

Voluntary Carbon Markets

Consultation Report



OICU-IOSCO

**The Board
OF THE
INTERNATIONAL ORGANIZATION OF SECURITIES
COMMISSIONS**

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Foreword

The Board of the International Organization of Securities Commissions (IOSCO) has published this Consultation Report outlining a proposed set of Good Practices (Good Practices) to promote the integrity and orderly functioning of Voluntary Carbon Markets (VCMs). These are addressed to relevant regulators and other authorities and market participants and look to offer support to/in jurisdictions that have established or may be seeking to establish VCMs.

This Consultation Report follows the Discussion Paper¹ that IOSCO published in November 2022, which aimed to advance global discourse regarding what sound and effective VCMs should look like and what role financial regulators may play in promoting integrity in those markets. The 2022 Discussion Paper included Key Considerations for regulatory authorities and market participants to foster sound and effective VCMs. This Consultation Report discusses the feedback that IOSCO received on the Discussion Paper, particularly regarding the Key Considerations, to inform and further develop a set of proposed Good Practices. The Consultation Report also seeks further feedback on the proposed set of Good Practices to foster sound and well-functioning VCMs that meet financial market integrity criteria typically expected in capital markets.

How to Submit Comments

1. Online

Preferable, please send us comments via the following [link](#) **on or before 3 March 2024**.

2. Paper

Send 3 copies of your paper comment letter to:

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International Organization of Securities Commissions (IOSCO)
Calle Oquendo 12
28006 Madrid
Spain

Your comment letter should indicate prominently that it is a ‘*Public Comment on Voluntary Carbon Markets – Consultation Report*.’

Important: All comments will be made available publicly, unless anonymity is specifically requested. Comments will be converted to PDF format and posted on the IOSCO website. Personal identifying information will not be edited from submissions.

¹ IOSCO Voluntary Carbon Markets Discussion Paper, November 2022, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD718.pdf>.

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Executive Summary

Voluntary Carbon Markets (VCMs) are markets where entities buy carbon credits for voluntary use (e.g., to offset carbon emissions and support a claim about their climate performance, or otherwise finance mitigation activities with traceable results) rather than to comply with an obligation. These carbon credits are most often issued in relation to climate change mitigation activities or projects. The projects are designed to mitigate climate change through either emission reduction, for example, by investing in renewable energy or preventing deforestation, or through carbon removal and sequestration, such as planting trees or technology-based carbon capture mechanisms.

In most cases, the process for the creation of carbon credits involves four general steps:

- (i) development of a climate change mitigation project;
- (ii) measurement, reporting, and third-party verification (MRV) of the activity's greenhouse gas emissions and reductions or removals;
- (iii) certification by a carbon-crediting program; and
- (iv) issuance of credits representing the activity's resulting reductions or removals in the developer's registry account.

The issued credits may be traded, either over-the-counter (OTC) through brokers, or through exchanges on secondary markets, both spot and derivatives. The holders of credits can "retire" the credit and, in doing so, claim to have supported the emissions reductions or removals and potentially count the credit toward its own emissions target.

Potential Vulnerabilities. VCMs have various challenges and both existing and potential vulnerabilities. IOSCO has engaged in work to identify and consider the role of financial regulators in mitigating some of these vulnerabilities given their relevance to market integrity.

Many of the challenges and potential vulnerabilities identified with respect to VCMs relate to market integrity, which may be considered through three different lenses:

- (i) concerns at the project level, regarding the environmental integrity of the carbon credits and the manner in which carbon credits are issued to a registry (primary market issuance);
- (ii) issues relating to the characteristics of the trading environment in which these credits are transferred from one party to another, and the behavior of market participants in doing so (secondary market trading); and
- (iii) issues regarding the use and disclosure of use of carbon credits by buyers.

IOSCO Fact Finding and Feedback. IOSCO has identified potential vulnerabilities in each of these areas that may merit specific attention. IOSCO first undertook a fact-finding exercise with exchanges, market intermediaries, academics, market participants and carbon crediting programs, from different jurisdictions, as well as IOSCO members. Thereafter, IOSCO published a Discussion Paper in November 2022,² to advance the discussion about what sound and effective VCMs should look like and what role financial regulators may play in promoting integrity in those markets. The Discussion Paper included Key Considerations that relevant

² IOSCO Voluntary Carbon Markets Discussion Paper, November 2022, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD718.pdf>.

regulators and other authorities as well as market participants could consider taking to foster sound and effective VCMs.

This Consultation Report includes discussion of the feedback that IOSCO received on the Discussion Paper. Overall, respondents generally agreed with the description of the carbon market ecosystem and vulnerabilities; called for coordination between various initiatives aimed at improving the functioning of VCMs; expressed mixed views with respect to the legal treatment of carbon credits, as well as the use of distributed ledger technology (DLT) and tokenization in connection with VCMs; were overwhelmingly in support of standards, recommendations or good practices regarding transparency on the use of carbon credits by market participants; and were generally in agreement with the Key Considerations.

Scope of Proposed Set of Good Practices. After considering the feedback received on the Discussion Paper, IOSCO understands that there are ongoing public and private sector initiatives whose objectives are to raise the environmental integrity in the VCMs by focusing on the climate aspects of carbon credits. IOSCO's work is not focused on environmental integrity; instead, the proposed set of Good Practices presented in this report are practices that relevant regulators and other authorities or market participants could consider in addressing vulnerabilities described in the paper. While not legally binding, they are intended to support sound market structures and enhance financial integrity in the VCMs such that carbon credits can be traded in an orderly and transparent way.

As such, this Consultation Report presents a two-pronged approach, whereby:

- (i) IOSCO seeks further feedback on a proposed set of Good Practices to foster sound and well-functioning VCMs where these fall within the scope of financial market integrity (*i.e.*, sound market structures, sound and orderly trading, and transparency and data availability and accessibility). The proposed set of Good Practices is addressed to relevant regulators and other authorities as well as market participants and looks to support jurisdictions that have or are seeking to establish VCMs.
- (ii) IOSCO highlights the Key Considerations that do not fall within the scope of financial market integrity and the typical remit of financial market regulators, describing other initiatives that are currently underway which may address the objectives of these Key Considerations.

This Consultation Report sets forth a proposed set of Good Practices that builds on the key considerations published in November 2022, the feedback received in response to that Discussion Paper, as well as our members' knowledge and oversight of financial markets – commodities and derivatives markets in particular. They further draw on existing good practices and principles for well-functioning markets, such as IOSCO's Objectives and Principles of Securities Regulation (including the derivatives markets). Respondents may wish to consider whether these are also fit for purpose for VCMs.

IOSCO has proposed a set of 21 Good Practices relating to regulatory frameworks, primary market issuance, secondary market trading, and use and disclosure of use of carbon credits, as set out below:

Regulatory Frameworks	
	<i>Good Practice 1 – Regulatory approach and scope</i>
	<i>Good Practice 2 – Regulatory treatment</i>
	<i>Good Practice 3 – Domestic and international consistency and cooperation</i>
	<i>Good Practice 4 – Participants’ skill and competence</i>
Primary Market Issuance	
	<i>Good Practice 5 – Standardization</i>
	<i>Good Practice 6 – Transparency</i>
	<i>Good Practice 7 – Disclosure</i>
	<i>Good Practice 8 – Soundness and accuracy of registries</i>
	<i>Good Practice 9 – Due diligence</i>
Secondary Market Trading	
<i>Market Functioning and Transparency</i>	<i>Good Practice 10 – Access to VCMs</i>
	<i>Good Practice 11 – Integrity of trading</i>
	<i>Good Practice 12 – Public reports</i>
	<i>Good Practice 13 – Pre-and post-trade disclosure</i>
	<i>Good Practice 14 – Derivatives standards</i>
<i>Governance and Risk Management</i>	<i>Good Practice 15 – Governance framework</i>
	<i>Good Practice 16 – Risk management</i>
	<i>Good Practice 17 – Conflicts of interest rules</i>
<i>Market Abuse</i>	<i>Good Practice 18 – Enforcement actions</i>
	<i>Good Practice 19 – Market surveillance and monitoring of trading</i>
	<i>Good Practice 20 – Trading venue resources</i>
Use and Disclosure of Use of Carbon Credits	
	<i>Good Practice 21 – Disclosure of Carbon Credits Use</i>

Report Structure. The Report is structured around six chapters. Chapter 1 is an introduction, covering the background and context of the Consultation Report. Chapter 2 provides a general overview of the carbon credits ecosystem and market structure, with added description in response to feedback to the Discussion Paper. Chapter 3 elaborates on the identified vulnerabilities, discussing additional concerns raised in the feedback that IOSCO received. Chapter 4 discusses the Key Considerations presented in the Discussion Paper and the feedback that IOSCO received. Chapter 5 discusses other VCMs initiatives currently underway that may address some of the Key Considerations related to environmental integrity. Finally, Chapter 6 presents the proposed set of Good Practices for financial market authorities and market participants relevant to promoting market integrity in VCMs and helping to overcome some of the present limitations in these markets.

Chapter 1 – Introduction

1.1. IOSCO Work

In March 2022, the IOSCO Board adopted a Sustainable Finance workplan and, within this mandate, directed the IOSCO Sustainable Finance Task Force to explore the current status, potential vulnerabilities and good practices in compliance carbon markets (CCMs) and VCMs. The Final Report on CCMs was published in July 2023.³

With regards to VCMs, IOSCO first undertook a fact-finding exercise with exchanges, market intermediaries, academics, market participants, and carbon crediting programs, from different geographies. IOSCO members also responded to a fact-finding survey about VCMs in their respective jurisdictions. As a result of this engagement, IOSCO published a Discussion Paper on VCMs at COP27, offering a series of Key Considerations for the development of resilient VCMs and asking respondents to consider the role of financial markets regulators in the oversight of these markets.

IOSCO’s Discussion Paper on VCMs put forward fourteen Key Considerations relating to eleven areas of focus, as set out in the table below:

Focus Areas	Key Considerations
Open Access	1: the degree to which, and how, to allow for open, broad market participation
Market Integrity	2: how to ensure that the market has sufficient integrity to operate without fraud, manipulation, or disruption
	3: how to provide market participants with sufficient liquidity and price discovery to execute trades on a timely basis with minimal price dislocation
Publicly Available Data to Promote Transparency	4: how to promote transparency by ensuring that market participants have sufficient data publicly available
	5: how relevant VCMs participants may disclose their use of carbon credits in their financial reporting
Price Discovery	6: how to facilitate price discovery for carbon credits
Product Standardization/Environmental Integrity	7: how to accord with global, high-quality standards against which the environmental integrity of carbon credits and their underlying methodology can be assessed
	8: how, to the extent possible, to standardize carbon credits in order to promote greater liquidity
Interoperability	9: how to take steps to improve the interoperability of carbon credit registries
Financial Integrity of Transactions including Settlement and Delivery	10: market participants engaging in these markets have sufficient financial integrity to ensure the cash settlement or physical delivery of a carbon credit transaction

³ IOSCO Compliance Carbon Markets Final Report, July 2023, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD740.pdf>.

Focus Areas	Key Considerations
Legal Certainty	11: what legal challenges VCMs stakeholders may encounter during the lifecycle of a carbon credit
Governance	12: how to ensure that key participants and infrastructures have appropriately robust governance frameworks
Conflicts of Interest	13: how to identify, manage, and resolve conflicts of interest
Enterprise Risk Management	14: how to ensure that key participants and infrastructures have effective systems of risk management and internal controls

The Discussion Paper also included toolkits underpinning the Key Considerations, with suggested ways to address each of the Key Considerations.

The comment period for the Discussion Paper closed on 10 February 2023. IOSCO received 52 responses to the Discussion Paper. Overall, respondents generally agreed with the description of the carbon markets ecosystem and vulnerabilities; called for coordination between various initiatives aimed at improving the functioning of VCMs; expressed mixed views with respect to the legal treatment of carbon credits, as well as the use of DLT and tokenization in connection with VCMs; were overwhelmingly in support of standards, recommendations or good practices regarding transparency on the use of carbon credits by market participants; and were generally in agreement with the Key Considerations.

In addition, comments strongly reflected the need for IOSCO to define its role with respect to VCMs, encouraging IOSCO to keep any further policy steps limited to that remit in order not to duplicate the work of other initiatives active on the environmental integrity aspect of the market. Commenters also suggested organizing content, particularly the Key Considerations, into categories, such as: primary market issuance (including environmental integrity); secondary market trading; and use and disclosure of use of carbon credits. Finally, respondents suggested that any IOSCO policy work should be high-level and principles-based, keeping in mind the early stage of development of VCMs.

1.2. Origins of Carbon Markets and the Paris Agreement

Market-based mechanisms to support climate change mitigation action find their origins in the 1997 Kyoto Protocol⁴ to the 1992 UN Framework Convention on Climate Change. The Kyoto Protocol entered into force in 2005 and established the **Clean Development Mechanism (CDM)**, the world's largest international carbon crediting mechanism to date. The Kyoto Protocol allowed a developed country with an emissions abatement target to purchase and use credits from a CDM emissions-reduction project in a developing country toward meeting its target. Such projects earned certified emission reduction (CER) credits, each equivalent to one tonne of CO₂.⁵

⁴ <https://digitallibrary.un.org/record/250111?ln=es>.

⁵ <https://unfccc.int/process-and-meetings/the-kyoto-protocol/the-clean-development-mechanism>.

The 2015 Paris Agreement, which entered into force in 2016,⁶ requires all Parties to prepare, communicate, and maintain successive **nationally determined contributions (NDCs)** (i.e., mitigation targets). NDCs and the Paris Agreement’s mechanism for increasing the ambition of Parties’ climate action over time (through, *inter alia*, an enhanced transparency framework, a collective stocktake of overall progress every five years, and the requirement to communicate new NDCs every five years) form the basis for Parties to achieve the global temperature goal of the Paris Agreement. Since climate finance is important for assisting certain Parties in implementing their NDCs, it can be helpful for such Parties to also develop a financing strategy.⁷

Parties can opt to use international market-based and non-market-based⁸ cooperative approaches to achieve their NDCs. Market approaches are guided by provisions set out under **Article 6.2 guidance and** may involve the use of certified emissions reductions generated under the crediting mechanism established under **Article 6.4 of the Paris Agreement**, which are discussed, along with their relationship to VCMs, in further detail in Chapter 2.

VCMs find their origins in the 1990s. VCMs development was led by non-state actors who sought a credible way to certify GHG emission reductions and removals outside of United Nations (UN) compliance schemes. The first VCM industry standards for issuing carbon credits for public use were launched in 1996.⁹

VCMs could be important in the context of the global transition to a low-carbon economy if they are successful in achieving their goals of, for example, providing a platform for businesses and other organizations to offset their carbon emissions and invest in climate change mitigation projects.

1.3. Carbon Markets Basics

Carbon markets have been identified as a key tool for governments and private sector institutions seeking to achieve climate change objectives. These markets have the overall objective of mitigating climate change. They do so by putting a price on carbon emissions, which promotes the reduction of CO₂ emissions into the atmosphere or allows for the offsetting of emissions using climate change mitigation projects.

The carbon markets ecosystem is complex, given the existence of different types of markets and different mechanisms within those markets. The table below provides an overview of the different market types, mechanisms, and types of products issued:

⁶ The **Paris Agreement** is a legally binding international treaty on climate change. The Paris Agreement’s goal is to limit global warming to well below 2 degrees Celsius, preferably to 1.5 degrees Celsius, compared to pre-industrial levels – *more information available at <https://unfccc.int/process-and-meetings/the-paris-agreement>*.

⁷ <https://www.un.org/en/climatechange/all-about-ndcs>.

⁸ Article 6.8 of the Paris Agreement addresses non-market international cooperation among governments. It proposes a framework for non-market approaches to sustainable development to promote non-market approaches to assist in implementing NDCs.

⁹ https://www.meti.go.jp/shingikai/energy_environment/carbon_credit/pdf/20220627_2.pdf

Type of Market	Mechanism	Issued Product
Compliance Carbon Markets (CCMs)	Cap-and-trade mechanism	Carbon emission allowances
	Baseline-and-credit mechanism	Carbon emission allowances
Voluntary Carbon Markets (VCMs)	Project-based mechanism	Reduction or Avoidance carbon credits Removal/Sequestration carbon credits.
Article 6.4 of the Paris Agreement	Project-based mechanism	Art.6.4 Emission Reductions (Art.6.4 ERs)
Clean Development Mechanism (CDM) ¹⁰	Project-based mechanism	Certified Emission Reductions (CERs) Credits

Carbon markets aim to reduce GHG emissions by employing two types of market-based instruments, sometimes in combination: (i) **emission allowances**, which are tradeable permits to emit one tonne of carbon dioxide equivalent (tCO₂e) per allowance and are typically issued in limited amounts based on an overarching cap on emissions; and (ii) **carbon credits (also known as offset credits)** which each represent one tCO₂e reduced, removed, or avoided. This distinction between these two instruments is important, in part because it affects the type of carbon marketplace in which a company decides to trade.

In **VCMs**, entities voluntarily buy credits generated from climate change mitigation projects that either (i) assisted in the **avoidance or reduction** of CO₂ emissions, for example, by investing in renewable energy; or (ii) permanently **removed or sequestered** emissions from the atmosphere, such as by investing in carbon capture and storage sequestration technology.

Such climate change mitigation projects should thereby allow entities buying the related carbon credits to offset some or all of their own carbon emissions. Where projects are designed, validated, implemented, and monitored according to a carbon crediting standardizing a relevant methodology, a carbon standards body issues the carbon credit in its designated registry.

CCMs were the subject of a separate IOSCO Report, as noted above, and are not discussed here.¹¹ Nonetheless, there may be links between VCMs and CCMs, particularly where jurisdictions complement their CCMs with independent crediting mechanisms, or in instances where a global CCM such as the International Civil Aviation Organization’s market-based measure permits airlines to use carbon credits certified to eligible independent standards toward their compliance obligations. As such, this Consultation Report should be read in conjunction with the IOSCO Final Report on CCMs, which sets out recommendations for the good functioning of CCMs.

A key difference between CCMs and VCMs is that compliance markets exist as mandatory schemes established by governmental authorities. Companies within the scope of CCMs have an allowed quota of emissions. The companies in scope are obligated to redeem emissions

¹⁰ The Conference of the Parties (COP) serving as the meeting of the Parties to the Kyoto Protocol will consider, at its 18th session (CMP18), the functioning and operation of the processes and institutions of the Clean Development Mechanism in the future. <https://cdm.unfccc.int/Registry/index.html>

¹¹ IOSCO Compliance Carbon Markets Final Report, July 2023, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD740.pdf>.

allowances to cover their GHG emissions and to participate in the scheme to “pay” for their allowed quota of emissions. In VCMs companies, governments and others may purchase carbon credits on a voluntary basis, with the aim of supporting corporate social responsibility or financial activities.

The mechanism established under **Article 6.4 of the Paris Agreement**,¹² is intended “to contribute to the mitigation of greenhouse gas emissions and support sustainable development”¹³ with the Parties to the Paris Agreement acting as the supervisory authority. Much like other carbon crediting standards, through this mechanism a company can undertake an activity to reduce emissions in a host country, which are credited and can be sold, e.g., sold to another company in another country or to a national government seeking to count them toward its NDC, or offered in exchange for results-based payments under a climate fund or finance mechanism. The Article 6.4 Supervisory Body was established in 2022 and has begun to make headway in setting out the details of how the Article 6.4 Mechanism will operate, including how activities under the Kyoto Protocol’s CDM can transition to the new mechanism. Article 6 is discussed, along with its relationship to VCMs, in further detail in Chapter 2.5, below.

International VCMs, interlinkages with CCMs and domestic frameworks. In some jurisdictions, entities may use carbon credits from some of the same independent standards that support VCMs to satisfy a percentage of their CCM compliance obligation under an Emission Trading Scheme (ETS) or other carbon-related requirements, such as carbon tax regimes. For example, at the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and this is also the case in Singapore,¹⁴ California,¹⁵ and Japan,¹⁶ carbon credits are accepted as means to offset GHG emissions from certain activities or sectors that are more costly to eliminate or to significantly curtail. Colombia also allows for the use of carbon credits to reduce carbon tax requirements through the so-called non-causation mechanism. This mechanism allows the buyer to avoid payment of the tax by purchasing eligible carbon credits (*i.e.*, those that have a 5-year-vintage, have been generated in Colombia, and come from one of the approved carbon crediting programs).¹⁷ China is also preparing to relaunch the registration of new projects through the China Certified Emission Reductions (CCER) scheme, which allows quantification and sale of emission reductions by projects. This scheme is government-led and would link up to China’s national compliance market by allowing the CCERs to cover up to

¹² https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf.

¹³ <https://unfccc.int/process-and-meetings/the-paris-agreement/article-64-mechanism>.

¹⁴ In Singapore, companies may use high quality international carbon credits to offset up to 5% of their taxable emissions from 2024. This will cushion the impact for companies that are able to source for credible carbon credits in a cost-effective manner, help create local demand for high-quality carbon credits and catalyse the development of a well-functioning and regulated carbon markets. All international carbon credits used under the carbon tax regime will need to adhere to a set of eligibility criteria, to ensure that they are of high environmental integrity and compliant with Article 6 of the Paris Agreement. <https://www.nccs.gov.sg/singapores-climate-action/mitigation-efforts/carbontax/>

¹⁵ Offsets, issued by CARB or by the authority of a linked cap-and-trade system, are compliance instruments under the California Cap-and-Trade Program. <https://icapcarbonaction.com/en/ets/usa-california-cap-and-trade-program>.

¹⁶ Four types of offset credits are permitted, based on certification criteria, to complement emission reduction credits issued to facilities covered by the Tokyo ETS. <https://icapcarbonaction.com/en/ets/japan-tokyo-cap-and-trade-program>.

¹⁷ <https://allcottrading.com/uncategorized-en/colombian-tax/>.

5% of an emitter's compliance obligations.¹⁸ India's upcoming carbon market is also set to be based on upon a VCM and a CCM mechanism.¹⁹

Other countries are developing VCM rules domestically where they do not presently have CCMs. These domestic frameworks are typically set out by legislation and overseen by legislative or regulatory agencies in the country. The frameworks also include domestic accreditation systems as opposed to, or in addition to, using the international industry carbon crediting programs such as Verra or Gold Standard, as well as the use of domestic registries and trading platforms.

