United Nations A/CN.9/1191/Rev.1

General Assembly

Distr.: General
31 August 2024

Original: English

United Nations Commission on International Trade Law
Fifty-seventh session
New York, 24 June–12 July 2024

UNCITRAL/UNIDROIT study on the legal nature of verified carbon credits issued by independent carbon standard setters

Note by the Secretariat

Contents

V.24-14241 (E) 200824 210824

I. Introduction

A. Background of the study*

1. At its fifty-fourth session, in 2021, the Commission heard a proposal to examine: (i) how existing UNCITRAL texts could be aligned with climate change mitigation, adaptation and resilience goals; and (ii) whether further work could be done by UNCITRAL to facilitate those goals in the implementation of those texts or through the development of new texts. It had been added that public-private partnerships could be an area of focus for taking stock of existing texts, while legal uncertainty regarding the legal status of carbon credits traded in voluntary carbon markets could be a focus for future legislative work.[1]

2. Broad support was expressed at that time for the Commission to consider the proposal further, based on more precise information on the work involved. It had been added that member States might need to carry out further internal consultations across different government agencies before a decision on future work could be taken, and that such work would need to be undertaken consistent with existing public international law frameworks, such as the Paris Agreement on climate change of 2015. After discussion, the Commission requested the secretariat to consult with interested States with a view to developing a more detailed proposal on the topic for presentation to the Commission for its consideration at its next session, in 2022.[2]

3. At its fifty-fifth session, in 2022, the Commission considered a note by the Secretariat summarizing the findings and recommendations of a study on private law aspects of climate change commissioned from an outside expert with a view to assisting the Commission to consider the desirability and feasibility of undertaking work in that area.[3] At that time, there was wide agreement within the Commission on the importance of the topic and on the usefulness of exploring how UNCITRAL could offer its own contribution to the international community's efforts to combat climate change and mitigate its effects by updating existing private law instruments and developing new enabling legal mechanisms, if necessary.[4] The Commission requested the secretariat to conduct further research in the area, in consultation with outside experts and interested organizations from both within and outside the United Nations system.[5] It also requested the secretariat to organize a colloquium or an expert group meeting on the various legal issues surrounding climate change mitigation, adaptation and resilience, in conjunction with relevant and interested international organizations.[6]

4. At its fifty-sixth session, in 2023, the Commission had before it a note by the Secretariat on the subject,[7] which provided additional information and comments received by the secretariat on the issues discussed in the two notes that the Commission had considered at its fifty-fifth session. The Commission also heard an

* The secretariat wishes to express its sincere thanks to its consultant Professor Géraud de Lassus St-Geniès and Ms. Giulia Previti (UNIDROIT), main authors of this study, to Ms. Priscila Andrade, and Professor Louise Gullifer (UNIDROIT), to Ms. Gérardine Goh Escolar (Deputy Secretary General of the Hague Conference on Private International Law), as well as to the various experts who participated in the first session of the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits (Rome, 10–12 October 2023) and the Joint Meeting of the UNCITRAL Expert Group and the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits (Vienna, 31 January–1 February 2024) for their contribution to the preparation of the study.

[1] *Official Records of the General Assembly, Seventy-sixth Session, Supplement No. 17* (A/76/17), para. 244.

[2] Ibid., para. 246.

[3] A/CN.9/1120 and A/CN.9/1120/Add.1.

[4] *Official Records of the General Assembly, Seventy-seventh Session, Supplement No. 17* (A/77/17), para. 212.

[5] Ibid., para. 216.

[6] Ibid.

[7] A/CN.9/1153 and A/CN.9/1153/Add.1.

oral report by the secretariat on the results of the UNCITRAL Colloquium on Climate Change and International Trade Law.[8] At that session, an idea that gathered wide support was that a mapping exercise beginning in the area of voluntary carbon credits, on which work was already under way at the International Institute for the Unification of Private Law (UNIDROIT), might represent a useful contribution by UNCITRAL to help States assess the options available to them in addressing relevant legal issues, in particular as regards the legal nature of voluntary carbon credits.[9] It was also added that it would be important for such work to describe and analyse issues rather than to prescribe possible solutions or formulate models so as to avoid interference and duplication with the work of the competent bodies under existing international agreements in the area of climate change.[10] In addition, it was stressed that such work should be inclusive, in particular as regards the participation of experts representing Member States, especially developing countries, and should give competent government officials the opportunity to provide substantive input and information on their policies and practices.[11]

5. After discussion, the Commission requested the secretariat, within the mandate of UNCITRAL, to consult with all Member States of the United Nations with a view to developing a more detailed study on the aspects of international trade law related to voluntary carbon credits. It was added that such study should include consideration of outputs from other relevant forums and processes, including the United Nations Convention on Climate Change Conference (UNFCCC), and whether UNCITRAL efforts would be redundant. Furthermore, the Commission requested the secretariat to conduct such study in cooperation and collaboration with the secretariat of UNFCCC, UNIDROIT, the Hague Conference on Private International Law (HCCH) and other organizations with relevant expertise.[12]

6. With a view to operationalizing the above-mentioned coordination and cooperation, the secretariat and its appointed experts participated in the first session of the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits, held in Rome in October 2023 (see para. 20 below). Furthermore, on 31 January and 1 February 2024, a Joint Meeting of the UNCITRAL Expert Group and the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits was held in Vienna. At this phase in the implementation of their respective mandates, UNCITRAL and UNIDROIT agreed to jointly author the present study.

B. Issues of terminology and definition of fundamental concepts

7. While the term “voluntary carbon credits” is widely used, even by the stakeholders of carbon markets themselves, experts consulted for the preparation of this study recommended refraining from employing it. It was argued that this term lacked precision and that the word “voluntary” could entail confusion and be misleading. For these experts, the objects of the detailed study which the Commission had requested at its fifty-sixth session, in 2023, could more accurately be characterized as “verified carbon credits issued by independent carbon standard setters”. For greater clarity, suggestions were made to use this term.

8. In line with these suggestions, the term “verified carbon credits issued by independent carbon standard setters” is used in this study instead of “voluntary carbon credits”. To explain the reasons that have led to this shift in terminology, some fundamental concepts of carbon markets need be introduced at this early stage of the study.

[8] *Official Records of the General Assembly, Seventy-eighth Session, Supplement No. 17* (A/78/17), para. 189.
[9] Ibid., para. 198.
[10] Ibid.
[11] Ibid.
[12] Ibid., para. 199.

9. Carbon markets may be defined as markets on which carbon credits are traded. However, not all carbon credits are the same. They may be created by different schemes and processes, they can represent, or enable their holders to do, different "things" or enable their holders to take different actions, and they may be used for different purposes. Thus, there are various types of carbon credits that may be bought and sold on carbon markets. This makes it difficult to provide a single, comprehensive, and accurate definition of what "carbon credits" are. The term "carbon credit" should therefore only be understood as a generic expression referring to any of the different types of units traded on carbon markets.

10. One specific type of carbon credits is called "verified carbon credits" (VCCs). A VCC may be defined as a unit that represents that one ton of CO_2 equivalent has been reduced (i.e. not emitted in the atmosphere) or removed from the atmosphere through a specific climate mitigation project, as recognized by a third-party issuer or a State.[13] The reason why these credits are referred to as "verified" is because they are only issued after a verification process is carried out. During this process, a trusted independent third party verifies that a specific climate mitigation project has indeed led to the reduction or the removal of an amount of CO_2 equivalent that would have not occurred had the project not been implemented. The term "third party" indicates that the entity in charge of the verification process is not the one conducting the climate mitigation project itself nor the one issuing the VCCs. In sum, VCCs may be presented as carbon credits that have been produced by following a specific "recipe" which relies on a certification and verification process. It is only after this certification and verification phase has been completed that VCCs are issued (see para. 57 below).

11. There are mainly two kinds of entities that may issue VCCs: (i) public authorities (e.g. intergovernmental organizations, international bodies, States, sub-national governments); and (ii) independent carbon standard setters. Independent carbon standard setters are private law entities (i.e. not administered by public authorities) which certify that climate mitigation projects have generated reductions in greenhouse gas (GHG) emissions or removals of GHG from the atmosphere (see para. 57 below).[14] Upon specific conditions, each of these independent carbon standard setters offers to issue VCCs when GHG reductions and removals, that have been verified according to its own standards, have occurred.

12. Regardless of whether issued by public authorities or independent carbon standard setters, it has become common in the world of carbon markets to refer to VCCs as "voluntary carbon credits". Presumably, this qualification stems from the fact that the purchase of VCCs is in most cases – although not always – "voluntary". This means that GHG emitters are usually not required by laws and regulations to purchase VCCs to comply with specific mandatory schemes. Laws and regulations may however permit the use of VCCs (whether issued by public authorities or independent carbon standard setters) to comply with specific mandatory schemes, without requiring their use for such purpose. In addition, many private companies purchase VCCs issued by independent carbon standard setters to demonstrate progress towards the achievement of voluntary mitigation targets (i.e. targets they have set for themselves without being compelled to do so by laws and regulations). Strictly speaking, it is therefore not the carbon credits themselves that are "voluntary", but the demand for such credits (in the sense that the demand does not aim at fulfilling a legal obligation). In any case, in practice, the term "voluntary carbon credits" has come to be interpreted in different ways, to refer either to VCCs

[13] The Intergovernmental Panel on Climate Change (IPCC) defines the word "mitigation" as "[a] human intervention to reduce emissions or enhance the sinks of greenhouse gases" (*Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the IPCC,* Annex I, p. 126).

[14] Independent carbon standard setters are also sometimes referred to as certification standards bodies or independent crediting programmes. In the absence of an existing agreed standardized definition in the world of carbon markets, the term "independent carbon standard setters" will be used throughout the study.

issued by public authorities, VCCs issued by independent carbon standard setters, or both.

13. In order to avoid any confusion as regards the object and scope of this study, the term "VCCs issued by independent carbon standard setters" has been chosen instead of "voluntary carbon credits". In line with this approach, it has been noted during the consultations conducted for the preparation of this study that the markets on which VCCs issued by independent carbon standard setters are traded would be best characterized as "voluntary carbon markets in VCCs issued by independent carbon standard setters".

14. For ease of reading, the following points should be noted: (i) the acronym "VCCs" is used throughout the study to refer to "verified carbon credits issued by independent carbon standard setters"; (ii) VCCs issued by public authorities are expressly referred to as such; (iii) the term "voluntary carbon credits" has been retained when used in the context of quotations or as the title of a document or an initiative; and (iv) the acronym "VCMs" is used to refer to "voluntary carbon markets where VCCs are issued by independent carbon standard setters".

C. Scope of the study

15. In response to the request by the Commission at its fifty-sixth session to the secretariat, the following study provides a comparative overview of legal issues related to VCCs to help States assess the options available to them in addressing relevant legal issues, in particular as regards the legal nature of VCCs.

16. This study does not seek to analyse regulatory schemes that are administered by public authorities, whether at the domestic or international level, and that involve the issuance of carbon credits or require or permit the use of carbon credits for compliance purposes. Thus, regulated emissions trading schemes (ETS)[15] such as cap-and-trade systems[16] and baseline-and-credit mechanisms[17] administered by public authorities (including the Paris Agreement Article 6.4 baseline-and-credit mechanism), the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) or the framework for cooperative approaches referred to in Article 6.2 of the Paris Agreement fall outside the scope of this study. Likewise, this study does not seek to discuss the carbon credits that may be issued under those schemes, such as emission allowances delivered under cap-and-trade systems, VCCs issued by public authorities under baseline-and-credit mechanisms, such as the instruments that may be delivered by the Article 6.4 Paris Agreement Supervisory Body (A6.4ERs[18] and mitigation contribution), or internationally transferred mitigation outcomes (ITMOs).

17. It should be noted, however, that VCMs and schemes administered by governments which involve the issuance of carbon credits or require or permit the use of carbon credits for compliance purposes do not represent completely separate universes. There is indeed an increasing convergence between them, as VCCs may sometimes be used for compliance purposes under schemes established by States (see

[15] In the context of this study, emissions trading schemes (ETS) should be understood as referring to any type of schemes that involve the issuance of carbon credits or require or permit the use of carbon credits. Cap-and-trade systems and baseline-and-credit systems are specific kinds of ETS.

[16] In a cap-and-trade system, an upper limit on GHG emissions is fixed, and emission allowances are issued on the basis of this limit. Entities that are covered by this system receive, or must purchase, tradable emission allowances which each usually represent a permit to emit one ton of CO_2 equivalent. At the end of a compliance period, covered entities are required to surrender as many allowances as the amount of CO_2 equivalent they have emitted. See also para. 28 below.

[17] In a baseline-and-credit mechanism, a GHG emission or GHG removal baseline is defined (according to a business-as-usual scenario, historical average, or performance standard or benchmark), and emission reductions or removals achieved that outperform that baseline are rewarded with carbon credits that can, in principle, be traded and used by another entity to offset its emissions generated elsewhere. See also para. 31 below.

[18] The acronym "A6.4ERs" stands for Article 6, paragraph 4, emission reductions issued under the mechanism established by Article 6, paragraph 4 of the Paris Agreement.

para. 76 below). Moreover, some States have adopted regulations to oversee the development of VCMs in their jurisdiction (see para. 53 below). In addition, some of the legal issues that currently arise in the context of the cross-border trading of VCCs share similarities with those that may be encountered in the context of governmental mechanisms involving carbon credits. Thus, while the focus of this study is on VCCs, it also gives an overview of the complex ecosystem formed by carbon markets (in which VCCs evolve), as this background is relevant for discussing the aspects of international trade law related to VCCs.

18. In line with the request by the Commission, the scope of this study is also limited to mapping legal issues relating to VCCs that have, or could have, an impact on their international trade. In other words, in the context of this study, VCCs are only envisaged as objects of international trade that have been properly created (i.e. created according to the rules of the independent carbon standard setters that have issued them). The implication of this premise is that not all legal issues related to VCCs are discussed in this study. Legal issues that may arise from cases of non-compliance with the rules of the independent carbon standard setters or with domestic and local laws and regulations (e.g. land ownership, obtainment of free, prior, and informed consent) are not part of the analysis conducted here. Instead, the study focuses on the most salient legal issues or uncertainties that arise, or may arise, in the context of the cross-border trading of VCCs with a view to stimulating a discussion on possible ways to improve legal certainty in the trading of VCCs across borders.

