard, for example, has a policy of publishing all information other than confidential information through its registry, and Verra keeps projects open for public comment before they go live. Any comments are published on the project's record and must be taken into consideration by the project proponent.

Clear labels are another way that project developers and standards can communicate simply and effectively with buyers. Gold Standard's SDG labels, for example, clearly indicate the sustainable development co-benefits of projects by showing the applicable SDG icons. Verra's introduction at the end of 2023 of Article 6 labels⁵⁴ stating the use authorisations that host countries have bestowed upon ITMOs generated in their jurisdiction also introduces a welcome degree of transparency and provides for alignment with the Paris mechanisms. The ICVCM's CCP-Eligible labels (for standards) and CCP-Approved label (for credits from a particular project) are another example of plain communication between participants in the VCM.

Recently, there have been indications that the flow of information between project participants is set to increase, at least in certain segments of the market. Certified removals under the EU's recent Carbon Removals Certification Framework ("**CRCF**") may be used in the VCM. The CRCF will certify carbon removals, carbon farming and carbon storage activities across the European Union and thereby aim to boost the use of higher quality credits. The CRCF requires EU-based project developers to follow the "QU.A.L.I.TY" criteria, obtain certification from third parties following specific methodologies, and, crucially, publish all certification-related information in an EU-wide registry.

Also helping to foster transparency and information sharing in the VCM is the emergence since 2020 of carbon credit rating agencies. Agencies such as Sylvera, BeZero, Calyx Global and Renoster now offer independent assessments of carbon projects and/or carbon credits and present standardised ratings for the actual emissions reductions or removals associated with those projects, having analysed certain key factors such as additionality, permanence and co-benefits. BeZero Carbon was the first ratings agency to implement "ex ante" ratings for carbon projects, which represent intended emissions reductions of a project that has yet to be fully developed and are intended to raise the initial funding needed to get them off the ground. It remains to be seen whether these ex ante ratings will catch on but, if they do, they may encourage greater information sharing about carbon projects at a much earlier stage. Such moves should be welcomed by cautious buyers of voluntary carbon credits, for whom

⁵⁴ Verra, 7 December 2023, Verra Announces First Application of Article 6 Authorized Labels to VCU's from a Cookstove Project in Rwanda. Available at: <https://verra.org/program-notice/verra-announces-first-issuance-of-article-6-authorized-labels-for-cookstove-project-in-rwanda/>

conducting due diligence prior to VCM transactions has become commonplace.

From a transactional perspective, we are seeing much higher expectations on behalf of buyers with respect to information sharing and reporting obligations on the project proponent or seller, and far more stringent warranty protections. Buyers are coming to carbon trades very alive to the potential reputation risks and are looking to insulate themselves from those risks as much as is commercially possible.

Going forward

As highlighted throughout this paper, there needs to be concerted effort to improve the integrity of the VCM. Increased transparency and information sharing is a simple way in which project proponents can help to achieve this and so alleviate the concerns that exist around greenwashing. Initiatives such as CRCF and the various carbon rating agencies are helping to deliver greater information sharing. We expect this will remain a focus for months and years ahead as the VCM recovers. In the face of a plethora of risks associated with buying voluntary carbon credits, prospective buyers will be increasingly reluctant to make purchases without undertaking thorough due diligence, and project developers and registries should expect to find it difficult to make sales without providing those buyers with the necessary information with which to conduct that.

3.3.3 Ensure that offsetting is secondary to reducing emissions whilst being transparent as to the use of offsetting measures

What has happened

In our 2022 paper, we recognised a common accusation by opponents of the VCM that offsets give an illusion of a “fix” but in effect are just an excuse for inaction resulting in claims of “greenwashing”. The reports over the past two years alleging certain carbon projects overstating their emissions reductions have been very detrimental to the VCM (see Chapter 1). Many of the climate activist entities and non-government organisations pursuing greenwashing claims are being driven by concern that carbon offsetting is directing the focus away from – and thereby slowing – the reduction of actual emissions. Whilst potentially an overly simplistic view of the VCM, it does highlight the importance of market participants being transparent about their use of carbon offsets.

To help counter this, VCM initiatives like the Claims Code are seeking to introduce stringent requirements for entities seeking to use carbon offsetting as part of their climate mitigation action plan. For example, under the Claims Code, part of the foundational criteria for making a Silver, Gold or Platinum claim is having SBTi-approved, net zero-aligned targets and being able to demonstrate progress against these goals. This means corporate entities need to be able to demonstrate that they have made considered changes in how they run their businesses to reduce emissions before they can rely on carbon credits.

Going forward

Needless to say, carbon offsetting should remain secondary to reducing emissions at source. The VCM is merely one tool in an arsenal needed to avoid the worst impacts of the climate crisis. At the heart of all climate mitigation must be deep-set, radical shifts in attitude towards the relationship of business to the natural world. Entities seeking to use carbon credits for offsetting purposes must develop transition plans which only rely on credits in the short and mid-term for hard-to-abate emissions. Carbon standards and their governing bodies should also continue to require such efforts by buyers when approving credit-related claims. This is especially important as long as allegations of greenwashing continue to hamper the VCM.

3.3.4 Act in an informed, discerning manner to build market trust and improve the legitimacy and integrity of the VCM

What has happened

Much has already been said about the challenges that the VCM has faced in recent years. Some of this is a direct consequence of participants not acting with integrity or honesty. The impact that this has had on the VCM cannot be understated.

However, there has been some positives. The World Bank Group in its State and Trends of Carbon Pricing: International Carbon Markets 2024⁵⁵ identifies the increased sophistication of buyers, including a preference for high-quality investment. It reports that buyers are willing to pay large premiums for carbon credits of perceived higher quality and developmental impact. For example, in 2023 projects with certified

⁵⁵ World Bank Group, State and Trends of Carbon Pricing 2024: <https://openknowledge.worldbank.org/server/api/core/bitstreams/253e6cdd-9631-4db2-8cc5-1d013956de15/content>

co-benefits traded at an average price premium of 37% over other projects. Projects with Letters of Authorisations also commanded higher prices. The World Bank Group considers the higher prices could be attributed to their perceived integrity by alignment with the Paris Agreement.

The emergence of different carbon credit labelling tools (including Gold Standard's SDG labels and Verra's Article 6 labels discussed above) are further helping buyers to act in an informed and discernible manner when engaging in carbon offsetting.

Going forward

In the same way that implementing a clear, positive communication strategy around the VCM is so important now, so too is ensuring that market participants are acting in an informed and discernible manner when choosing to rely on carbon offsets. It is hoped that buyers continue to seek out high-quality, high integrity credits. The work by the ICVCM and the VCMI is considered to be helping, but more will be required. Adoption of the various labelling tools recently introduced by the different carbon standards should also assist.