Examples include:

- (i) Egypt – In December 2022, Egypt modified its capital market executive regulations via a prime ministerial law to officially recognize and define carbon credits as tradable financial instruments. This legislative move also led to the establishment of a high-level carbon market committee chaired by the FRA, with participation from EGX and the Ministry of Environment, and representative from the private sector, aimed at facilitating the voluntary carbon market within Egypt. This committee is responsible for:
 - a. Drafting The Selection Criteria for Approving Validation And Verification Bodies (VVBs) – International and Domestic.
 - b. Drafting The Selection Criteria for Identifying and Recognizing Carbon Registries that Would Be Recognized For Carbon Credit Trading.
 - c. Drafting the Issuance Regulations for Carbon Credits.
 - d. Drafting Requirements for Continuous Disclosure and Transparency For Carbon Emission Reduction Projects And Programs.
 - e. Issuing Guiding Rules For The Integrity and Credibility Standards Of Carbon Credits, Following The ICVCM Carbon Credits Principles (CCP).

Furthermore, to address validation and verification cost challenges in VCMs, the FRA issued Decree No. 163 in August 2023 outlining requirements for approving VVBs. Additionally, the FRA is currently defining the selection criteria for officially recognizing carbon registries.

On the capacity building front, FRA has engaged in multiple introductory sessions about VCM with key stakeholders and is collaborating with Egyptian Accreditation Council EGAC and international organizations to develop a comprehensive capacity building program focusing on VCM standards. EGAC, in particular, has commenced accreditation programs for VVBs and signed Memorandums of Understanding (MoUs) with Verra Carbon registry to further bolster the VCM ecosystem.

- (ii) Abu Dhabi – In Abu Dhabi Global Market (ADGM), AirCarbon (ACX) has been granted recognition orders by its regulator (ADGM's Financial Services Regulatory Authority) for the purposes of operating a VCM as a recognized investment

¹⁸ <https://chinadialogue.net/en/digest/chinas-carbon-credit-system-to-restart-this-year/>.

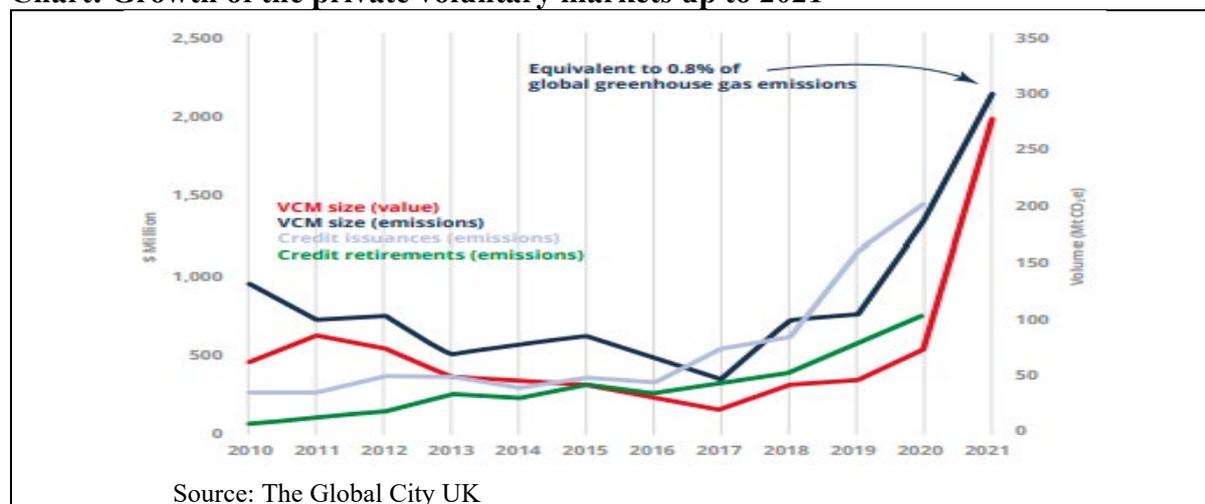
¹⁹ <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/063023-indias-national-carbon-market-to-seek-links-with-international-registries>.

exchange and a recognized clearing house in relation to Environmental Instruments, a class of financial instruments. These domestic ecosystems will complement international mechanisms and the current private, international, carbon markets typically administered by private entities.

1.4. Carbon Markets Size, Growth and Trends

While the compliance market remains the larger of the two, the Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimated that demand for carbon credits could increase by a factor of 15 or more by 2030 and by a factor of up to 100 by 2050.²⁰ Overall, TSVCM noted that the market for carbon credits could be worth upwards of \$50 billion in 2030.

Chart: Growth of the private voluntary markets up to 2021



VCMs, as can be seen on the chart above, have fluctuated in size, in part due to international-level negotiations. While a reduction in market size is noticeable during the Paris Agreement negotiations and after it was signed in 2016, the value of VCMs has more recently been on an upward trend and reached the \$ 2 billion mark in 2021, with market size, in terms of trading volumes, increasing five-fold since 2017 as long-term net zero commitments increase on the demand side.²¹

Bloomberg reported that VCMs shrunk in 2022, with companies buying 155 million offset credits, down 4% from 2021, and the supply of offset credits dropping in some sectors as well, such as avoided deforestation, which dropped 32% in 2022.²² Trove Research suggested a further drop in H1 2023, after an increase in issuance in Q4 2022.²³ Bloomberg also noted that investors and the media have expressed concerns regarding the quality of carbon credits. Bloomberg connected the drop in both demand and supply to the concerns regarding quality

²⁰ “Taskforce on Scaling Voluntary Carbon markets (TSVCM),” Institute of International Finance, January 2021, https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf.

²¹ Ecosystem Marketplace, “State of the Voluntary Carbon Market: 2021 Report.”

²² <https://www.bloomberg.com/professional/blog/long-term-carbon-offsets-outlook-2023/>.

²³ https://trove-research.com/wp-content/uploads/pda/2023/07/20230720-Trove-Webinar-2Q23-VCM-In-Review_upload-version.pdf.

and integrity²⁴ while Xpansiv associated it with the macroeconomic conditions and the higher interest rates in addition to investor concerns.

²⁴ “Five Need-to-Knows About the Future of Voluntary Carbon Offset Markets,” BloombergNEF blog (Jan. 2023) at <https://about.bnef.com/blog/five-need-to-knows-about-the-future-of-voluntary-carbon-offset-markets/>.

Chapter 2 – Carbon Credits Ecosystem and Market Structure

The VCMs Discussion Paper included a chapter discussing the characteristics of VCMs. It included a description of carbon credits, an overview of the process for issuing carbon credits and key market participants, and a discussion of secondary market trading.

Commenters on the Discussion Paper generally agreed with the description of the carbon credits ecosystem and market structure. There were numerous suggestions to expand the description to include other types of market participants. In addition, some suggested greater clarity on the roles and legal obligations at the level of the projects, including verification processes. Finally, there were several suggestions to clarify primary market activity versus secondary market activity.

Chapter 2 expands upon the VCMs characteristics outlined in Chapter 2 of the Discussion Paper, responds to the feedback received by clarifying the terminology that is used in this Consultation Report, expands on the types of market participants in the discussion, and organizes the content by primary market issuance, secondary market trading, and use and disclosure of use of carbon credits.

As noted by commenters on the Discussion Paper, VCMs are relatively young and still at a nascent stage of development. Any descriptions of the carbon credits ecosystem and market structure, including the issuance of carbon credits and key market participants, could change over the coming years as the market matures.

2.1. Terminology

Defining a Carbon Credit (also known as an Offset Credit). A **carbon credit** is a transferable instrument, representing an emission reduction or removal of one tonne of CO₂ or CO₂ equivalent (CO₂e). As defined by the Integrity Council for the Voluntary Carbon Market (ICVCM), a carbon credit is “*a tradable financial instrument that is issued by a carbon-crediting program. A carbon credit represents a greenhouse gas emission reduction to, or removal from, the atmosphere equivalent to one tonne of carbon dioxide equivalent, calculated as the difference in emissions from a baseline scenario to a project scenario. Carbon credits are uniquely serialized, issued, tracked and retired or administratively cancelled by means of an electronic registry operated by an administrative body, such as a carbon-crediting program.*”²⁵

The holders of this credit can **retire** the credit (*i.e.*, make it unavailable for trading) and, in doing so, can either claim the underlying reduction towards their own net GHG emission reduction goals or claim contribution to climate change mitigation (*e.g.*, in cases where an individual or entity purchasing carbon credits does not have specific emissions that they are offsetting, but nonetheless wishes to claim a contribution to climate change mitigation). The action of retiring and claiming a carbon credit towards GHG emission reduction targets is called offsetting. On the basis of these characteristics, offsetting can therefore be defined as: “*...The compensation for an entity’s greenhouse gas emissions within its scope by achieving*

²⁵ <https://icvcm.org/wp-content/uploads/2022/07/ICVCM-Public-Consultation-FINAL-Part-5.pdf>. Note that the reference to “tradable financial instruments” does not indicate that these are regulated financial instruments in any particular jurisdiction. See Chapter 3 below for a discussion of the regulatory treatment of carbon credits.

an equivalent amount of emissions reductions or removals outside the boundary or value chain of that entity.”²⁶

In VCMs, purchasers buy a certificate of the emission reductions stemming from a climate change mitigation project, offsetting their own emissions or contributing to climate change mitigation. Purchasers of carbon credits also include financial buyers, who may buy credits as an investment, hoping to achieve a return through their subsequent resale at a higher price.

Carbon offsets are based on projects designed in one place and may be used to compensate emissions elsewhere. Climate change mitigation projects can be very different in nature, from reforestation and conservation to renewable energy, and many others. These carbon credits – and the projects underpinning them – are typically grouped in two categories:

- (i) **Reductions or avoidance** – whereby the projects underpinning the credit either aim to prevent the release of GHG emissions into the atmosphere, such as by limiting the loss of natural resources that absorb carbon, and/or to help reduce the amount of GHG emitted into the atmosphere, such as by funding the transition to renewable energies.
- (ii) **Removals and sequestration** – whereby the projects underpinning the credit use natural resources or technology to sequester carbon (*e.g.*, reforestation projects) or to remove it (*e.g.*, by investing in technology that filters CO₂ out of the atmosphere).

Other VCMs Terminology. The carbon credits ecosystem is complex and involves multiple participants in different roles and at different stages. As noted above, the Discussion Paper included a description of carbon credits, an overview of the process for issuing carbon credits and key market participants, and a discussion of secondary market trading. While commenters generally agreed with the description, a number of comments on the Discussion Paper noted the need for greater clarity and consistency in terminology. Some commenters also called for the use of more standardized terminology within the VCMs industry generally.

In response to this feedback, throughout this report key terms are identified in bold text, include a short definition and discussion, and are used consistently thereafter. Where multiple terms, overlapping or confusing terminology is currently used in the industry, this is noted. There is also a glossary of the VCMs terminology used in this Consultation Report included at Appendix 2.

Consultation Questions:

Question 1: Does the Consultation Report use the correct and commonly accepted terminology? Are terms defined appropriately in the report and its glossary? Does the Consultation Report acknowledge all instances of inconsistent and conflicting terminology used in the industry? Are there any terms that have not been defined but which should be defined or alternatively, that should not be defined by IOSCO?

²⁶ <https://icvcm.org/wp-content/uploads/2022/07/ICVCM-Public-Consultation-FINAL-Part-5.pdf>.

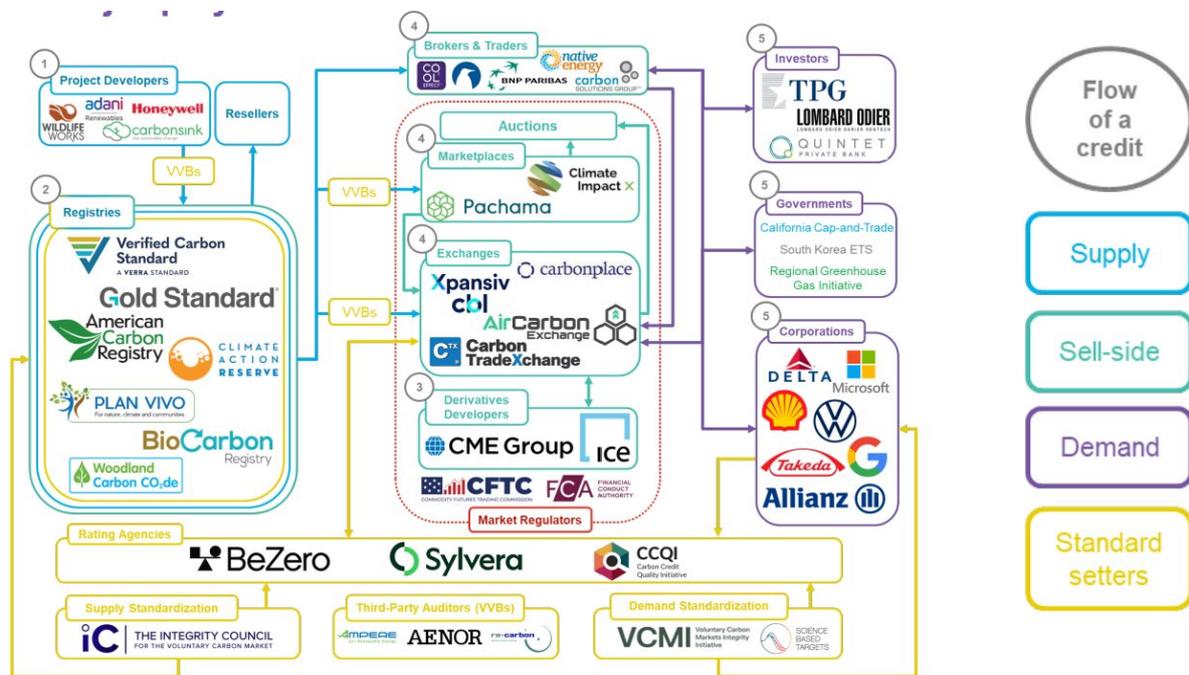
2.2. Primary Market Issuance

The process for the creation of VCM carbon credits typically involves four steps:

- (i) development of a climate change mitigation project;
- (ii) measurement, reporting, and third-party verification (MRV) of the activity's greenhouse gas emissions and reductions or removals;
- (iii) certification by a carbon-crediting program; and
- (iv) issuance of credits representing the activity's resulting reductions or removals in the developer's registry account.

The issued and registered credits may be purchased, traded, and sold to buyers on secondary markets, either OTC through brokers or through exchanges, both spot and derivatives; or the holders of credits can retire them.

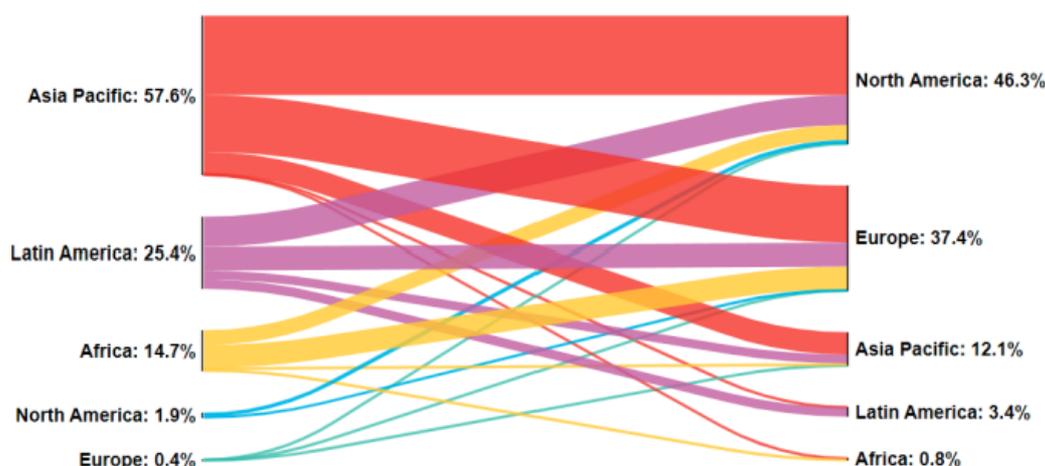
The chart below provides an overview of the functioning of VCMs and the interlinkages between the various participants in the market:



Source: BloombergNEF

Development of a Climate Change Mitigation Project in the Private Sector. As can be seen from the chart, the process for the creation of carbon credits begins with the development of a climate change mitigation project. Typically, **project developers** scope out the projects, obtain funding and physically create the project. Most of the supply for projects and therefore the offset credits come from APAC, Latin America and Africa, whereas the demand side currently remains tilted towards North America and Europe as can be seen in the graph below.

Chart: Carbon offsets by geography of supply (left) and demand (right)



Source: BloombergNEF, Verra

Commenters on the Discussion Paper noted that, in some cases, the project developer may not be the same person as the owner of the land or assets forming part of the applicable climate change mitigation project. In those instances, the project developer would need to first engage with the owner. Commenters noted that engagement with land and asset owners is important to acknowledge, including the role that indigenous peoples, local communities, farmers, forestry owners, and others play in the carbon credits ecosystem.

Project developers will select a set of standards from a carbon crediting program that will underpin the delivery of the project. Generally, the project developers will need to demonstrate how they meet the rules and requirements set out by the carbon crediting program and how they have applied the eligible methodology to calculate the baseline scenario against which the emissions reductions will be calculated. These demonstrations take place during the verification and validation processes, though as explain in chapter 3 on potential vulnerabilities, these verification and validation processes might not always be carried out with sufficient due diligence.

One commenter on the Discussion Paper also suggested that project developers should consult with carbon management experts and scientists, before and in addition to the third-party entities. The commenter stated that experts and scientists can play a critical role in determining the quality of the carbon credit project from the beginning and can support the development of high-quality projects that are backed with scientific integrity.

One respondent suggested that IOSCO should note the role that NGOs play as carbon emission calculation tools providers. NGOs support project owners or project developers with respect to calculating the amount of carbon emissions reduced or removed. This respondent noted that the function or role of such service providers should be distinct from the processes for issuance and registry recording, from the processes for tracking retirement, as well as from the assurance function of third-party entities. In addition, the respondent stated that such service providers should have relevant technical expertise and apply science-based methodology to assess additionality against a “baseline scenario.”

Validation and verification of climate change mitigation projects. A further step related to project development involves **validation and verification** according to the rules and methodologies established by the carbon crediting program. Validation is the ex-ante independent assessment of the project by a **third-party entity** that determines whether the project and its GHG statement conforms with the carbon crediting program rules, and evaluates the reasonableness of assumptions, limitations, and methods that support a claim about the outcome of future activities.²⁷ Verification is the periodic ex-post independent assessment by a third-party entity of the project and its GHG statement of emission reductions and removals.²⁸

Third-party entities may sometimes be called validation/verification bodies, or label organizations.²⁹ This inconsistent terminology is particularly challenging because it may cause confusion with the next step in the issuance process, as well as confusion with ratings providers. For clarity and consistency, in this Consultation Report these entities are referred to as third-party entities.

For a third-party entity to verify a project, project developers need to demonstrate that the project has actually avoided or removed harmful GHG emissions. This is demonstrated through the **measurement, reporting, and verification (MRV)** process which is defined by the World Bank (WB) as *the multi-step process to measure the amount of GHG emissions reduced by a specific mitigation activity [...] over a period of time and report these findings to an accredited third party. The third party then verifies the report so that the results can be certified and carbon credits can be issued.*³⁰ As noted in the WB definition above, a key aspect is that third-party entities are required to be accredited by the selected carbon crediting program, which may raise issues with respect to potential conflicts of interest. In addition, they are paid by project developers. These aspects are discussed further in Chapter 3 regarding vulnerabilities.

A respondent suggested that the MRV process is often costly and poses a significant barrier to widespread uptake of VCMs (often excluding smaller owners and farms) and that there needs to be careful assessment of risks and effectiveness of the MRV process for climate change mitigation projects and robust certification before scaling up the markets.

Certification by a Carbon Crediting Program. To receive carbon credits, climate change mitigation projects need to receive **certification** through a carbon crediting program. In VCMs, **carbon crediting programs** set standards for carbon credit quality, certify projects, issue carbon credits, and have a registry to track certified projects, issuance and retirement of carbon credits.³¹ Certification fees are typically paid by the project developers. To receive

²⁷ Definition included in Verra's VCS Standard <https://verra.org/programs/verified-carbon-standard/#how-it-works>.

²⁸ Id.

²⁹ This role is similar to that of a verifier in the CCMs, which is defined in IOSCO's Compliance Carbon Markets Final Report as a legal person or entity, or an independent third party, authorized to carry out verification activities for emission reduction by compliance entities (i.e., (1 tCO₂ emitted = 1 tCO₂ reported). <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD740.pdf>.

³⁰ [https://www.worldbank.org/en/news/feature/2022/07/27/what-you-need-to-know-about-the-measurement-reporting-and-verification-mrv-of-carbon-credits#:~:text=MRV%20seeks%20to%20prove%20that,of%20CO2%20equivalent%20\(tCO2eq\)](https://www.worldbank.org/en/news/feature/2022/07/27/what-you-need-to-know-about-the-measurement-reporting-and-verification-mrv-of-carbon-credits#:~:text=MRV%20seeks%20to%20prove%20that,of%20CO2%20equivalent%20(tCO2eq)).

³¹ Currently, Gold Standard and Verra are prominent carbon crediting programs for VCMs. Commenters on the Discussion Paper referenced others, including Climate Action Reserve, Global Carbon Trust, Sovereign Carbon, CCER, and Puro.Earth. Reference to specific entities is illustrative only and is not meant to imply that these are the only, or only credible carbon crediting programs, and IOSCO does not endorse any particular market participants.

certification, the project must meet certain specifications dependent upon the methodology used by the carbon crediting program. In many circumstances, the project will need to demonstrate qualities such as additionality³², permanence³³, and the use of a third-party entity for MRV, to name but a few.

The industry uses varied terminology for this process and these entities as well. The carbon crediting program may also be called a carbon crediting scheme, a carbon offset program or scheme, a standard setter, or a certification body. Certification may also be referred to as carbon crediting. For clarity and consistency, in this Consultation Report this step is referred to as certification, and the entity is called a carbon crediting program.