D. Inputs considered for the preparation of the study

19. At its fifty-sixth session, the Commission requested the secretariat to consult with all Member States of the United Nations with a view to developing a more detailed study on the aspects of international trade law related to VCCs. It was suggested that this could include questionnaires to be sent out by the secretariat. The secretariat was also requested to invite all Member States of the United Nations to nominate experts to provide inputs to the work. Accordingly, on 6 October 2023, the secretariat circulated a questionnaire to all Member States of the United Nations, with a view to gathering information on their existing legislations on carbon trading, the state of VCMs in their jurisdictions, and on the legal nature of carbon credits (e.g. emission allowances, VCCs issued by public authorities, VCCs) under their domestic laws. The questionnaire further invited all Member States to nominate experts to provide input to the work of the secretariat in that area. As of March 2024, 32 responses to the questionnaire, originating from countries from Africa, Asia, Europe, Central America, North America, and South America, were transmitted to the secretariat and considered for the preparation of this study.[19] In addition, the secretariat invited the comments from State-nominated experts on an earlier draft of the detailed study, with the comments received[20] having been taken into consideration for the preparation of this study.

20. Consideration was also given to the work carried out by UNIDROIT in relation to the legal nature of voluntary carbon credits. At its 81st session, in 2022, the General Assembly of UNIDROIT endorsed the recommendation of the UNIDROIT Governing Council to include in UNIDROIT's 2023–2025 Work Programme a project to analyse the legal nature and other private law aspects of voluntary carbon credits. Following receipt of this mandate, the UNIDROIT Secretariat organized in 2023 two exploratory consultative workshops, in collaboration with the World Bank Group (WBG) and the International Swaps and Derivatives Association (ISDA). In 2023, the UNIDROIT Governing Council confirmed the authorization to establish a Working Group on the Legal Nature of Voluntary Carbon Credits and encouraged further coordination in this

[19] Argentina, Australia, Brazil, Brunei Darussalam, Burkina Faso, Canada, Côte d'Ivoire, Croatia, Dominican Republic, El Salvador, Guatemala, Guyana, Ireland, Israel, Japan, Kazakhstan, Malaysia, Mexico, Myanmar, Norway, Oman, Panama, Paraguay, Peru, Russian Federation, Singapore, Slovenia, Sri Lanka, Thailand, Türkiye, Turkmenistan, United States.

[20] Comments were received from the experts nominated by China and the United States.

area with other international organizations, such as UNCITRAL. The first meeting of this Working Group, which was composed of representatives of relevant organizations (e.g. the UNFCCC secretariat, WBG, HCCH, the UNCITRAL secretariat), academics and legal practitioners with an expertise in the field of VCCs, was held in October 2023. The issues paper prepared for this meeting,[21] as well as the discussions held during this meeting, were considered for the preparation of this study.

21. An earlier version of this study was presented and discussed at a Joint Meeting of the UNCITRAL Expert Group and the UNIDROIT Working Group on the Legal nature of VCCs, organized by the secretariats of UNCITRAL and UNIDROIT in Vienna on 31 January and 1 February 2024. The comments made during this Joint Meeting, attended by representatives of relevant organizations (e.g. the UNFCCC secretariat, WBG, HCCH, International Emission Trading Association, ISDA and International Organization of Securities Commissions (IOSCO)) as well as academics and legal practitioners with an expertise in the field of VCCs, have been incorporated into the following version of the detailed study.

22. In addition, reports on the topic of VCCs prepared by relevant stakeholders, such as IOSCO, ISDA, the Organisation for Economic Co-operation and Development (OECD) and the WBG also served as inputs for this study. The content of the notes on the topic of climate change mitigation, adaptation and resilience that the secretariat submitted to the Commission at its fifty-fourth and fifty-fifth sessions were also part of the information considered for the preparation of this detailed study.

II. Carbon markets: an overview of the global landscape

23. The idea of trading carbon credits representing a certain amount of reduced GHG emissions or a certain amount of GHG removed from the atmosphere and allowing their use to demonstrate progress towards the achievement of mitigation goals was first introduced in the negotiations of the UNFCCC, which was adopted in 1992.

24. It was however only with the adoption of the Kyoto Protocol to the UNFCCC, in 1997, that a global carbon market emerged. This treaty created three market mechanisms: (i) an international ETS through which Parties listed in Annex I to the UNFCCC ("Annex I Parties") could trade units of the emissions allowed under the targets that had been agreed in the Kyoto Protocol for the 2008–2012 commitment period, i.e. Assigned Amount Units (AAUs), each representing one ton of CO_2 equivalent; (ii) a mechanism known as "Joint Implementation" that allowed Annex I Parties to earn Emission Reduction Units (ERUs) from an emission reduction or emission removal project in another Annex I Party, each equivalent to one ton of CO_2 equivalent; and (iii) a mechanism known as "Clean Development Mechanism" (CDM) which allowed Annex I Parties to earn Certified Emission Reduction credits (CERs) by investing in GHG abatement projects in non-Annex I Parties, each equivalent to one ton of CO_2 equivalent.[22] AAUs, ERUs and CERs were all tradable units that could be counted towards meeting Kyoto targets.[23]

25. Since then, carbon markets have considerably expanded. Today, they form a complex and fragmented ecosystem in which different types of carbon credits – generated under different types of mechanisms – are being traded on different carbon markets.[24] These markets may operate at the international, regional, national, or sub-national level. The world of carbon markets is usually presented as

[21] UNIDROIT, *Issues Paper*, Study LXXXVI – W.G.1 – Doc. 2, October 2023.
[22] Kyoto Protocol, arts. 17, 6 and 12, respectively.
[23] UNFCCC, "Emissions Trading", available at https://unfccc.int/process/the-kyoto-protocol/mechanisms/emissions-trading.
[24] IOSCO, *Compliance Carbon Markets. Final Report*, FR/09/23, July 2023, p. 4 (noting that "[t]he carbon markets ecosystem is a complex one given the existence of different types of markets and different mechanisms, within those markets").

comprising two categories of carbon markets: compliance carbon markets (CCMs) and VCMs.

A. Compliance carbon markets

26. CCMs (or regulatory carbon markets) refer to carbon markets that are created by mechanisms that have in common two characteristics. These mechanisms: (i) are administered by public authorities; and (ii) involve the issuance of carbon credits or require, or permit, the use of carbon credits for compliance purposes. There are various mechanisms through which CCMs may be created. Most of the time, these mechanisms rely on the issuance of carbon credits that GHG emitters must, or may, use for compliance purposes. However, as explained below, this is not always the case.

27. The following paragraphs present the main mechanisms through which existing CCMs have been established, whether at the domestic or international level, and discuss the issue of the legal characterization of the carbon credits traded on CCMs.

1. Market infrastructure

(i) At the domestic level

28. CCMs may be created by a mechanism known as "cap-and-trade". Under this mechanism, a regulator (e.g. a State, a regional organization, a group of States, or a sub-national entity), establishes a maximum level of emissions that can be emitted within a specified time period (this being the "cap"). On the basis of this cap, GHG emitters designated by the regulator receive, or are given the opportunity to purchase from the competent public authority, a certain number of emission allowances. These emission allowances can then be traded between participants (this being the "trade"). At the end of the period, these entities are obliged to surrender one allowance for each ton of CO_2 equivalent they have emitted during that period. As emission allowances can be traded between participants, entities that lower their emissions can sell their allowances to entities that are likely to emit more than the number of allowances they have received or have been able to purchase.[25]

29. In their response to the questionnaire sent by the secretariat, several States indicated that they had one or several cap-and-trade systems in operation in their jurisdiction. This is notably the case of Canada (in the province of Québec), China, the member States of the European Union (EU),[26] Japan (in the city of Tokyo and in the Saitama Prefecture), Kazakhstan, Mexico, Norway (which takes part in the EU ETS on the same legal basis as EU member States), the Russian Federation (which is testing a cap-and-trade system in the Sakhalin region) and the United States of America (on a sub-national basis, in California and in north-eastern states under the Regional Greenhouse Gas Initiative).[27]

30. Switzerland,[28] the United Kingdom of Great Britain and Northern Ireland,[29] and the Republic of Korea[30] are also countries in which cap-and-trade systems are in force. In addition, some countries are discussing the possibility to establish a cap-and-trade system in their jurisdictions. For instance, in its response to the questionnaire, Brazil indicated that a bill aiming at establishing a regulated system based on a GHG "emissions cap and the trading of assets representing GHG

[25] A/CN.9/1120, para. 12.

[26] Croatia; Ireland; Slovenia (response to UNCITRAL questionnaire, 1a). It should be noted that the EU cap-and-trade system, known as the "EU ETS", applies in all EU member States.

[27] Canada, Japan, Kazakhstan, Mexico, Norway, Russian Federation, United States (response to UNCITRAL questionnaire, 1a); Expert nominated by China, "Comments on the Draft UNCITRAL/UNIDROIT Study on the Legal Nature of Voluntary Carbon Credits".

[28] Switzerland, Federal Act on the Reduction of CO_2 Emissions (23 December 2011).

[29] United Kingdom, The Greenhouse Gas Emissions Trading Scheme Order 2020.

[30] Republic of Korea, Act on the Allocation and Trading of Greenhouse-Gas Emission Permits, Act No. 11419 (14 May 2012).

emissions, reductions or removals" was under discussion at the congress.[31] Legislative actions to implement a mandatory cap-and-trade system are also underway in Türkiye.[32] According to the International Carbon Action Partnership, there are currently 28 cap-and-trade systems in operation worldwide, and such systems are under development in 8 jurisdictions and under consideration in 12 jurisdictions.[33]

31. Baseline-and-credit mechanisms are another type of system that States can establish, leading to the creation of CCMs. Under this mechanism, a GHG emission or GHG removal baseline is defined, and emission reductions or removals achieved that outperform that baseline are rewarded with carbon credits that can, in principle, be traded. The way in which baseline-and-credit mechanisms operate may vary according to the type of baseline that is chosen ("business-as-usual scenario", historical average, or performance standard or benchmark).

32. An example of baseline-and-credit mechanism based on a performance standard may be found in Canada (both at the federal and provincial level).[34] Under this mechanism, known as "output-based pricing system", facilities, per regulations, must not exceed an annual predefined output-based emissions limit. Facilities that emit less than the annual limit receive carbon credits (called "surplus credits") from the government for the portion of their emissions that are below the limit. These credits may be traded with facilities whose emissions are above the output-based emissions limit and these facilities may use those credits to cover the portion of their emissions that exceed the limit. A similar mechanism exists in Australia, where facilities whose emissions exceed a certain threshold are subjected to legislated net emissions limits, known as baselines. Tradable credits are issued to facilities with emissions below their baseline, and these credits may be purchased and surrendered by facilities that need to bring down their net emissions.[35]

33. In baseline-and-credit mechanisms based on the assumption that operating practices and policies remain as they are at present ("business-as-usual scenario"), credits are usually issued for specific kinds of mitigation projects (often identified in laws and regulations) that generate emission reductions or removals, by following a predefined methodology, that would not have occurred had the project not been implemented. In many cases, laws and regulations require that an independent third party verifies that this condition, known as "additionality", is met.[36] Thus, carbon credits issued under regulated baseline-and-credit mechanisms based on a business-as-usual scenario often take the form of VCCs issued by public authorities. In many jurisdictions, these VCCs issued by public authorities are qualified by laws and regulations as "offset credits" to indicate that they may be used by an entity to "offset" its emissions.

34. In the context of mechanisms involving carbon credits, "offsetting" GHG emissions refers to the action of "using" carbon credits for calculating the net level of GHG emitted by an entity during a given period. An entity is usually said to have "offset" its emissions when it subtracts from the amount of GHG it actually emitted an amount of GHG represented by carbon credits. Thus, offsetting may be viewed as an accounting operation for the elaboration of a net GHG emissions balance.

---

[31] Brazil (response to UNCITRAL questionnaire, 1a and 1b).

[32] Türkiye (response to UNCITRAL questionnaire, 1a).

[33] International Carbon Action Partnership, "ETS Map", available at https://icapcarbonaction.com/en/ets.

[34] Canada (response to UNCITRAL questionnaire, 1a).

[35] Australia (response to UNCITRAL questionnaire, 1a).

[36] Expert nominated by China, "Comments on the Draft UNCITRAL/UNIDROIT Study on the Legal Nature of Voluntary Carbon Credits", laws and regulations often provide specific criteria that independent third parties (which can be private law entities) must meet to be deemed eligible by public authorities to perform this verification process. Furthermore, in some baseline-and-credit mechanisms, the result of the verification process carried out by an independent third party can be reassessed by public authorities. This is notably the case in China, with the process leading to the issuance of Chinese Certified Emission Reductions (CCERs).

35. To evidence this accounting operation, and because carbon credits usually exist in electronic registries in a digital format, the holders of carbon credits that have used them for offsetting purposes may ask, or could be required to ask, the registry in which these credits are recorded to "retire" them. When carbon credits are "retired", they are permanently transferred into a specific account which indicates that these credits have been used for calculating a net GHG emissions balance and that they can therefore no longer be sold or used for offsetting purposes another time. Retirement of carbon credits enables entities that make an offsetting claim (i.e. that make a public statement about the level of their net emissions) to provide evidence for substantiating this claim.[37] The expression "retirement" is used in the context of both CCMs and VCMs.

36. In their response to the questionnaire sent by the secretariat, several States have indicated that they had a type of baseline-and-credit mechanism administered by a public authority in operation in their country. This is notably the case of Australia,[38] Canada,[39] China,[40] France,[41] Japan,[42] Kazakhstan,[43] Mexico,[44] the Russian Federation,[45] Thailand[46] and the United States.[47] Other States also reported to be in the process of developing a baseline-and-credit mechanism (e.g. Brazil[48] and Panama[49]). The EU is currently examining a proposal for a regulation on a certification for carbon removals, which would establish a voluntary EU-wide framework under which carbon removal units would be issued.[50]

37. Baseline-and-credit mechanisms may function as autonomous programmes or they can be coupled with other market-based mechanisms. When used as an autonomous programme (e.g. France and Thailand), the carbon credits issued by public authorities may be used by private companies on a voluntary basis (i.e. without being required to do so by the law) to calculate and disclose a net GHG emissions balance. Individuals may also purchase those credits simply for the benefit of the environment. When baseline-and-credit mechanisms are coupled with market-based mechanisms – such as cap-and-trade systems (e.g. Mexico, Quebec, China and the States participating to the Regional Greenhouse Gas Initiative in the United States) – the credits issued can be used as compliance instruments (similarly as emission allowances).[51] However, some baseline-and-credit mechanisms have a hybrid nature. For instance, in Canada, offset credits issued under the federal carbon offsetting programme may be used either for substantiating voluntary offsetting claims or as

[37] While the word "offsetting" is widely used by the stakeholders of carbon markets, some experts noted during the consultations conducted for the preparation of this study that, in the context of VCMs, the word should not be used as its legal connotation appears to be at odds with the fact that no mandatory compliance requirements exist on VCMs.