3.4 Government-led action

Governments and government-led action can have an instrumental impact on the VCM. Clear government support for VCM activities can deliver a great deal of confidence in a market of the particular jurisdiction and help to drive market participants (and ultimately climate finance) to those jurisdictions. Of course, express opposition to the VCM from governments will have the opposite effect. For that reason,

Governments should recognise that and take care when engaging with the VCM.

Governments also have a fundamental role in finalising the operationalisation of the Paris mechanisms and ensuring they have the necessary domestic legislation in place to enable their countries to participate.

3.4.1 To foster VCM activities, host governments should demonstrate clear support for, and engage strategically in, the VCM

What has happened

The response by governments to the VCM has been mixed over recent years. Ministers from a number of countries including the UK, Ghana, Japan and Finland have publicly endorsed the work of the VCMI and ICVCM. There was also a very prominent display of governmental support for the VCM by the Biden-Harris administration in the US in May 2024 but, of course, the US position has changed significantly since the Trump administration took over in January 2025. Throughout the Middle East and Asia, several countries, including the Kingdom of Saudi Arabia, Abu Dhabi and Japan, have sought to establish carbon trading platforms or provide for carbon trading within their existing stock exchanges. Whilst not as explicit as the US, this action nevertheless demonstrates clear support for the VCM in those jurisdictions.

In contrast, in Africa, the focus has been on establishing a domestic regulatory environment to implement Article 6. For example, Kenya, Rwanda, Ghana, Tanzania and Zambia

have all introduced new legislative frameworks to align with Article 6 (discussed further below).

However, a degree of governmental involvement in the VCM is important to help identify the opportunities VCM participation can offer a country, and to align approaches to the VCM with existing policy frameworks and goals. The UK's approach provides a good example of this.

In March 2023, the UK government published its updated Green Finance Strategy and its Nature Markets Framework. Together, the strategy and the framework aim to foster growth in high integrity carbon and nature markets to unlock investment and support development of nature projects across England.

In October 2024, the UK released its Transition Finance Market Review.⁵⁶ The review recognised “*the significant potential and the opportunity that hosting a high integrity VCM could provide, including for scaling transition finance*” and recommended that the government promptly issue its consultation on scaling a high integrity VCM, including providing clarity to the private sector on the role carbon credits should play in transition plans. Fittingly, the review also emphasised the government's role in “*demonstrating ambition and leadership*” to support greater drive in and application of carbon markets, including as part of UNFCCC negotiations.

At COP29, the UK government published six principles to support integrity in voluntary carbon and nature markets, aiming to align nature-based credits with current integrity

⁵⁶ Transition Finance Market Review, October 2024. Available at: <https://www.theglobalcity.uk/PositiveWebsite/media/Research-reports/Scaling-Transition-Finance-Report.pdf>

initiatives and prevent misleading environmental claims. The six principles are:

- Carbon credit use should be in addition to ambitious actions within value chains;
- Only high-integrity credits should be used, based on recognised criteria, such as those set out by sector initiatives;
- Measurement and disclosure of the planned use of credits should be part of sustainability reporting;
- Forward planning;
- Make accurate green claims, using appropriate terminology; and
- Co-operation with other VCM participants to support the growth of high integrity markets.

In April 2025, the UK government launched a consultation inviting views on the implementation of these six principles. The overall aims of the consultation⁵⁷ include ensuring voluntary markets integrate effectively with the UK government's long-term strategy for financial disclosure and transition planning, clarifying regulatory responsibilities to improve the integrity, efficiency and scale of the UK market, and ensuring alignment on common principles and processes in the UK as well as internationally.

Also in April 2025 a set of standardised template agreements were introduced for buying and selling carbon credits in the UK's VCM, specifically for projects under the Peatland Code

and Woodland Carbon Code. The templates, developed by Scottish Forestry, the IUCN UK Peatland Programme, and several law firms, aim to enhance confidence and understanding among buyers and sellers regarding their responsibilities, obligations, and liabilities.

Going forward

While the Paris mechanisms continue to develop, it is crucial that global climate action progresses without delay. The VCM will likely play a significant role alongside the Paris mechanisms, even as they become fully operational. Governments should realise the potential for voluntary carbon credits to support companies' net zero and transition plans, and actively engage in establishing VCM infrastructure now. Doing so will both create an enabling environment for carbon projects that contribute to governments' net zero and transition plans, and boost the demand-side of the VCM by making voluntary credits readily available to voluntary buyers within each jurisdiction.

3.4.2 Host governments should expressly recognise the ability to internationally trade carbon credits generated within their countries

What has happened

Following publication of Decision 3/CMA.3 and the rules, modalities and procedures for the PACM, several countries, including India, Indonesia, Honduras and Papua New Guinea, introduced moratoria on the issuance of carbon credits and/or international trading of carbon credits pending further clarity on how the VCM and the Paris mechanisms would co-exist, and the role the VCM could play in Parties satisfying

⁵⁷ Department for Energy Security & Net Zero, 17 April 2025, Open consultation: Voluntary carbon and nature markets: raising integrity. Available at: <https://www.gov.uk/government/consultations/voluntary-carbon-and-nature-markets-raising-integrity>



their NDC targets. By and large, these moratoria have now been lifted. Whilst not every issue has been settled, evidently, enough progress has been made in clarifying the scope and role of the carbon trading mechanisms for NDC purposes that these once hesitant Parties have lifted their rudimentary bans. In their place, Parties are opting for the imposition of legislative frameworks to establish the boundaries necessary to foster carbon trading whilst protecting their domestic climate action needs.

At a policy level, Parties are also now increasingly willing to recognise the role of international carbon trading activities in their jurisdiction, whether within their NDC or in government statements or policies supporting the same. A broad sweep of countries around the globe has shown implicit support for international trading of carbon credits they generate by issuing Letters of Authorisation (“**LOAs**”) in accordance with the Paris mechanisms, most notably Vanuatu, Thailand and Ghana, each of whom have agreed to sell ITMOs they produce to Switzerland.

Since COP29, countries including Kenya, Rwanda, and Ethiopia have issued LOAs for projects in their jurisdictions which will generate credits necessitating corresponding adjustments that can be traded under both of the Paris mechanisms.

Going forward

Parties can deliver certainty to the market by expressly providing for carbon credits generated in their jurisdiction to be traded internationally. Establishing the necessary legal

frameworks to provide for this will be important. In the absence of legal frameworks, policy support can be effective. Later in this paper we consider what Parties are doing to deliver this.