Each credit has a specific vintage year, which is the year in which the emission reduction occurred, and a specific issuance date, which is when the credit will be available on the market. Given the length of the certification and MRV processes, credits may be issued years after the carbon reduction took place.

Commenters on the Discussion Paper also noted the important role that those global initiatives such as the ICVCM and the Voluntary Carbon Markets Integrity Initiative (VCMI) play in working with individual carbon crediting programs. The work of these initiatives is discussed in Chapter 5.

Beyond their primary objective, climate mitigation projects may also contribute to other aspects of the UN's Sustainable Development Goals. For example, they may contribute to improving welfare for the local population, improving water quality, reducing economic inequality, or helping channel climate investment towards developing economies.³⁴ These are generally referred to as co-benefits. Commenters on the Discussion Paper noted that co-benefits are of growing importance to investors, impact the comparability of carbon credits, and that further research is needed to better identify, assess, measure, and standardize such additional benefits.

Issuance of Credits to a Registry. Once projects have been certified, the carbon crediting program will issue credits. It does this by assigning a unique serial number to each tonne of emissions reductions or removals, recorded in its designated registry of certified projects. The aim of such registry systems is to provide transparency to the market on the credits issued and to record transactions. A registry is an electronic system that tracks and records the ownership, transfer, and retirement of carbon credits. A registry provides a secure and transparent platform for the registration, management, and tracking of carbon credits. They are typically operated by the carbon crediting program that certified the project and issued the carbon credits.

A registry (i) provides electronic services to carbon crediting program that governs the eligibility of projects to receive offsets and the quantification and MRV of project-based emission reductions and (ii) has its own terms of use specifying the conditions under which users may access and use the registry as well as defining the ownership of assets and agreement to transfer assets. One registry provider may serve multiple carbon crediting programs.

³² A carbon project is additional if the emissions reductions or removals would not have occurred in the absence of the incentive created by carbon credit revenues. <https://icvcm.org/the-core-carbon-principles/>.

³³ Permanence refers to the fact that the GHG emission reductions or removals from the mitigation activity shall not be reversible or, where there is a risk of reversal, there shall be measures in place to address those risks and compensate reversals. <https://icvcm.org/the-core-carbon-principles/>.

³⁴ <https://carbon-pulse.com/128193/>.

Commenters on the Discussion Paper noted the potential value of a meta-registry, which could have a regular, consistent interface with carbon crediting programs, registries and exchanges. Meta-registries could be regional or global and allow for comparison of data and content between registries. For example, commenters noted that there are otherwise no easy ways to cross check climate change mitigation projects, which might reference the same assets, avoidance, removal or reduction, which could lead to double counting of climate change mitigation efforts. In the following Chapters there are further discussions of the advantages and disadvantages of using DLT in registries (included in Box 2 on The Role of DLT and Tokenization in VCMs), as well as the World Bank Climate Warehouse Initiative (Climate Action Data Trust) for a global meta-registry.

Insurance Companies. One respondent suggested that insurance companies will be an important stakeholder in the future to promote private investments in VCMs. Insurance companies may help to create trust in these markets by covering risks along the value chain of VCMs, particularly those relating to fraud and negligence³⁵ as they do in other commodities markets.³⁶ They suggested insurance solutions would need to be bespoke, attending to the different industries and sectors involved in VCMs as well as the different needs of carbon credit buyers.

Consultation Questions:

Question 2: Is the description of the issuance of carbon credits accurate? Are all key market participants properly reflected in the Consultation Report?

2.3. Secondary Market Trading

Carbon Credits Trading. Once carbon credits have been issued and added to a registry, the issued credits may be purchased, traded, and sold to buyers, either OTC through brokers or through exchanges on secondary markets, both spot and derivatives. Many purchasers of carbon credits are motivated to offset their own emissions or to contribute to climate change mitigation. Some purchasers of carbon credits are investors that hope to achieve a return through their subsequent resale at a higher price. Alternatively, other purchasers buy carbon credits to retire them to claim an emissions reduction or contribute to climate change mitigation efforts. After a carbon credit has been retired, it cannot be traded again. Retirement is discussed further under Use and Disclosure of Use of Carbon Credits, in Chapter 2.4.

Most trading of carbon credits is currently executed bilaterally or through an intermediary in the OTC markets with little public pricing information available. Several factors might explain the high share of OTC trading, including the relatively small size of the market, the lack of standardization in the credits, buyer desire to establish an exclusive relationship with the project and/or its beneficiaries, and the varying levels of buyer sophistication, in addition to

³⁵ https://www.ccarbon.info/the-role-of-insurance-in-scaling-the-carbon-markets/?utm_id=Insurance&trk=organization_guest_main-feed-card_reshare_feed-article-content#:~:text=This%20insurance%20covers%20the%20fraud,%2450bn%20market%20in%202030.

³⁶ [https://www.euromoney.com/article/2bgwrlnuejf0rllsuc4jk/esg/esg-buyers-on-the-vcm-demand-more-insurance-options.](https://www.euromoney.com/article/2bgwrlnuejf0rllsuc4jk/esg/esg-buyers-on-the-vcm-demand-more-insurance-options)

the general fragmentation of potential liquidity pools given the current structure of those markets. Vulnerabilities related to lack of standardization are discussed in Chapter 3.

Due to the OTC trading, financial intermediaries play an important role in facilitating trades between buyers and sellers. Intermediaries can pool different orders to facilitate trading activity, provide clients with market information not readily accessible to many participants, and provide liquidity by bridging the gap between bids and offers.

Financial intermediaries are brokers that will typically charge a commission for their services in similar ways as they do in other financial markets. They are traditionally investment banks, although other market participants include investment funds, as well as other investors and traders that purchase and sell carbon credits. These market participants may buy and hold carbon credits over a longer period, hoping to achieve a return on investment, or may be shorter term traders or speculators, who may trade on market-price distortions and arbitrage possibilities.

One commenter on the Discussion Paper noted that describing these market participants as speculators taking advantage of price disparities could shed a negative light on their participation in the market. However, the term speculator is not intended to be pejorative, and short-term trading is not necessarily negative. As recognized in the Discussion Paper, broader participation in VCMs, including different types of sellers, buyers, and intermediaries, promotes the development of liquidity and price discovery. As another commenter noted, interest from investors with a short-term investment horizon is a normal part of trading in a healthy market.

Although most trading of carbon credits is currently executed OTC, with the growth in derivatives products linked to carbon credits, several trading platforms have become more active as venues for these products, both spot instruments and their derivatives. U.S.-based trading platform Xpansiv CBL, which owns the world's largest spot carbon credit trading platform CBL and accounts for around 40% of VCM trade³⁷, also has an Australian presence in addition to the US market, while others such as AirCarbon Exchange and Climate Impact X (CIX) operate in Singapore.

CIX launched a spot trading platform, CIX Exchange, in June 2023. CIX Exchange has a standardized benchmark contract (Nature X, based on nature-based carbon credits underpinned by 11 Redd+ projects³⁸) and individually listed carbon credit projects.³⁹

HKEX also launched a spot trading platform, Core Climate, in October 2022. Core Climate is a carbon marketplace that facilitates the trading of internationally certified carbon projects. The carbon credits currently traded on Core Climate are Verra's credits.⁴⁰

Derivatives exchanges in the United States and elsewhere have announced plans to scale up their activities. For example, the CME and Nodal Exchange, CFTC-registered derivatives

³⁷ <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/electric-power/031623-interview-xpansiv-banking-on-latent-demand-to-relieve-voluntary-carbon-markets>.

³⁸ Redd+ is a United Nations Framework Convention on Climate Change solution which stands for 'Reducing emissions from deforestation and forest degradation in developing countries.' See <https://redd.unfccc.int/>.

³⁹ <https://www.climateimpactx.com/exchange>.

⁴⁰ https://www.hkex.com.hk/News/News-Release/2022/221028news?sc_lang=en

exchanges, listed voluntary carbon offset derivatives contracts in 2021⁴¹ and 2022 respectively,^{42,43} while in Europe, EEX has announced plans to launch a VCMs trading platform in 2023⁴⁴ and the LSE launched a VCM designation for eligible issuers admitted to trading on the main market or AIM in October 2022.⁴⁵ ICE Futures Europe has also launched futures contracts based on carbon credits.

Commenters on the Discussion Paper noted that regulated exchanges could play a significant role in the ongoing development of VCMs by working to create an infrastructure that would help the carbon markets work more efficiently, assist with price formation and transparency, and increase standardization and integration of various existing markets in the long term. The example of CCMs shows that derivatives can play an important role in the sound functioning of secondary markets and may support growth in on-venue trading thanks to standardization benefits. Nonetheless, it was noted in the feedback to the Discussion Paper that a significant portion of the market will likely remain OTC.

Carbon Credit Ratings and Data Product Providers. There is a growing number of ratings providers, such as Sylvera and BeZero, that issue ratings with respect to carbon credits. There are also providers of aggregated VCM data. The **carbon credit ratings and data product providers** issue ratings and/or provide data products according to their own models and methodologies, including baseline and ‘additionality’ models. In contrast to third-party entities, the ratings and data products are provided ex-post, following certification and issuance of the carbon credits. These ratings typically provide judgment on the likelihood of a carbon credit achieving the avoidance and/or removal of a tonne of CO₂e.

Industry references to these providers may use a variety of similar terms, including offset quality ratings, carbon project ratings, and carbon pricing and data providers. For clarity and consistency, in this Consultation Report these entities are called carbon credit ratings and data product providers.

Commenters on the Discussion Paper noted that these carbon credit ratings and data product providers can play a key role in supporting high integrity in VCMs and an increasingly important role in market transparency. For example, carbon credit buyers use ratings and data products for due diligence. Commenters also noted that independent carbon credit ratings and data product providers sit between buyers and brokers or exchanges and may add legitimacy to reliable certifications. Commenters also noted that carbon crediting programs may face conflicts of interest, as there is an incentive for them to certify the credits that they will receive payment from; by contrast, carbon credit ratings and data product providers do not necessarily receive payment from carbon crediting programs but may be paid by the users of the carbon credit ratings or data products. In addition, certification by a carbon crediting program is a necessary condition to the issuance of the carbon credits, whereas the use of carbon credit ratings or data products is voluntary.

⁴¹ [CME Group to Launch CBL Core Global Emissions Offset Futures - CME Group.](#)

⁴² [Nodal Exchange Successfully Lists New Environmental Futures and Options – Bloomberg.](#)

⁴³ The contracts cover a range of offset standards and project types. The product group includes: Voluntary Emission Reduction (VER) CORSIA-eligible Futures and Options; Verified Emission Reduction Nature-based (Base and Vintage) Futures and Options; Carbon Removal Futures, and Global Emission Reduction (GER) Futures contracts, which Nodal Exchange launched in cooperation with NetZero Markets.

⁴⁴ [https://www.eex.com/en/markets/environmental-markets/voluntary-carbon-markets.](https://www.eex.com/en/markets/environmental-markets/voluntary-carbon-markets)

⁴⁵ [https://www.londonstockexchange.com/raise-finance/equity/voluntary-carbon-market.](https://www.londonstockexchange.com/raise-finance/equity/voluntary-carbon-market)

Carbon credit ratings and data product providers were not specifically identified within the scope of the ESG ratings and data product providers covered by IOSCO's *Final Report on Environmental, Social and Governance (ESG) Ratings and Data Products Providers*.⁴⁶ However, many of the issues and challenges discussed in that report with respect to ESG ratings and data product providers may also be relevant to carbon credit ratings and data product providers. In addition, participants in the carbon credit ratings and data products industry may include established market participants such as credit rating agencies (directly or through their affiliates).

Consultation Questions:

Question 3: Is the description of secondary market trading of carbon credits accurate? Are all key market participants properly reflected?

Question 4: Should carbon credit ratings and data product providers fall within the scope of the recommendations within IOSCO's Report on ESG Ratings and Data Product Providers?

The Role of DLT and Tokenization in VCMs. Distributed ledger technology (DLT) and tokenized credits are being explored for use in voluntary carbon markets. As noted in the Discussion Paper, various jurisdictions have seen firms developing tokenized carbon credits (e.g., Toucan) and so-called DeFi⁴⁷ marketplaces while others have begun using DLT for processes relating to carbon credits, such as for settlement, with the view of ensuring the simultaneous transfer of ownership of credits and payment (e.g., Carbonplace)⁴⁸. Some public authorities have also looked at turning carbon credits into tokenized form; as is the case of the Bank for International Settlement's Innovation Hub as well as the World Bank's International Finance Corporation (IFC) division.

One commenter noted DLT is often perceived as being able to contribute to two main roles in VCMs: (i) facilitating the digital representation and ownership of carbon credits on a blockchain via the process of so-called 'tokenization' and (ii) the simplification and standardization of certain measurement, reporting and verification (MRV) and certification processes given the potential for digital technologies to streamline in some respects data collection, processing, and quality control in MRV processes, to accelerate verification/validation and issuance process. Tokenization is seen by proponents as a way to facilitate the trading of carbon credits and improve the speed and volume of transactions. Commenters noted that the use of smart contracts may reduce the need for certain intermediaries.

⁴⁶ November 2021. <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD690.pdf>.

⁴⁷ DeFi commonly refers to financial products, services, arrangements, and activities that use distributed ledger or blockchain technologies (DLT), including self-executing code referred to as smart contracts. DeFi aims to disintermediate and decentralize legacy ecosystems by eliminating the need for some traditional financial intermediaries and centralized institutions, and by enabling certain direct investment activities, definition available at CR04/2023 Policy Recommendations for Decentralized Finance (DeFi) (www.iosco.org)

⁴⁸ [Bank backed blockchain carbon credit network Carbonplace raises \\$45m - Ledger Insights - blockchain for enterprise](#)

Particular, potential benefits of DLT highlighted by respondents typically related to MRV processes and included references to these respondents' beliefs that DLT could:

- (i) Increase transparency, efficiency, and traceability by ensuring that carbon emission data on the blockchain are immutable and traceable via tamper-proof public records. The ability to trace transactions has the potential to help mitigate the risk of double counting or double claiming of carbon credits as well as transactional counterparty risk.
- (ii) Reduce transaction costs, which will facilitate accessibility by smaller organizations.

However, DLT also presents risks. The following vulnerabilities were highlighted in the Discussion Paper:

- (i) Potential exposure of investors (including retail investors) to significant price volatility, while the complexity of the product makes it difficult to understand this risk;
- (ii) Carbon credit quality remains an issue, which blockchain does not currently mitigate. Blockchain cannot ascertain how true the emission reductions that come with the carbon credit are and is unable to verify the claim of the supply side as regards to the longevity of the credits;
- (iii) If not properly constructed, competing tokenization projects may result in double-counting credits;
- (iv) Blockchain mining, associated with Proof of Work blockchains, creates its own GHG emissions and environmental impacts. There may also be high fees related to energy use on public blockchains.

Respondents generally agreed with IOSCO on the risks associated with tokenization, but were seemingly more optimistic about its use for MRV purposes.

Several respondents agreed that DLT is very carbon intensive. However, others noted that the negative externalities of DLT, such as high energy consumption, have decreased in recent years with the successful adoption of Proof-of-Stake systems demonstrating that distributed functionality can be achieved without excessive energy consumption. It was also noted that, while tokenization has the potential to make credits easier to trade, tokenization could make the attributes that drive the quality of individual credits more opaque to the broader market. In addition, commenters noted that tokenization of carbon credits could lead to unhelpful speculation that could disrupt the ultimate objectives of the asset class. In addition, a couple of respondents noted their belief that DLT is not a regulated technology and that there is not a consistent industry practice for tokenizing credits. Commenters noted that this introduces potential governance risks and reintroduces the need for trusted central bodies to back the supply of tokenized credits represented on-chain. There may also be questions about the relationship between a tokenized credit and the underlying credit. Respondents further observed that the use of DLT in VCMs would also raise concerns with respect to anti-money laundering, know your customer and other customer protections provided by traditional trading platforms.

Given the nascent aspect of the use of DLT, and the existing challenges associated with upscaling VCMs, IOSCO notes responses received but is not proposing any specific way forward as part of this Report.

2.4. Use and Disclosure of Use of Carbon Credits

Demand for Carbon Credits and Retirement. Most purchasers buy carbon credits to offset their own emissions or to contribute to climate change mitigation. However, this is not the only source of demand. Purchasers of carbon credits also include investors, who may buy credits with the hope of achieving a return through their subsequent resale at a higher price. As discussed in Chapter 2.3, market participants also include financial market intermediaries, such as investment banks, investment funds, and shorter-term traders or speculators.

A carbon credit purchaser can decide to retire the credit as it uses it to offset its own emissions or to promote one's contribution to climate change mitigation efforts. After a carbon credit has been retired, it cannot be traded again, including on the secondary market. Final buyers or end-users are typically private companies or NGOs that purchase carbon credits to offset their GHG emissions or to contribute to climate change mitigation efforts. Efforts by private companies to offset emissions are often driven, at least in part, by commitments they have made to achieve objectives such as "net-zero" or "carbon neutrality". When the final buyer declares that the carbon credit has been retired to offset their GHG emissions, this must be recorded in the appropriate registry (either the carbon crediting program that initially approved the issuance, or the registry where the credit was listed following secondary market transactions).

Not all carbon credits end up on carbon credit marketplaces. One respondent to the Discussion Paper noted that some credits are purchased by an individual buyer or a collection of buyers through an advanced purchase agreement and are retired without ever being listed on a carbon credit marketplace.

If the carbon credit is not transparently recorded as retired in the registry when the final buyer claims the emission offset or contribution to climate change mitigation, the carbon credit could remain available in the market, creating a risk of double selling. Double selling occurs when two parties are sold, and attempt to claim, the same emission offset or contribution to climate change mitigation. This issue is closely linked to the challenges around data availability and disclosure.

Disclosure of Use of Carbon Credits. VCM participants that rely on carbon credits to offset their emissions to achieve net zero emissions will typically voluntarily disclose this information. Both IFRS Accounting Standards⁴⁹ and U.S. GAAP⁵⁰ require entities to consider the material effects of climate-related matters in preparing their financial statements. As such, entities are currently required to consider the need to disclose material use of carbon credits. In addition, new sustainability reporting regimes may also require the disclosure of the planned use of these credits in relation to GHG emissions targets it has set, if material, as described in IFRS S2 Climate-related Disclosures.⁵¹ Regarding the delegated act on the European

⁴⁹ www.ifrs.org/content/dam/ifrs/supporting-implementation/documents/effects-of-climate-related-matters-on-financial-statements.pdf.

⁵⁰ https://fasb.org/Page/ShowPdf?path=FASB_Staff_ESG_Educational_Paper_FINAL.pdf&title=FASB%20Staff%20Educational%20Paper-Intersection%20of%20Environmental.

⁵¹ <https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards-issb/english/2023/issued/part-a/issb-2023-a-ifrs-s2-climate-related-disclosures.pdf?bypass=on>, paragraph 36 (e).

Sustainability Reporting Standards (ESRS)⁵² in the EU, entities will typically have to disclose characteristics and financial statement effects of the carbon credits they purchase to achieve their emission reduction and/or avoidance goals. This can be done through financial or sustainability reporting requirements they may be subject to and/or through transition plans. For example, the Organisation for Economic Co-operation and Development (OECD) identifies providing clarity on the use of carbon offsets within transition plans as a key element of ensuring credibility of these plans, noting however the current divergence in the treatment of offsets to transition plans.⁵³

Most of the respondents to the Discussion Paper were supportive of IOSCO recommending good practices regarding transparency on the use and impact of carbon credits by market participants in order to avoid greenwashing. In addition, respondents were generally supportive of the work of the International Sustainability Standards Board (ISSB)⁵⁴ and IOSCO's endorsement of the ISSB standards.⁵⁵ The ISSB sets out disclosure standards, including within transition plans, for the planned use of offset credits. We discuss this aspect within Chapter 6 setting out Good Practices.

Supply and Demand Imbalances. Issuances, which have outpaced retirements every year, have begun to dramatically outstrip them, resulting in an increasingly high surplus of voluntary carbon credits.

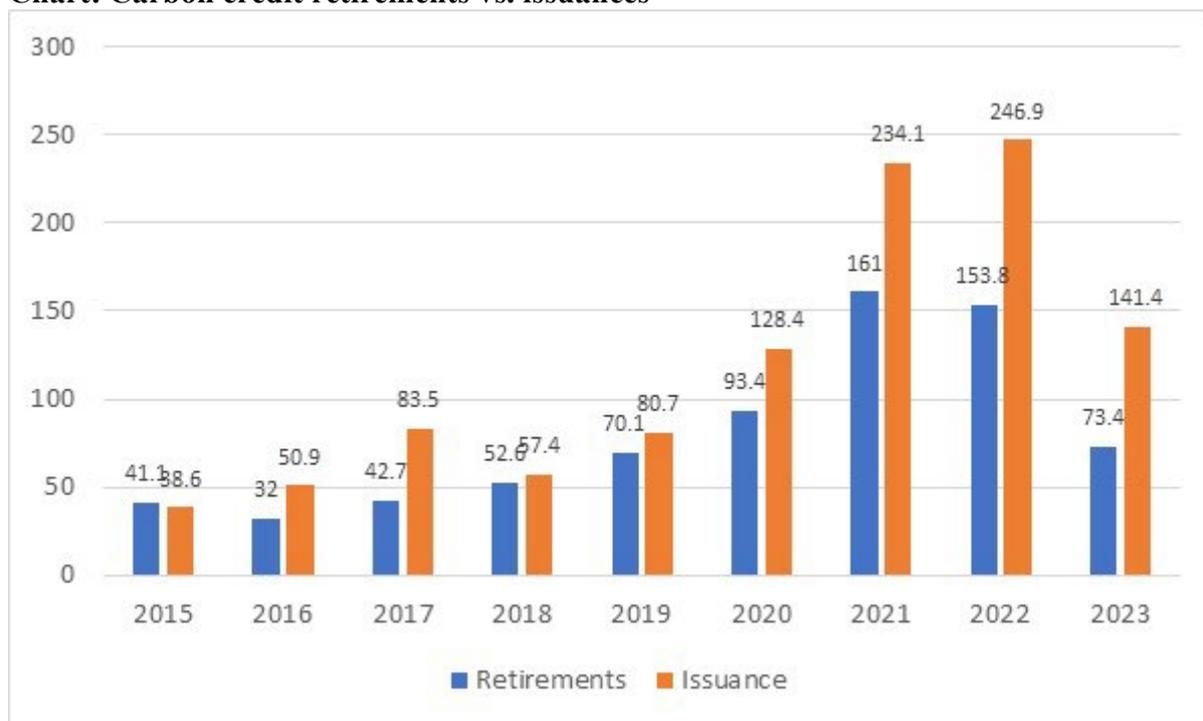
⁵² https://ec.europa.eu/finance/docs/level-2-measures/csrd-delegated-act-2023-5303-annex-1_en.pdf;
<https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FSiteAssets%2F08%2520Draft%2520ESRS%2520E1%2520Climate%2520Change%2520November%25202022.pdf>

⁵³ <https://www.oecd-ilibrary.org/sites/f092a7f7-en/index.html?itemId=/content/component/f092a7f7-en>.