[38] Australia (response to UNCITRAL questionnaire, 1a).

[39] Canada (response to UNCITRAL questionnaire, 1a).

[40] Expert nominated by China, "Comments on the Draft UNCITRAL/UNIDROIT Study on the Legal Nature of Voluntary Carbon Credits". A baseline-and-credit mechanism, based on the issuance of CCERs, was launched in China in 2012. However, in 2017, due to low trading volumes and a lack of carbon audit standards, the system was temporarily suspended. After the issuance of new regulations in October 2023, this baseline-and-credit mechanism officially resumed in January 2024. It should be noted that CCERs are VCCs issued by public authorities.

[41] France, Decree No. 2018-1043 of 28 November 2018 creating a "Low-Carbon".

[42] Japan (response to UNCITRAL questionnaire, 3a).

[43] Kazakhstan (response to UNCITRAL questionnaire, 2a).

[44] Mexico (response to UNCITRAL questionnaire, 2a).

[45] Russian Federation (response to UNCITRAL questionnaire, 3a).

[46] Thailand (response to UNCITRAL questionnaire, 3a).

[47] United States (response to UNCITRAL questionnaire, 1a).

[48] Brazil (response to UNCITRAL questionnaire, 1b).

[49] Panama (response to UNCITRAL questionnaire, 1a).

[50] European Commission, *Proposal for a Regulation of the European Parliament and of the Council establishing a Union certification framework for carbon removals*, [2022] OJ C 2022/672.

[51] Expert nominated by China, "Comments on the Draft UNCITRAL/UNIDROIT Study on the Legal Nature of Voluntary Carbon Credits". For instance, in China, entities covered by a cap-and-trade system may surrender CCERs up to a limit of 5 per cent of their emissions instead of surrendering emission allowances.

compliance instruments under the mandatory output-based pricing system.[52] Likewise, in Australia, Australian Carbon Credits Units (which are credits issued by the government) may be used by private actors to voluntarily offset their emissions or meet compliance requirements under the Safeguard Mechanism (a baseline-and-credit mechanism based on a performance standard).[53]

38. In their response to the questionnaire, several States have also reported to be developing, or considering the possibility to develop, an ETS in their jurisdiction, without further specifying the form that this system would or could take. For instance, Brunei Darussalam mentioned that it was exploring feasibility studies on carbon pricing instruments, including on ETS.[54] The Dominican Republic indicated to be working on a bill on climate change that will include aspects relating to carbon markets.[55] El Salvador stated that work was underway on a proposal for a framework law on climate change, addressing the issue of carbon markets.[56] Israel reported that initial discussions were being held between governmental bodies, relevant stakeholders and legal experts to examine the advisability of establishing an ETS.[57] Sri Lanka indicated to be in the process of developing a regulatory mechanism involving carbon trading.[58] Thailand noted that the Ministry of Natural Resources and Environment was currently drafting a bill which would include carbon pricing instruments.[59]

(ii) At the international level

39. CCMs also exist at the international level. As mentioned above, the Kyoto Protocol led to the creation of an international carbon market. The units delivered under this treaty could be used by Annex I Parties to achieve their quantified emission limitation or reduction targets. With the end of the second commitment period of the Kyoto Protocol in 2020, the market-based mechanisms of this treaty have ceased to function or are no longer fully operational.[60] However, market mechanisms have remained an integral part of the United Nations climate change regime, with Article 6 of the Paris Agreement establishing two frameworks for engaging in market-based mechanisms: (i) a framework under which Parties may engage in cooperative approaches to exchange ITMOs;[61] and (ii) a baseline-and-credit mechanism under which A6.4ERs may be issued by a Supervisory Body.[62]

40. Unlike A6.4ERs (which are a type of VCC issued by a public authority), ITMOs are not, per se, a type of carbon credit. During the consultations conducted for the preparation of this study, experts noted that ITMOs could best be described as a status, or a label, that is applied to emission reductions and removals that are generated within the territory of a party to the Paris Agreement, when that party authorizes the use of these emission reductions and removals towards the achievement of the nationally determined contribution of another party, or for other international mitigation purposes.[63] ITMOs can therefore be a variety of "things" – whether the

[52] Canada (response to UNCITRAL questionnaire, 1a).
[53] Australia (response to UNCITRAL questionnaire, 1a).
[54] Brunei Darussalam (response to UNCITRAL questionnaire, 2b).
[55] Dominican Republic (response to UNCITRAL questionnaire, 1a and 1b).
[56] El Salvador (response to UNCITRAL questionnaire 1b).
[57] Israel (response to UNCITRAL questionnaire, 1a).
[58] Sri Lanka (response to UNCITRAL questionnaire, 1a).
[59] Thailand (response to UNCITRAL questionnaire, 1b).
[60] For instance, in the case of the CDM, Parties to the Kyoto Protocol have agreed that there will be no issuance of CERs for emission reductions occurring on or after 1 January 2021. However, as of now, no decision specifies a deadline for requesting issuance of CERs for emission reductions that occurred prior to 1 January 2021 or indicates when such CER issuance should cease (Functioning and operation of the processes and institutions under the clean development mechanism in the future. Technical paper by the UNFCCC secretariat, FCCC/TP/2023/3, para. 8).
[61] Paris Agreement, art. 6.2.
[62] Paris Agreement, art. 6.4.
[63] Decision 2/CMA.3, *Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement*, FCCC/PA/CMA/2021/10/Add.1, Annex, para. 1.

"thing" that is intended to be internationally transferred is measured in metric tons of CO_2 equivalent or in other non-GHG metrics determined by the parties[64] – including, but not limited to, emission allowances, VCCs issued by public authorities (including A6.4ERs[65]), VCCs, or any other type of carbon credit. In their response to the questionnaire, some States (e.g. Côte d'Ivoire, El Salvador and Peru[66]) have indicated to be developing domestic legal frameworks to participate in ITMOs trading.

41. Mechanisms administered by public authorities at the international level and involving the issuance of carbon credits can also be found outside the United Nations climate change regime. For instance, the WBG developed a carbon crediting standard – the Forest Carbon Partnership Facility (FCPF) Standard[67] – under which credits may be issued (after a third-party verification process) for emission reductions and removals generated in developing countries through jurisdictional-scale REDD+ programmes.[68] This mechanism is part of a broader initiative of the WBG (i.e. FCPF), which aims at supporting the implementation of such programmes. To that end, the Carbon Fund of the FCPF remunerates participant countries in accordance with negotiated contracts for verifiable emission reductions. Typically, the Carbon Fund negotiates an Emission Reduction Payment Agreement (ERPA) with a REDD+ participant country, or its authorized entity, for the acquisition of a predetermined amount of verified emission reductions. By virtue of the ERPA, once the country has fulfilled all its contract emission reductions, and the Carbon Fund has exhausted its call option or declined to exercise it, the emission reductions generated in excess to those provided for in the ERPA are available to the country, which fully owns these credits.

42. In some cases, CCMs are created under mechanisms that do not deliver carbon credits, but instead require or permit the use for compliance purposes of carbon credits that are generated by other mechanisms. At the international level, this is the case with CORSIA, the market-based mechanism developed by the United Nations International Civil Aviation Organization (ICAO) in relation to the aviation sector. CORSIA provides for a carbon offset and reduction scheme for international flights under which aeroplane operators have to compensate their emissions that are above a certain threshold.[69] To do so, CORSIA enables them to use, inter alia, VCCs issued by public authorities and VCCs that are deemed eligible by ICAO.

2. Legal nature of carbon credits traded on compliance carbon markets

43. Based on the responses received from the States to the questionnaire, it appears that the situation regarding the legal nature of carbon credits traded on CCMs varies widely across countries that have an ETS in operation in their jurisdiction or that participate in an international mechanism involving the issuance of carbon credits. It should be noted that in their responses, States provided indications on the legal nature of carbon credits by reference to private law, or property law, but also indications on other forms of legal characterization that are more relevant for public law issues, such as tax law or financial law. In both cases, however, the way in which carbon credits are legally characterized is far from consistent across jurisdictions.

---

[64] Such as hectares of land afforested or kilowatt hours of renewable electricity.

[65] When internationally transferred from one party to the Paris Agreement, A6.4ERs are considered as ITMOs. See also supra note 63, para. 1.

[66] Côte d'Ivoire, El Salvador, Peru (response to UNCITRAL questionnaire, 1(b).

[67] Forest Carbon Partnership Facility, "FCPF Standard", available at www.forestcarbonpartnership.org/fcpf-standard/.

[68] The acronym "REDD+" stands for reducing emissions from deforestation and forest degradation in developing countries. The sign + refers to conservation of forest carbon stock, sustainable management of forests, and enhancement of forest carbon stocks. Jurisdictional-scale REDD+ programmes are national or sub-national programmes, usually carried out by governments, that aim at implementing REDD+ activities.

[69] ICAO, "Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)", available at www.icao.int/environmental-protection/CORSIA/Pages/default.aspx.

(i) Legal characterization by reference to private law or property law

44. Some States have expressly mentioned that the legal nature of the carbon credits issued in their jurisdictions is undetermined. For instance, Canada reported that the federal legislation did not define the legal nature of the carbon credits issued under the federal baseline-and-credit mechanisms.[70] Likewise, the Russian Federation indicated that the nature of the carbon units issued under its pilot cap-and-trade system was not defined by legislation and that there exists no case law or established administrative interpretation addressing the legal nature of these units.[71] Thailand also mentioned that there was no explicit specification of the legal nature of the VCCs issued by the government in its legislation.[72] The absence of statutory provisions addressing the issue of the legal nature of carbon credits issued by government-run ETS may be encountered in other jurisdictions.[73]

45. By contrast, there are several jurisdictions in which the legal nature of carbon credits traded on CCMs is specified by statutory provisions or has been clarified by judicial or administrative interpretation. In Australia, the law clearly indicates that an Australian Carbon Credit Unit is personal property that is transmissible by assignment, by will and by devolution by operation of law.[74] In Canada, at the provincial level, offset credits are sometimes considered as revocable licences.[75] In China, despite the absence of explicit legal specifications regarding the legal nature of CCERs in Chinese law, their economic value has led to their recognition as a form of property rights.[76] In Côte d'Ivoire, under the legal framework for REDD+ activities, emission reductions credits are defined by regulations as intangible property (movable incorporeal assets).[77] In the EU, the legal nature of emission allowances issued under the EU ETS is not specified by the EU legislation. Each member State has therefore discretion to define the legal nature of these allowances. Some of them have characterized the emission allowances as property rights,[78] intangible assets,[79] or movable assets.[80] In Mexico, emission allowances are qualified as administrative instruments.[81] In the United States, the legal nature of emission allowances or carbon credits should be considered on a state-by-state basis. For instance, in Massachusetts, emission allowances are treated as intangible property. In California, they have been qualified by judicial determination as "valuable, tradable, private property rights".[82]

46. In several cases, States that are implementing (or considering implementing) an ETS in their jurisdiction, or that are modifying their domestic law to participate in an

[70] Canada (response to UNCITRAL questionnaire, 2a).
[71] Russian Federation (response to UNCITRAL questionnaire, 2a).
[72] Thailand (response to UNCITRAL questionnaire, 2a and 2b).
[73] For instance: Switzerland, Federal Act on the Reduction of CO_2 Emissions (23 December 2011), art. 2.3; Republic of Korea, Act on the Allocation and Trading of Greenhouse-Gas Emission Permits, Act No. 11419 (14 May 2012), art. 2.3.
[74] Australia (response to UNCITRAL questionnaire, 2a).
[75] Canada (response to UNCITRAL questionnaire, 2a). The legal nature of emission allowances under the Ontario Emissions Performance Standards programme was debated in a recent ICSID case (Case No. ARB/20/52 (Koch Industries, Inc. and Koch Supply & Trading, LP v. Government of Canada), in which Canada argued that emission allowances held by the claimants were not "property" under NAFTA Article 1139 (g). It was mentioned that what constituted "property" must be determined by reference to the relevant domestic law and in this case no Ontario court has confronted the question of whether emission allowances constitute property in Ontario. The final award is not yet publicly available. See Canada's Rejoinder Memorial dated 30 September 2022, para. 122, available at https://icsidfiles.worldbank.org/icsid/ICSIDBLOBS/OnlineAwards/C9375/DS18454_En.pdf.
[76] Expert nominated by China, "Comments on the Draft UNCITRAL/UNIDROIT Study on the Legal Nature of Voluntary Carbon Credits".
[77] Côte d'Ivoire (response to UNCITRAL questionnaire, 2b).
[78] Croatia (response to UNCITRAL questionnaire, 2a).
[79] Slovenia (response to UNCITRAL questionnaire, 2a).
[80] France, Environmental Code, art. L. 229-15.
[81] Mexico (response to UNCITRAL questionnaire, 2a).
[82] United States (response to UNCITRAL questionnaire, 2a and 2b).

international market-based mechanism, indicated their intention to address the issue of the legal nature of the carbon credits in their to-be-adopted legislation. For instance, Burkina Faso reported that its proposed legal framework for REDD+ activities specifies that the carbon credits to be issued under this framework would be treated as intangible property (movable incorporeal assets) freely transferable and assignable by their owners.[83] Brunei Darussalam mentioned that it would look into defining the legal nature of carbon credits with the relevant stakeholders after exploring feasibility studies on carbon pricing instruments.[84] El Salvador and Panama, both of which are currently developing a legal framework to establish a CCM in their territory, also indicated that clarifying the legal nature of the carbon credits to be traded in their jurisdiction was an aspect under consideration.[85] Peru, which is implementing a national registry for carbon credits resulting from mitigation activities carried out in its territory, mentioned that the carbon credits that will be recorded in this registry will be defined as intangible movable property.[86] In Paraguay, where such a registry has already been established, carbon credits are identified by statutory provisions as objects of property rights.[87]

(ii) Legal characterization by reference to public law issues

47. Some States also provided information on the legal characterization of carbon credits traded on CCMs from the perspective of specific branches of their public law, such as tax law or financial law. Canada indicated that, for tax purposes, emission allowances are generally subject to the Goods and Services Tax/Harmonized Sales Tax, Canada's value-added tax, as intangible personal (movable) property under the Excise Tax Act.[88] Thailand mentioned that, in its jurisdiction, carbon credits are considered for tax purposes as incorporeal objects, susceptible of having a value and of being appropriated.[89]

48. Regarding the legal characterization of carbon credits by reference to financial law, Argentina declared that, by virtue of a 2012 regulation, CERs (i.e. the units issued under the CDM of the Kyoto Protocol) are comparable to securities under its domestic law.[90] Australia reported that Australian Carbon Credit Units and Safeguard Mechanism Credits are considered as financial products under Australian law.[91] EU member States indicated that emission allowances issued under the EU ETS are classified under the Markets in Financial Instruments Directive 2014 (MiFID II) as financial instruments.[92] Kazakhstan reported that its emission allowances and carbon offset units are considered as commodity.[93] Panama noted that, although the law does not define the legal nature of carbon credits, they are considered as commodity.[94] Paraguay mentioned that, in its country, carbon credits are characterized as tradable instruments, suggesting that they represent a financial asset.[95] The United States referred to a case in which the California Appeals Court reiterated a prior holding that emission allowances are a valuable commodity.[96]

---

[83] Burkina Faso (response to UNCITRAL questionnaire, 2a).
[84] Brunei Darussalam (response to UNCITRAL questionnaire, 3a).
[85] El Salvador, Guatemala (response to UNCITRAL questionnaire, 2a).
[86] Peru (response to UNCITRAL questionnaire, 2a).
[87] Paraguay (response to UNCITRAL questionnaire, 1a).
[88] Canada (response to UNCITRAL questionnaire, 2a).
[89] Thailand (response to UNCITRAL questionnaire, 2a and 2b).
[90] Argentina (response to UNCITRAL questionnaire, 2a).
[91] Australia (response to UNCITRAL questionnaire, 2a: "As both ACCUs and SMCs are financial products, you must hold an Australian Financial Services licence (AFS licence) if you carry on a financial services business with, into or from Australia that provides any regulated emission units under the Corporations Act, unless an exemption applies. This also includes financial products associated with these emissions units such as derivatives over emissions units or managed investment schemes that aggregate carbon abatement activities").
[92] Croatia, Ireland, Slovenia (response to UNCITRAL questionnaire, 2a).
[93] Kazakhstan (response to UNCITRAL questionnaire, 2a).
[94] Panama (response to UNCITRAL questionnaire, 2a).
[95] Paraguay (response to UNCITRAL questionnaire, 2a).
[96] United States (response to UNCITRAL questionnaire, 2b).