3.4.3 Host countries concerned with benefit-sharing arrangements may wish to incorporate express benefit sharing requirements within existing national regulatory frameworks

What has happened

Benefit sharing arrangements have been a concern for many developing countries with regards to the VCM and its interplay with Paris mechanisms. A report by Carbon Market Watch in late 2023⁵⁸ found that comprehensive requirements for benefit sharing arrangements are not yet common practice, and that there is a high degree of variation in the quality of reporting on benefit-sharing. Additionally, as mentioned in the above discussion on REDD+ projects, benefit-sharing is a contentious aspect of many carbon projects, especially regarding indigenous people and local communities. Aside from the difficulties encountered in several Brazilian states, Australia, Colombia and Peru have all faced challenges in approaching an appropriate form of benefit-sharing, and have all recently adopted new ways of managing the tension between the need to develop carbon projects, and the lives of indigenous groups who may be affected by them (see detail below).

Our 2022 report recommended that governments concerned with benefit-sharing arrangements may wish to incorporate express requirements in national regulatory frameworks.

Indeed, we have seen a number of countries do exactly this in recent years, albeit in different forms. For example:

- Following controversy at the Kariba avoided deforestation project in 2023, Zimbabwe implemented temporary statutory instruments entitling the government to 50% of revenue from carbon credit projects, with foreign and local investors receiving 30% and 20%, respectively. In May 2024, Zimbabwe's government sought to codify these measures in legislation, with higher levies for those projects with more significant community impacts. Such levies contribute to a “National Climate Fund” for climate change response actions.
- Kenya's Climate Change (Amendment) Act 2023 came into force in September 2023, requiring project proponents to outline expected benefits and establish community development agreements. These agreements mandate sharing benefits with impacted communities, contributing at least 25% of annual earnings to them. More recently, Kenya has introduced the Climate Change (Carbon Markets) Regulations 2024 to support and detail the 2023 Act, which maintains the 25% contribution for non land-based carbon projects but raises this to 40% for projects which are land-based.
- Papua New Guinea has introduced a national carbon market regulatory framework that enshrines benefit-sharing by mandating that 50-60% of the benefits (which includes community development projects and capacity-building initiatives as well as monetary benefits) from carbon projects must go to local communities. This is overseen by PNG's Climate Change Development Authority, which

⁵⁸ Carbon Market Watch and Oko-Institut, November 2023, Assessing the transparency and integrity of benefit sharing arrangements related to voluntary carbon market projects. Available at: <https://carbonmarketwatch.org/wp-content/uploads/2023/11/Assessing-transparency-and-integrity-of-benefit-sharing-arrangements-related-to-voluntary-carbon-market-projects.pdf>

supports local communities in negotiations with developers to ensure that their community needs are prioritised.

- Australia has initiated the Future Industries Grant Program, allowing indigenous corporations to apply for grants of up to AUD 50,000 to support commercial activities (like data analysis, financial advice, and community planning) in sectors such as carbon markets, renewable energy, and fisheries.
- Colombia has passed a new law (Decree 488/2025) establishing the right of indigenous communities to free, prior, and informed consent for new carbon projects, allowing them to approve or oppose developments based on a “cultural objection” mechanism. It also regulates leadership, governance, fiscal norms, and coordination with state entities, and recognises indigenous rights to develop private projects and receive payments for environmental services.
- Peru’s Ministry of Environment has launched a call for traditional communities to preserve up to 550,000 hectares of forests in return for a financial reward under the ‘Forest Programme’, which has already benefited 93 communities, covering 1.8 million hectares, and aims to support sustainable activities and improve residents’ quality of life.

Going forward

Governments wishing to secure benefit arrangements may wish to consider these examples when developing similar arrangements within their own regulatory frameworks. Any benefit-sharing arrangements will need to be carefully considered and should aim to strike an appropriate balance between protecting some of the benefits achieved by the

project or programme in question for the host country and its communities, and the need to ensure the countries remains an attractive investment opportunity for project proponents. Getting the balance wrong could drive prospective projects to other jurisdictions with more balanced (or no) benefit-sharing arrangements.

3.4.4 Parties should maintain a clear and well-defined NDC

What has happened

NDCs are at the heart of the Paris Agreement. NDCs represent each Party’s pledge to reduce emissions with specific targets, as well as measures the Parties are taking to adapt to climate change including implementation strategies and time frames for achieving these goals.

The first global stocktake of NDCs was undertaken in 2023 and concluded at COP28 in Dubai. The purpose of the global stocktake was to evaluate the collective progress towards meeting the Paris goals and aims to inform the next round of NDCs due to be submitted in 2025. The results of that stocktake were published in March 2024 in Decision 1/ CMA.5. In its decision, the CMA acknowledges that all Parties have communicated NDCs that demonstrate progress towards achieving the Paris Agreement temperature goal and most provide the information necessary to facilitate their clarity, transparency and understanding. However, despite this progress, it was noted with significant concern that global GHG emissions trajectories were not yet in line with the Paris Agreement. Therefore, Parties are encouraged to come forward in their next NDCs with *“ambitious, economy-wide emission reduction targets, covering all GHGs, sectors and categories and aligned with limiting global warming to 1.5°C,*

as informed by the latest science, in the light of different national circumstances”. Specifically, Parties are encouraged to communicate in 2025 their NDCs with an end date of 2035.

As to what these NDCs cover, the results of the global stocktake express appreciation that all Parties have demonstrated NDCs that demonstrate progress towards achieving the Paris Agreement temperature goal, noting that most provided the information necessary to facilitate their clarity, transparency and understanding. However, several market commentators have since raised concerns about the “investibility” of these NDCs. That is, while current NDCs provide a useful starting point for assessing countries’ overall decarbonisation trajectories, their “investibility” remains difficult to assess. These market commentators raise concerns with the significant variance in quality and granularity of NDCs, the fact they do not have full sectoral coverage and often use different metrics to establish targets, are often submitted late, and generally lack alignment with other supporting documents and plans such as national adaptation plans and national biodiversity strategies and action plans. Hence, there is clearly significant scope for Parties to improve their NDCs.

In the run up to COP29, UN reports drew stark attention to the insufficiency in ambition with regards to Parties’ NDCs: The UN’s 2024 NDC Synthesis report revealed that current national climate plans would only reduce global greenhouse gas emissions by 2.6% from 2019 levels, far short of the 43% reduction needed by 2030 to prevent severe global warming, while UNEP’s Emissions gap report found that global emissions rose by 1.3% in 2023, with current NDCs setting

the world on a path to a 2.6°C increase by 2100. This necessitates annual reductions of 7.5% from now on, to retain a 59% chance of keeping temperature rise below 1.5C of warming (the Paris Agreement’s more stringent goal).