⁵⁴ <https://www.ifrs.org/projects/completed-projects/2023/general-sustainability-related-disclosures/#published-documents>.

⁵⁵ <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD741-Endorsement-Decision.pdf>.

Chart: Carbon credit retirements vs. issuances



Source: BloombergNEF, Verra, Gold Standard, American Carbon Registry, Climate Action Reserve taken from BloombergNEF presentation to US CFTC Convening, July 2023.

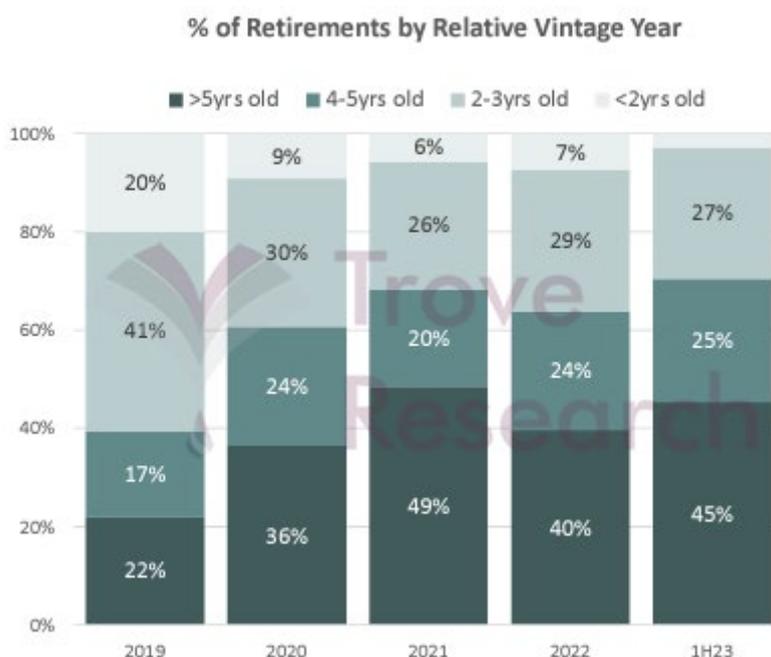
This may be because the issued carbon credits are unsold, held by traders, held by end users for future use, or the sellers may delay retirement requests, preferring to request and execute them in bulk. In some instances, this practice is based on the assumption that the global carbon price will converge toward the range of \$US50 to \$US100 per tonne of CO₂ by 2030.⁵⁶ This is the price range estimated as necessary to achieve the Paris Agreement’s goal of limiting global warming to well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temporary increase to 1.5 degrees Celsius. The lower levels of retirement of carbon credits by corporates could create pricing issues over time, as it could lead to oversupply in certain VCM segments.

A commenter on the Discussion Paper noted that a surplus of carbon credits could also mean a deficiency in the quality of credits or a deficiency in the ability of companies to procure credits. Another commenter noted that further examination of the nature of the carbon credit surplus is needed. This commenter reflected that a potential shift towards retiring younger vintages will leave the surplus increasingly made up of older vintages. Should this happen, this could increase challenges relating to integrity as older credits typically have been subject to weaker methodologies.⁵⁷ However, current data suggests this shift may not be happening in practice, with the average age of retired offsets increasing as buyers are currently purchasing older credits.

⁵⁶ <https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-markets-2021>.

⁵⁷ <https://www.carbon-direct.com/insights/assessing-the-state-of-the-voluntary-carbon-market-in-2022>.

Chart: Percentage of retirements by relative vintage year



Source: Trove Intelligence, including ACR, ART Trees, BIO Carbon, CAR, CDM-NDC Eligible, Climate Forward, EcoRegistry, Gold Standard, Puro Earth and Verra Registries.

Consultation Questions:

Question 5: Is the description of the use and disclosure of use of carbon credits accurate? Are the related supply and demand issues appropriately captured?

2.5. Article 6 of the Paris Agreement

As introduced above, the Paris Agreement is an international agreement on climate change that entered into force in 2016. The Paris Agreement requires each Party to prepare, communicate and maintain successive NDCs, i.e., targets for mitigating GHG emissions. Countries can use markets and non-market approaches to achieve their NDCs. The Paris Agreement sets out guidance for robustly accounting for and reporting on voluntary market-based co-operation under Article 6.2, and establishes a centralized but non-exhaustive carbon crediting mechanism under Article 6.4.⁵⁸

Article 6.2 Cooperative Approach. Article 6.2 sets out guidance for Parties that opt to internationally transfer mitigation outcomes (ITMOs) for use toward achieving NDC targets.⁵⁹ The guidance specifies accounting and reporting approaches the Parties must apply to demonstrate that their cooperation delivers on the mandates in Article 6.2. **ITMOs** are authorized by cooperating Parties and represent emission reductions and removal units from

⁵⁸ Learning for nature – UNDP. [Operationalizing Article 6.2 of the Paris Agreement: Achieving ambitious climate action through cooperative approaches.](#)

⁵⁹ Id.

climate change mitigation projects that are transferred internationally.⁶⁰ Parties may apply this guidance to cooperative approaches governed by bilateral or multilateral agreements, or to account for the underlying trade and use of carbon credits generated under crediting mechanisms that are administered by, e.g., the Party or an independent carbon crediting program, and are authorized by the Party in the context of Article 6.

There are requirements that participating Parties must meet, and procedures for accounting and reporting that they must follow under Article 6.2. ITMOs must be tracked and reported by the host Party and any acquiring Party(ies), with the option to do so in the international registry implemented by the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat.⁶¹

ITMOs can be used towards an NDC, or for other international mitigation purposes, depending on the purposes that are authorized by the host Party. These “other international mitigation purposes” could include e.g., use under CORSIA.

When ITMOs are authorized by the government of a country, it will trigger the application of **Corresponding Adjustments (CAs)**. CAs are a type of accounting tool used by parties to avoid double counting of GHG emission reductions. According to the UNFCCC,⁶² double counting happens when the same underlying mitigation outcome is counted by more than one Party towards achieving NDCs.

Article 6.4 Mechanism. Article 6.4 establishes the Paris Agreement’s global carbon crediting mechanism and provides for a Supervisory Body to govern the mechanism. Among other things,⁶³ the Supervisory Body will develop rules, modalities, and procedures for development and approval of methodologies and standardized baselines for Article 6.4 projects, establish a registry for the mechanism and register projects, accredit designated operational entities (**DOEs**), and issue “Article 6.4 emission reductions (**A6.4 ERs**).”

In several ways, the Article 6.4 mechanism operates similarly to independent crediting standards. A climate change mitigation project needs to be registered to be eligible to issue ERs. A key distinction in this case is that the host Party must provide a letter of approval for the activity at the time of registration. Before that, the host Party must also provide some key up-front information about the mechanism’s relationship and expected contributions to its own NDC objectives, as well as any country-specific priorities or constraints in terms of, e.g., activity types or crediting periods. Projects must meet certain requirements with respect to baseline-setting procedures, measures to avoid or address any reversals of removals, additionality, measurability, co-benefits⁶⁴ and absence of negative environmental and social impacts, and avoidance of carbon leakage. Procedures pertaining to MRV are largely comparable to other standards.

⁶⁰ Id.

⁶¹ Id.

⁶² Id.

⁶³ For further detail, please refer to section B, “governance and functions”, of the Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement https://unfccc.int/sites/default/files/resource/cma3_auv_12b_PA_6.4.pdf.

⁶⁴ According to McKinsey’s, such projects can have additional benefits (co-benefits) such as biodiversity protection, pollution prevention, public-health improvements, and job creation. <https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge>.

A host country can decide whether these ERs can be authorized under Article 6.2 for use towards another country's NDC and/or other international mitigation purposes.

Commenters on the Discussion Paper raised many questions about Article 6 and its relationship to VCMs, notably with regards to Article 6.4. While Article 6 is clearly relevant to VCMs, there remain open questions about implementation and potential impacts.

The feedback received to IOSCO's Discussion Paper on VCMs highlights the interplay between Article 6 and VCMs and the role of the private sector in Article 6. One key ongoing debate, for example, relates to non-authorized A6.4 ERs (otherwise known as "mitigation contribution Article 6.4 ERs").⁶⁵ These are defined under Article 6 as "*A6.4 ERs not specified as authorized for use towards achievement of NDC and/or for other international mitigation purposes, which may be used inter alia for results-based climate finance, domestic mitigation pricing schemes, or domestic price-based measures, for the purpose of contributing to the reduction of emission levels in the host Party (Country).*"

Discussions on Article 6.4 are nevertheless ongoing and multiple issues related to the functioning of the Article 6.4 mechanism remain subject to negotiations by the Parties to the Paris Agreement and the Article 6.4 Supervisory Body and may take several years to conclude.

Consultation Questions:

Question 6: Is the description of Article 6 mechanisms and its potential relationship to VCMs accurate? If not, please provide additional information.

⁶⁵ <https://www.theglobalcity.uk/PositiveWebsite/media/Research-reports/Enabling-the-voluntary-carbon-market-2022.pdf>.

Chapter 3 – Potential Vulnerabilities

Chapter 3 of the VCMs Discussion Paper considered potential vulnerabilities in the VCMs, including those relevant to integrity, through three lenses:

- (i) concerns at the project level, regarding the environmental integrity of the carbon credits and the manner in which carbon credits are issued and added to a registry (primary market issuance);
- (ii) issues relating to the characteristics of the trading environment in which these credits are transferred from one party to another, and the behavior of market participants in doing so (secondary market trading); and
- (iii) issues regarding the overall communication around the use of carbon credits by buyers, or the use and disclosure of use of carbon credits.

Commenters on the Discussion Paper generally agreed with the description of potential vulnerabilities. Several commenters noted lack of standardization as a significant vulnerability. There were suggestions to expand the discussion of some of the potential vulnerabilities included in the Discussion Paper, including carbon credits quality, double counting, MRV and oversight, conflicts of interest, legal risk, lack of standardization, data availability, and issues regarding communication around the use of carbon credits.

The following subsections build on the Discussion Paper chapter on potential vulnerabilities in VCMs, responding to the feedback received by expanding on the discussion of potential vulnerabilities, including discussion of additional potential vulnerabilities, and organizing the content by primary market issuance, secondary market trading, and use and disclosure of use of carbon credits.

3.1. Primary Market Issuance

3.1.1. Carbon Credit Quality

At present, there is no uniform definition of a “high quality carbon credit” which contributes to the perception of lack of integrity in VCMs. Some factors that are generally used to determine carbon credit quality are: additionality, avoidance of double counting, avoidance of carbon leakage, permanence, MRV, co-benefits and transparency.⁶⁶

Some of the concerns linked to carbon credit quality are discussed in greater detail below, noting that these aspects are currently being considered by private initiatives on the supply side, as noted in Chapter 5.

One respondent to the Discussion Paper noted with respect to a uniform definition of high quality that although the ICVCM Core Carbon Principle (CCP) designation has a useful role to play in the market, there is a concern that in creating any binary designation of quality, there would be a tension between liquidity and quality (*i.e.*, if the standard is too lenient, this could dilute carbon credit quality but if the standard is too stringent there may be insufficient supply leading to reduced liquidity). This respondent therefore proposed that quality must be thought

⁶⁶ Leonard, K. *Quality Enhancement in Voluntary Carbon Markets: Opening Up for Mainstream*; Diplomica Verlag: Hamburg Germany, 2009.

of as a spectrum, with the ICVCM CCP designation as a useful minimum threshold, or quality floor, until carbon credits can truly be standardized.

In this same line, another respondent noted that while there should be a common and transparent understanding of carbon credit quality, this does not mean that there should be a singular approach to achieving that quality. This respondent also highlighted that definitions of quality are complex and dynamic and are not subject to simple regulatory definitions. The respondent expressed that any attempts to regulate quality in carbon markets should build on an independent assessment of crediting programs that is carried out in close proximity to carbon markets and is able to evolve with them.

Transparency and Accuracy of Emission Reduction Calculation (carbon emissions accounting). A critical consideration in strengthening the integrity of VCMs is promoting robust quantification of benefits related to the avoidance, or reduction of carbon emissions, referred to in this report as validation and verification, including MRV by a third-party entity. In all cases, measurement of carbon emissions relating to reductions or removals, compared to a baseline, is a fundamental aspect of integrity in VCMs. Currently, the projects underlying carbon credits appear to exhibit a wide variance in quality related to whether the project has actually avoided or removed the GHG emissions as claimed. Low-quality credits based on projects that do not achieve their claimed carbon emissions reductions or removals could prove misleading to investors. This could hinder the ability of entities to manage and achieve their GHG-related objectives and increase the risk of greenwashing.

There are different methodologies available to quantify the amount of carbon emissions avoided or reduced, with little agreement on which methodology is most appropriate even within specific project types. This may amplify greenwashing risks or confuse for potential buyers

Some respondents highlighted that the presence of multiple methodologies reflects the diversity of project types, circumstances, and non-carbon impacts, as well as the richness and competition among crediting programs to find effective and credible, yet viable methodological approaches.

The Discussion Paper called for greater transparency on methodologies to assist potential buyers, as it would give them the tools necessary to make their own decisions about the validity of the carbon credit. In this respect, most respondents highlighted that methodologies are available publicly, but that they are overly complex, such that non-experts struggle to understand them. One respondent suggested that the key is not transparency but accessibility, meaning that the solution may not be in more information but in less, allowing buyers to easily sift through a well-communicated summary rather than hundreds of pages of documents.

Additionality. Additionality means that the GHG emission reductions or removals from the mitigation activity would not have occurred in the absence of the incentive created by carbon credit revenues. In other words, “additionality is the risk that a credit purchased and retired does not lead to a tonne of CO₂e being avoided or sequestered that would not have otherwise happened.”⁶⁷

⁶⁷ <https://bezerocarbon.com/insights/bezero-carbon-risk-factor-series-additionality/>.

As noted by one of the respondents to the Discussion Paper, the majority of carbon credits are used to make claims as to carbon neutrality or net zero targets. As a result, these credits are being used as carbon offsets. If credits are offsetting emissions, it is critical that they represent real climate benefits that would not have occurred otherwise, *i.e.*, that they are additional, or else the resultant claims risk being misleading or fraudulent.

To assess the additionality of a project, it is necessary to determine the level of emissions that would have occurred absent the reduction programs, the so-called “baseline scenario.” The Discussion Paper noted that, without a standardized methodology to calculate these baseline scenarios, assessing the additionality of an offset project is complicated and arbitrary, which consequently can challenge its precision and validity.

In this respect, one respondent suggested that addressing additionality concerns is not simply a matter of developing standardized methodologies to calculate baseline scenarios, but also of ensuring a consistent stringency of the methodology and practice for calculations of additionality across a variety of carbon credit types.

As pointed out by another respondent, to fully assess additionality, one must interrogate the appropriateness and limitations of the test(s) used and corroborate any data underlying them. Unfortunately, this vital information is not universally provided in the VCMs. According to a study, a quarter of projects have not published clear information on the additionality test used or the underlying details.⁶⁸

Permanency and Risk of Reversal. Permanence of GHG reductions or removals is a necessary requirement for offset projects to serve their ultimate goals. Carbon offsets must represent the sequestration of carbon kept out of the atmosphere essentially on a permanent basis.

The Discussion Paper noted the concerns around the risk of reversal specifically on nature-based carbon credits. As a significant amount of carbon offsets are sourced from agriculture, forestry, and other land use projects, there are concerns that these offsets may only last for a certain period of time, instead of indefinitely. For example, with the increased frequency of wildfires, there is a concern that forestry-based offsets may not be permanent.

VCMs participants recognize that there are no nature-based biogenic offsets that reduce emissions indefinitely. For this reason, one respondent noted that there is a need to recognize that the application of permanence, and the corresponding implications for quality and price of a carbon credit, varies according to the type of carbon credit and should be considered thoughtfully. While permanence is an important criterion, a practical, fully transparent and clearly defined approach should be adopted to accommodate different types of carbon credits. This commenter suggested that this necessarily means re-thinking how carbon credits are created and priced.

While recognizing the difficulties of implementing permanence, there is general agreement that higher levels of permanence or long-term efficacy contribute to enhancing the integrity of VCMs. However, a few respondents suggested that it is not realistic to ensure indefinite permanence, as contracts, insurance, and institutions cannot be guaranteed to last that long.

⁶⁸ <https://bezerocarbon.com/insights/bezero-carbon-risk-factor-series-additionality/>.

There is currently an open debate as to what amount of time is considered to be permanent and how this permanence should be assured.

Carbon-crediting programs have been taking steps to manage permanence risks with climate change mitigation projects by establishing mechanisms to compensate reversals and putting in place requirements to lengthen the current assurance of permanence. One carbon crediting program is, for example, aiming for 100 years through a mixture of contractual obligations, long-term monitoring, compensation for any reversals through a buffer mechanism, and potentially insurance.

3.1.2. Effectiveness of Emission Reduction or Removal and Collateral Effects

Differing Means of Storing CO₂. Carbon capture and storage (CCS) involves capturing carbon dioxide released by power stations and other industrial sources and burying it deep underground. CCS does not remove carbon from the atmosphere directly, it captures the CO₂ before it enters the atmosphere.

One respondent to the Discussion Paper noted that certain methods of CO₂ storage result in continued exposure to the environment which may lead to CO₂ leaking back into the atmosphere, while others allow for storage of CO₂ for centuries, if not millennia. This respondent highlighted the need to improve disclosures about the differing methods of storing CO₂ once removed from the atmosphere in order to help market participants identify the most efficient processes for sequestering CO₂. Clear disclosure on the type of storage associated with a particular carbon credit will allow market participants to favor those methods of CO₂ removal that provide the greatest environmental benefit.

Difference between CO₂ Avoidance and CO₂ Removal. One respondent stated that there should be a clear distinction between CO₂ emission avoidance or reduction credits, on the one hand, and CO₂ removal credits on the other. This commenter noted that carbon avoidance credits are not an accurate means of assessing environmental progress as there is no way to know if the emissions were avoided due only to the carbon credit (for example, leaving trees to grow that would not have been felled in any event). Carbon removals on the other hand, are based on the documented removal of CO₂ from the atmosphere. The former is often a “best estimate,” while the latter is an accurate, verifiable means of tracking environmental progress.

Effectiveness of Carbon Emission Reductions. One respondent to the Discussion Paper noted that as a matter of climate science, short cycle biogenic carbon sinks cannot compensate physically for long cycle geological emissions from fossil fuel production and combustion. The respondent stated that this is a vulnerability not sufficiently discussed in the Discussion Paper.

According to the International Panel on Climate Change’s (IPCC) Sixth Assessment Report⁶⁹ on the Physical Science of Climate Change, the physics of positive emissions are not offset by negative emissions on a one-to-one ratio. Instead, climate scientists describe an asymmetry between the positive emissions of greenhouse gases and the negative emissions of carbon sinks and offsets.

This respondent also referred to a Nature Climate Change article⁷⁰ on climate modeling findings that noted that “results indicate that a CO₂ emission into the atmosphere is more

⁶⁹ https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf.

⁷⁰ <https://www.nature.com/articles/s41558-021-01061-2>.

effective at raising atmospheric CO₂ than an equivalent CO₂ removal is at lowering it, with the asymmetry increasing with the magnitude of the emission/removal. The findings of this study imply that offsetting positive CO₂ emissions with negative emissions of the same magnitude could result in a different climate outcome than avoiding the CO₂ emissions.”

This respondent suggested that carbon credit standards that claim to be science based should incorporate these findings of climate science. In addition, the commenter suggested that IOSCO should advise its member regulators who oversee VCMs to retain consultants with climate science and climate modeling expertise to help regulators evaluate the emission reduction claims of existing and new carbon credit products in the primary and secondary markets.

Risk of Leakage of GHG Emissions. Carbon offset projects may entail collateral effects such as a shift in pollution. For example, forest conservation projects can incentivize agriculture displacement into other regions which can neutralize the effects of the offset project.

Impact of Offset Projects for Indigenous and Local Communities. Various respondents noted that offset projects frequently violate the rights of indigenous and local communities and that the widely adopted international standards and safeguards have not eliminated these issues, as claims of exploitation and rights violation persist within programs registered to these standards.

3.1.3. Data Availability and Methodologies to Assess Carbon Quality

Data Availability. Data remains a challenge. Given that credit issuance is project-based, there currently exists little high-quality granular data to support pricing and risk assessment for particular carbon credits. One respondent noted the inconsistency in the data provided by projects and registries.

One example highlighted by one respondent to the Discussion Paper refers to the imprecise availability of project location details. A simple (yet essential) disclosure to substantiate information related to a carbon offset project is its location. For example, for nature-based solutions such as forestry projects, detailed project boundary maps are essential for independent assessment or monitoring of project fundamentals. Although the majority of projects do provide project location details, a BeZero’s study found that 23 projects or 18% of the sample did not – leaving no way to physically verify the project’s details.

MRV and Oversight. Issuance and monitoring of voluntary carbon credits is generally unregulated, as is the case for most cash commodity markets. At this time, there is no specific regulatory framework nor guidance on the issuance of credits as there may be, for example, for the issuance of bonds or for initial public offerings of equity.⁷¹ This heightens the importance of establishing robust third-party standards.