B. Voluntary carbon markets

49. VCMs emerged in the 1990s as an effort led by non-State actors to certify GHG emission reductions and removals outside of United Nations compliance schemes.[97] In VCMs, VCCs are generated by diverse types of climate mitigation projects and issued by non-State organizations known as independent carbon standard setters. Examples of independent carbon standard setters include the Verified Carbon Standard (VCS/Verra),[98] the Gold Standard,[99] the American Carbon Registry (ACR),[100] or Climate Action Reserve.[101]

50. VCMs are often described as a "non-regulatory means of directing financial resources" to mitigation projects.[102] Where there are insufficient financial or legal incentives to implement projects that reduce GHG emissions or remove GHG from the atmosphere, the possibility of selling VCCs offers an opportunity to make such projects financially viable. Thus, it is generally considered that through their capacity to mobilize private finance for climate action, VCMs can play an important role in facilitating the transition towards a low carbon-economy.[103]

1. Market infrastructure

51. As noted above, VCCs are units that represent the achievement of a reduction or removal of one ton of CO_2 equivalent, which has been verified by a third party.[104] VCCs buyers may purchase these instruments for different usages. For example, they may use VCCs to mitigate their carbon footprint (e.g. to enable them to calculate their net GHG emissions balance, or to enable them to report the purchase of mitigating VCCs when disclosing their gross emissions) and help meet their self-imposed net-zero goals; they may purchase VCCs as a form of investment to then sell on to other VCMs participants; they may simply hold on to the VCCs indefinitely for the sole benefit of the environment; or they may seek an adjustment to the VCCs in order to use them in a CCM.

52. In contrast to the CCMs, which are by definition regulated markets, VCMs do not generally involve government regulatory authorities. In their response to the questionnaire sent by the secretariat, several States have expressly indicated that they do not play any oversight role in the functioning of the VCMs in their jurisdiction (e.g. Argentina,[105] Burkina Faso,[106] Canada,[107] Norway[108] and Sri Lanka[109]).

53. However, other countries have introduced laws and regulations to monitor the mitigation projects whose outcomes are certified by independent carbon standard setters. This is notably the case in Guatemala, where the developers of projects which are certified by independent carbon standards setters are required to register their

---

[97] IOSCO, *Voluntary Carbon Markets. Consultation Report*, CR/06/23, December 2023, p. 9.
[98] Verra, available at https://verra.org/programs/verified-carbon-standard/.
[99] Gold Standard, available at www.goldstandard.org/.
[100] American Carbon Registry, available at https://americancarbonregistry.org/.
[101] Climate Action Reserve, available at www.climateactionreserve.org/.
[102] J. Sadikman, S. Duncanson, D. Saric et al., "The Evolution of Canada's Carbon Markets and Their Role in Energy Transition", *Alberta Law Review*, vol. 60, issue 2, 2022, p. 342.
[103] IOSCO, *Voluntary Carbon Markets. Consultation Report*, supra note 97, p. 9.
[104] UNIDROIT, *Issues Paper*, supra note 21, para. 39. Units known as ex ante credits are also traded on VCMs. Ex ante crediting has been defined as "[t]he issuance of carbon offsets in expectation of future emission reductions". UN-REDD Programme, "Ex-ante crediting", available at www.un-redd.org/glossary/ex-ante-crediting. Importantly, in the case of ex ante credits, the emission reduction or removal has not yet occurred. The credits are typically issued on an estimation of the expected mitigation outcomes in order to facilitate early-stage financing. While ex ante credits may be used in facilitating investment into VCMs, they are credits that have not yet been verified and thus cannot be retired.
[105] Argentina (response to UNCITRAL questionnaire, 3a).
[106] Burkina Faso (response to UNCITRAL questionnaire, 3a).
[107] Canada (response to UNCITRAL questionnaire, 3a).
[108] Norway (response to UNCITRAL questionnaire, 3 a).
[109] Sri Lanka (response to UNCITRAL questionnaire, 3a).

project in a public registry.[110] A similar requirement exists in the Dominican Republic[111] and Paraguay.[112] In Argentina, a national registry has been implemented to keep track of all the mitigation projects carried out in the country. The purpose of this registry is to systematize the information about these projects that appear in other registries (such as those operated by independent carbon standard setters). This means that projects are listed in this registry by public authorities only when they are listed in the registry of the correspondent carbon standard applied to its development.[113] Peru is also implementing a national registry in which mitigation projects leading to the issuance of carbon credits will have to be recorded.[114] In any case, legal requirements across jurisdictions are far from consistent.

54. The life cycle of a VCC starts with the development of a project aiming at mitigating GHG emissions. Such projects generally fall into two categories: (i) reduction projects that either reduce emissions from current sources, such as renewable energy projects, or prevent the release of GHG emissions into the atmosphere, such as by limiting the loss of natural resources that absorb carbon; or (ii) removal projects that remove GHG from the atmosphere. In turn, such climate mitigation projects may either be in the form of nature or technology-based solutions.

55. Nature-based solutions, such as reforestation projects,[115] work to reduce emissions or remove GHG from the atmosphere by either enhancing the ability of ecosystems to sequester CO_2, or by reversing the degradation of an ecosystem so that it stores more carbon than it emits.[116] Climate technologies that help reduce GHG emissions include renewable energies (such as wind energy, solar power and hydropower[117]) and Carbon Capture, Utilization and Storage (CCUS), a suite of technologies which involves the capture of CO_2, generally from large point sources like power generation or industrial facilities that use either fossil fuels or biomass as fuel and its storage in reservoirs (e.g. in underground geologic formations).[118] Climate technologies such as Direct Air Capture (an industrial process by which CO_2 is extracted from the atmosphere) may also be used to remove CO_2 from the atmosphere.

56. The individual or organization that has "overall control and responsibility" for the climate mitigation project is generally known as the "project proponent".[119] Project proponents usually research and conceive the projects. They are responsible for developing a project description, submitting the project for registration with the applicable independent carbon standard setter, and for monitoring the project's activities.[120] Project proponents may not necessarily be the same as the project developers, i.e., the entities responsible for the development and management of the climate mitigation project. Project proponents may also not be the owners of the land or other assets required to develop the projects, such as titles or permits, and must

[110] Guatemala (response to UNCITRAL questionnaire, 2a).
[111] Dominican Republic (response to UNCITRAL questionnaire, 3).
[112] Paraguay (response to UNCITRAL questionnaire, 1a).
[113] Argentina (response to UNCITRAL questionnaire, 3a).
[114] Peru (response to UNCITRAL questionnaire, 1b).
[115] UNIDROIT, *Issues Paper,* supra note 21, para. 44; IOSCO, *Voluntary Carbon Markets. Consultation Report*, supra note 97, p. 16.
[116] L. Mercer, "What are nature-based solutions to climate change?", Grantham Research Institute on Climate Change and the Environment, 15 November 2022, available at www.lse.ac.uk/granthaminstitute/explainers/what-are-nature-based-solutions-to-climate-change/#:~:text=Nature%2Dbased%20solutions%20include%3A%20avoiding,singular%20species%3B%20improving%20management%20practices.
[117] UNFCCC, *Technology and the UNFCCC: Building the foundation for sustainable development*, 2016, p. 2, available at https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/NAD_EBG/54b3b39e25b84f96aeada52180215ade/b8ce50e79b574690886602169f4f479b.pdf.
[118] International Energy Agency, "Carbon Capture, Utilisation and Storage", available at www.iea.org/energy-system/carbon-capture-utilisation-and-storage.
[119] For instance: Verra "Program Definitions", 21 December 2021, v4.3, online: https://verra.org/wp-content/uploads/2022/12/vcs-program-definitions-v4.3-final.pdf.
[120] For instance: Verra, "Develop a verified carbon standard (VCS) project", available at https://verra.org/programs/verified-carbon-standard/develop-a-vcs-project/.

thus engage with local authorities, including regional and state governments, as well as local communities, local landowners, farmers, and other relevant constituents.

57. In order for VCCs to be issued in relation to a climate mitigation project, the project and its claimed emission reductions or removals must be certified by an independent carbon standard setter. As noted above, independent carbon standard setters are private entities, each of which has their own set of rules and regulations with which project proponents will need to comply, as well as approved methodologies to assess the climate impact of the projects they are asked to certify. As explained by Verra, "[m]ethodologies are essential to quantifying real and accurate greenhouse gas (GHG) benefits of a project" and they "provide requirements and procedures to determine project boundaries, identify the baseline, assess additionality, monitor the relevant parameters, and ultimately quantify the GHG emission reductions or removals".[121]

58. Thus, before certifying a particular project, the independent carbon standard setter will assess whether the project complies with its applicable methodology and its rules and regulations. This assessment process will involve both: (i) an ex ante validation to determine whether the project conforms with the carbon standard setter's programme rules and to evaluate the reasonableness of assumptions, limitations, and methods that support a claim about the outcome of future activities; as well as (ii) an ex post verification of the project to confirm the reductions and removals actually achieved by the project.[122]

59. Generally, the project proponent must demonstrate that the GHG reductions or removals are real, measurable, permanent, additional, independently verified, unique and traceable.[123] This is demonstrated through a process known as the measurement, reporting, and verification (MRV) process. As described by the WBG, the MRV process is "the multi-step process to measure the amount of GHG emissions reduced by a specific mitigation activity".[124]

60. The validation and verification of a project's claimed climate impact is typically carried out by third parties known as "verification bodies" or "verifiers". Verifiers are independent assessment bodies that develop quality assurance programmes to confirm that the activities of a climate mitigation project have resulted in the claimed emissions reductions or removals. Typically, verifiers will be accredited by the independent carbon standard setter and hired by the project proponent. The overall process from the start of a project to certification by an independent carbon standard setter may be lengthy, meaning that VCCs may be issued years after the emission reductions or removals occurred.[125]

61. Once a project has been certified by an independent carbon standard setter, the project proponent can be issued tradable VCCs for each metric ton of CO_2 equivalent reduced or removed from the atmosphere. Once issued, VCCs are given a unique serial number and recorded on a VCC registry. Registries are recordkeeping systems for registered climate projects for which VCCs are issued. They are often, though not always, operated by the independent carbon standard setter that has issued the VCCs. Such registries store information and track the VCCs at every step of their life cycle (i.e. issuance, transfer, retirement and cancellation).

62. Once certified, issued, and registered, the VCCs can be sold on the open market, either over the counter (OTC) or through an exchange market. VCCs may be sold

[121] Verra, "Methodologies", available at https://verra.org/methodologies-main.

[122] For instance: Verra, "Program overview", available at https://verra.org/programs/verified-carbon-standard/#how-it-works; IOSCO, *Voluntary Carbon Markets. Consultation Report*, supra note 97.

[123] IOSCO, *Voluntary Carbon Markets. Discussion Paper,* CR/06/22, November 2022, pp. 9–10 and pp. 13–15.

[124] WBG, "What You Need to Know About the Measurement, Reporting and Verification (MRV) of Carbon Credits", 27 July 2022, available at 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.

[125] IOSCO, *Voluntary Carbon Markets. Discussion Paper*, supra note 123, p. 9.

directly or through intermediaries such as brokers (including but not limited to banks that typically charge a commission for their services[126]) or exchanges. There are two types of VCCs markets: the primary and the secondary market. The primary market generally refers to the first purchase of the credit post-verification, often made directly from the project proponents who are first issued the VCCs by the independent carbon standard setter. The secondary market refers instead to the potential for the credit to then be sold along a chain. Sellers on the secondary market may include, for example, financial institutions, traders, non-governmental organizations, and corporate entities. As to VCC buyers, these often include corporate entities or non-governmental organizations that may choose to simply hold on to the VCC, to further trade it, to seek any applicable adjustments for use in the compliance market, or to retire the VCC.

63. If the VCC holder wishes to "claim the benefit" of a VCC, it has to retire it.[127] Claiming the benefit of the VCC can take various forms such as the use of a VCC as an offset in a compliance programme or making a statement, when reporting the VCC holder's emission inventory, that it holds, and is retiring, a VCC. Once retired, a VCC is no longer tradable, and all that is left is a record of it. For example, according to Section 8.2 of the Verra Terms of Use, upon the retirement of a VCC, "(a) all legal and beneficial title and interests in such Instruments will be extinguished; and (b) neither Verra, the User, nor any other person with Legal or Beneficial Ownership Rights will have any further rights to take the benefit of such Instruments nor the underlying Environmental Benefits corresponding to such Instruments". Section 8.5 of the Verra Terms of Use further provides, in part, that "no person has any further rights to take the benefit of the cancelled or retired Instruments or the underlying Environmental Benefits corresponding to such Instruments". Section 9 of the Gold Standard Terms of Use includes similar provisions.[128]

64. It should be noted that a VCC buyer could directly instruct the registry to retire the VCC, or it could contractually agree with the VCC seller that the seller will retire the credit on the buyer's behalf. In such an instance, the seller would instruct the registry to retire the credit.