The Climate Action Tracker levied significant criticism at the UAE’s latest NDC, published just before it hosted COP29 in November 2024, on the basis that it lacked detailed strategies for achieving its stated reductions targets, and maintained a fossil fuel-based power sector with unrealistic reliance on carbon capture and storage instead of increasing renewable energy targets, undermining the credibility of its so-called Paris-aligned goals. This criticism draws attention to the need for detailed scrutiny of the NDCs which Parties release, and that real commitment to the underlying goals of the Paris Agreement is far more important than using NDS to pay lip service to the need for meaningful climate action. In February 2025, the UNFCCC agreed to extend the deadline for Parties to submit renewed NDCs to September 2025, to allow more time for the plans to be comprehensive and effective.

To assist smaller developing nations in particular with developing ambitious and credible NDCs, the NDC Partnership, a global coalition of countries and institutions, has developed an online tool designed to help countries identify finance needs and gaps and secure and direct finance towards achieving their climate goals under the Paris Agreement. The Climate Investment Planning and Mobilization Framework” supports countries in identifying finance needs, developing strategies, and aligning various government and

financial institutions to enhance the quality and impact of climate financing.

Going forward

Enhancing ambition is one of the two pillars of the COP29 vision. A key element of this, as recognised by the COP29 President-Designate in his letter to Parties in July 2024, is “*for the Parties to signal their own determination to act with ambitious, comprehensive, and robust NDCs*”. This reiterates the message from the CMA following the global stocktake of NDCs in 2023. Therefore, we can expect NDCs to be a key focus going into COP29 and beyond, as Parties seek to update and communicate their NDCs by September 2025 with an end date of 2035.

In terms of the content of NDCs, the concept of “investable NDCs” has started to emerge. While there is guidance on information to facilitate clarity, transparency and understanding of NDCs, there is little available on what makes an NDC “investable”. Market commentators⁵⁹ have suggested that for an NDC to be “investable” it should contain credible information, provide sectoral targets and pathways, quantify investment needs, provide for whole of government engagement, be supported by stable domestic policies and regulatory frameworks, and enhance global harmonisation and consistency across NDCs. If all of this can be achieved, it will be much easier for companies in those sectors to align their transition plans with the NDC whilst delivering certainty for investors and funders to understand where they should direct their finances. Parties should take care to align their NDCs with these broad principles so as to best position

59 Center for Climate and Energy Solutions, 25 July 2024, “What are “Investable” NDCs?” Discussion Paper available at: <https://www.c2es.org/wp-content/uploads/2024/07/20240723-C2ES-Investable-NDCs-FINAL.pdf>. Also see IIGCC, June 2024, “Making NDCs investable” – the investor perspective. Available at: https://www.iigcc.org/hubfs/POLICY/IIGCC_Making%20NDCs%20investable%20-%20the%20investor%20perspective_June2024.pdf



themselves to succeed in their NDC implementation and, where relevant, attract the necessary financial investment for doing so.

It is worth noting that the World Resources Institute's Climate Watch platform launched an interactive NDC Tracker ahead of COP29 to enable users to track and analyse new NDC submissions. With tools such as this becoming available, we expect the level of public scrutiny of Parties' NDCs to increase over time.

3.4.5 Host governments should consider G2G and/or B2G arrangements to make clear their positions with respect to Paris mechanisms and the VCM in order to support greater investment activity

What has happened

Government-led cooperative approaches sit at the core of the Paris mechanisms. In our 2022 paper, we suggested governments should consider government-to-government ("G2G") or business-to-government ("B2G") arrangements to make clear their position on the Paris mechanisms and the VCM. In the years since, G2G agreements laying the groundwork for Article 6.2 implementation have taken off, but are being driven by only a handful of countries. (See above recommendations to project proponents for more information on B2G arrangements.)

- Singapore has entered into MoUs with more than twenty countries including Bhutan, Cambodia, Chile, Fiji, Mongolia, Kenya, Rwanda and Vietnam to collaborate on carbon credits. These agreements create a framework for cooperation and outline the criteria for recognising the international transfer of mitigation outcomes by the treaty parties. They also provide a legal foundation for

commercial contracts between buyers and sellers of these ITMOs.

- Switzerland has signed bilateral agreements with more than fourteen countries including Peru, Ghana, Morocco, Chile, Kenya, Malawi, Tunisia, Uruguay, Ukraine, Senegal, Georgia, Dominica, Thailand and Vanuatu to offset its emissions. Switzerland's agreement with Thailand in January 2024 to purchase 1,961 credits from Thailand's Energy Absolute was the first bilateral transaction under Article 6.2, with the funds used to support the replacement of petrol-fuelled buses in Bangkok with electric ones.
- Ghana has engaged in five G2G bilateral cooperative approaches. The participating Parties, with Ghana being the host country, include, Sweden, Switzerland, Singapore, South Korea and Liechtenstein.
- Japan has also run a Joint Crediting Mechanism for many years, whereby it partners with developing countries and facilitates their implementation of systems to decarbonise and contribute to sustainable developments, generating credits that Japan uses towards its NDC. As of February 2024, Japan had bilateral agreements with 29 countries, and in July 2024 its MoU with Thailand was updated to include references to carbon credits generated under the Paris Agreement and Thailand's Premium voluntary emissions reduction scheme.

The MoUs seen so far evidence a range of project types, from solar power installations to clean cookstoves to biogas. They typically cover an agreement for Parties to work together towards legally binding Implementation Agreements, to share best practices and knowledge of carbon market mechanisms to develop capacity, and identify potential Article

6.2-compliant mitigation projects that are most suitable for the Parties concerned. So far, Singapore's MoUs with Bhutan, Ghana, and Papua New Guinea have progressed to Implementation Agreements.

Alongside these efforts, governments have been channelling their efforts into developing the necessary legislative and policy frameworks, such as creating an Article 6.2 registry, to encourage carbon activities generally within their jurisdiction rather than focusing on one or two carbon projects.

Going forward

G2G arrangements remain an option for delivering greater certainty to the VCM. Formal arrangements such as MoUs between Parties can provide clarity on carbon project and/or programme eligibility, whether certain emission reductions are within scope of a Party's NDC, and use authorisations and the need for corresponding adjustments - all whilst enhancing cooperation within the global community.

Governments should also be open to B2G arrangements with private market participants, such as investors, project developers or buyers. They could also be used for sector groups. Although not as scalable as G2G arrangements, B2G agreements can nevertheless offer certainty to support investment and financing. They can also be used to tie in at sectoral level to NDCs.