VCMs credits are generally issued by non-governmental carbon crediting programs. Each carbon crediting program sets forth integrity standards and has a unique methodology that projects must follow before emission reduction/removal projects are verified and corresponding carbon credits are issued. Standardized MRV methodologies in VCMs and/or

⁷¹ Id.

the development of labels⁷² could therefore increase credibility and transparency. To maximize the benefits of MRV, it should ideally take place *ex ante* as well as *ex post*.

One respondent suggested that it is necessary to set out requirements for third party MRV and certification of carbon removals, in order to harmonize the certification process, ensure environmental integrity and build public trust. Current efforts such as the ICVCM's CCPs and ISDA Verified Carbon Credit Transactions Definitions (discussed further in Chapter 5) may help bolster the standardization of carbon credits and facilitate transactions in them. Carbon credit rating agencies also examine new projects and utilize modeling and formulas to assign ratings to carbon credits. However, best practices for validation and verification of carbon emissions reductions for underlying projects are still emerging related to identification, quantification, and verification of a particular project's emission reductions or removals.

3.1.4 Conflicts of Interest at the Issuance Level

The Discussion Paper noted that there may be a lack of transparency in the remuneration of project developers; with respect to how much money ends up financing the reduction project; and regarding the remuneration mechanisms of the carbon crediting program.⁷³

Respondents generally agreed that conflicts of interest in the carbon credit ecosystem are a potential vulnerability in VCMs. For example, one respondent stated that some market observers consider carbon crediting programs to face conflicts of interest, as there is an incentive for them to certify the credits from which they will receive payment. Another respondent highlighted situations where the climate change mitigation project seeks confirmation from, and also pays a fee to a third-party entity, that a project has in fact removed the amount of CO₂ claimed. Another commenter observed that there are serious conflicts of interest where the third-party entity is also a seller of carbon credits. Other examples of conflicts that respondents identified include: where the purchaser of carbon credits deriving from a particular industry is also the regulator of that industry; where the purchaser of carbon credits deriving from a particular project is also the project developer; where the purchaser of carbon credits is a connected party to the project developer; and where the project developer or a purchaser of carbon credits deriving from a particular project has connections with the carbon crediting program or third-party entity. One commenter noted that rating providers will play a key role in delivering a high integrity, functioning carbon market, particularly as they do not necessarily receive payment from credit issuance (unlike carbon crediting programs).

3.2. Secondary Market Trading

3.2.1. Double Counting and Fraudulent Transactions

Double Counting. As discussed above in Chapter 2, the carbon crediting program issues carbon credits and adds them to a registry. Once carbon credits have been added to a registry, the issued credits may be purchased, traded, and sold. Thus, voluntary carbon credits are recorded on different registries depending on the carbon crediting program that issued the credit, as well as any subsequent secondary market trading. In addition, buyers may retire the carbon credits, which must also be recorded on the same registry as the issuance or last transfer.

⁷² See for example the French low carbon label that defines rules and conditions for a project to be environmentally robust.

⁷³ Leonard, K. *Quality Enhancement in Voluntary Carbon Markets: Opening Up for Mainstream*; Diplomica Verlag: Hamburg Germany, 2009.

The existence of multiple registries can lead to issues with double counting. Double counting occurs when two parties attempt to claim the same emission offset or contribution to climate change mitigation. For example, if a carbon credit is not recorded as having been transferred to another registry, or as retired when the final buyer claims the emission offset or contribution to climate change mitigation, the carbon credit could remain available on multiple registries as a result of trading or remain in the market despite having been retired.

Double counting is a serious concern, as a carbon credit is only meaningful if counted once. As noted above, the majority of carbon credits are used to make claims as to carbon neutrality or net zero targets. It is critical that carbon credits represent real climate benefits that would not have occurred otherwise, and which have not already been claimed by another buyer, or else the resultant claims of GHG emission offset or climate change mitigation risk being misleading or fraudulent. In addition, there are still questions about how and whether a credit can be used as a carbon emission offset by an entity or individual and simultaneously claimed against a country's NDC.

Commenters on the Discussion Paper raised the concept of a **meta-registry**. Meta-registries could be regional or global and allow for comparison of data and content between registries. Commenters noted that these should have a regular, consistent interface with carbon crediting programs, registries, and exchanges. Commenters also referenced the Climate Action Data Trust (CAD Trust) for a global meta-registry, which will enhance crosschecks between registries. This initiative is discussed in further detail in Chapter 5.

The development of meta-registries could mitigate concerns regarding double counting in the medium term, as will clarification about the operationalization and application scope of corresponding adjustments under Article 6 of the Paris Agreement.

Fraudulent Transactions. While centralized carbon registries can help prevent double counting, the intangible nature of carbon credits carries an additional risk of fraudulent transactions, *e.g.*, the selling of carbon credits that do not exist or do not belong to the seller. This type of fraudulent activity may occur where there is no physical indication of the holder of the carbon rights other than a record maintained in a registry. In the secondary market, the concern would focus on potential trading of credits that belong to someone else.

There may also be scenarios where credits are issued and then sold to multiple buyers with fraudulent "certificates of retirement" for the same credits. If the buyers are unsophisticated, they may not be aware of the registry function and the possibility to retire credits.

Potential means to address fraudulent transactions include oversight and regulation; the use of credible registries; and a global centralized registry such as the CAD Trust, discussed in further detail in Chapter 5.

3.2.2. Conflicts of Interest in Secondary Markets

There may be conflicts of interest between traders and investors, where traders also have a proprietary interest in carbon credits, or where they are also responsible for generating carbon credits through offset projects. This could incentivize traders to manipulate carbon credits prices by, for example, issuing buy/sell recommendations to their customers, while doing the opposite with their own carbon credits. Traders might try to increase carbon credit demand by issuing buy recommendations.

These practices may, depending on the facts and circumstances, constitute securities fraud or manipulation or other illegal conduct under a jurisdiction’s legal and regulatory framework. According to the Interpol Guide to Carbon Trading Crime, “securities fraud involves deceptive practices in the carbon market in violation of securities laws that induce investors to make decisions to purchase or sell credits on the basis of false information, frequently resulting in losses.”⁷⁴

There may also be conflicts of interest in the secondary carbon credit markets with respect to carbon credits ratings and data products providers. A provider or an entity closely associated with a provider might perform other functions or services in the carbon credit ecosystem. These functions and services might, for example, include consulting services related to the climate change mitigation project, as well as advisory services on carbon credit strategy. For example, the provider might give the climate change mitigation project insight into how ratings and data products are developed; support with reporting that influences ratings and data products; and might advise climate change mitigation projects on how to improve their carbon credit ratings or data products. This could result in conflicts of interest where the consulting side of business may provide information to the climate change mitigation projects to allow said project to gain an advantage in terms of receiving a good rating or data product outcome from the ratings or data product side of the business.

The fee model for carbon credit ratings and data products may also impact potential conflicts of interest. Ratings and data products may be provided on a “subscriber pays” basis, where the subscribers or investors pay, or an “issuer pays” basis, where the climate mitigation project pays. The “issuer pays” model may create conflicts of interest due to the financial incentive that the rating or data product provider may have to provide favorable ratings and data products to its client.

As noted above, respondents generally agreed that conflicts of interest in the carbon credit ecosystem are a potential vulnerability in VCMs, citing potential conflicts throughout the carbon credit ecosystem, involving climate change mitigation projects; carbon crediting programs; third-party entities; and buyers and sellers of carbon credits.

3.2.3. The Trading Environment

Lack of Standardization of Carbon Credit Trading. A familiar concept in financial markets is that standardization helps create liquidity and depth, thereby allowing for scale and accelerating growth of VCMs. This feature is currently lacking in carbon credit markets.

Climate change mitigation projects vary based on their environmental impact as well as on the methodology used to certify them. Carbon credit buyers also may have bespoke requirements. This adds complexity to the process and makes standardization particularly challenging. In that same context, the pricing of carbon credits varies widely according to the type of project (*e.g.*, renewable energy vs. forestry). Several other variables also contribute to how a carbon credit is priced for primary market issuance, including: (i) size of the project; (ii) location of the project; (iii) vintage year; and (iv) which carbon crediting program has certified the project.

⁷⁴ Guide to Carbon Trading Crime, Interpol, available at <https://www.interpol.int/en/Search-Page?search=carbon+>, June 2013.

Standardizing at least some of the attributes sought by carbon credit purchasers in a common taxonomy could help price these attributes and facilitate transactions between buyers and sellers. Some exchanges have been developing more standardized products, notably in the derivatives market. The main derivative product that is currently being used are carbon credit futures. Carbon credit futures contracts equal 1,000 carbon credits generated from underpinning projects.⁷⁵ Xpansiv has, for example, developed the Global Emission Offset (GEO) contract, which is a product whereby a seller must physically deliver a credit underpinned by specific project characteristics, while CME Group developed a futures contract based on that GEO product. As they have done in other markets, the International Swaps and Derivatives Association (ISDA) has published industry documentation for the trading of verified carbon credits, setting out transactions definitions and related template confirmations for spot, forward and option contracts.⁷⁶ This could further support standardization.

Commenters generally agreed that lack of standardization in VCMs is a potential vulnerability. One commenter stated that standardization in key areas is essential to ensure VCMs provide durable and transparent environmental and social benefits, while another stated that the lack of standardization and fungibility is one of the key issues with scaling VCMs. Other commenters referenced specific aspects of standardization that would be helpful in secondary markets, including carbon credit contracts, documents and procedures for trading and settlement, standardized reporting and market data, and the involvement of regulated exchanges as well as centralized clearing counterparties.

However, there were a few commenters who expressed reservations, including one who stated that the implied need for standardization comparable to bond and equity markets is false. This commenter positively referenced the diversity of project types, circumstances and non-carbon impacts, as well as the richness and competition among carbon crediting programs. Another commenter reflected that greater standardization in the derivative markets is useful for scaling and is already emerging, but that equivalent standardization in the underlying carbon credit generation fails to understand the nature of carbon credits and their projects.

Data Availability and accessibility. As is the case in primary markets, data availability in secondary VCMs is limited. As noted above, most trading of carbon credits is currently executed via OTC markets with little public pricing information available. Some price reporting agencies have begun providing services in offset markets.

Commenters generally agreed that data availability is a potential vulnerability in VCMs. One commenter emphasized that the lack of public pricing information is a vulnerability in the VCMs and noted that OTC markets (not just VCMs) typically have less publicly available pricing information than exchange-traded markets. This is generally considered to be appropriate given the bilateral and negotiated nature of transactions in OTC markets. The commenter further reflected that, if regulators concluded that pricing information should be publicly available, it would be necessary to consider carefully what the impact of this might be on the nascent VCM. Another commenter stated that regulatory requirements to disclose pricing data could be one of the single most impactful changes to ensure future high-quality carbon credit supply.

⁷⁵ <https://www.green.earth/blog/understanding-carbon-credit-futures-an-overview-of-the-carbon-market>.

⁷⁶ [2022 ISDA Verified Carbon Credit Transactions Definitions – International Swaps and Derivatives Association.](#)

Another area where the lack of data availability and transparency in secondary VCMs may pose a vulnerability relates to carbon credit ratings and data providers. There may be insufficient information available to enable investors to understand, evaluate and compare ratings and data products for different carbon credits. For example, investors would need to understand what the carbon credits ratings or data products intend to measure, as well as the methodologies underpinning the ratings or data products. In addition, raw data is a key factor to determine the quality of ratings and data products. Lack of transparency on the underlying raw data as well as the process of developing ratings and data products could make it difficult for users to understand and interpret providers' outputs.

One commenter noted that there should be open access to the use of ratings, involving transparent fees, and a minimum degree of transparency around the methodologies employed by ratings providers, among other things.

The operational resilience of registries. As in any financial market, registries play an important role as a central depository of information, given they are in many ways the custodians of carbon credits. This role is important, notably in the context of settlement. With this in mind, many respondents suggested registries should be subject to standard operating principles including operational, privacy and cyber-security protection and that there should be transparency from these registries as they are well positioned to collect and report on prices, particularly given the OTC nature of the market.

Supply and Demand Imbalances. As noted above, the absence of retirement of carbon credits by corporates could create issues over time with regards to the pricing of carbon credits as it could lead to oversupply if credits are not retired. Should the supply side be greater than the demand side, the price of the carbon credits could drop. Artificially low carbon credit prices are a concern because this would undermine climate change mitigation. Low-cost carbon credits may fail to motivate further carbon emission reductions and would not sufficiently compensate high-cost climate change mitigation projects, such as technology-based removal projects.

Several commenters noted that the expected mismatch of supply and demand in the VCMs is a potential vulnerability. One commenter noted that pricing volatility is also a concern, suggesting that a market stabilisation mechanism might be needed.

Lack of Market Participant Expertise. Several respondents expressed that climate change mitigation projects require knowledge, skills, and a baseline of data and scientific understanding. Acquiring and maintaining the necessary skills and knowledge requires training, support, outreach, and funding. For example, as one commenter noted, experts and scientists may play a critical role in carbon credit quality and the development of high-quality projects that are backed with scientific integrity. Such skills would be needed throughout the carbon credit ecosystem, particularly with respect to climate change mitigation projects, third-party entities, carbon crediting programs, and carbon credit rating and data products providers. Lack of skills and knowledge at any point in the ecosystem may contribute to low quality carbon credits, which undermine the purpose of VCMs.

3.3. Use and Disclosure of Use of Carbon Credits

3.3.1. Legal Requirements and Uncertainties

The Discussion Paper noted a lack of a common understanding of the nature of carbon credits as traded instruments. It flagged that the general tendency is to characterize carbon credits as commodities, but there may be uncertainty about the applicable regulatory framework and the competent authorities in particular jurisdictions. For example, carbon credits would not be qualified as financial instruments under EU legislation while emission allowances are. How carbon credits are treated in any particular jurisdiction will generally determine whether the financial market regulators will have authority over supervision of the spot market of such credits. Derivatives would however typically fall within the remit of financial regulators.

Respondents highlighted that it is critical to understand the legal treatment for various purposes of an offset credit (*i.e.*, what it is as a matter of law in the relevant jurisdiction – is it property or some other kind of right), including how it is treated for market regulatory purposes (*i.e.*, regulated as a security, a commodity or some other kind of instrument).

Similar to carbon allowances, and as noted in IOSCO’s Final Report on CCMs,⁷⁷ the legal treatment for various purposes of carbon credits within each jurisdiction is important as it has consequences for the rights that a holder may assert over the allowances in terms of the security interests they hold, their treatment for tax or accounting purposes, upon insolvency and installation closure, or their coverage as financial instruments. How they are treated for regulatory purposes will indicate which type of regulatory framework may be applicable for their oversight.

Some respondents noted that carbon credits can be regarded as an intangible asset on the basis that they are definable, identifiable by third parties and have some degree of permanence. This is the case for example in the UK.⁷⁸ They can also be considered a financial instrument or service as is the case in Abu Dhabi where they fall under the category of “environmental instrument under financial instrument,”⁷⁹ or even a mineral right, depending on what the definer wants to achieve.

For some, the preferred approach is to define carbon credits as intangible assets. Others propose that carbon credits be considered as a bundle of contractual rights or fungible property upon meeting certain certification requirements or standardization on quality of carbon credits. Finally, some others are of the view that it is possible for more than one characterization to apply to a carbon credit, taking into account: (i) its particular attributes: each carbon credit carries the attributes associated with the particular project that it relates to (*e.g.*, the nature or location of the project); and (ii) how an interest in it is evidenced: for example, a bundle of contractual rights or title by registration.

With respect to the regulatory characterization, most respondents (although not all) compared carbon credits to physical commodities for a number of reasons, including: (i) they can be physically delivered, (ii) they can be conveyed in some manner, (iii) they can be consumed (when they are retired or forced to be retired, in case of expiration), (iv) they are produced and

⁷⁷ <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD740.pdf>.

⁷⁸ [Enabling the voluntary carbon market in the context of the Paris Agreement \(theglobalcity.uk\)](https://www.theglobalcity.uk/enabling-the-voluntary-carbon-market-in-the-context-of-the-paris-agreement).

⁷⁹ <https://acx.ae/regulation/>.

used at different points in time and stored in warehouse (registries) in between production and use, and (v) they require an initial investment and involve a risk of non-production.

One respondent also noted that it is important to distinguish between the legal treatment of VCMs themselves and the nature of transactions in VCMs (*e.g.*, derivatives transactions with a carbon credit underlying, such as listed futures, options on futures, or swaps). Commenters noted that robust regulation of derivatives already exists in all major jurisdictions and any regulation of carbon credits as an asset class should not duplicate or undermine this regulation. Commenters also noted, with respect to futures on voluntary carbon credits, that these are pervasively regulated as derivatives in virtually all major jurisdictions and thus should be regulated like all other futures.

With respect to IOSCO's role, the preference shared by respondents is that, rather than recommend a specific definition or approach applicable to all IOSCO members, IOSCO should strongly encourage its members to clarify the regulatory treatment of an offset credit, as well as standard reporting definitions and methodologies, within members' respective regulatory regimes.

3.3.2. Disclosure of Use of Carbon Credits

Integrity and information disclosure on the use and impact of carbon credits is fundamental to avoid greenwashing and to enhance investors' confidence in companies that use carbon credits to achieve their environmental targets, according to respondents. The lack of reliable and comparable disclosure information can make it easier for market participants to be misled about claims by users of carbon credits. Overall respondents agreed that this concern can be mitigated with clear disclosure requirements, and clarity about the appropriate use of carbon credits in net-zero transitions.

Chapter 4 – VCMs Discussion Paper Key Considerations and Feedback

Following IOSCO’s work to identify potential vulnerabilities in VCMs, it published the Discussion Paper with Key Considerations for regulatory authorities and market participants to foster sound and effective VCMs. The Discussion Paper noted that the Key Considerations could be relevant for regulators contemplating frameworks to promote market integrity in VCMs and could help overcome some of the present limitations of these markets. The Key Considerations were developed from best practices in other regulatory trading venues’ frameworks that may contribute to the development of a fair, efficient, stable, and liquid market for carbon credits, one that accurately reflects supply and demand conditions and provides market participants with sufficient transparency and publicly available data.

Chapter 4 provides a short discussion of the feedback that IOSCO received to each of the Key Considerations in the Discussion Paper. One strong message from the feedback is that IOSCO should clearly define its role with respect to VCMs and should keep any further policy steps limited to that remit, and not address issues of environmental integrity, for example. Subsequent chapters will further discuss how IOSCO is taking forward the Key Considerations directly related to financial market integrity through a proposed set of Good Practices, and how others are being addressed by ongoing public and private sector initiatives whose objective is to raise the environmental integrity in the VCMs by focusing on the climate aspect of carbon credits.

4.1. Open Access

VCMs Discussion Paper Key Consideration 1: A Key Consideration for VCMs is the degree to which, and how, to allow for open, broad market participation.

Key Consideration 1 highlighted the importance of broad access to a trading market in promoting efficient price discovery, fairness, liquidity and transparency. In doing so, it noted that the following precepts may apply:

- a. The criteria to access carbon offset spot trading platforms or exchanges offering offset derivatives should be clearly stated, not unduly burdensome, fair, and fairly applied.
- b. Appropriate participation rules, standards, and practices, including minimum financial resource criteria, should be developed and implemented.
- c. Broader participation (including sellers and buyers, intermediaries, financial market infrastructures project developers, offset issuers, certification firms) promotes the development of liquidity and price discovery.
- d. Fees to access a market should be fair, open, and non-discriminatory.
- e. Procedures as to denying, suspending, or permanently barring a market participant’s access should be fair and transparent.

Respondents were generally supportive of providing for open and broad market participation, with one commenter noting that broad market participation is a critical aspect of the scaling of these markets. This commenter encouraged regulators to ensure any regulatory framework they develop includes cross-border coordination and harmonization and leverages private sector-led efforts that seek to help the transition to a lower carbon economy. Another respondent indicated their support, while also noting with respect to increasing price transparency, that it is important

to ensure that access to diligence materials is not lost when moving from OTC to on-venue trading. And one respondent indicated that VCM regulatory frameworks should aim to create an enabling environment where established exchanges can leverage existing practices to ensure integrity and efficiency can be achieved, and new entrants may not be disincentivized by a perceived regulatory burden.

Good Practices with respect to fostering open, broad market participation are discussed in Chapter 6.

4.2. Market Integrity

VCMs Discussion Paper Key Consideration 2: A Key Consideration for VCMs is how to ensure that the market has sufficient integrity to operate without fraud, manipulation, or disruption.

VCMs Discussion Paper Key Consideration 3: A related Key Consideration for VCMs is how to provide market participants with sufficient liquidity and price discovery to execute trades on a timely basis with minimal price dislocation.

Key Considerations 2 and 3 touched upon how VCMs could benefit from rules and practices that help ensure that legitimate transactions and fundamental supply and demand information were accurately reflected in prices.

It suggested the following measures could be considered as ways to foster fairness and prevent fraud, manipulation, and abusive practices:

- a. Provide market participants with transparent rules, policies, and procedures such as:
 - Fees including any ancillary services, discounts, rebates and third-party service providers.
 - Criteria for issuing offsets.
 - Criteria for market participants seeking to connect to trading platform or other VCM infrastructure entity.
 - Dispute resolution procedures.
- b. Conduct market surveillance and trade monitoring to identify fraud, manipulation, price distortion, and/or other market disruptions.
- c. Implement rule enforcement programs with disciplinary mechanisms to discourage trading practice violations including fines to deter recidivism.
- d. Ensure that such programs have adequate staffing and resources to detect and investigate rule violations including a chief compliance officer or chief regulatory officer.
- e. Implement rules and systems for relevant reporting, recordkeeping, and audit trail.
- f. Support market participants in meeting compliance requirements, e.g., KYC/AML.
- g. Implement risk controls for trading.

Commenters generally agreed with the Key Considerations related to VCMs market integrity and orderly functioning, with respect to preventing fraud, manipulation and disruption, as well as providing sufficient liquidity and price discovery to prevent price dislocation.

One respondent noted that the orderly functioning of VCMs, as with any financial market, relies on robust trading and settlement infrastructure. This respondent noted that exchanges, brokers and other market intermediaries, as well as carbon registries, are all essential to the smooth operation of VCMs, along with transparency throughout the ecosystem, standardization of documents, consistency of definitions and alignment of taxonomies, and clarity as to the legal and accounting treatment of carbon credits. Another commenter supported proposals to reduce the risk of market manipulation and disruption, particularly with respect to financial market intermediaries, cautioning that climate change mitigation project developers are not publicly-listed corporations and should not be expected to comply with equivalent standards as debt/equity issuers in the short-term. This commenter encouraged a phased-in approach to requirements for climate change mitigation project developers, with more rigorous controls applied to financial intermediaries.