65. Other than being retired by or on behalf of a VCC holder, a VCC could also be subject to: (i) reversal; (ii) suspension; (iii) cancellation; or (iv) expiry. Reversal is the term used to describe the event in which the carbon that has already been verified as removed escapes back into the environment. An example would be a forest that has been planted and then burns down, or carbon that has been stored in a reservoir subsequently leaks. To anticipate and address such potential occurrences, nature-based projects that could be subject to a reversal would generally have to divert some of the VCCs they generate to what is known as a "buffer pool". In the event of

[126] IOSCO, *Voluntary Carbon Markets. Consultation Report*, supra note 97, p. 22.

[127] VCC holders may also retire them without making any claim, simply as means to support the underlying mitigation action.

[128] Section 9 of the Gold Standard *Terms of Use* (available at https://globalgoals.goldstandard.org/standards/T-Preview-V1.1-Registry-App-Terms-of-Use.pdf) provides in relevant part that: The Account Holder acknowledges and agrees that if the Account Holder retires Units in The Gold Standard Registry: (a) the Account Holder is retiring such Units permanently; (b) neither the Account Holder nor any third party has any further rights to take the benefit of such Units nor the underlying Environmental Benefits corresponding to such Units; and (c) the Account Holder will procure that all relevant third parties enter into such agreements as are necessary to ensure that neither the Account Holder nor any third parties have any further rights to take the benefit of such Units nor the underlying Environmental Benefits corresponding to such Units. Subject to clause 17, any instruction by the Account Holder to The Gold Standard Registry to retire Units in accordance with this clause 9 is irrevocable, and the Account Holder acknowledges that any such instruction will not be reversed. The Gold Standard acknowledges and agrees that, once the Account Holder has complied with this clause 9 and The Gold Standard has retired the Units, The Gold Standard will not take any action to exercise or purport to exercise any right or interest, or deal with or otherwise use, the retired Units or the underlying Environmental Benefits corresponding to such Units and considers that no person has any further rights to take the benefit of the retired Units or the underlying Environmental Benefits corresponding to such Units.

a reversal, the carbon standard setter would then cancel the equivalent number of credits in that buffer pool, such that there would be no need to unwind the transactions that had already happened.[129] An issue could potentially arise if the buffer pool is exhausted, for example in the event that an entire forest is wiped out by wildfire. However, experts noted that such a scenario has not yet arisen.[130]

66. Suspension may refer to instances in which the host State suspends the underlying project and thus potentially delays the issuance of the related credits. For example, in 2021, Indonesia suspended the issuance of carbon credits as a result of regulatory concerns.[131]

67. Suspension may also refer to instances where an independent carbon standard setter decides to suspend a VCC holder's account and their ability to deal with their VCCs if, for example, the carbon standard setter believes that the VCC holder has failed to comply with the applicable Terms of Use, that any of the units the VCC holder holds were created fraudulently or listed illegally, or the certification of the units is withdrawn.[132] Such a suspension may result in the permanent cancellation of the VCCs, whereby "all legal and beneficial title and interests" in the credits will be "extinguished".[133]

2. Current state of the market

68. Over the last decade there have been over 500 million VCCs, issued through four of the main independent carbon standard setters, that have been retired.[134] Despite the market for VCCs slowing down over the past year, analysis from Trove Research, in cooperation with the International Emissions Trading Association (IETA), Sylvera, and Verra, found that finance flowing into VCMs has significantly increased in recent years.[135] The Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimated that demand for VCCs could increase by a factor of 15 or more by 2030 and by a factor of up to 100 by 2050. According to the TSVCM, the market for VCCs could be worth upwards of $50 billion in 2030.[136]

69. Nonetheless, a paper published by the World Economic Forum found that government policies and corresponding market standards have fallen short in providing sufficient strategic incentives to inspire and motivate boards and investors to invest in VCCs.[137] A further hinderance to the scaling of the VCMs is the lack of transparency in the climate mitigation strategies of non-State actors and their

[129] UNIDROIT, *Summary Report of the First Session (10–12 October 2023)*, Study LXXXVI – W.G.1 – Doc.3, para. 28.

[130] Ibid.

[131] V. Sebastian, "Carbon credit issuances from Indonesia on hold, developers await clarity", *S&P Global*, 7 April 2022, available at www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/040722-carbon-credit-issuances-from-indonesia-on-hold-developers-await-clarity.

[132] For instance: Gold Standard *Terms of Use* (supra note 128), Section 10.1.

[133] Verra, *Terms of Use. Verra Registry,* September 2021, Section 8.2, available at https://vcmintegrity.org/wp-content/uploads/2023/09/Verra-Registry-TOU-September-2021_FINAL-1.pdf.

[134] K. Sullivan, A. Diemert, C. Cordova et al., *Status and trends of compliance and voluntary carbon markets in Latin America*, ICAP, IETA, International Development Bank, 2021, p. 35, available at https://icapcarbonaction.com/system/files/document/201025_idb_compliancevoluntary_paper-rz.pdf.

[135] WBG, *State and Trends of Carbon Pricing. International Carbon Markets*, 2023, p. 14, available at https://openknowledge.worldbank.org/server/api/core/bitstreams/2eb25e8e-ca16-4649-b637-e5caf88fd625/content.

[136] TSVCM, *Taskforce on Scaling Voluntary Carbon Markets. Final Report*, January 2021, p. 2, available at www.iif.com/Portals/1/Files/TSVCM_Report.pdf.

[137] World Economic Forum, *Scaling Voluntary Carbon Markets: A Playbook for Corporate Action*, September 2023, p. 2, available at www.weforum.org/publications/scaling-voluntary-carbon-markets-a-playbook-for-corporate-action/.

utilization of VCCs, as well as concerns surrounding the quality of the VCCs themselves.[138]

3. Integrity concerns and recent international initiatives

70. Concerns around the quality and integrity of VCCs can arise from challenges present in both the supply side, primarily in relation to the third-party entities that verify and issue the VCCs, and the demand side of the VCMs, referring instead to the entities that purchase the VCCs and such entities' use of these credits. On the supply side, although rapidly expanding, VCMs currently remain fragmented and largely unregulated, with no standard methodologies applicable across the varying independent carbon standard setters.[139] The lack of uniformity across standards, the intangible nature of VCCs, as well as the complexity in measuring the claimed climate impact of a climate mitigation project may make it difficult for VCCs buyers to thoroughly assess the quality of the product they are purchasing. On the demand side, issues may arise in relation to how companies use the VCCs they purchase given a current general lack of guidance on the type of claims that can be made.[140]

71. Attempts have already been made or are being made by some governments and private parties to ameliorate these integrity concerns. For example, on the supply side:

- In December 2023, the United States Commodity Futures Trading Commission (CFTC) announced that it had approved a proposed guidance and request for public comment regarding the listing for trading of VCCs derivative contracts.[141] The proposed guidance outlines factors that a CFTC-regulated exchange should consider when addressing requirements of the Commodity Exchange Act (CEA) and CFTC regulations that are relevant to the contract design and listing process.[142] On the consumer protection side, the United States Federal Trade Commission (FTC) addresses carbon offsets in its non-binding "Green Guides" on environmental marketing,[143] last updated in 2012.[144] Among other things, the Green Guides currently require sellers of carbon credits to "employ competent and reliable scientific and accounting methods to properly quantify claimed emission reductions".[145]

- The Climate Warehouse, a project within the World Bank's Carbon Markets and Innovation unit, develops digital infrastructure to foster greater transparency, trust, and integrity in carbon markets.[146] Examples include the metadata global platform Climate Action Data Trust (CAD Trust).[147] The CAD Trust, a private-led initiative, has developed a decentralized and open-source metadata platform that links, aggregates, and harmonizes all major carbon credit registry data to enhance transparent accounting, in line with Article 6 of the Paris Agreement. The CAD Trust uses blockchain technology to create a

[138] R. Macquarie, "The Voluntary Carbon Market and Sustainable Development", Grantham Research Institute on Climate Change and the Environment, March 2023, p. 1, available at www.lse.ac.uk/granthaminstitute/wp-content/uploads/2023/03/The-voluntary-carbon-market-and-sustainable-development-policy-brief.pdf.

[139] UNIDROIT, *Issues Paper*, supra note 21, paras. 86–87.

[140] A. Dawes, "What's Plaguing Voluntary Carbon Markets?", Center for Strategic and International Studies, 2 February 2024, available at www.csis.org/analysis/whats-plaguing-voluntary-carbon-markets.

[141] CFTC, "CFTC Issues Proposed Guidance Regarding the Listing of Voluntary Carbon Credits Derivatives Contracts", 4 December 2023, available at www.cftc.gov/PressRoom/PressReleases/8829-23.

[142] Ibid.

[143] Federal Trade Commission, "Green Guides", available at www.ftc.gov/news-events/topics/truth-advertising/green-guides.

[144] See United States, 7 16 C.F.R. § 260.5 (2012).

[145] Federal Trade Commission, "Green Guides", supra note 143.

[146] Climate Warehouse, website, available at www.theclimatewarehouse.org/.

[147] Climate Action Data Trust, available at https://climateactiondata.org/.

decentralized record of carbon market activity, aiming to contain the risk of double counting, improve transparency, and increase trust in carbon credit data.

- The Integrity Council for Voluntary Carbon Markets (ICVCM), an independent governance body for the VCMs,[148] has established the Core Carbon Principles (CCPs) which set out key principles for high-integrity carbon credits, as well as an Assessment Framework which includes the detailed criteria the ICVCM employs to assess whether carbon standard setters and categories of carbon credits meet the CCPs.[149] Carbon standard setters assessed as CCP-eligible will be able to use the CCP label on carbon credits from approved categories.

- Six of the main independent carbon standard setters issued a joint statement at COP28 noting that they "are embarking on a collaboration to promote integrity throughout 2024 to create the next step-change in the dependability of carbon markets".[150] In particular, the carbon standard setters undertook to, among other things: (i) learn from each other's best practices; (ii) support the independent assurance of programmes by the ICVCM; (iii) seek to align standards to common principles for the quantification and accounting of removals and reductions; (iv) work to extend the durability of carbon sinks, including by insuring against reversals; (v) create indicators to promote community benefits of projects on the ground, to underline sustainable development achievements and to safeguard against negative harm; (vi) improve the transparency around the use of carbon credits; and (vii) work to improve and enhance the flow of finance to developing countries to help them achieve and go beyond their nationally determined contributions.[151]

72. It should also be noted that independent carbon standard setters may face potential civil liability, including private law civil liability, in relation to their role in certifying climate mitigation projects and issuing VCCs. The extent to which an independent carbon standard setter may be liable in contract or tort, for example, is likely to depend on the applicable law in the relevant jurisdictions, as well as the specific Terms of Use and any other contractual arrangements that the independent carbon standard setter provides to its users. For example, the Verra system requires both project proponents and verifiers to provide Verra and all the constituents who participate in the process, by way of a deed, a warranty and a representation about the nature of what they offer. Among other things, project proponents represent and warrant that all of the information they provide is true and complete, all project documentation is true and accurate, and that they hold full and exclusive legal and equitable title and rights to all reductions and removals generated by the projects.[152] In turn, the validation and verification body specifically represents and warrants, inter alia, that it has independently validated the project's compliance with the VCS Program requirements as set out in the VCS Program Rules (which is managed by Verra), it has independently verified the reductions or removals generated by the project in accordance with the VCS Program Rules, and that all factual information provided in relation to the deed or verification report are true, accurate and complete in all material respects.[153] Such representations are made to: (i) Verra; (ii) each person who is an account holder holding VCUs (Verified Carbon Units, i.e. the name given

[148] Integrity Council for Voluntary Carbon Markets, available at https://icvcm.org.

[149] Integrity Council for Voluntary Carbon Markets, "The Core Carbon Principles", available at https://icvcm.org/the-core-carbon-principles/.

[150] ACR, ART, Climate Action Reserve, Global Carbon Council, Gold Standard, Verra, Promoting scale and integrity in carbon markets to help operationalize Article 6 and Nationally Determined Contributions under the Paris Agreement, joint statement, 4 December 2023, available at www.climateactionreserve.org/blog/2023/12/04/cop28-icp/.

[151] Ibid.

[152] Verra, "Registration Representation v4.3" (Deed of representation issued in respect of the project), section 2.2, available at https://verra.org/programs/verified-carbon-standard/vcs-program-details/ under subsection "Templates and Forms".

[153] Verra, "Validation Representation v4.2" (Deed of representation issued in respect of validation), ibid., section 2.2; Verra "Verification Representation v4.2" (Deed of representation issued in respect of verification), ibid., section 2.2.

to VCCs issued by Verra) relating to the project at any given time; (iii) each person on whose behalf VCUs relating to the project were retired by an account holder; and (iv) each of the successors and assigns of those persons.[154] Deeds containing similar representations and warranties are used in relation to the issuance and validation of VCUs under the Verra system.[155] However, this approach is not uniform across independent carbon standard setters. Indeed, it is not the case with respect to the Gold Standard, for example.[156]

73. On the demand side of the VCMs, several programmes aim to provide net zero corporate guidance, including in relation to the use of VCCs. These include, for example:

- The Corporate Net-Zero Standard developed by the Science Based Targets initiative (SBTi) – a partnership between the Carbon Disclosure Project (CDP), the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) – to provide guidance, criteria, and recommendations for companies to set science-based net-zero targets.[157]
- The Carbon Market Platform launched in 2015 by the OECD to strengthen international cooperation in developing effective carbon pricing approaches.[158]
- The United Nations High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities established by the United Nations Secretary-General in March 2022 to develop standards for net-zero emissions pledges by non-State entities, including businesses, investors, cities, and regions.[159]
- The Voluntary Carbon Markets Integrity Initiative (VCMI),[160] an international non-profit organization consisting of a multi-stakeholder project bringing together representatives of civil society, businesses, local communities, and governments to establish guidance on how VCCs can be used and claimed as part of credible net-zero decarbonization strategies. In November 2023, the VCMI released the second version of its Claims Code of Practice (first published in June 2023). The VCMI Claims Code of Practice addresses integrity issues on the demand side of the VCM by offering guidance to companies and other non-State actors on how they can credibly make use of VCCs as part of their voluntary climate commitments and on how they communicate their use of those credits.[161]

74. The above is a merely illustrative list of recent initiatives in this rapidly evolving space.

C. Relationship between compliance and voluntary carbon markets

75. Participation in CCMs and VCMs is not mutually exclusive, and many participants are active in both markets. Furthermore, experts of carbon markets

---

[154] Ibid., section 2.3.