To be effective in promoting clarity and investment, a high level of detail in MoUs is desirable. Governments should be willing to share information about the types of carbon projects authorised for trading, whether under the Paris mechanisms or the VCM, the volumes of carbon credits intended for trade, any restrictions, and how accounting obligations, including

corresponding adjustments, will be met. Transparency in governments publicly sharing the fact of their entry into MoUs and their details will also be important in encouraging a broader selection of governments to consider and enter into similar agreements to specify their intended approach to engaging with the Paris mechanisms and VCM.

3.4.6 Establish clear parameters for the granting of, and a standard form for, use authorisations.

What has happened

There are three categories of use authorisation for ITMOs recognised by the Paris mechanisms:

- i. Authorisation for use towards an NDC pursuant to Article 6.3;
- ii. Authorisation for international mitigation purposes other than achieving an NDC (i.e., global compliance markets); and
- iii. Authorisation for “other purposes” as determined by the first transferring participating Party. This is widely accepted to include voluntary offsetting purposes.

The use authorisation attributed to an ITMO has significant implications on the future application of those ITMOs. It brings those ITMOs within the accounting that Parties must carry out when determining whether they have met their emission targets set out in the NDCs and will inform whether corresponding adjustments are required.

Given the implications of use authorisations, we recommended in our 2022 paper that clear parameters for

the granting of, and a standard form for, use authorisations should be considered to ensure a consistent approach is taken by all Parties. Those that have emerged have all taken slightly different forms and styles; nevertheless, they all contain the same basic information and confirmations. Early form template LOAs have started to emerge from various industry bodies including the World Bank Group and Global Carbon Council, and several leading carbon standards including Verra and Gold Standard had also published their own template LOAs⁶⁰. In both cases, these LOA also inform certain “Article 6 labels” that the carbon standards have made available to projects. Verra describes implementation of these labels as bringing the voluntary carbon standard into alignment with how Parties are to account for their climate action. At COP29, the decision on Article 6.2 gave the UNFCCC Secretariat the responsibility of creating a voluntary LOA template for the authorisation of ITMOs, which was since published in March 2025⁶¹.

One particular area of contention going into COP29 was whether a host Party should be able to revoke or amend an LOA after it has been issued. Some developing countries (e.g. India and China) insisted that their sovereign rights should not be impinged by UNFCCC decisions and guidance, whereas others including the UK and Singapore, pushed for clear, firm rules on revocation (given the impact that such uncertainties could have from an investment perspective). The decision on Article 6.2 at COP29 established that the terms and conditions for changes and revocations will be defined in each individual LOA. Changes may even take place after the “first transfer” of the ITMO, but only if the initial use authorisation specified the circumstances in which such a



⁶⁰ See for example: <https://globalgoals.goldstandard.org/501-letter-of-authorisation-for-use-under-article-6-template/>

⁶¹ Available here: <https://unfccc.int/documents/646071>

change could take place and the process that should be followed. Paragraphs 5 and 6 of the Article 6.2 decision made at COP29 also determine the content and format requirements of use authorisations.

As for actual LoAs by Parties, the interim CARP set up by the UNFCCC manages a register of LoAs. So far, the following six have been recorded:

- i. An LOA by Suriname dated 29 May 2024 authorising that the GHG emission reductions and/or removals as verified under Article 5.2 and posted on the UNFCCC REDD+ Information Hub may be issued as ITMOs and used towards NDCs pursuant to Article 6.3 or for other international mitigation purposes.
- ii. An LOA by Guyana dated 22 February 2024 authorising the REDD+ emissions reductions or removals from specified Programme Activities, issued as “ART Credits”, may be used for one or more of the following purposes: NDC purposes; international mitigation purposes; or other purposes.
- iii. An LOA by Switzerland dated 21 March 2025, authorising various carbon projects in Ghana, Thailand and Vanuatu for different ranges of uses (The Thai project is only authorised for NDC use, while the others are authorised for use towards NDC, other international mitigation purposes and other purposes, including the voluntary offsetting).
- iv. An LOA by Thailand dated 9 April 2025, authorising the mitigation activity referred to in Switzerland’s LoA (an e-bus program).
- v. An LOA by Ghana dated 16 April 2025, authorising the mitigation activity referred to in Switzerland’s LoA (a

cookstoves project and a sustainable rice cultivation project).

- vi. An LOA by Cambodia dated 15 May 2025, authorising two mitigation activities (a cookstoves project and a water purification project) to generate ITMOs for use towards other Parties’ NDCs.

Whilst only six LOAs have been recorded on the official CARP platform, 36 have been issued⁶², both between governments (such as the LOAs listed above between Switzerland and each of Ghana, Vanuatu and Thailand), and between governments and businesses. Rwanda and Madagascar have been most active in the latter type of arrangement, issuing four letters of authorisation each (the recipient being project developers DelAgua, Korea Carbon Mgt, and atmosfair).

Going forward

In the wake of the COP29 decision finally establishing parameters for the content and format of use authorisations, the ability to change and revoke authorised uses, and the publication of a UNFCCC-approved template, we expect that as more Parties become familiar with the mechanisms of use authorisations and the advantages these offer, more Parties will be willing to issue LOAs for carbon projects or programmes within their jurisdiction.

3.4.7 Establish a registry for the tracking of ITMOs and, possibly, VCM activities

What has happened

Carbon registries serve both an accounting and transactional function. Transparent, fully functioning and interoperable registries are critical to the success of the Paris mechanisms (and the VCM if it is to grow and possibly integrate with the

Paris mechanisms market). Hence, readying the necessary infrastructure to support the Paris mechanisms (and the VCM) has been a hugely important task for years.

That the creation of an international registry for Article 6 transactions became a major stumbling block in the Article 6 negotiations indicates it has took on greater political significance than it perhaps merited, stoked by fears that it represented a threat to national sovereignty. The “dual layer” registry approach adopted in the Article 6.2 decision, whereby the international registry for ITMOs links to both Parties’ Article 6.2 registries and to the PACM registry, and allows for pulling and viewing of data as well as the additional ability to transact credits for those parties that request it, was a compromise position between negotiating blocs led by the US and EU on opposing sides,

Other aspects of the digital infrastructure needed at the UN level to support the Paris mechanisms is progressing. This comprises the international registry administered by the UNFCCC Secretariat for participating Parties that do not have, or do not have access to, a registry (Decision 2/CMA.3, annex, para 30), the Article 6 database (to record and compile the quantitative annual information on ITMOs submitted by the Parties) (Decision 2/CMA.3, annex, para 32) and the centralised accounting and reporting platform (i.e., the CARP) (Decision 2/CMA.3, annex, para 35).