While a few commenters noted that liquidity can be improved through carbon-based derivatives, another indicated that liquidity and price discovery is a function of the size of the underlying market, such that demand for carbon credits would need to increase to deepen the market, and the derivatives market will then follow.

One commenter suggested that distinguishing between carbon credits based on avoidance versus carbon credits based on removal could foster transparency, fairness and liquidity, as this would help buyers distinguish between alternatives. This commenter also suggested increased transparency for carbon credit registries, including the identities of beneficiaries of carbon credit retirements, as well as standardized extensive data on the underlying project from which the credit has been produced.

One respondent noted that measures to help ensure that trades are executed in a timely manner with minimal price dislocation include: (i) reserve pricing or pricing adjustments; (ii) volume thresholds for carbon credits; (iii) assessing the integrity of carbon credits by reference to an umbrella standard such as the ICVCM Core Carbon Principles; (iv) greater centralisation of trading activities and data collation; (v) minimum disclosure standards; and (vi) ‘delivery versus payment’ settlement.

One respondent noted that sudden, massive, and opaque price movements in VCMs may be triggered when corporations decide to retire their carbon credits en masse, which is related to the dearth of retirements motivated by corporations waiting for higher prices.

Good Practices with respect to ensuring financial market integrity and orderly market functioning are discussed in Chapter 6.

4.3. Publicly Available Data to Promote Transparency

VCMs Discussion Paper Key Consideration 4: A Key Consideration for VCMs is how to promote transparency by ensuring that market participants have sufficient data publicly available.

Key Consideration 4 set out how appropriate transparency can increase market liquidity by reducing information asymmetry and providing disclosure of trading interest, as well as improve price discovery by promoting competition among market participants. It suggested the

following precepts may apply when considering issues related to ensuring appropriate levels of transparency:

- a. VCMs may provide access to fundamental market data relating to the supply of carbon credits in the market;
- b. The appropriate level of confidentiality of carbon credit trading and position information balanced against the amount of data necessary to enable proper market surveillance and pre-trade price discovery could be considered.

Respondents to the Discussion Paper emphasized the importance of market transparency, including sufficient publicly available data and data to facilitate price discovery for carbon credits, including pricing information. Two commenters suggested that data relating to trading carbon credits should be made publicly available on the websites of carbon exchanges, marketplaces and registries. Another commenter suggested that exchanges should incorporate carbon credit ratings to improve price discovery. And one commenter encouraged IOSCO to consider the opportunities that meta-registries offer, specifically referencing the Climate Action Data Trust (discussed in Chapter 5).

Good Practices for providing sufficient publicly available data are discussed in Chapter 6.

VCMs Discussion Paper Key Consideration 5: Another Key Consideration concerns how relevant VCMs participants may disclose their use of carbon credits in their financial reporting.

Key Consideration 5 set out, as part of its toolkit, information authorities or sustainability reporting standard setters should consider with regards to disclosure. These included the fact that disclosures could address:

- a. Whether and to what extent a participant will rely on credits to achieve climate pledges.
- b. Whether and to what extent a participant will rely on credits that have been issued under the certification of a body authorized to do so under Article 6 of the Paris Agreement.
- c. Whether and to what extent participants will rely on credits that have been issued under certification by an industry body, which body, and whether that body claims to comply with prevailing standard for high-integrity carbon offsets (*e.g.*, the Core Carbon Principles to be issued by the ICVCM for the supply side, any other private sector carbon offset standards body for demand side of the VCM, and/or intergovernmental bodies).
- d. How the market participant assesses the carbon credit(s) to operate having regard to: impact; additionality; permanence; and risk of leakage.
- e. Whether the market participant has used the credit faithfully to offset residual emissions only but not to abuse the use of credits to maintain business as usual.
- f. How participants accounted for existing carbon credits purchased, including standards and assumptions used.

Commenters were generally in agreement with the Key Consideration related to disclosure by end users of a carbon credit. Respondents referenced the ISSB sustainability disclosure

standards and supported IOSCO's endorsement of the ISSB standards. Some also suggested that IOSCO should provide guidance on disclosure by VCMs end users, regarding offsetting or contribution claims, price information, etc.

The ISSB standards and Good Practices for disclosure by end users of carbon credits are discussed further in Chapter 6.

4.4. Price Discovery

VCMs Discussion Paper Key Consideration 6: A Key Consideration for VCMs is how to facilitate price discovery for carbon credits.

Key Consideration 6 indicated that a VCM considering how to facilitate price discovery could include:

- a. Providing pre- and post-trade transparency measures to provide access to timely and accurate information to market participants. Examples include: (i) quotes, transaction records; and (ii) inter-market information (*e.g.*, US National Market System).
- b. Striving to ensure that the market accurately reflects supply and demand conditions.
- c. Aiming to support the availability and accessibility of relevant product data that supports price differentiation: (i) offset status (*e.g.*, active; impaired; cancelled; retired); (ii) offset provenance (*e.g.*, origin, trading history; current ownership); (iii) accreditation; verification; validation (*e.g.*, dates, responsible orgs/entities); and (iv) trade execution facilities that encourage centralized trading such as an order book and limit off- exchange trades to appropriately sized block trades.

As noted above, with respect to Key Consideration 4, respondents to the Discussion Paper emphasized the importance of market transparency, including sufficient publicly available data and data to facilitate price discovery for carbon credits. Some commenters referenced centralized trading platforms, noting that standardized on-exchange trading plays an important role in price formation and liquidity.

Good Practices to facilitate price discovery for carbon credits are discussed further in Chapter 6 below.

4.5. Product Standardization/Environmental Integrity

VCMs Discussion Paper Key Consideration 7: A Key Consideration for VCMs is how to accord with global, high-quality standards against which the environmental integrity of carbon credits and their underlying methodology can be assessed.

Key Consideration 7 noted that to ensure a robust and liquid market for carbon credits, market participants must be confident that each carbon credit purchased in the VCM accurately represents such emissions reduction or avoidance to meaningfully reduce GHGs. High-quality standards can provide project developers with guidelines to develop carbon credits that are reputable and fungible which will lead to market participants' confidence and trust in the VCM.

Respondents to IOSCO’s Discussion Paper suggested several steps that could be taken to align VCMs with Key Consideration 7.

One respondent suggested that IOSCO could publicly support carbon crediting programs that adhere to the most robust, comprehensive and project-focused standards for the certification of carbon credits. This respondent suggested that given the critical role that carbon crediting programs have to play in VCMs, they would ideally want all carbon crediting programs to be independently regulated and audited and would welcome an open dialogue with key market participants as to the perceived costs and benefits of implementing such an approach. In addition, they proposed a discussion as to whether there could be merit in the implementation of a resolution mechanism for cases where the integrity of a carbon credit is questioned. Another respondent suggested carbon credit quality could be improved through the consultation of carbon dioxide removal experts throughout the development of carbon credit projects as well as in the MRV processes of these projects.

Some of the respondents to the Discussion Paper noted that intermediaries, such as carbon exchanges and marketplaces, should play a key role in setting carbon credit quality. In particular, there was a suggestion for IOSCO to advocate for exchanges to encourage corporate best-practice behavior; for industry coalitions to promote carbon footprinting, accounting, disclosure, and financing; and for consumer protection and advertising standards for net-zero or carbon neutrality claims.

Another respondent specifically addressed the additionality aspect of carbon credit quality, stating that the climate change mitigation project should be additional to legal and regulatory requirements of the jurisdiction in which the project is being undertaken. This commenter also advocated for coordination and communication among the various standard setters and stakeholders towards harmonization of additionality assessments.

Other initiatives addressing quality standards for carbon credits are discussed further in Chapter 5.

VCMs Discussion Paper Key Consideration 8: A further Key Consideration for VCMs is how, to the extent possible, to standardize carbon credits in order to promote greater liquidity.

Key Consideration 8 noted that, if issues related to product standardization and integrity are considered, the following steps may apply:

- a. Develop and implement appropriate product listing standards to ensure only carbon credits that represent measurable and verifiable greenhouse gas emissions reductions or carbon removals are listed.
- b. Promote application of high-quality and globally consistent standards for carbon credits.
- c. Implement rules, procedures, and policies designed to ensure contracts are physically or cash-settled per the terms of the carbon spot or derivatives product.
- d. List products that are standardized to the extent possible for market participants’ risk management needs.

In their responses to the Discussion Paper, respondents suggested various ways through which standardization could occur, noting that standardization could happen both at primary market level through the standardization of the processes for issuance of offset credits themselves, at secondary market level, through the standardization of traded contracts, and at the reporting level, through standardization of reporting disclosures.

Feedback to the Discussion Paper included comments that multiple methodologies at the level of the emission reduction project and the quality of the related carbon credits reflect the diversity of project types, and specific circumstances of the projects and associated non-carbon impacts, as well as the richness and competition among crediting programs to find effective and credible, yet viable methodological approaches. One commenter noted that standardization is not a silver bullet that necessarily leads to higher environmental integrity, and that in some cases it could even undermine environmental integrity.

At the same time, various proposals were made on how carbon credits could be made more comparable, without detracting from the individual attributes of specific underlying projects which may not be suitable for complete standardization:

- a. One respondent expressed support for the standardization of carbon credit attribute labelling (e.g., emission reduction vs. removal, host country Article 6 authorisation/adjustment, certified sustainable development impacts) and of carbon credit contracts, wherever standardization is straightforward and practicable.
- b. One respondent suggested ratings could be a useful component of comparability.
- c. Another respondent suggested exchanges could pre-screen credits for quality, only admitting those that achieved certain levels of quality, thereby creating on-exchange standardization.
- d. Another respondent advocated for a standard or criteria for classification of carbon credits as ‘high-integrity,’ noting that integrity benchmarking is a common feature within commodities markets which promotes fungibility and helps to mitigate market fragmentation risk.
- e. One respondent called for the development of standardized on-exchange forwards for unissued project credits.
- f. Finally, some respondents suggested that IOSCO should work to establish standardized classifications (i.e., a ‘taxonomy’ and labelling of carbon credit types and quality levels) across all jurisdictions for the relevant instruments.

Good Practices to facilitate standardization for carbon credits are discussed further in Chapter 6.

4.6. Interoperability

VCMs Discussion Paper Key Consideration 9: A Key Consideration for VCMs is how to take steps to improve the interoperability of offset registries.

Key Consideration 9 noted a VCM should consider how it would implement procedures if a coordinated, cross-market intervention is necessary to maintain fair and orderly trading and to prevent or address manipulation or disruptive trading practices. To the extent that similar, if not identical, contracts are traded on more than one venue, the importance of coordinated

interventions increases. In that regard, Key Consideration 9 also suggested the implementation of a global registry akin to the Climate Warehouse Initiative would help address fragmentation risks stemming from multiple issuers maintaining separate registries.

In connection with Key Consideration 9, one respondent to the Discussion Paper noted that greater interoperability between VCMs with similar decarbonization ambitions would help to scale up trading and market liquidity (provided that increased interoperability does not dilute emission reduction targets within individual VCMs) and help to mitigate the risk of double counting and double claiming. Another commenter noted that benchmarking the integrity of carbon credits against an internationally recognized, umbrella standard such as the ICVCM CCPs, could support interoperability. There were a few notes of caution regarding cross border interoperability of VCMs, with one commenter suggesting that jurisdictions should develop measures to prevent regulatory arbitrage and that such measures should be part of comparability determinations among regulators from different jurisdictions. Another commenter noted that cross border interoperability would need to be considered very carefully and would depend on local regulations.

Other initiatives addressing the interoperability of offset registries are discussed further in Chapter 5.

4.7. Financial Integrity of Transactions including Settlement and Delivery

VCMs Discussion Paper Key Consideration 10: A Key Consideration for VCMs is that market participants engaging in these markets have sufficient financial integrity to ensure the cash settlement or physical delivery of a carbon credit transaction.

Key Consideration 10 noted financial integrity of transactions was the centrepiece of any market because it meant that market participants could be confident that transactions would be completed on the specified terms.

It suggested VCMs could consider the following steps to ensure financial integrity:

- a. Integrate with a well-developed central clearing and settlement mechanism with appropriately tailored risk management processes.
- b. Require any intermediaries on the market to meet certain minimum financial resource criteria.
- c. Consider examinations of intermediaries by a self-regulatory organization or the relevant regulator and other authorities.
- d. Require open interest position and counterparty exposure reporting.
- e. Establish customer protection measures with segregation of customer funds and property, skin-in-the game, and default waterfalls.
- f. Implement trading risk controls and margin requirements.
- g. Appoint a chief risk officer.

Respondents agreed with the importance of settlement certainty. Several commenters expressed support for initiatives to ensure sufficient financial integrity for cash settlement or physical delivery of carbon credit transactions, although one commenter cautioned that profit motives of financial intermediaries should not be permitted to compromise the environmental

integrity of VCMs. One commenter noted that certain principles and objectives applicable to securities or commodities derivatives markets could apply to VCMs, such as fair and equitable rules; pre- and post-trade transactions transparency; detection and deterrence of market manipulation and unfair practices; and policies and procedures for data handling, market disruption, risk management, and internal audit.

Good Practices with respect to settlement and delivery are discussed further in Chapter 6.

4.8. Legal Certainty

VCMs Discussion Paper Key Consideration 11: A Key Consideration is what legal challenges VCMs stakeholders may encounter during the lifecycle of an offset.

Key Consideration 11 noted VCMs could benefit from legal certainty as to the bankruptcy treatment for carbon credits, netting provisions between counterparties, conflicts of laws, and forms of legal documentation, among other aspects of these markets.

As discussed in Chapter 3.3, above, respondents highlighted that it is critical to understand the legal treatment for various purposes of carbon credit (*i.e.*, what it is as a matter of law in the relevant jurisdiction – is it property or some other kind of right) and the regulatory characterization (*i.e.*, whether it is regulated as a security, a commodity or some other kind of instrument). With respect to Key Consideration 11, respondents again emphasized the importance of understanding the legal treatment for various purposes of carbon credits, noting that this would impact the legal relationship and obligations of the parties to VCM transactions, as well as legal recourse and evidentiary rules in cases of grievance regarding fraud, manipulation, misrepresentation, conflicts of interest, or negligence. One commenter noted that establishing legal certainty would be a pre-condition to addressing other Key Considerations, such as standardization, interoperability, and price discovery.

Several commenters suggested that carbon credits should be treated, for regulatory purposes, as commodities, subject to the same regulatory framework as other commodity markets. One commenter noted that subjecting currently non-licensed marketplaces to exchange registration requirements may disincentivize participation or cause them to avoid more sophisticated practices that might subject them to regulation.

Other initiatives addressing the legal treatment of carbon credits are discussed further in Chapter 5, and Good Practices with respect to regulatory treatment are discussed further in Chapter 6.

4.9. Governance

VCMs Discussion Paper Key Consideration 12: A Key Consideration for VCMs is how to ensure that key participants and infrastructures have appropriately robust governance frameworks.

Key Consideration 12 suggested that appropriate governance standards can be an effective means for VCMs to improve efficiency in decision-making, increase fair access to the VCM,

facilitate transparency, and balance opposing views. The related toolkit included the following aspects:

- a. Establishing transparent governance arrangements.
- b. Developing approaches to audit and accreditation.
- c. Developing governance frameworks ensuring independence of key functions and reflective of range of stakeholders on boards and committees.
- d. Establishing fitness standards for directors and officers.

Respondents generally agreed with the approach to governance set out in the Discussion Paper, with one commenter noting that the approach should include how jurisdictions regulate VCMs and what safeguards they can put in place to build the credibility of VCMs and scale the markets.

Good Practices with respect to robust governance frameworks are discussed further in Chapter 6.

4.10. Conflicts of Interest

VCMs Discussion Paper Key Consideration 13: A Key Consideration for VCMs is how to identify, manage, and resolve conflicts of interest.

Key Consideration 13 noted how conflicts of interests could have a detrimental effect on price discovery and encouraged VCMs to develop and implement policies, procedures and rules to identify these conflicts of interest in the decision-making process of VCM stakeholders and to put in place processes to avoid these conflicts where possible and mitigate such conflicts where avoidance is not possible. It also called for the disclosure of such policies to market participants.

Respondents agreed that it would be important to identify, manage, and resolve conflicts of interest in VCMs. As discussed with respect to VCM vulnerabilities in Chapters 3.1 and 3.2, several respondents highlighted that there are many potential conflicts of interest within the VCMs ecosystem. One commenter noted that roles in VCMs overlap, including brokers that act as traders; institutions with both brokering and project development arms; end users that finance their own climate change mitigation projects, keeping some or all of the issued credits for their own offsetting needs; and any party within the ecosystem that may market carbon credits to end buyers. Another commenter noted potential conflicts of interest where the purchaser of carbon credits is the regulator of the industry from which the credits derive.

One commenter suggested ways to effectively manage conflicts of interest, including disclosure and transparency for all parties involved in the climate change mitigation project; tracking details about the holders of carbon credits; and tracing the use of funds deriving from the sale of carbon credits. Another commenter noted that overly prescriptive requirements could impede the development of VCMs, by imposing unnecessary expense. They suggested spot checks and self-audit as possible compromise approaches. Finally, one respondent noted that, due to the numerous stakeholders and competing interests in VCMs, administration of any aspect of the market should be undertaken by a genuinely neutral body.

Good Practices with respect to the identification, management, and mitigation of conflicts of interest are discussed further in Chapter 6.

4.11. Enterprise Risk Management

VCMs Discussion Paper Key Consideration 14: A Key Consideration for VCMs is how to ensure that key participants and infrastructures have effective systems of risk management and internal controls.

Key Consideration 14 set out what a VCM should consider if they seek to implement an effective risk management framework. This included the following measures:

- a. Identify an enterprise risk officer with sufficient staffing and support resources.
- b. Establish an enterprise risk management framework for the entity's operations.
- c. Implement a cybersecurity program including system safeguards that are thoroughly developed and routinely reviewed for consistency with industry best practices.
- d. Implement emergency authority policies and procedures including a business continuity disaster recovery plan.

Respondents generally agreed with the approach to risk management and internal controls set out in the Discussion Paper. One commenter noted that effective systems would be particularly important for order processing, as well as financial, regulatory, and political risk mitigation for the development and deployment of climate change mitigation projects.

Good Practices for risk management and internal controls are discussed further in Chapter 6.

Chapter 5 – Other VCM Initiatives

The Discussion Paper addressed issues directly related to financial market integrity, as well as issues related to environmental integrity and the quality of the climate change mitigation projects that underlie carbon credits. As described above, feedback on the Discussion Paper reflected a strong message that IOSCO should clearly define its role with respect to VCMs and should keep any further policy steps limited to issues directly related to financial markets.

The largely unregulated nature of VCMs has motivated the emergence of different industry-led and public authority-led initiatives intended to address some of the challenges and potential vulnerabilities outlined in Chapter 3 of this report.

Many of these initiatives address the environmental aspects of VCMs that are not directly related to financial market integrity but fall more squarely in the scope of environmental integrity. They are generally focused on seeking to enhance the quality of the supply of carbon credits, intending to set threshold standards for carbon credit quality. In addition, these initiatives seek to enhance standardization of carbon credits and thereby move towards the commoditization or financialization of these assets to build credible financial instruments. Some of these initiatives also seek to influence the demand for carbon credits (*e.g.*, by strengthening transparency and credibility).

IOSCO's primary focus is on financial market integrity, market infrastructure, and the behavior of market participants, in order to promote the integrity of VCMs. At the same time, some of the feedback to the Discussion Paper discussed the need for a coordinated approach between the different initiatives currently underway.

With this in mind, this Chapter is intended to provide an overview of some of the key initiatives regarding VCMs, from both private and international organizations, as well as how they relate to IOSCO's objectives for VCMs. It does so by referencing relevant Key Considerations that were set out in the Discussion Paper, as they remain of utmost importance, and by discussing how some of these existing initiatives aim at meeting the objectives of the Key Considerations. Reference to specific entities is informational only, and IOSCO is neither recommending or endorsing, nor disapproving or opposing, any of the included or excluded initiatives.

5.1. Environmental Integrity

It is critical for environmental integrity that climate-mitigation projects demonstrate clear 'additionality' over and above the baseline scenario; and permanence of emission removal or reduction, in each case firmly based in science.

Environmental integrity aspects are critical for the general functioning and robustness of VCMs and for carbon credit price formation. The lack of environmental integrity creates uncertainties and can undermine market participants' confidence that carbon credits purchased in VCMs accurately represent emission reduction or mitigation. This undermines the credibility and effectiveness of VCMs, reducing the demand for carbon credits, damaging liquidity and, ultimately, leading to lower prices that can have a significant negative impact on the success of VCMs in contributing to achieve climate change mitigation goals.

These important issues of environmental integrity were recognized in the Discussion Paper in Key Consideration 7: “A Key Consideration for VCMs is how to accord with global, high-quality standards against which the environmental integrity of carbon credits and their underlying methodology can be assessed.”

Several initiatives – both public and private – are currently under way to improve said environmental integrity. For example, the ICVCM has released an industry-led framework with the aim of mitigating environmental integrity challenges which currently undermine the evolution of VCMs. Also, the G7-led Carbon Market Platform is currently analyzing to what extent, and through which mechanisms, environmental integrity provisions in voluntary and compliance carbon markets could align to adopt best practices.

In March 2023, the ICVCM launched its CCPs, which aim to serve as a global benchmark for high-integrity carbon credits, and Program-level Assessment Framework.⁸⁰ In July 2023, ICVCM published full criteria for assessing categories of carbon credits and crediting methodologies.⁸¹ Carbon crediting programs in VCMs would need to voluntarily submit to an assessment by ICVCM, and meet the requirements established by the ICVCM in order to be CCP-eligible. The aim of this process would be to help raise the ambition of standardization and improve the integrity of carbon credits and make them comparable.