[155] Verra, "VCS Program details", available at https://verra.org/programs/verified-carbon-standard/vcs-program-details/ under subsection "Templates and Forms – VCS Representations".

[156] Gold Standard, *Terms of Use* (supra note 128).

[157] Science Based Targets, *SBTi Corporate Net-Zero Standard. Version 1.1*, April 2023, available at https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf.

[158] OECD, "Carbon Market Platform", website page, available at www.oecd.org/environment/cc/carbon-market-platform/#:~:text=The%20Carbon%20Market%20Platform%2C%20launched,and%20ambitious%20carbon%20pricing%20approaches.

[159] United Nations High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, *Integrity Matters: Net Zero Commitments by Businesses, Financial Institutions, Cities and Regions*, 2022, available at www.un.org/sites/un2.un.org/files/high-level_expert_group_n7b.pdf.

[160] The Voluntary Carbon Markets Integrity Initiative, website, available at https://vcmintegrity.org/.

[161] VCMI, *Claims Code of Practice*, November 2023, v.2, available at https://vcmintegrity.org/wp-content/uploads/2023/11/VCMI-Claims-Code-of-Practice-November-2023.pdf.

consulted during the preparation of this study were generally of the view that there is an increased convergence between CCMs and VCMs.

76. The fact that, in some jurisdictions, a VCC may be used in furtherance of a compliance obligation if the relevant CCM allows the VCC to be qualified for such purposes provides an illustration of this convergence. For instance, in Singapore, the Carbon Pricing Act allows companies to purchase VCCs to pay a part of their carbon tax liability.[162] Likewise, in Colombia, VCCs that are issued as the result of climate mitigation projects conducted in the country are accepted as alternative means of complying with the State's carbon tax requirements.[163] In South Africa, VCCs may be used to offset the liability of an entity that is eligible for the South African carbon tax.[164] In Australia, VCCs may be used by businesses which seek to obtain a state-issued carbon neutral certification of their operations, events, products and services, or buildings.[165] In Brazil, under the proposed bill establishing a cap-and-trade system, VCCs can be admitted as compliance instruments as long as they are consistent with methodological requirements defined by the system's authority, follow specified MRV procedures and are registered in the national registry.[166]

77. Another sign of the convergence between CCMs and VCMs is the fact that, in some countries, the same legal framework applies to climate mitigation projects regardless of whether these projects have been certified by independent carbon standard setters or public authorities. This is notably the case with the legal frameworks establishing registries aiming at keeping track of the climate mitigation projects conducted in the territory of a State and the VCCs resulting from those projects, which can contain provisions that apply to both VCCs and VCCs issued by public authorities (e.g. Dominican Republic,[167] Panama[168] and Paraguay[169]).

78. It should be noted that instead of certifying specific climate mitigation projects, some independent carbon standard setters offer to issue VCCs for emission reductions or removals generated by mitigation policies developed and implemented by public authorities at a large scale. This is the case of the Architecture for REDD+ Transactions (ART), which is a "standalone, independent program that develops and administers standardized procedures for crediting emission reductions and removals from national and large sub-national REDD+ programs".[170] Under TREES (i.e. the standard developed by ART), countries and eligible sub-national jurisdictions can, as sovereign programme developer, generate VCCs which are recorded in a registry operated by ART. In its response to the questionnaire, Guyana indicated its participation in the ART-TREES standard.[171] In December 2022, it became the first country to be issued jurisdictional REDD+ ART-TREES credits.

79. During the consultations conducted for the preparation of the study, experts noted that there are currently some uncertainties regarding the way in which market-based mechanisms of Article 6 of the Paris Agreement could impact the VCMs. Those uncertainties are mainly due to the fact that Parties to the Paris Agreement engaged in ITMO trading are required, by virtue of Article 6.2 guidance, to apply "corresponding adjustments" for all ITMOs.

---

[162] Singapore (response to UNCITRAL questionnaire, 1a).

[163] UNIDROIT, *Issues Paper*, supra note 21, para. 41.

[164] South Africa, "Carbon Offset Administration System", available at https://carbon.energy.gov.za/Home.aspx#:~:text=The%20South%20African%20Carbon%20Tax,the%20Gold%20Standard%20(GS).

[165] Australia (response to UNCITRAL questionnaire, 3a).

[166] Brazil (response to UNCITRAL questionnaire, 1b, noting that "voluntary credits can be admitted as Certificates of Verified Reductions or Removals of Emissions and can be used for the purposes of periodic reconciliations of obligations").

[167] Dominican Republic (response to UNCITRAL questionnaire, 3).

[168] Panama (response to UNCITRAL questionnaire, 1a).

[169] Paraguay (response to UNCITRAL questionnaire, 1a).

[170] Architecture for REDD+ Transactions, "About Us", available at www.artredd.org/about-us.

[171] Guyana (response to UNCITRAL questionnaire, 3a).

80. “Corresponding adjustments” can be described as a correspondence of actions to be carried out by: (i) the party that first transfers ITMOs (which must remove the mitigation outcomes achieved in its territory and transferred abroad as ITMOs from its books of account); and (ii) the party that uses the ITMOs towards its nationally determined contribution (which must add the mitigation outcomes that the ITMOs purchased represent to the mitigation outcomes achieved domestically). A party that authorizes the use of mitigation outcomes for another use than achievement of a nationally determined contribution (e.g. for CORISA, for the achievement of a voluntary climate target) is still required to apply “corresponding adjustments”.

81. Applying “corresponding adjustments” is crucial to ensure that each mitigation outcome is not counted twice–by the party where the mitigation outcome was achieved and the party or entity that has purchased the ITMOs generated by that mitigation outcome. By contrast, international transfers of VCCs do not require such adjustments. Thus, because applying “corresponding adjustments” ensures that the same reduction or removal of amount of CO_2 equivalent has not been counted twice, i.e. for the calculation of two different GHG net emissions balances, buyers could express a preference for carbon credits that have been adjusted.

82. VCCs may be authorized as ITMOs and become adjusted carbon credits under Article 6.2 of the Paris Agreement. However, it is for each country to decide whether VCCs issued as the result of climate mitigation projects conducted in its territory should be authorized as ITMOs. Therefore, an increased demand for adjusted VCCs could lead States to regulate VCMs activities unfolding in their jurisdictions. However, experts acknowledge that it remains difficult at this stage to anticipate how exactly Article 6 of the Paris Agreement will impact the functioning of the VCMs in practice.

III. Current legal issues related to the trading of verified carbon credits issued by independent carbon standard setters

83. As explained above, VCMs have emerged gradually without the intervention of public authorities and, as of now, most VCCs are delivered and traded outside any specific domestic or international legal framework. Therefore, even though VCCs have been “objects” of international trade for decades, many actors involved in VCMs are of the view that key legal aspects related to the cross-border trading of VCCs currently lack clarity or are not sufficiently harmonized among jurisdictions.

84. This situation is usually perceived as unsatisfactory as it tends to create an unpredictable business environment, make trading of VCCs unnecessarily complex, prevent further investments in VCMs and, thus, hinder their capacity to channel more finance towards mitigation projects.

85. As a result, there has been a growing expectation among the actors involved in VCMs for a more predictable and harmonized legal environment for the trading of VCCs to be developed. This expectation was expressed in recent studies, in which experts have emphasized that “[i]nvestment and transactions concerning complex assets such as VCCs *require* legal certainty”,[172] that trade in VCCs “*require* appropriate legal underpinnings”,[173] or that “[a] robust voluntary carbon market *must* be grounded in a strong legal foundation”.[174]

86. Echoing these concerns, the following sub-sections of the detailed study identify and present, in an analytical manner, the most salient legal issues that currently arise

[172] UNIDROIT, *Issues Paper,* supra note 21, para. 52 (emphasis added).

[173] TSVCM, *Taskforce on Scaling Voluntary Carbon Markets. Final Report*, supra note 136, p. 103 (emphasis added).

[174] ISDA, *Legal Implications of Voluntary Carbon Credits*, December 2021, p. 10 (emphasis added), available at www.isda.org/a/38ngE/Legal-Implications-of-Voluntary-Carbon-Credits.pdf.

in the context of the cross-border trading of VCCs issued by independent carbon standard setters. The issues discussed below concern the following topics:

(a) Legal nature of verified carbon credits under private law;

(b) Ownership of verified carbon credits;

(c) Secured transactions and collateralization;

(d) Transfer of verified carbon credits;

(e) Treatment in case of insolvency;

(f) Dispute settlement;

(g) Issues of applicable law.

87. For clarity purposes, the study addresses these topics in different sub-sections. However, many of the issues discussed in these sub-sections are closely connected. For instance, the question of whether VCCs may be used as securities in a given jurisdiction (Sub-section C), or which rules apply to their transfer between a seller and a buyer (Sub-section D), may depend on how VCCs are legally characterized in this jurisdiction (Sub-section A). Likewise, the way in which VCCs will be treated in case their owner becomes insolvent will depend on the law that will be applicable to this insolvency proceeding (Sub-section E).

A. Legal nature of verified carbon credits under private law

88. Any given market needs certainty regarding the characterization under private law of the thing that is being traded. Indeed, such legal characterization is key to answering a range of legal questions that are crucial for market participants, such as how this thing may be acquired and sold, what rights its owner may assert over it, how it will be treated upon insolvency of any market participant, whether it may be used as securities, or what tax and accounting rules will apply to it.

89. If private actors are unable to know with certainty how a thing will be treated under private law, it then becomes difficult for them to assess and quantify their risk exposure in those or any other unanticipated situations. This, in turn, may refrain them from purchasing this thing, or investing in it, because of the perceived uncertainties and legal risks surrounding the trading environment. Since the emergence of carbon markets, the importance of clarifying the legal nature of the carbon credits traded in CCMs has been widely highlighted in the legal literature.[175]

90. With regard to VCMs, the issue at the moment is that the precise legal nature of VCCs under private law often remains "elusive".[176] It should be noted that, in some jurisdictions, the law does provide some indications in that regard. For instance, in Paraguay, the law states that the VCCs that are to be registered in the national carbon credits' registry are objects of property and that their ownership may be transferred.[177]

91. However, in their response to the questionnaire, many countries have indicated that in their jurisdiction the legal nature of VCCs under private law is currently not specified by statutory law, judicial determination, or other forms of authoritative statement. This is notably the case in Argentina, Australia, Brazil, Brunei Darussalam, Burkina Faso, Canada, Côte d'Ivoire, Croatia, Dominican Republic, El Salvador, Guatemala, Guyana, Ireland, Japan, Kazakhstan, Malaysia, Mexico, Myanmar, Norway, Oman, Panama, Peru, Russian Federation, Singapore, Slovenia, Sri Lanka, Thailand, Türkiye and Turkmenistan.[178] Furthermore, as things currently stand, international law provides no guidance that would indicate what States collectively,

[175] A/CN.9/1120, paras. 15–16.

[176] Ben McQuhae & Co, "The Legal Nature of Carbon Credits", 15 March 2023, p. 1, available at https://bmcquhae.com/en/2023/03/15/the-legal-nature-of-carbon-credits.

[177] Paraguay, Law No. 7190 on Carbon Credits (12 October 2023), arts. 3 and 10.

[178] Response of these States to UNCITRAL questionnaire, 3b.

consider that the legal nature of VCCs should be in domestic law, as no global standards have been developed on this precise issue yet.

92. What makes this situation problematic is that because of their peculiarities, VCCs could potentially receive different legal characterizations in most jurisdictions, depending on how one envisages them. Thus, it is currently often difficult for the actors involved in VCMs to anticipate with an adequate level of certainty how VCCs will be treated under domestic law (although this level of uncertainty may vary across jurisdictions).[179]

93. In any case, legal experts insist on the importance of a precise understanding of the legal nature of VCCs under private law. As one study notes, "[t]he legal nature of VCCs is not a purely academic question. The legal nature determines how ownership rights in VCCs can be created and transferred […]. It also affects what type of security may be taken and enforced and how that can be achieved, as well as how VCCs would be treated following an insolvency".[180]

94. In their response to the questionnaire, some States also indicated how VCCs are treated, or are expected to be treated, for the purposes of regulatory law in their jurisdiction (i.e. whether VCCs represent a commodity, a financial instrument or something else). For instance, the United States mentioned that the CFTC (i.e. the entity responsible for regulating derivates contracts) recently issued guidance regarding the listing of derivatives contracts traded in CFTC-regulated exchanges, where the underlying commodity is a VCC.[181] In this guidance, the CFTC referred to VCCs as an "intangible commodity underlying a *derivative contract*", suggesting that VCCs are not financial instruments.[182] Canada noted that the Canadian Securities Administrators (CSA), which is the umbrella organization of Canada's provincial and territorial securities regulators, declared "certain intangible commodities, such as carbon credits and emissions allowances, to be commodities for purposes of securities legislation".[183] Conversely, Brazil indicated that it is expected that the VCCs that will be admitted as Certificates of Verified Reductions or Removals of Emissions and used for compliance purposes under the proposed ETS will have the legal nature of securities when traded in the financial markets.[184] It has also been reported that in Egypt, VCCs are recognized as tradable financial instruments and that under the regulations of the Abu Dhabi Global Market (an international financial centre and free zone), VCCs are regulated as "environmental instruments", which are a class of financial instruments.[185]

95. The way in which VCCs are characterized under regulatory law is an element that may affect their tradability. Furthermore, this characterization may also be relevant for a private law analysis, as it can provide some indications on how one could reasonably expect VCCs to be treated under private law. However, the two issues remain distinct, as determining the legal treatment reserved to VCCs under regulatory law does not necessarily answer the question of their legal nature under private law.

96. A wide consensus exists among legal experts on the importance for legal systems to recognize VCCs as being capable of being the subject of "proprietary

[179] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, p. 9.

[180] ISDA, *The Legal Nature of Voluntary Carbon Credits: France, Japan and Singapore*, November 2022, p. 14, available at www.isda.org/a/PlcgE/Legal-Nature-of-Voluntary-Carbon-Credits-France-Japan-and-Singapore.pdf.

[181] United States (response to UNCITRAL questionnaire, 3b).

[182] CFTC, "Commission Guidance Regarding the Listing of Voluntary Carbon Credit Derivative Contracts; Request for Comment", Federal Register, vol. 88, No. 247, 27 December 2023, p. 89412.