Conceptually, the international registry and the Article 6 database will be integrated parts of the CARP and are being developed, and will be maintained, by the Secretariat. Decision 6/CMA.4 requested the Secretariat to implement the international registry and make it available to Parties no later

⁶² See IETA’s Letter of Authorisation Tracker available at: <https://www.ieta.org/resources/visualising-article-6-implementation/>

than end-2024 and to develop and make available the interim CARP and Article 6 database by June 2024 (a test version only) with a view to them being finalised by June 2025. The interim CARP is now operational and supports submission of initial reports, updated initial reports, and annual information pursuant to Decision 2/CMA.3. A reference manual published by the UNFCCC Secretariat in April 2025 confirms that the international registry remains under development.

At a domestic level, states have a variety of options for securing the necessary infrastructure to support carbon activities within their jurisdiction. In our 2022 paper, we suggested host Parties with the resources to do so should consider implementing their own registries to allow complete oversight and control over the activities within their countries. A number of countries in Asia have been ahead of the curve in this respect having had some form of national registry or repository for climate change mitigation information in place for a number of years (for example, Indonesia, since 2016, and Singapore, since 2018). However, the structure and scope of these registries has evolved considerably in response to the VCM and the emerging Paris mechanisms. More recently, several countries in Africa have taken steps to establish their own registries. Zimbabwe, for example, has introduced a single, all-encompassing carbon registry for all carbon trading information relating to both the VCM and compliance markets. Similarly in Kenya, regulations which came into force in May 2024 make provision for the establishment of a national carbon registry to keep, maintain and update registries of carbon market projects. Rwanda and

Ghana are two other African countries that have set up their own registries for tracking the trade of mitigation outcomes.

Many other States are still considering their options. Those who do not have the capacity or resources to develop their own, or simply do not wish to, may rely on the international registry. Additionally, several international carbon standards and other organisations, including Xpansiv⁶³, S&P's IHS Markit carbon registry⁶⁴, EcoRegistry⁶⁵, and EcoConsortium⁶⁶, maintain their own registries. These could also develop ITMO capacity to support States with no domestic registry.

Going forward

Developing the core infrastructure needed to support the Paris mechanisms and the VCM is crucial for achieving the operationalisation of these mechanisms and should remain a top priority. The unequivocal directions by the CMA to the Secretariat in Decision 6/CMA.4 to prioritise these workstreams is clearly garnering results, and we suspect many Parties are awaiting the rollout of the international registry to determine whether there is a need to develop their own. The focus should nevertheless remain on ensuring interoperability and technological innovation and Parties should seek out opportunities for shared learning from each other. It will also be important to carefully monitor the rollout of the transacting function in the dual-layer international registry, given that there is an explicit recognition in the Article 6.2 decision that mitigation outcomes being issued or transacted via the international registry does not constitute an endorsement of their quality.

3.4.8 Establish a legal framework to operationalise the Paris mechanisms at a domestic level

What has happened

In our 2022 paper, we recognised that host Parties would need to incorporate the Paris mechanisms into their legislative framework, in particular to provide a clear route for carbon projects (and market participants) into the PACM. Over the past two years, a significant number of jurisdictions have in fact implemented or begun implementing new legal frameworks, not necessarily specific to the PACM, but relating to carbon market activities more generally within their jurisdictions.

A number of initiatives have emerged which bring attention to these legislative developments with the aim of improving the understanding and transparency of carbon market regulations. In June 2024, Gold Standard released its Carbon Market Regulation Tracker which provides summaries (and links) to actual and proposed regulations concerning baseline and crediting market activities within the VCM and those under Article 6 (but excluding carbon tax policies or emission trading systems). The World Bank Group also maintains a State and Trends of Carbon Pricing Dashboard which is an interactive tool aimed at policymakers, businesses and resources to supply information on existing and emerging direct carbon pricing initiatives around the world.

The Supporting Preparedness for Article 6 Cooperation (“**SPAR6C**”), a UN-backed initiative funded by the German government, is helping Pakistan, Colombia, Thailand and

63 Xpansiv, <https://xpansiv.com/carbon/>; Xpansiv, 30 January 2024, Xpansiv Goes Live with Meta-Registry. Available at: <https://xpansiv.com/xpansiv-goes-live-with-meta-registry-integration-of-evidents-i-rec-registry/>.

64 QCI, 5 April 2024, S&P plans major carbon registry expansion in 2024. Available at: <https://www.qcintel.com/carbon/article/s-p-plans-major-carbon-registry-expansion-in-2024-23227.html>

65 Available here: <https://www.ecoregistry.io/>. Also see: QCI, 11 July 2023, ACX links up with Cercarbono, EcoRegistry to host credits. Available at: <https://www.qcintel.com/carbon/article/acx-links-up-with-cercarbono-ecoregistry-to-host-credits-15309.html>

66 QCI, 25 May 2023, EcoRegistry, Verdana create Asia Pacific digital carbon registry. Available at: <https://www.qcintel.com/carbon/article/ecoregistry-verdana-create-asia-pacific-digital-carbon-registry-14122.html>

Zambia to prepare for international carbon market cooperation by supporting development of a project pipeline under Article 6 of the Paris Agreement. SPAR6C's first project is to provide technical assistance to a landfill project where methane emissions are captured and redirected to the city of Lahore to displace natural gas usage. Pakistan is making other notable steps towards full utilisation of the Paris mechanisms, having already issued its first Host Country Approval and Letter of Intent for two carbon projects (a water filtration project and a project to transform landfill into green space and a solar park, which will generate Art6.4ERs and Art6.2 ITMOs respectively).

Other clear examples of moves by Parties to operationalise the Paris mechanisms at a domestic level include:

- Morocco, which is amending its Climate Change Law to include a framework for Article 6, aiming to begin trading carbon credits with countries like Norway, Switzerland, South Korea, and Singapore starting in 2025, plans to provide guidance in each of Articles 6.4, 6.4 and 6.8, and has expedited the legislative process to start trading ITMOs.
- South Korea, whose government is collaborating to support developing countries in establishing carbon projects that will generate ITMOs, focusing on areas such as national registry development, project certification, and report preparation.
- Ghana, which is reported to be planning to sell over a third of the carbon credits it generates under Article 6, with up

to 5.2 million tonnes of CO2 equivalent from three projects. already authorised for trading as ITMOs.