The ICVCM assessment framework has a dual approach: (i) it establishes requirements to be applied by the carbon-crediting programs, and also, (ii) it establishes requirements, including specific criteria, for categories of carbon credits.⁸²

At the program level, the CCPs identify principles around effective governance, tracking, transparency and robust independent third-party MRV. In addition, they aim to ensure that there is no double counting of carbon credits.

At the level of the carbon credits’ categories, the CCPs require that the GHG emission reductions or removals from the mitigation activity are additional and permanent. Moreover, the mitigation activity should contribute towards net zero emissions by avoiding locking-in levels of emissions, technologies or carbon intensive practices that are incompatible with the objective of achieving net zero GHG emissions by mid-century.⁸³

At both levels, the CCPs aim to ensure a robust quantification of GHG emission reductions or removals and require that mitigation activities adhere to environmental and social safeguards and contribute to the UN Sustainable Development Goals (SDGs).⁸⁴

The ICVCM will also implement a disclosure framework for carbon crediting programs. The Assessment Framework requires public disclosure of all relevant project documentation. As this relates to disclosure and transparency efforts, this initiative is further discussed in Chapter 6.

⁸⁰ <https://icvcm.org/the-core-carbon-principles/>.

⁸¹ Global benchmark for high-integrity carbon credits aims to mobilize climate finance at speed and scale - ICVCM (July 27, 2023), <https://icvcm.org/global-benchmark-for-high-integrity-carbon-credits-aims-to-mobilize-climate-finance-at-speed-and-scale/>.

⁸² [Global benchmark for high-integrity carbon credits aims to mobilize climate finance at speed and scale - ICVCM. https://icvcm.org/wp-content/uploads/2023/03/CCP-Section-3-FINAL-27Mar23.pdf](https://icvcm.org/wp-content/uploads/2023/03/CCP-Section-3-FINAL-27Mar23.pdf).

⁸³ Id.

⁸⁴ <https://sdgs.un.org/goals>.

5.2. Standardization

The Discussion Paper addressed Standardization issues in Key Consideration 8: “A further Key Consideration for VCMs is how to standardize, to the extent possible, carbon credits in order to promote greater liquidity.”

Standardization is important to enhance the credibility, transparency, and comparability of climate change mitigation projects, thereby enhancing the ability of market participants to assess and compare the quality of different projects. This should increase the capital directed to higher quality projects, improving the effectiveness of the carbon market as a whole. Standardization helps provide clarity and confidence to buyers, sellers, and other stakeholders participating in carbon credit transactions.

At primary market level, the ICVCM aims to promote standardization by aligning environmental integrity criteria, promoting comparability on the methodologies for measuring and quantifying emissions reductions or removals; calculation of projects’ baseline emissions; management of permanence risks; and monitoring and reporting actual emissions after implementing the project. Secondary market level standardization is discussed within Chapter 6 on Good Practices.

5.3. Interoperability of VCM Registries

The Discussion Paper addressed interoperability issues in Key Consideration 9: “A Key Consideration for VCMs is how to take steps to improve the interoperability of offset registries.”

Consistent with IOSCO’s Key Consideration 9, the Climate Warehouse Initiative⁸⁵ launched a metadata platform to help address the fragmentation risks stemming from offset issuers maintaining separate registries for their respective programs.

The Climate Warehouse is within the World Bank’s Carbon Markets and Innovation (CMI) unit. The CMI aims to help client countries leverage carbon pricing to increase the resources mobilized towards NDC implementation and enhancement of global climate ambition.⁸⁶

In December 2022, the Climate Warehouse launched a metadata platform to connect and aggregate registry information with the CAD Trust, which aggregates and harmonizes all carbon credit data from project registries, using blockchain technology, to facilitate transparent accounting. The aim of the CAD Trust is to avoid double counting, increase trust in carbon credit data, and build confidence in carbon markets.⁸⁷

5.4. Legal Treatment of Carbon Credits

The lack of clarity on the legal treatment of carbon credits for various purposes can impede purchasers’ decisions to purchase carbon credits considering the uncertainties around tax, accounting, and insolvency treatments, etc. This also impacts the standardization of contracts discussed above.

⁸⁵ <https://www.theclimatewarehouse.org/work/climate-warehouse>.

⁸⁶ <https://www.theclimatewarehouse.org/about>.

⁸⁷ <https://www.theclimatewarehouse.org/tools/simulation-3>.

The legal treatment of carbon credits for various purposes can affect holders in terms of the security interests they hold, their treatment for tax or accounting purposes, and upon insolvency. It may also have implications for whether carbon credits are within the scope of regulation as financial instruments.

IOSCO's Discussion Paper acknowledged that the lack of clarity regarding the legal treatment of carbon credits for various purposes could have consequences for the rights that a holder may assert over the carbon credits. Key Consideration 11 in the Discussion Paper stated: "A Key Consideration is what legal challenges VCMs stakeholders may encounter during the lifecycle of an offset."

As explained earlier in this Consultation Report, it is important to understand how carbon credits are treated for various legal purposes, including market regulatory oversight. Chapter 6 will cover the issue of legal treatment for regulatory purposes. While the legal treatment for other purposes is beyond the remit of IOSCO and financial market regulators, this next section describes initiatives that aim to address such other purposes.

In June 2022, UNIDROIT included in their 2023-2025 Work Programme an analysis of the private law aspects and the legal treatment of carbon credits. Now working with the United Nations International Trade Law Commission (UNCITRAL), they will conduct a mapping exercise concerning existing relevant instruments and voluntary carbon credits and seek to clarify aspects of the legal treatment of carbon credits, including the creation, transfer, and retirement of carbon credits, as well as broader considerations, such as fungibility, collateralization, and problems arising in insolvency. IOSCO is closely following the work of UNIDROIT and UNCITRAL to understand the outcomes of their work.

Chapter 6 – Proposed Set of Good Practices

With VCMs projected to grow, relevant regulators and other authorities, where consistent with their mandates and domestic legal requirements, may be interested in exploring ways to promote the development of these markets and to ensure these markets are both sound and efficient. As with any other traded asset market, VCMs should be fair and orderly, economically sound as to pricing and information flow, and structurally resilient. VCMs should also have appropriate customer protections and sufficient access to market participants.

Existing traded asset markets with deeper histories of operation and activity can offer lessons and insights into features that have proven successful in promoting sound markets. Well-functioning markets typically reflect the following practices and safeguards:

- have clear, transparent, open, and fair access standards;
- have clear rules and/or documentation governing the operation of the market, trading, and the rights and obligations of market participants;
- monitor and mitigate abusive, fraudulent, manipulative, evasive, or disruptive activity;
- promote baselines of quality and integrity of the traded assets which appropriately and efficiently reflect the supply and demand for such assets;
- promote sufficient liquidity and price discovery;
- identify, mitigate, and resolve conflicts of interests of relevant stakeholders;
- promote adequate levels of transparency, with appropriate recordkeeping and reporting; and
- promote customer or investor protection.

This Consultation Report identifies Good Practices that may be helpful to relevant regulators and other authorities, and market participants interested in promoting VCM integrity and helping to overcome some of the present limitations in these markets. IOSCO recognizes that, due to differing legal frameworks, the Good Practices will have varying degrees of relevance and applicability to regulators in each jurisdiction. The Good Practices listed below stem from feedback received to the Key Considerations in the November 2022 Discussion Paper, as well as practices drawn from the principles that guide regulated markets, including IOSCO's Objectives and Principles of Securities Regulation (understood to include reference to the derivatives markets); IOSCO's Principles for the Regulation and Supervision of Commodity Derivatives Markets; and the CPMI-IOSCO Principles for Financial Market Infrastructures (PFMI).

Ultimately, these Good Practices can help promote a fair, efficient, stable, and liquid market for carbon credits, that accurately reflects supply and demand conditions and provides market participants with sufficient transparency and information. To encourage the development of sound and efficient VCMs globally, the Good Practices below are intended to give jurisdictions a starting point and, where relevant, may be considered proportionally given variations in jurisdictions' regulatory regimes and evolving market conditions.

6.1. Regulatory Frameworks

Given the potentially broad future role that carbon credits are expected to play for those who seek to finance climate-action projects and with respect to furthering global efforts to achieve carbon neutrality objectives in line with the Paris Agreement, IOSCO believes that the integrity of the VCM market is critical. Effective VCMs will make it easier for market participants to identify, buy, sell, and/or retire high integrity credits. At present, however, VCMs do not yet function as effectively as they should and remain fragmented.

As noted earlier, market participants continue to raise significant concerns about the environmental integrity of many carbon credits; the emission reduction claims underlying some credits have come under scrutiny. Limited pricing data presents a challenge for carbon credit buyers and sellers, as well as carbon-reduction project developers. Accounting and verification methodologies vary across carbon crediting programs. All too often, VCMs are characterized by low liquidity, insufficient transparency, and limited data availability.

In many jurisdictions, however, financial market regulators may not have direct government or regulatory oversight frameworks for VCMs; in most jurisdictions, only derivative contracts and participants in derivatives markets appear to be subject to regulatory oversight, as derivatives typically fall under the scope of financial market regulators. Jurisdiction over the spot market for carbon credits, where it exists, is generally limited to anti-fraud and anti-manipulation enforcement by an authority, which is informed by tips, complaints, or referrals, but not ongoing regulatory oversight.

Legal and regulatory uncertainty regarding the creation and use of carbon credits is another issue clouding the development of VCMs. As noted in Chapter 3, the legal treatment for various purposes of a carbon credit will shape how it is created, bought, sold, and retired. It will also have implications for their treatment in times of insolvency. Regulatory characterization, on the other hand, determines what kind of regulatory framework may apply to VCMs.

Nonetheless, while financial market regulators may lack authority to regulate *all* facets of VCMs, such as the environmental standards by which carbon credits are certified, there is much that financial regulators in parallel and/or in collaboration with other authorities, regulated entities, private sector initiatives, and other market participants can do to encourage and facilitate improvements that will safeguard VCM integrity, foster greater liquidity and transparency, strengthen these markets, and allow them to scale up as needed in support of GHG emission reductions goals.

With that in mind, this VCMs Consultation Report seeks to advance many of the Key Considerations that were set forth in the November 2022 VCMs Discussion Paper with the following Good Practices that may be of assistance to relevant regulators and other authorities and market participants in addressing the structure, operation, risks, challenges, and opportunities of VCMs. They are meant to foster secure, efficient, accessible, and appropriately transparent VCMs, which in turn may facilitate the achievement of transition and other environmental objectives.

Good Practice 1 – Regulatory approach and scope: Consistent with their respective mandates, relevant regulators and other authorities could consider ways to apply appropriate and effective regulation, supervision, and oversight to VCMs, covering, among other things, the issuance, trading, and retirement of carbon credits.

To the extent consistent with their authority, relevant regulators and other authorities could consider using existing frameworks, or developing new or amended frameworks, to regulate and oversee VCMs. In doing so, they could adopt an approach consistent with IOSCO's Objectives and Principles of Securities Regulation; IOSCO's Principles for the Regulation and Supervision of Commodity Derivatives Markets; and the PFMI.

The regulatory approach should seek to achieve regulatory outcomes for investor protection and market integrity that are the same as, or consistent with, those that are required in traditional financial markets.

Such measures could include:

- developing frameworks to ensure that carbon credits issued, traded, or retired within their jurisdictions represent real, measurable, additional, unique, and independently verified emission reductions or removals.
- encouraging carbon crediting programs to establish, maintain, and appropriately disclose to the public their standards. This would include disclosing their standards for measuring, reporting, and verifying carbon credits and for recording carbon credit issuance, transfer, and retirement on a registry, including information regarding third party verification.

Good Practice 2 – Regulatory treatment: Where possible and consistent with their respective mandates, relevant regulators and other authorities could consider ways to provide clarity regarding the regulatory treatment of carbon credits.

As noted above, the legal treatment for certain purposes unrelated to market regulation does not typically fall within the remit of financial regulators.

Regulatory treatment, on the other hand, refers to how these instruments are characterized and regulated by authorities. While derivatives on carbon credits will typically fall under the regulatory framework applicable to commodity derivatives, there is less certainty about the credits themselves and they can be characterized in different ways, such as financial instruments, commodity instruments, etc.

Providing clarity on the regulatory treatment of carbon credits is an important component to consider for any regulatory authority seeking to create consistency and integrity in carbon markets.

Good Practice 3 – Domestic and international consistency and cooperation: To foster the global development of VCMs, where possible and if consistent with domestic processes and mandates, regulators and other relevant authorities could consider seeking both domestic (between various domestic authorities) and international consistency and alignment when developing their own regulatory approach to carbon credits, including with regards to cross-border cooperation for enforcement.

Global consistency is an important component of scaling carbon markets as fragmentation in the market could create diverse and different liquidity pools, thereby not allowing for growth. Where relevant regulators and other authorities consider oversight of VCMs, they could therefore consider seeking alignment to the extent possible.

With regards to supervision and enforcement, regulators could consider developing and utilizing arrangements for: (i) the exchange of information with domestic and international counterparts with supervisory authority over different aspects of VCMs, including the issuance, marketing, trading, and retirement of carbon credits; and (ii) cooperation regarding the cross-border nature of VCMs. This would also encourage consistent regulatory outcomes.

Good Practice 4 – Participants’ skill and competence: Consistent with their respective mandates, relevant regulators and other authorities could consider promoting the need for firms and senior management to have adequate skills and competence, including an understanding of the benefits and risks of trading in VCMs, and how existing regulatory frameworks may, or may not, apply. In addition, they could consider developing investor education programs to improve the public’s knowledge of carbon credits.

Consultation Questions:

Question 7: Are the Good Practices set out under the section on Regulatory Frameworks appropriate? Is there anything else IOSCO should take into account?

6.2. Primary Market Issuance

While, as noted, many aspects of primary market issuance are being led by private initiatives at the moment; we have set out where relevant regulators and authorities, which may or may not be financial markets regulators, may look to play a role in promoting good practices at the primary market level.

Good Practice 5 – Standardization: Consistent with their respective mandates, relevant regulators and other authorities could consider engaging with carbon crediting programs, spot exchanges, derivatives exchanges, private sector initiatives, and other market participants to standardize a taxonomy of carbon credit attributes, strengthen verification methodologies, and streamline verification processes.

Standardization is important to enhance the credibility, transparency, and comparability of climate change mitigation projects, thereby enhancing the ability of market participants to

assess and compare the quality of different projects. This should improve the effectiveness of the carbon market as a whole. Standardization helps provide clarity and confidence to buyers, sellers, and other stakeholders participating in carbon credit transactions. Several key aspects contribute to the standardization of VCMs.

As noted above, the ICVCM aims to provide standardization by aligning environmental integrity criteria, promoting comparability of the methodologies for measuring and quantifying emission reductions or removals, calculating projects' baseline emissions, managing permanence risks, and monitoring and reporting actual emissions after implementing the project.

Good Practice 6 – Transparency: Consistent with their respective mandates, relevant regulators and other authorities could consider appropriate ways to promote transparency around the creation of a carbon credit. This could include comprehensive disclosures on the project development process, verification and auditing methodologies, and the entities responsible for measurement, reporting, and verification. Transparency of contracts and pricing in the primary market could also be encouraged.

Good Practice 7 – Disclosure: Consistent with their respective mandates, relevant regulators and other authorities could consider appropriate requirements to promote complete, accurate, and understandable disclosure of information related to the primary issuance of carbon credits as well as transparent disclosure of any associated risks.

Good Practice 8 – Soundness and accuracy of registries: Consistent with their respective mandates, relevant regulators and other authorities could consider appropriate requirements, that registries, as custodians of carbon credits, are accurate, complete and current in order to serve as reliable sources of information regarding the price at issuance, tracking and/or retirement of carbon credits.

Good Practice 9 – Due diligence: Consistent with their respective mandates, relevant regulators and other authorities could consider appropriate requirements to ensure that carbon crediting programs perform adequate levels of know-your-customer (KYC) and due diligence procedures to prevent the use of carbon credits for money laundering.

Consultation Questions:

Question 8: Are the Good Practices set out under the section on Primary Markets appropriate? Is there anything else IOSCO should take into account?

Question 9: Are existing disclosures, third-party standards, and/or industry best practices sufficient to ensure that investors are not misled as to the environmental or carbon emissions reductions benefits? Please identify specific regulations, standards, or practices and why they are sufficient.

Question 10: Are existing standards for certifying voluntary carbon credits sufficient to promote robust validation and verification of GHG emissions reductions/removals at the project level?

Question 11: Are there existing accounting-based approaches for establishing baseline scenarios for nature-based projects to help ensure the additionality of projects and avoid double counting?

Question 12: Are there existing best practices for modeling carbon emissions reductions related to nature-based projects that take into account the effects of climate change that could affect project permanence and efficiency in terms of meeting carbon objectives?

Question 13: Where issuance and trading of voluntary carbon credits is not subject to comprehensive regulation, how can the accuracy of disclosures around the carbon emissions reductions benefits of voluntary carbon credits be more transparent to regulators?

Question 14: To address risks that low-quality projects could result in voluntary carbon credits that do not represent their promised carbon emissions reductions benefits, are disclosure-based standards sufficient to mitigate against misleading investors? Are there cases where even robust disclosure as to the underlying project quality, and therefore the quality of the carbon credits based on such project, would be insufficient to protect investors?

6.3. Secondary Market Trading

6.3.1 Market Functioning and Transparency

Many carbon credits are traded OTC and may thus lack pricing transparency. While some level of differentiation across projects may be needed to satisfy the diverse objectives of some carbon credit purchasers, the availability of more uniform carbon credits on centralized trading platforms would make carbon credits more accessible to a broader pool of market participants and deepen liquidity in VCMs.

Besides fostering greater liquidity, broader market access tends to enhance price transparency and market efficiency, because a larger pool of market participants may have more insight into transactions and prices. Appropriate transparency reduces information asymmetry and provides visibility into trading interest. It also improves price discovery by promoting competition among market participants. Moreover, transparency creates more efficient markets, where market participants may consider the prices at which recent transactions have occurred when

determining the price at which to display quotes or orders or whether to accept an offer. In addition, appropriate market transparency can provide incentives for new participants to enter the market, increase competition and reduce concentration. In an ideal framework, VCM trading platforms would maintain market participant criteria and procedures that are fair, reasonable, transparent, and non-discriminatory.

The following practices aim to enhance the functioning and transparency of the VCM secondary market:

Good Practice 10 – Access to VCMs: Consistent with their respective mandates, regulators and other relevant authorities could consider requirements or policies to ensure open and fair access to secondary market trading on VCMs for interested market participants.

Good Practice 11 – Integrity of trading: Consistent with their respective mandates, relevant regulators and other authorities could consider requirements to ensure that VCM participants observe high standards of integrity and fair dealing with respect to business activities relating to carbon credits.

These considerations could include:

- Promoting requirements to ensure that only carbon credits satisfying established and recognized standards for quality and integrity are eligible for trading on regulated trading venues and eligible to be the physically-delivered commodity for futures contracts.
- Requiring or encouraging carbon credit trading venues to establish, maintain, and appropriately disclose to the public their standards—including systems, rules, policies, procedures, and methodologies—for listing and de-listing carbon credits on the spot exchange or carbon credits derivatives on the derivatives exchange. The trading venue could also disclose how a carbon credit is transferred at the registry following a spot transaction or at the point of physical-settlement of the derivative.
- Requiring or encouraging carbon credit trading venues to implement records management policies and procedures to ensure that accurate and timely information, including trade data and audit trail, is available regarding all carbon credit transactions.

In addition, transparency can also be achieved through disclosure of transactions. The following Good Practices are therefore proposed:

Good Practice 12 – Public reports: Consistent with their respective mandates, relevant regulators and other authorities could consider requiring that trading venues and registries, including for OTC trading, make public reports which disclose, on an equal basis to all market participants, relevant data regarding trading, including, but not limited to, pre- and post-trade price transparency, trading volume, bid-ask spreads, and deliveries of carbon credits.

Good Practice 13 – Pre-and post-trade disclosure: Consistent with their respective mandates, relevant regulators and other authorities could consider encouraging an entity operating a VCM, which lists carbon credits that are the underlying for regulated derivatives, derivatives exchanges, or an intermediary to provide pre- and post-trade disclosures in a form and manner that are the same as, or that achieve similar regulatory outcomes consistent with, those that are required in traditional, regulated financial markets.

Good Practice 14 – Derivatives standards: Consistent with their respective mandates, regulators and other relevant authorities could consider ways to ensure that contract specifications for carbon credit derivatives include sufficient details on the standards by which the underlying credits were certified, the applicable delivery requirements, and procedures for market participants.

Enhancing standardization of carbon credits for secondary trading will enhance market participant confidence regarding the execution and settlement of transactions, while promoting greater liquidity and efficiency.

On 13 December 2022, ISDA published the 2022 ISDA Verified Carbon Credit Transactions Definitions (the VCC Definitions)⁸⁸ in respect of physically settled spot, forward and option transactions (VCC Definitions do not contemplate cash settlement).⁸⁹ The VCC Definitions provide a set of standardized terms for the trading and retirement of VCCs in the secondary market. They have been designed to support transactions in VCCs across different carbon standards and registries and operate as a global document, meaning that they are not specific to any particular jurisdiction, region, or carbon standard.⁹⁰ The VCC Definitions and Forms of VCC Confirmations are the first standardized OTC derivatives documentation for secondary market trading in VCMs.⁹¹

Key terms include a settlement mechanism in which payment follows delivery, and by which the parties can elect how they allocate the risk of cancellation of a VCC post-delivery. The VCC Definitions also address transfers and retirements, and the related adjustments to registries and registry accounts that also allow for parties to use carbon credits to offset their emissions where they do not have direct access to the registry (in contrast to parties who will continue trading credits in the secondary market).⁹² The VCC Definitions also contemplate the different approaches to deal with settlement disruption and failure events.

If trading of carbon credits shifts from bilateral trading to more centralized trading and trading venues list more standardized carbon credit derivatives, trading venues can coordinate with

⁸⁸ <https://www.isda.org/2022/12/13/isda-launches-standard-definitions-for-the-voluntary-carbon-market/>.

⁸⁹ <https://www.isda.org/a/jBXgE/2022-ISDA-Verified-Carbon-Credit-Transactions-Definitions-FAQs-061323.pdf>.

⁹⁰ <https://www.isda.org/a/jBXgE/2022-ISDA-Verified-Carbon-Credit-Transactions-Definitions-FAQs-061323.pdf>.