[183] CSA, CSA Notice of Amendments to Multilateral Instruments 25-102 and Changes to Companion Policy 25-102, 29 June 2023, available at www.asc.ca/-/media/ASC-Documents-part-1/Regulatory-Instruments/2023/06/6103549-Amendments-to-MI-25-102-and-Changes-to-CP.ashx; Canada (response to UNCITRAL questionnaire, 2b).

[184] Brazil (response to UNCITRAL questionnaire, 1b).

[185] IOSCO, *Voluntary Carbon Markets. Consultation Report,* supra note 97, p. 12.

rights".[186] If the law does not allow private actors to acquire "proprietary rights" in relation to VCCs, then the functioning of VCMs could be problematic. However, there is also an agreement on the fact that: (i) the issues surrounding the legal characterization of VCCs depend on the context of each legal system and may therefore vary across jurisdictions; and (ii) in most jurisdictions, there may be different approaches to recognize that VCCs can be the subject of "proprietary rights".[187]

97. The following paragraphs expose various alternatives for the characterization of VCCs under private law, which all have legal implications for the tradability of VCCs.

1. VCCs as a bundle of contractual rights

98. A first possible approach would be to characterize VCCs as a bundle of contractual rights. Under this approach, VCCs would be seen as the result of the performance of contractual obligations by one or more identified parties (like a service). This possible qualification stems from the fact that VCCs exist only through, and because of, the performance of a set of contractual obligations. In order for VCCs to be issued and traded, a series of contracts is to be executed. These contracts include, inter alia: a contract between the project proponent and the independent carbon standard setter; a contract between the project proponent and a verification and validation body; a contract between the project proponent and the registry; a contract between the registry and another person who requests the issuance of VCCs in a new account in its name.

99. It has been noted, however, that most of these contracts may not be relevant in this context, given that the issuance of VCCs is precisely the result of the execution of these contracts. Thus, once VCCs are issued, there could be (although this may depend on the terms of the contracts) no "remaining contractual obligations and no remaining rights".[188] While this might be the case with the contracts between the project proponent and the independent carbon standard setter, or the project proponent and the verification and validation body, it seems that if VCCs appear in a registry, it is because: (i) a person has concluded a contract with the registry to have an account in this registry in which those VCCs are recorded; and (ii) this contract is still in force.

100. In that sense, the holder of VCCs would own a bundle of contractual rights against the registry. What this bundle of rights could encompass would vary according to the Terms of Use of each registry. But it would be likely to include the right to see the inscription of the VCCs in the registry maintained, the right to see the VCCs transferred to another account whenever the owner of the account requests it, as well as the right to retire the VCCs. Thus, VCCs could be envisaged as the result of the continuous execution by the registry of a contractual obligation.

2. VCCs as intangible property

101. A second approach would be to consider VCCs as "intangible property".[189] The precise meaning of this approach would vary from jurisdiction to jurisdiction, but

---

[186] UNIDROIT, *Issues Paper*, supra note 21, para. 66. In line with the approach adopted in the UNIDROIT's Principles on Digital Assets and Private Law, the expression "proprietary rights" is in this context "used in a broad sense to include both proprietary interests and rights with proprietary effects", and intended to "express that persons [could] have rights or interests in [VCCs], which rights or interests can be asserted against third parties, i.e., against persons that are not necessarily contractual parties". UNIDROIT's Principles on Digital Assets and Private Law, para. 3.4.

[187] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, pp. 9–10; Ben McQuhae & Co, "The Legal Nature of Carbon Credits", supra note 176, p. 1.

[188] UNIDROIT, *Issues Paper*, supra note 21, para. 71.

[189] In a recent report, the United Kingdom Law Commission noted that "the prevailing view in most jurisdictions (including under the law of England and Wales) is that VCCs are 'a form of intangible property' – they are capable at law of being things to which personal property rights can relate". Law Commission, *Digital assets: Final report*, Law Com No 412, 2023, para. 4.68 (United Kingdom), available at www.lawcom.gov.uk/project/digital-assets/.

functionally the approach means that VCCs could be the object of rights which are effective against third parties, despite not being tangible. This approach could apply to a VCC which does not comprise of any contractual rights, as well as a VCC which does. A VCC could thus be seen as a finite resource which is capable of being the object of such rights. The finite resource, on this analysis, would be the certification that one ton of CO_2 equivalent has been removed from the atmosphere, or not emitted in the atmosphere, by an identified and specific climate mitigation project.[190] A potential problem with this analysis is that the certification (in the absence of contractual rights or any relevant legislation) is merely information, which is not capable of being the subject of proprietary rights in many jurisdictions.[191] Against this, it can be argued that a VCC is not merely information, because of the way in which it is issued, registered, transferred and retired. Instead, each VCC is an identified unit, which is, and which is treated as, an item separate from the information it contains.

102. Reference could, therefore, be made to the general features of "intangible property" (widely construed, as explained in the previous paragraph) accepted by most legal systems. For example, in some countries, for a thing to be considered as property it must be established that it is "definable, identifiable by third parties, capable in its nature of assumption by third parties and [having] some degree of permanence or stability", while in other countries "the criteria traditionally used to define property tend to revolve around the questions of whether a thing has an economic value, whether it can be transferable, and whether a person can use it without interference by third parties".[192] A VCC, because of its specific characteristics as described above, would appear to satisfy these criteria.

3. VCCs as digital assets

103. A further issue that deserves consideration is that since VCCs primarily exist in an electronic format with a unique serial number, they may be viewed as a form of "digital asset". The term "digital assets" is one that can be interpreted widely, and only a subset of "digital assets" are likely to be capable of being the subject of proprietary rights.

104. Yet, as digital assets are increasingly important in modern society – and because of their peculiarities from the perspective of property law – a question that currently elicits considerable interest in the legal community is whether digital assets should be recognized as a new legal category in domestic law. Thus, the fact that countries could eventually develop new bespoke legal categories for digital assets could add another layer of uncertainty as to how VCCs could be characterized under property law. In that regard, it is worth mentioning that in a recent report on digital assets, the United Kingdom Law Commission considered that some digital assets were neither things in possession nor things in action, but part of a third category of things to which personal property rights can relate, and that VCCs, depending on how they were structured, were an example of things likely to fall within this third category, either because they were structured as digital assets or as "intangible property" more generally.[193]

105. UNIDROIT's Principles on Digital Assets and Private Law (the "DAPL Principles") provide that a certain subset of digital assets can be the subject of proprietary rights; namely, those electronic records that are capable of being subject to control.[194] Control in this context is understood as factual rather than legal control and is defined as having: (i) the exclusive ability to prevent others from obtaining substantially all of the benefit from the digital asset; (ii) the ability to obtain substantially all of the benefit from the digital asset; and (iii) the exclusive ability to

[190] UNIDROIT, *Issues Paper*, supra note 21, para 73.
[191] Ibid.
[192] A/CN.9/1120, para. 21.
[193] Law Commission, *Digital Assets: Final report*, supra note 189, para. 4.74.
[194] DAPL Principle 2(2).

transfer those abilities to another person.[195] Thus, under the DAPL Principles, the person who controls the digital assets does so as a matter of fact; because of the way digital assets are set up there is a technical system that prevents anyone else from controlling the asset. In the context of VCCs, however, the holder of the VCC is unlikely to have this degree of factual control. As matters currently stand, registries do not currently operate like blockchains and do not provide the degree of control to holders that blockchains provide.

4. Legal implications of the choice of a characterization

106. The choice of legal characterization for VCCs under private law is not a purely theoretical question. This choice may have concrete implications with regards to the conditions under which VCCs are traded, for the legal security of the commercial transactions of VCCs and, thus, for the well-functioning of VCMs.

107. For instance, under the intangible property approach, VCCs could be seen as representing intangible things whose existence is distinct from the registry (the function of the registry being primarily to record the VCCs).[196] By contrast, under the contractual approach, VCCs derive from the contractual relationship between the holder and the registry. In case of insolvency of the entity operating the registry or issues concerning the identification of the moment when VCCs begin to exist as objects of law, the choice of one characterization or the other may lead to different outcomes.

108. More importantly, in case of a sale of VCCs, what are transferred from the seller to the buyer under the intangible property approach are rights over an intangible thing; under the contractual approach, what are transferred are contractual claims. Yet, in many jurisdictions, the rules governing the transfer of contractual claims are more complex and stringent than those governing the transfer of rights over things. Thus, the dominant view among the legal experts consulted for the preparation of this study seemed to be that qualifying VCCs as contractual claims would likely lead to an undesirable outcome.

109. Characterizing VCCs as a bundle of contractual rights or intangible property may also have other legal implications, such as in case of succession. It should also be noted that treating VCCs as a bundle of contractual rights may raise issues regarding the applicability of the extinctive prescription rules. As can be seen, the choice of a legal characterization might have profound consequences regarding how VCCs can be bought and sold, and this choice could therefore facilitate or hinder their trading.

5. Possible legal characterization in some jurisdictions

110. The following paragraphs give an overview of how legal experts consider that VCCs could potentially be, or would likely be, legally characterized under private law in some jurisdictions under the current state of the law.

111. Under English law, the existing literature suggests that although VCCs could be considered as a bundle of contractual rights, they would be more likely to be treated as intangible property.[197] An important point in that case is that, at the time the United Kingdom was a member State of the EU, EU emission allowances were recognized in the jurisprudence as a form of intangible property under English law.[198] Some authors have even been more specific by asserting that, “[a]s things currently stand,

[195] DAPL Principle 6(1).

[196] When VCCs are considered as intangible property, it should be noted that a person who has concluded a contract with a registry remains the holder of contractual rights against the registry. In such a case, however, the right to see the VCCs appear in the registry is not constitutive of the existence of those VCCs, which exist as intangible objects independently of their appearance in the registry.

[197] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, p. 10 and p. 13.

[198] *Armstrong DLW GmbH v. Winnington Networks Ltd* [2012] EWHC 10 (United Kingdom), para. 52 (ruling that “an EU allowance is ‘intangible’ property”).

a properly issued carbon credit is likely to be a documentary intangible (i.e.[,] a personal property right) under English law".[199]

112. However, some observers contend that it is not enough just to state that VCCs are intangible property, as this statement must be substantiated by legal principle. It has been argued that, in the absence of a specific right or claim represented by (or embodied in) the VCC, VCCs – or to be more precise, what VCCs are in their substance – can be envisioned as simple certificates attesting that one ton of CO_2 equivalent has been reduced or removed from the atmosphere. Yet, as noted by one participant to the first session of the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits, this could be problematic as a certificate is merely information and information is not capable of being the subject of proprietary rights under English law. Therefore, in addition to focusing on the substance of VCCs, it has been suggested that VCCs could be legally characterized by reference to their form. For example, a VCC issued in paper form would be a tangible,[200] and a VCC issued in the form of a digital asset could be the subject of proprietary rights because of that form.[201]

113. In Europe, EU legislation does not specify how VCCs should be treated under private law in the member States. As such, there is no unified definition of VCCs that applies across the EU and "each member state treats VCCs at its own discretion".[202] However, the EU is proposing an EU-wide voluntary certification framework for carbon removals, and it has been noted that the work carried out in this context could eventually lead the EU to provide indications on the legal nature of those carbon removal units. If that were the case, the legal nature conferred to those units could then be a relevant indication for determining the legal nature of VCCs in EU member States.

114. Absent a specific statutory definition, in civil law legal systems, it is often considered that VCCs could qualify as intangible movable property.[203] For instance, in France, although the question of the legal nature of VCCs has not been specified yet by statutory law or judicial determination, authors are of the view that VCCs should be considered as intangible movable property.[204] A key aspect in this case is that EU emissions allowances are already recognized as intangible movable property by French law.[205] In Japan, which also has a civil law system and where the legal nature of VCCs has not been specified, it appears that VCCs should be able to be interpreted as being a form of intangible property.[206] However, experts note that "without legislative action, the legal nature under Japanese law remains unclear".[207]

---

[199] Ben McQuhae & Co, "The Legal Nature of Carbon Credits", supra note 176, p. 3. In English law, a documentary intangible is a document that entitles its holder to demand something (money, goods) and which allows it to transfer this right to another by delivery of the document followed by any necessary indorsement. It should be noted that since an actual documentary intangible must be tangible, the possibility to legally characterize VCCs as such remains contested given that VCCs usually exist only in an electronic format.

[200] UNIDROIT, *Issues Paper*, supra note 21, para. 79.

[201] Ibid., para. 83; Law Commission, *Digital Assets: Final report*, supra note 189, para. 4.74.

[202] M. Burzec, K.K. Lewis, "Voluntary Carbon Market: Challenges and Promises of the Green Transition Tool", Ernst & Young, 20 August 2021, available at www.ey.com/en_pl/law/voluntary-carbon-market.

[203] R. Bhadoria, D. Banjoko, "Carbon Credits and Climate Change", Trinity International LLP, 14 March 2023, available at www.trinityllp.com/carbon-credits-and-climate-change.

[204] P. Larroque, A-E. Rubio, "Neutralité carbone : quel cadre juridique pour la compensation volontaire?", CMS Francis Lefebvre Avocats, 24 June 2021, available at https://cms.law/fr/fra/news-information/neutralite-carbone; ISDA, *The Legal Nature of Voluntary Carbon Credits: France, Japan and Singapore*, supra note 180, p. 7.

[205] France, Environmental Code, art. L. 229-11.

[206] ISDA, *The Legal Nature of Voluntary Carbon Credits: France, Japan and Singapore*, supra note 180, p. 10.

[207] Ibid., p. 11.

Similar conclusions have been reached regarding other jurisdictions such as Singapore[208] and Germany.[209]

B. Ownership of verified carbon credits

115. Several issues may arise in relation to "ownership"[210] of VCCs. A first area of uncertainty concerns the precise moment where VCCs begin to exist in the realm of law, i.e. as objects of legal rights and duties. It seems that there is currently no consensus among legal experts on whether VCCs start to exist from the moment the independent carbon standard setter certifies that the reduction or removal of GHGs has occurred (which implies that VCCs exist before their appearance in a registry) or if VCCs only begin their existence upon their appearance in a registry. The answer to this question is of importance as it will enable to determine when ownership over VCCs is established. To illustrate, if an entity that operates a registry does not issue VCCs in its database (because of a technical matter or any other reason), issues of ownership may be relevant for determining whether the project proponent may still sell those VCCs as their legitimate owner.

116. If it is deemed that VCCs start their existence upon their appearance in a registry, a subsequent question remains: should it be considered that VCCs have an autonomous existence as a thing distinct from the registry or do VCCs exist only through their inscription in the registry? In other words, are the VCCs that are being recorded and the registry in which those VCCs are recorded distinguishable, or is the inscription of the VCCs in the registry what constitutes their existence? The answer to the question seems closely related to the fundamental issue of the legal nature of VCCs.