- Papua New Guinea, which in spring 2025 lifted its nearly three-year moratorium on carbon credit projects, has introduced a carbon market regulation encompassing forestry-based, energy, waste and industrial processes sectors as well as Article 6 market, with a National Climate Change Board to oversee the market and climate policies. The government has already signed implementation agreements for two projects to create ITMOs.
- Suriname, which has issued 18.1 million RRUs for 2017-21 from its national programme of REDD+ activities and plans to sell an initial 1.5 million of the credits with post-2020 vintages as ITMOs. Suriname is, however, yet to receive approval from the UNFCCC for use of the RRUs as ITMOs with the CARP reporting the UNFCCC technical expert review as "pending".

Unsurprisingly, the form of legislative frameworks being introduced, and the extent of regulation imposed, varies considerably. However, certain fundamentals are emerging. Common elements of these legal frameworks include:

- the establishment (or designation) of governance or institutional arrangements for carbon activities;
- the delineation of certain basic parameters for the types of projects or activities eligible for carbon credits in that jurisdiction (sometimes also specifying applicable methodologies and crediting mechanisms); and

- basic procedural elements including reporting requirements, use authorisations and occasionally establishment of a national carbon registry (for accounting and/or transactional purposes) (discussed further above).

These core elements are important for ensuring alignment with the Paris mechanisms and should hopefully provide market participants some degree of certainty over carbon activities within the jurisdiction to encourage participation. Where some of the greatest differences lie is in aspects such as fee structures and/or benefit-sharing arrangements, and the procedure for obtaining use authorisations, which is reflective of differences in national circumstances.

Going forward

Just as important as the decisions which operationalise the Paris mechanisms is ensuring the integration of these mechanisms at a domestic level. We are seeing considerable progress in this respect and are hopeful that this momentum can continue. Attention should, however, also turn to achieving consistency among Parties to improve the understanding and operability of these domestic regimes.

There are resources available seeking to drive greater consistency among jurisdictions. The World Bank Group, together with Climate Warehouse, has published the "Country Policy Framework for Cooperative Approaches under Article 6.2"⁶⁷, which aims to identify a minimum legal foundation required to give Parties (including private sector entities) the necessary certainty with respect to cooperative approaches including their rights and obligations as participants and the ability to enforce cross-border contractual arrangements.

⁶⁷ Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/478601631780001402/country-policy-framework-for-cooperative-approaches-under-article-6-2>

Parties should draw from these resources, and each other, as far as possible, to help reduce fragmentation among Parties and enable effective engagement in carbon markets.

3.4.9 Formalise the legal nature of, and ownership rights over, carbon credits

What has happened

In our 2022 paper, we recognised that one way to attract additional investment in the VCM, particularly a secondary market, would be to codify the legal nature of, and ownership rights over, carbon credits. In practice, this has not happened in a consistent market-wide approach. However, a number of countries have sought to set out the status of carbon credits in their jurisdictions (as part of the legislation implementing the Paris mechanisms). Therefore, the legal nature of carbon credits continues to be debated, with varying views on whether carbon credits should be treated as documentary intangibles, personal property, financial instruments or commodities.

Notwithstanding, certain trends have emerged among Parties. From an ownership and security perspective, the prevailing view appears to be that carbon credits are intangible property. From a financial perspective, an increasing number of countries appear to be amending their capital market laws and/or financial regulations to recognise carbon credits as financial instruments, thereby seeking to regulate carbon trading activities. Some argue that clear contractual provisions between market participants can inject enough certainty into the market for it to successfully operate regardless of the legal nature that any given jurisdiction

ascribes to credits. For example, initiatives such as ISDA's Verified Carbon Credit Transactions Definitions⁶⁸ offer some standardised core terms for emission reduction purchase agreements. Some consider that this is enough to achieve sufficient clarity and consensus as to the legal nature of, and ownership rights over, carbon credits to enabling meaningful transactions, without jurisdictional or regulatory intervention to provide precise definition.

However, there are still those who consider that greater certainty is needed, particularly if a meaningful secondary market for carbon credits is to develop. To this end, the International Institute for the Unification of Private Law ("UNIDROIT"), in collaboration with the World Bank Group, has undertaken a project to analysis and define the legal nature of voluntary carbon credits (subsequently retitled to refer to "verified carbon credits", instead of voluntary, to reflect the fact that it is the purchase of such credits that is voluntary rather than the units themselves and in recognition of the independent third-party verification such credits go must through which distinguishes these instruments from other types of climate financing tools). So far, three working groups have been held, with two more due in 2025. The key objective is to produce an international instrument providing guidance on verified carbon credits including, inter alia, the typical life cycle of a verified carbon credit, general principles surrounding carbon credits, transfer and/or retirement of verified carbon credits, custody and security. The ultimate goal is to enhance confidence in the VCM and ultimately help establish a legal framework for the trading of verified carbon credits.

Going forward

We recognise that clear contracting can deliver sufficient certainty for many engaging in VCM transactions (evidenced by the volume of VCM transactions that have occurred to date). However, we also recognise that providing greater certainty has the potential to open the VCM to a broader pool of participants. Therefore, we remain of the view that addressing legal uncertainties about the nature and ownership of carbon credits remains important. For many investors and would-be participants, clarifying these aspects is a necessary precursor to their willingness to fully participate in the VCM. Not only would such clarity provide legal certainty with regards to ownership and transferability, but that certainty would enable financial security mechanisms which would, in turn, support development of a mature secondary market.

3.4.10 Consider the role that financial regulators could play in the VCM going forward

What has happened

The role that financial regulators could play in the VCM was largely untested at the time of our 2022 paper. We had recommended that this was worthwhile exploring as a means of promoting greater market integrity. Since then, there has been a noticeable shift in countries seeking to utilise their existing financial regulatory frameworks to provide for and, in a sense, regulate carbon trading activities in their jurisdiction. Egypt, for example, amended its capital market executive regulations to recognise and define carbon credits as tradable financial instruments. In Abu Dhabi, the government has developed a new regulatory framework to treat carbon as a

68 Available at: <https://www.isda.org/book/2022-isda-verified-carbon-credit-transaction-definitions/>

commodity and regulate carbon credits as an “environmental instrument” (being a new form of financial instrument). In Australia, “Australian carbon credit units” are classified as tradable financial instruments for the purposes of Australia’s corporation laws (and personal property for property law purposes – see the discussion above about the legal nature of carbon credits). There is clearly a recognition among States that financial regulators can have a role in regulating, and promoting integrity within, voluntary carbon markets.