⁹¹ <https://www.nortonrosefulbright.com/en/knowledge/publications/6cf5bc9e/overview-of-the-2022-isda-verified-carbon-credit-transaction-definitions>.

⁹² <https://transactions.freshfields.com/post/102icym/launch-of-the-2022-isda-verified-carbon-credit-transactions-definitions>.

clearinghouses to develop rules and procedures to ensure the financial integrity of exchange executed transactions with prompt and efficient transaction processing rules and procedures. This coordination could establish and maintain appropriate minimum financial standards for market participants that clear carbon credit derivatives in both intermediated and non-intermediated clearing structures. Clearinghouses could also implement rules, policies, and procedures to segregate customer funds and proprietary funds, custody customer funds, set investment standards for customer funds, implement intermediary default procedures, and implement recordkeeping. Consistent with their respective mandates, relevant regulators and other authorities could also consider requiring rules and procedures to facilitate timely and final settlement of carbon credit transactions as well as collecting initial and variation margin.

Consultation Questions:

Question 15: Are the Good Practices set out under the section on Secondary Markets appropriate? Is there anything else IOSCO should take into account?

6.3.2. Governance and Risk Management

Appropriate governance standards can be an effective means for VCMs – both in primary markets and secondary markets – to improve efficiency in decision-making, increase fair access, facilitate transparency, and balance opposing views – all of which decrease risk and increase market integrity.

Good Practice 15 – Governance framework: Consistent with their respective mandates, relevant regulators and other authorities could consider requiring that VCM participants, including carbon credit project developers, registries, validation and verification bodies, brokers, traders, marketplaces and exchanges, rating agencies, third-party entities, and private sector supply and demand side standardization initiatives, have in place a comprehensive governance framework with clear lines of responsibility and accountability for the functions and activities they are conducting.

Likewise, robust risk management practices support market functioning, integrity, and stability by ensuring that market participants are prepared to address and respond to associated risks. Among other things, an effective risk management program identifies and minimizes sources of operational risk through the development of appropriate controls and procedures, as well as systems that are reliable, secure, and have adequate scalability. The risk management program may also include emergency procedures, backup facilities, and a disaster recovery plan that allows for the timely recovery and resumption of operations, as well as periodic tests of backup resources.

Compliance with generally accepted standards and good practices with respect to the development, operation, reliability, security, and capacity of automated systems can reduce the frequency and severity of automated system security breaches or functional failures and minimize market disruptions within VCMs. These standards can mitigate risks and ensure market continuity, by promoting the resilience of the VCM's automated systems and its ability to recover and resume trading promptly in the event of an operational disruption.

Good Practice 16 – Risk management: Consistent with their respective mandates, relevant regulators and other authorities could consider requiring that carbon credit intermediaries, marketplaces, and exchanges have effective enterprise risk management frameworks in place to address any potential operational or technological risks associated with the trading of or provision of services relating to carbon credits. Appropriate enterprise management, information technology, and security protocols could be deployed by each of the key market participants, including the registries where carbon credits are transferred, to effectively guard against fraud, hacking, and other, criminal activities related to carbon credits. Regulators could consider requiring the employment of an enterprise risk officer with sufficient staffing and support resources. Regulators could also consider requiring the implementation of a business continuity disaster recovery plan and operational resilience programs with system safeguards that are developed and routinely reviewed for consistency with industry best practices.

As noted earlier, commenters to the Discussion Paper generally agreed that conflicts of interest in the carbon credit ecosystem – both at primary and secondary market level - are a potential vulnerability and an issue of concern in VCMs. Carbon crediting programs, for example, may rely on compensation from the certification of credits, thus incentivizing them to approve projects lacking measurable emission reductions. Third-party auditing and verification firms may be receiving payment from project developers, and all of the various entities involved in having a project certified may themselves be purchasing and selling carbon credits.

Within VCMs, conflicts of interest can also arise in other situations, including those relating to which contracts are traded on the market, the levels of access available to various market participants, and the manner in which orders are executed. Transparent governance structures, disclosure requirements, and compliance frameworks are some of the measures that have been proven to mitigate conflicts of interest effectively in other markets. VCMs would benefit from incorporating such practices as well.

Good Practice 17 – Conflicts of interest rules: Consistent with their respective mandates, relevant regulators and other authorities could consider whether laws and applicable rules within their remit and jurisdiction appropriately address conflicts of interest raised by the issuance, verification, certification, transfer, and retirement of carbon credits.

This could include:

- establishing policies and procedures to address and mitigate conflicts of interest pertaining to carbon credits, with prohibitions of the most obviously problematic conflicts, including adequate disclosures regarding legal or beneficial relationships between project developers, validation and/or verification bodies, carbon crediting programs, registries, marketplaces and exchanges, intermediaries, etc.
- requiring or encouraging trading venues to establish clear processes to identify and monitor conflicts of interest and to take appropriate actions if there are risks to orderly trading or market integrity.

Consultation Questions:

Question 16: Are the Good Practices set out under the section on governance and risk management appropriate? Is there anything else IOSCO should take into account?

6.3.3. Market Abuse

Orderly markets apply measures aimed at protecting market participants and the public from fraudulent, manipulative, or disruptive conduct. Like any traded asset market, VCMs could benefit from rules and practices that deter improper and abusive conduct, thus promoting confidence in the market and enabling it to operate more efficiently.

VCM growth has been hindered by justifiable concerns about carbon credit integrity and fraud. Many offset projects are failing to deliver promised emission reductions and some carbon credits may amount to little more than greenwashing. Concerns over integrity and transparency are one reason that demand for carbon credits decreased between 2021 and 2022, even as supply continued to grow.

As noted in Chapter 5, private initiatives, such as the ICVCM and VCMI, are developing and implementing guidelines to enhance the integrity of carbon credits. These initiatives could instill greater trust that carbon credits represent genuine emission reductions and could provide interested market participants with a common taxonomy of attributes that will allow them to find the carbon credits that are suitable for their emission-reduction goals.

That said, financial market regulators and other authorities with enforcement power can play a significant role in preventing fraud, protecting market participants from misleading claims, and instilling greater confidence in the integrity of VCMs.

Good Practice 18 – Enforcement actions: Consistent with their respective mandates, relevant regulators and other authorities could consider bringing enforcement actions if there are fraudulent or abusive practices in VCMs, such as false and misleading statements regarding the attributes of carbon credits.

In anticipation, consistent with their respective mandates, relevant regulators and other authorities as well as trading venues could consider implementing rule enforcement programs with disciplinary mechanisms to discourage trade practice violations, including monetary sanctions to deter recidivism.

This would include putting in place measures to ensure the avoidance of fraud with respect to any systems used to issue, track, record, and/or register ownership of a carbon credit.

Good Practice 19 – Market surveillance and monitoring of trading: Consistent with their respective mandates, relevant regulators and other authorities and trading venues could consider appropriate ways to conduct market surveillance and trade monitoring to identify fraud, manipulation, price distortion, and/or other market disruptions.

Good Practice 20 – Trading venue resources: Consistent with their respective mandates, relevant regulators and other authorities could consider ensuring that trading venues maintain adequate resources to detect and investigate fraudulent or manipulative practices, including a Chief Compliance Officer and Chief Regulatory Officer.

Consultation Questions:

Question 17: Are the Good Practices set out under the section on market abuse appropriate? Is there anything else IOSCO should take into account?

6.4. Use and Disclosure of Use of Carbon Credits

With firms around the world increasingly making public commitments to achieving net-zero emissions, carbon credits will likely continue to play a significant role in climate change mitigation efforts, as they provide the ability to offset emissions that cannot yet be eliminated through other means.

Given lingering doubts over whether some carbon credits represent actual emission reductions, the use of credits in decarbonization efforts remains an area of concern. In a similar vein, there are doubts as to whether firms will take steps to reduce their own emissions if carbon credits are readily available to offset those emissions.

Improved transparency around the use of carbon credits would allow stakeholders to better assess firms' risks and opportunities and make informed decisions about how firms are managing GHG emissions.

Good Practice 21 – Disclosure of Carbon Credits Use: Consistent with their respective mandates, relevant regulators and other authorities could consider, consistent with their jurisdiction's laws and domestic legal requirements, encouraging or requiring disclosures regarding an entity's use of carbon credits to achieve any net GHG emission targets.

Several recent examples may help relevant regulators and other authorities in considering this suggested good practice. As one example, in June 2023, the ISSB issued its inaugural standards for sustainability and climate-related disclosures — IFRS S1 and IFRS S2 — aimed to improve trust and confidence in company disclosures about sustainability to inform investment decisions. The objective of IFRS S2 Climate-related Disclosures is to require an entity to disclose information about its climate-related risks and opportunities that is useful to primary users of general-purpose financial reports in making decisions relating to providing resources to the entity.

As part of IFRS S2, an entity is required to describe its planned use of carbon credits to offset emissions to achieve any net GHG emissions targets the entity has set, or any it is required to meet by law or regulation. In addition, as part of this disclosure, the entity might also include information about carbon credits it has already purchased for future use to meet its net GHG

emission target, if the information enables users of general-purpose financial reports to understand the entity's GHG emission target.

IOSCO announced its endorsement of the ISSB standards on 25 July 2023 and has called on members to consider ways in which they might adopt, apply or otherwise be informed by the ISSB Standards S1 and S2. In addition, the delegated acts on ESRS in the EU on climate change also include standards for carbon credits disclosure.⁹³

In the context of carbon disclosures, relevant regulators and other authorities could therefore consider adopting, applying or otherwise being informed by the ISSB Standards regarding disclosure of the entity's planned use of carbon credits to offset greenhouse gas emissions to achieve any net greenhouse gas emissions target, including:

- The extent to which, and how, achieving any net greenhouse gas emissions target relies on the use of carbon credits.
- Which third-party scheme(s) will verify or certify the carbon credits.
- The type of carbon credit, including whether the underlying offset will be nature-based or based on technological carbon removals, and whether the underlying offset is achieved through carbon reduction or removal.
- Any other factors necessary for users of general-purpose financial reports to understand the credibility and integrity of the carbon credits the entity plans to use (for example, assumptions regarding the permanence of the carbon offset).

As another example, firms may also provide transparency on their use or intended use of carbon credits through their transition plans in jurisdictions where they are required to publish these or where they decide to do so voluntarily. In the UK, the Transition Plan Task Force recommends an entity should disclose information regarding: (i) why an entity is employing carbon credits and how the use of these credits supports achieving an entity's climate objectives and priorities; (ii) what third-party verification or certification scheme or schemes the credits are subject to; (iii) the type of carbon credit (*e.g.*, whether the credits are generated from carbon removal, emissions avoidance projects etc.); and (iv) any other significant factors necessary for users to understand the credibility and integrity of carbon credits intended to be used by the entity.⁹⁴

On the private initiative front, it is worth noting the work of the VCMI. The VCMI goal is to give carbon buyers an understanding on how they can use carbon credits in their climate strategies in a way that is accepted by investors, civil society, government regulators, and policymakers.⁹⁵ With this goal in mind, they have issued a Claims Code of Practice⁹⁶ that: (i) sets clear requirements, recommendations and supporting guidance for companies and other non-state actors regarding credible voluntary use of carbon credits as part of their near-term

⁹³ https://ec.europa.eu/finance/docs/level-2-measures/csr-delegated-act-2023-5303-annex-1_en.pdfhttps://ec.europa.eu/finance/docs/level-2-measures/csr-delegated-act-2023-5303-annex-1_en.pdf.

⁹⁴ <https://sustainablefutures.linklaters.com/post/102i125/uk-transition-plan-taskforce-consults-on-gold-standard-for-credible-climate-trans>

⁹⁵ <https://vcmintegrity.org/wp-content/uploads/2023/06/VCMI-Claims-Code-of-Practice.pdf>

⁹⁶ <https://vcmintegrity.org/wp-content/uploads/2023/06/VCMI-Claims-Code-of-Practice.pdf>

emissions reduction objectives and long-term net zero commitments; and (ii) provides guidance regarding the associated claims that they can make regarding the use of those carbon credits.

Consultation Questions:

Question 18: Are the Good Practices included in this Consultation Report appropriate? Are there any Good Practices that IOSCO should consider modifying, removing, or adding in the final report? Please provide commentary on each of the Good Practices. Please explain your rationale.

Appendix 1- Consultation Questions

Question 1: Does the Consultation Report use the correct and commonly accepted terminology? Are terms defined appropriately in the report and its glossary? Does the Consultation Report acknowledge all instances of inconsistent and conflicting terminology used in the industry? Are there any terms that have not been defined but which should be defined or alternatively, that should not be defined by IOSCO?

Question 2: Is the description of the issuance of carbon credits accurate? Are all key market participants properly reflected in the Consultation Report?

Question 3: Is the description of secondary market trading of carbon credits accurate? Are all key market participants properly reflected?

Question 4: Should carbon credit ratings and data product providers fall within the scope of the recommendations within IOSCO's Report on ESG Ratings and Data Product Providers?

Question 5: Is the description of the use and disclosure of use of carbon credits accurate? Are the related supply and demand issues appropriately captured?

Question 6: Is the description of Article 6 mechanisms and its potential relationship to VCMs accurate? If not, please provide additional information.

Question 7: Are the Good Practices set out under the section on Regulatory Frameworks appropriate? Is there anything else IOSCO should take into account?

Question 8: Are the Good Practices set out under the section on Primary Markets appropriate? Is there anything else IOSCO should take into account?

Question 9: Are existing disclosures, third-party standards, and/or industry best practices sufficient to ensure that investors are not misled as to the environmental or carbon emissions reductions benefits? Please identify specific regulations, standards, or practices and why they are sufficient.

Question 10: Are existing standards for certifying voluntary carbon credits sufficient to promote robust validation and verification of GHG emissions reductions/removals at the project level?

Question 11: Are there existing accounting-based approaches for establishing baseline scenarios for nature-based projects to help ensure the additionality of projects and avoid double counting?

Question 12: Are there existing best practices for modeling carbon emissions reductions related to nature-based projects that take into account the effects of climate change that could affect project permanence and efficiency in terms of meeting carbon objectives?

Question 13: Where issuance and trading of voluntary carbon credits is not subject to comprehensive regulation, how can the accuracy of disclosures around the carbon emissions reductions benefits of voluntary carbon credits be more transparent to regulators?

Question 14: To address risks that low-quality projects could result in voluntary carbon credits that do not represent their promised carbon emissions reductions benefits, are disclosure-based standards sufficient to mitigate against misleading investors? Are there cases where even robust disclosure as to the underlying project quality, and therefore the quality of the carbon credits based on such project, would be insufficient to protect investors?

Question 15: Are the Good Practices set out under the section on Secondary Markets appropriate? Is there anything else IOSCO should take into account?

Question 16: Are the Good Practices set out under the section on governance and risk management appropriate? Is there anything else IOSCO should take into account?

Question 17: Are the Good Practices set out under the section on market abuse appropriate? Is there anything else IOSCO should take into account?

Question 18: Are the Good Practices included in this Consultation Report appropriate? Are there any Good Practices that IOSCO should consider modifying, removing, or adding in the final report? Please provide commentary on each of the Good Practices. Please explain your rationale.

Appendix 2. Glossary

<p>Additionality</p>	<p>Additionality means that the mitigation activity would not have occurred in the absence of the incentive created by carbon credit markets or mechanism.</p>
<p>Article 6.4 Mechanism</p>	<p>The Article 6.4 mechanism is an international crediting mechanism under the Paris Agreement that certified emissions reductions or removals achieved by activities that are approved by a Paris Agreement Party to help lower its national emissions levels.. This mechanism’s detailed procedures and requirements are is still being finalized.</p>
<p>“Baseline-and-credit” system</p>	<p>A type of compliance carbon market whereby baseline emission levels, i.e., target levels decided by the governmental authorities based on historical data and environmental objectives, are defined for compliance entities and allowances are issued to those that have reduced their emissions below that level.</p>
<p>“Cap-and-trade” mechanism</p>	<p>A type of compliance carbon market where governmental authorities set an upper limit on the total amount of CO2 that an industry sector can emit. This cap is reduced over time by a predetermined amount. Governmental authorities issue carbon emission allowances that mandate the maximum amount of carbon that covered entities are permitted to emit. At the end of the compliance period entities must surrender allowances back to the governmental entity to cover the greenhouse gas emissions that they created.</p>
<p>Carbon crediting program (also known as “standard setters” and “certification bodies”)</p>	<p>Set standards for carbon credit quality, register validated projects, identify or directly accredit eligible validation and verification bodies, issue carbon credits for verified emissions reductions or removals, and have or designate a registry to track projects and the issuance and retirement of carbon credits.</p>

Carbon Emission Allowance (or “carbon allowances” or “allowances”)	Government issued permits representing the right to emit one tonne of CO ₂ or CO ₂ e. These are instruments acquired to pay for an emission liability and recognize the cost of the negative externality of pollution. Each allowance (or emissions permit) typically allows its owner to emit one tonne of a pollutant such as CO ₂
Carbon emissions	CO ₂ and CO ₂ e emissions
Carbon leakage	<p>In the context of CCMs: A term used to describe the transfer of industrial production to countries with laxer constraints on GHG emissions, due to additional costs resulting from emission abatement activities.</p> <p>In the context of VCMs: A collateral effect of carbon offset projects that produce a shift in pollution.</p>
Carbon market	<p>Market mechanism to put a price on carbon emissions and promote the reduction of CO₂ emissions into the atmosphere or allow for the compensation of emissions using climate change mitigation projects.</p> <p>In VCMs, carbon markets encompass primary market issuance and secondary market trading of carbon credits in centralized and decentralized (over-the-counter and bilateral arrangements) transactions.</p>
Carbon Offset Credit (or “carbon credits” or “credits”)	A transferable instrument, representing an emission reduction or removal of one tonne of CO ₂ or CO ₂ equivalent (CO ₂ e).
Clean Development Mechanism (CDM)	International carbon market scheme that allowed a developed country with an emissions abatement target to purchase and use credits from a CDM emission-reduction project in a developing country. Such projects earned certified emission reduction (CER) credits, each equivalent to one tonne of CO ₂ .
CO ₂ e	Carbon Dioxide Equivalent

Compliance Carbon Market (CCM)	A type of carbon market, also called “Emission Trading Systems (ETS)”, created and regulated by mandatory national, regional, or international carbon reduction regimes. Their overall objective is to reduce CO2 emissions. There are two types of mechanisms within compliance markets, “cap-and-trade” mechanism and “baseline-and-credit system”, and both use tradable allowances to give companies within specific industries, the right to emit one tonne of CO2.
Corresponding Adjustments (CAs)	A type of accounting tool used by Parties to avoid double counting of GHG emission reductions in the course of accounting for their NDCs.
Double counting	<p>Double counting refers to a situation where a carbon allowance, credit, or the underlying GHG mitigation these represent is claimed by more than one entity.</p> <p>Double counting in the context of article 6 of the Paris Agreement happens when an ITMO is counted more than once towards achieving countries’ NDCs.</p>
Internationally Transferred Mitigation Outcomes (ITMOs)	Represent amounts of emissions reductions or removals that are authorized by a Party to the Paris Agreement for use by another Party toward achieving its NDC, or for use toward another international mitigation purpose, which the host Party accounts for and reports on consistent with Article 6.2 guidance..
Legal treatment of carbon credits	The legal treatment of carbon credits refers to the fundamental legal characteristics of these instruments in the relevant jurisdiction, e.g., whether they are considered property rights that can be bought, sold, and traded on markets, or administrative rights, or how it is treated by law in case of insolvency as well as for tax purposes.
Measurement, reporting, and verification (MRV) process	Multi-step process to monitor/ measure the amount of GHG emissions reduced by a specific mitigation activity over a period of time and report these findings to an

	accredited third party. The third party then verifies the report so that the results can be certified, and carbon credits can be issued
Mitigation outcomes	GHG emissions reduced, avoided or sequestered by a climate change mitigation project.
Nationally Determined Contribution (NDC)	NDCs form the basis for countries to achieve the objectives of the Paris Agreement. They represent a country's climate action plan to cut emissions and adapt to climate change impacts. Since climate finance is key to implementing the plans, NDCs ideally also detail a financing strategy.
Permanence	Permanence refers to mitigation activity results that are not reversible or, where there is a risk of reversal, the assurance of measures in place to address those risks and compensate for reversals.
Project developers	Project developers design projects, obtain funding and physically create the project. In some cases, the project developer may not be the same person as the owner of the land or assets forming part of the applicable climate change mitigation project.
Reduction or avoidance projects	Projects that reduce the amount of GHG emitted into the atmosphere.
Registry	Electronic system that tracks and records the issuance, ownership, transfer, and retirement of carbon credits and associated project information and documentation.
Regulatory characterization of carbon credits	The regulatory characterization of carbon credits refers to how these instruments are treated for regulatory purposes by government authorities. Carbon credits can be characterized in a few different ways, such as tradable instruments, financial instruments, or commodity instruments. The regulatory characterization will likely determine the applicable regulatory framework and financial regulators' jurisdiction over trading of carbon credits.

Relevant regulators and other authorities	Financial markets regulators as well as public policy governmental organizations that may have oversight of VCMs.
Removal and sequestration projects	Projects involving natural resources, engineering techniques, or technology to remove and durably sequester or store carbon from the atmosphere.
Retire	To retire or to offset a carbon credit refers to actions performed in a registry to formally and transparently remove a credit from circulation such that it cannot be further transferred or otherwise transacted
Third-party entity (also known as “validation/verification bodies”,	An independent entity that is accredited by a carbon crediting program to perform validation and/or verification audits.
Validation	Validation is the ex-ante independent assessment of the project by a third-party entity that determines whether the project and its GHG statement conforms with the carbon crediting program rules, and evaluates the reasonableness of assumptions, limitations, and methods that support a claim about the outcome of future activities.
Verification	Verification is the periodic ex-post independent assessment by a third-party entity of the project and its GHG statement of emission reductions and removals that have occurred as a result of the project during the monitoring period
Voluntary Carbon Market (VCM)	A type of carbon market where entities voluntarily buy credits generated from projects that either (i) avoided CO2 emissions, (ii) assisted in the reduction of emissions, or (iii) permanently removed emissions from the atmosphere, thereby allowing these buying entities to offset some or all of their own carbon emissions.