In our 2022 paper we also noted that the International Organization of Securities Commissions (“**IOSCO**”) was at the time seeking to advance discussions about the role that financial regulators could play in promoting standardised operating principles and a robust underlying infrastructure for the VCM. At COP28, IOSCO released a consultation report⁶⁹ outlining 21 good practices to promote fair, efficient, stable and transparent markets. The suggested good practices focus on four key areas where financial regulators can have a positive role in developing market integrity, being:

- regulatory frameworks, by promoting consistency and cooperation between domestic and international regulators;
- primary market issuance, by promoting transparency, disclosure and accuracy in registries;
- secondary market trading, by promoting market functioning and transparency; and
- helping to ensure carbon credits are used and disclosed appropriately.

The consultation closed in March 2024 and IOSCO issued a final report on the VCM in November 2024. The report comprises the final set of 21 good practices for VCMs aimed at supporting sound market structures and enhancing financial integrity of carbon credits and carbon markets. The good practices are directed at relevant regulators and authorities interested in carbon markets in their jurisdictions, trading venues and relevant market participants. It will be interesting to see whether IOSCO’s final report encourages even more Parties to explore the role that financial regulators can have in carbon trading activities. Interestingly, the report notes that some IOSCO members already view the regulation of carbon markets within their authority, whilst others are developing or planning to develop frameworks for carbon market regulation so we can definitely expect increased activity in this space in future.

Going forward

As recognised throughout this paper, national regulations can have an important role to play in addressing some of the core criticisms of the VCM. If undertaken correctly, these can deliver a great deal of clarity and certainty which, as the market has demonstrated, are crucial to its success.

For many States, their existing financial regulators are in a prime position to assume this regulatory role (or at least in part). Classifying carbon credits as a financial instrument, for example, achieves a certain degree of oversight in respect of such activities which can improve market transparency and integrity. It creates the opportunity for the trading of these carbon-related financial instruments to take place on established and regulated exchanges or platforms (for

example, a country’s existing stock exchange, as is the case in Egypt, Abu Dhabi and Japan (among others)); that, in turn brings another layer of regulatory oversight. Parties should consider whether there is scope to expand their existing capital markets laws to recognise and provide for carbon credits as a financial instrument and carbon trading as a regulated activity.

A certain degree of financial regulation or oversight can also help to drive a meaningful secondary market by providing the foundation for derivative products linked to carbon credits to evolve. In its consultation report, IOSCO identifies a growth in such derivatives products, noting that several trading platforms have become more active as venues for these products (i.e., both spot instruments and their derivatives). The more widespread this becomes, the greater the market access and the more liquidity in the market, which in turn means a more active, efficient and transparent VCM.

Naturally, care must be taken not to over-regulate carbon trading activities which could inadvertently undermine the agility and flexibility that sits at the core of the VCM. Any such financial regulatory regime would also need to tie into the Party’s broader climate change mitigation workstreams. As noted above, many Parties have introduced or are introducing legislative frameworks specifically for carbon-related activities. Where this is the case, it will be important that the different regulatory arms are aligned.

⁶⁹ IOSCO, December 2023. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD749.pdf>



**CHAPTER FOUR:
CONCLUDING COMMENTS**

4. CONCLUDING COMMENTS

While progress has been made against our 2022 recommendations, albeit in varying degrees, the issues they cover remain as relevant as ever. Most notably, decisions were adopted at COP29 in Baku which enable the full operationalisation of both Article 6.2 (cooperative approaches) and Article 6.4 (the PACM), resolving significant areas of disputes which proved stubborn stumbling blocks at previous COPs. However, further work is needed both by the UNFCCC Secretariat to finalise registry arrangements (such as the international registry for Parties who do not maintain their own national registry), and by the SBM to continue overseeing the transition of projects from the CDM to the PACM, and the development of high-integrity project methodologies. We believe however that the issuing of ITMOs and trading under the Paris mechanisms will significantly increase over the next few years.

We expect the VCM to remain highly relevant post-operationalisation of the Paris mechanisms, especially as an accessible means for non-governmental actors to buy, trade, and retire credits against their hard-to-abate emissions. In the meantime, particularly until the Paris mechanisms can be fully utilised, it is critically important that lingering concerns over integrity in the VCM are addressed. Integrity underpins many of our updated recommendations, from the need for governing bodies to implement a communications strategy to market participants engaging in more transparent information sharing to governments utilising the existing frameworks and expertise of financial regulators. Given the prominence of integrity in our recommendations, it is important to reiterate that integrity is truly the concept at the heart of a well-functioning carbon market. Integrity is the core theme that ties together the activities of both buyers and sellers in the market, without which credit sales are open to criticisms that they are a pass for polluting entities to continue business-as-usual. More broadly, any entity active in participating in or making decisions which relate to the VCM or Paris mechanisms must keep the need for the highest standards of integrity at the forefront of their minds.

Our recommendations demonstrate the necessity of a cooperative and collaborative approach to resolving the outstanding issues in the Paris mechanisms and VCM. Few of our recommendations can be fully actioned by one stakeholder group alone, for example knowledge-sharing initiatives must have feed-in from a combination of market participants, governing bodies and carbon standards, resolving the continued controversy and confusion plaguing REDD+ will need significant input from both VCM governing bodies and the CMA, and as governments implement national legislative frameworks to support the Paris mechanisms they will have to be conscious of regulating in a way that doesn't create fragmentation or conflict with CMA guidance or best practice in the VCM. Collaboration is crucial for steering the constructive development of carbon markets and facilitating standardisation and interoperability between mechanisms, and the examples of collaboration throughout our recommendations illustrate the multifaceted approach needed to advance the global carbon market effectively.

Finally, our recommendations highlight the need to ensure that efforts to promote transparency, clarity and integrity

ultimately serve the development of carbon markets that draw significant investment. This is especially pertinent given that COP29 was dubbed the finance COP. Early engagement between host governments and project proponents, G2G and/or B2G agreements, standard formats for and better detail in NDCs, and clarity on the legal nature of carbon credits and their role within policy and financial frameworks are areas ripe for improvement in facilitate greater confidence and investment activity.

Despite ongoing political events that threaten to undermine international consensus on the urgency of climate action, there remains hope that the landmark decisions on international carbon trading mechanisms taken at COP29 in Baku will serve as a pivotal moment for reaffirming global commitments, both to high-integrity credits and interoperable carbon markets, as well as the broader global goal of channelling significant financing to and directing smart policy tools at the collective and urgent goal of combating climate change.

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About the UK Carbon Market Forum:

The UK Carbon Markets Forum was established in April 2021 to support the growth of a high-integrity scaled carbon market in the UK and to support and amplify common international frameworks. The Forum is chaired by Dame Clara Furse, with City of London Corporation providing secretariat support.

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