117. Once VCCs appear in the registry, another set of questions arises. One concerns the legal value of the registry and whether the fact that a person holds an account in which VCCs are recorded should be considered as proof (or perhaps a presumption) of ownership of these VCCs. Some legal experts contend that, to the extent that VCCs are things that exist apart from the registry, the function of the registry is only to show evidence of who holds which VCCs, for the holder of VCCs may not always be their proper owner. A VCC holder may indeed act as a custodian.[211] In fact, most registries currently make it clear in their terms of use that they are not acting as registries of title.[212] Therefore, some argue that a VCC registry should not be treated like a form of registry of deeds and that an inscription in a VCC registry should not be viewed as a proof of ownership (although it could still serve to establish a presumption of ownership). If that is the case, this situation could increase the complexity of trading in VCCs, as it could become more difficult for potential VCCs purchasers to be certain that the person from whom they buy VCCs is their legitimate owner.

---

[208] Ibid., pp. 11 and 14 (noting that "despite the flexibility of Singapore courts in recognizing property rights in intangible assets where the market treats those assets as property, it remains the case that, pending an authoritative statement, there is currently a degree of perceived or residual uncertainty over the characterization of VCCs under Singapore law").

[209] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, p. 15 (noting that "[s]imilar to other jurisdictions, a German analysis would need to consider whether VCCs quality or are deemed to qualify as property […] or as contractual rights").

[210] The notion of "ownership" is used in this context in a broad sense, to refer to the bundle of exclusive rights and interests that a person may have in or over a VCC and that can be asserted against third parties, according to the law of a specific jurisdiction.

[211] The notion of custodian is defined in the DAPL Principles as "a person who provides services to a client pursuant to a custody agreement […] and is acting in that capacity" (Principle 10); UNIDROIT, *Issues Paper*, supra note 21, para. 125 (noting that "custody, broadly speaking, is where a legal person maintains a digital asset on behalf of and for the benefit of another – [i.e.,] a client – in a manner that gives the client special protection in the event of unauthorized dispositions of the asset and the insolvency of the custodian who maintains the digital asset").

[212] For instance: Verra, *Terms of Use. Verra Registry*, supra note 133, Section 9.1 (stating that "the User acknowledges and agrees that Verra does not in any way guarantee legal title to the Instruments and the User relies on any content obtained through the Verra Registry at its own risk").

118. A second question on which clarification may be desirable is whether co-ownership of VCCs is possible. It is well-established that there should always "be a single holder of a VCC at any given moment",[213] and that VCCs should only be capable of being claimed one time and by one entity.[214] The extent to which co-ownership of VCCs (for instance, by parties to a joint venture) may be possible may depend on how VCCs are legally characterized in a jurisdiction. If, for instance, VCCs are recognized not as intangible things but as contractual rights, it has been argued that the idea of co-ownership may not be accepted under certain legal systems in which "contractual obligations can only be owed to one person at the time".[215]

119. A third question relates to the criteria (or criterion) upon which the identification of the owner of VCCs should be based. Ownership is usually conceived as encompassing the right to possess and to exercise exclusive control over an object of property. Yet, as mentioned above, VCMs form a complex ecosystem with many actors and intermediaries. Thus, identifying the owner of VCCs could raise difficulties.

120. A first aspect is that, as entities operating registries always retain a certain level of control over VCCs (e.g. they may, at any time, suspend the access of a holder of VCCs to its account, which would make any transfer impossible[216]), it seems difficult to define ownership in the context of VCCs by referring to the idea of exclusive control over a thing, or at least to understand this criteria in the same way as it may be interpreted in other contexts.

121. Another important element to consider is that holders of VCCs (i.e. those who have an account in a registry in which VCCs are recorded) may act as custodians. A holder can indeed conclude a contract with a client by virtue of which this client acquires the right to instruct the holder of the VCCs to either retire them on its behalf or to sell them to a third party. In such situations, the person entitled to control the VCCs and the person with effective control over these VCCs (i.e. the holder of the account which has the credentials to request the registries to transfer or retire VCCs) would not be the same.

122. Additional issues relating to ownership of VCCs may arise when VCCs are generated by climate mitigation projects that involve the sequestration of GHG in reservoirs (e.g. trees, peatland, underground geologic formations). Uncertainties could indeed appear regarding whether the owner of the reservoirs in which the carbon has been sequestered (which may be a private or public entity) is entitled to assert ownership rights over the VCCs generated by the sequestration project. A distinct but related potential issue is whether the subsequent owners of VCCs that have been generated by a sequestration project could be regarded as being the owner of an interest in the land in which the carbon that has led to the issuance of those VCCs has been stored.

123. For the well-functioning of VCMs, legal experts consider crucial to provide clarity on: (i) who is the initial owner of VCCs in all possible scenarios; and (ii) the fact that owing VCCs does not confer any interest in real property. In that regard, it should be noted that legal frameworks governing the issuance of carbon credits resulting from jurisdictional REDD+ activities usually contain specific requirements on those aspects. For instance, under the FCPF Standard, the Programme Entity (which can be a sub-national entity or a State) must "demonstrate its ability to transfer title to emissions reductions (ERs), free of any interest, Encumbrance of claim of a

[213] UNIDROIT, *Issues Paper*, supra note 21, para. 93.
[214] A/CN.9/1120, para. 21.
[215] UNIDROIT, *Issues Paper*, supra note 21, para. 93.
[216] For instance: Verra, *Terms of Use. Verra Registry*, supra note 133, Section 14.6 (stating that "Verra may suspend the User's access to the Verra Registry and the User' Verra Registry account […] at any time with or without cause and without prior notice to the User").

Third Party, prior to any ERs Transfer".[217] Likewise, under TREES (the standard operated by ART), the rules state that participants "must explain how, under existing constitutional or legal framework, carbon rights and/or related intangible property interests, are established and addressed" and that only carbon credits for which "clear ownership or rights" have been demonstrated will be issued.[218]

C. Secured transactions and collateralization

124. As assets that have an economic value, an important question in relation to VCCs is whether their owners are allowed to use them as collateral to secure loans or other contractual obligations in the context of their business activities. During the first session of the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits, some actors involved in VCMs highlighted that taking security over VCCs has been common practice for many years now. Nevertheless, legal experts are generally of the view that, under the present circumstances, this practice often remains surrounded by legal uncertainties.

125. The first kind of uncertainty that may arise is whether the law of a given jurisdiction allows security rights to be created over VCCs and, if so, whether existing domestic frameworks for security rights can be applicable to VCCs.[219] During the consultations conducted for the preparation of this study, legal experts agreed that the question of the applicability of existing legal frameworks could pose challenges. As an illustration of that, divergent views were expressed on whether the UNCITRAL Model Law on Secured Transactions would apply to VCCs.

126. In many cases, the answer to such query will be "linked to the fundamental question of the legal nature of VCCs […] and whether a VCC can be the subject of proprietary rights".[220] In most legal systems, a security right can only be created if the grantor has rights in the assets to be encumbered or the power to encumber it (a security right is a proprietary right and if a VCC could not be the subject of a proprietary right, it could not be the subject of a security right).[221] Thus, as long as the exact legal nature of VCCs under private law remains unsettled in a jurisdiction, a lack of clarity may persist as to whether security arrangements will be treated as valid and enforceable under the law of this jurisdiction.

127. The importance of clarifying this point is highlighted in the literature, which emphasizes that the possibility of using VCCs as collateral is "[a] key concern for VCM participants".[222] Furthermore, in the context of cap-and-trade systems, it has been suggested that "the commercial value of emission allowances tends to increase when the law clearly provides that emission allowances are capable of supporting the existence of security interests".[223] A similar reasoning would seem to apply to VCCs.

128. Clarifying the legal nature of VCCs may not, however, suffice to dispel all legal uncertainties relating to the use of VCCs as collateral. For instance, issues could arise regarding whether a security right can be created over VCCs that will be issued in the future or whether VCCs can be treated as eligible collateral in the context of financial prudential requirements across jurisdictions. Other uncertainties may appear

[217] FCPF, Emission Reductions Payment Agreement (ERPA) Template, November 2014, Schedule 1, available at www.forestcarbonpartnership.org/system/files/documents/fcpf_erpa_commercial_terms_template_november_1_2014_english.pdf.

[218] ART, The REDD+ Environmental Excellence Standard (TREES), August 2021, p. 81, available at www.artredd.org/wp-content/uploads/2021/12/TREES-2.0-August-2021-Clean.pdf.

[219] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, p. 5.

[220] UNIDROIT, *Issues Paper*, supra note 21, para. 113.

[221] For instance: UNCITRAL Model Law on Secured Transactions, art. 6.1 ("A security right is created by a security agreement, provided that the grantor has rights in the asset to be encumbered or the power to encumber it").

[222] UNIDROIT, *Issues Paper*, supra note 21, para. 112.

[223] European Court of Auditors, The integrity and implementation of the EU ETS, European Union, 2015, p. 25, available at https://www.eca.europa.eu/Lists/ECADocuments/SR15_06/SR15_06_EN.pdf.

concerning the applicable rules on third-party effectiveness. Legal experts agree that since VCCs registries are not the prescribed secured transactions registry, they do not represent a mechanism to render a security right effective against third parties. Whether any form of registration in such a registry amounted to the requisite degree of legal control for third party effectiveness would vary very considerably from jurisdiction to jurisdiction. Questions could also arise as to the conditions under which control over an encumbered VCC would be considered established, and, in many cases, specific and new legislation would be required for this to be the case. Thus, for their security rights to be effective against third party, VCMs participants may wonder whether a formal registration in a secured transactions registry is necessary. Because of these uncertainties, it has been argued that the rules for determining priority of security rights in VCCs may not provide predictability.[224]

129. Furthermore, as each jurisdiction has its own legal regime governing collateral and securitization, and the creation, validity, perfection and enforcement of security rights, discrepancies could appear among jurisdictions regarding how domestic laws regulate security rights over VCCs. Considering that VCCs are an object of international trade, the need for coordination – for instance among registries that record the security right over VCCs – was highlighted during the consultation conducted for the preparation of this study.

D. Transfer of verified carbon credits

130. VCCs are currently traded OTC, through private bilateral contracts, or on exchange-traded markets.[225] In their responses to the UNCITRAL questionnaire, two States provided information on the trading environment of VCCs in their country. Canada mentioned the existence in its territory of a stock exchange specializing in the trading of VCCs.[226] The United States indicated that VCCs are primarily transacted OTC in their country, but that some credit aggregators and retailers are increasingly using exchange platforms to purchase credits – via spot or futures contracts – in bulk and at lower prices than may be secured OTC.[227]

131. According to VCMs analysts, there is currently a need for greater standardization in VCMs, including with regards to the contracts through which VCCs are transferred.[228] Observers note, however, that "[s]ome exchanges have been developing more standardized products, notably in the derivatives market", such as the trading platform Xpansiv which "developed the Global Emission Offset […] contract, which is a product whereby a seller must physically deliver a credit underpinned by specific project characteristics".[229] It is also mentioned that the work of ISDA, which "published industry documentation for the trading of [VCCs], setting out transactions definitions and related template confirmations for spot, forward and option contracts […] could further support standardization".[230]

132. Whether in OTC or exchange traded markets, there seems to be a wide agreement among legal experts on the fact that the predictability of the legal framework for VCCs transfers could be enhanced. At present, it seems that there are situations in which parties to commercial transactions of VCCs lack authoritative guidance to ascertain the possible answer to some of the legal questions that could arise in the context of these transactions.

---

[224] UNIDROIT, *Issues Paper*, supra note 21, para. 117.

[225] During the consultations conducted for the preparation of this study, some experts noted that the development of emerging technologies, such as distributed ledger technology, could lead to evolutions in the ways in which VCCs are transferred and that any legal analysis on VCC transfers should be mindful of such potential evolutions.

[226] Canada (response to UNCITRAL questionnaire, 3a).

[227] United States (response to UNCITRAL questionnaire, 3a).

[228] TSVCM, *Taskforce on Scaling Voluntary Carbon Markets. Final Report*, supra note 136, p. 103.

[229] IOSCO, *Voluntary Carbon Markets. Consultation Report*, supra note 97, p. 40.

[230] Ibid.

133. This is notably the case regarding the applicability of the force majeure clause to situations of non-delivery of VCCs caused by regulatory changes, a potentially higher risk in connection with VCCs as compared to other tradeable assets in view of the evolving public policy environment. A project proponent could find itself unable to deliver the VCCs it promised to transfer to a buyer, by virtue of a validly concluded sales contract, because of regulatory changes in the country in which the mitigation project is carried out (making this project economically non-viable or simply impossible). Depending on the legal characterization of VCCs (e.g. whether property or contractual rights) and the time of their existence, it may be unclear whether non-delivery of VCCs in such circumstances could be adequately dealt with by an application of the force majeure clause.

134. Legal uncertainties may also arise regarding the conditions under which a transfer of VCCs should be deemed completed and the exact moment at which ownership passes from the seller to the buyer. Sale contracts of VCCs are often concluded before VCCs are transferred from the seller's account to the buyer's account. A question arises as to whether transfer of ownership occurs upon the transfer of the VCCs from one account to another in the registry, or when the sales contract is concluded. The answer to this question would likely depend on the applicable law and it could also be clarified between the seller and the buyer on an ad hoc basis by express contractual provisions. Nevertheless, it would be desirable that national law is clear on this point and common guidance regarding the relationship between delivery of VCCs and title transfer could contribute to a more predictable VCCs trading environment.

135. An additional factor to consider is that the holder of an account in which VCCs are registered may act as a custodian. According to the Terms of Use of some registries (such as Verra), if the custodian transfers the VCCs on behalf of a third party, it must provide advance written notice to the registry that it will engage in such activities.[231] Whether non-compliance with this formality could impact the transfer of ownership between the seller of the VCCs, which has instructed the custodian to transfer them, and the buyer of VCCs, and to what extent, remains to be determined. How this issue would be addressed would likely depend on the applicable law and the provisions of the sales contract. For instance, a contract could specify that transfer of ownership is dependent on the fulfilment of a specified condition.

136. Another area of uncertainty concerns the rights and duties of the sellers and buyers of VCCs. A key issue in VCMs remains that VCCs may not all possess the same quality (e.g., they may not all possess the same level of environmental integrity, they may not all represent GHG removals that have the same risk of reversal[232]). Furthermore, their existence as tradable assets might be compromised by external events, even retroactively after having been sold multiple times in the secondary market. As the CFTC explains, "VCCs issued for a project or activity may have to be recalled or cancelled due to carbon removed by the project or activity being released back into the atmosphere, or due to a re-evaluation of the amount of carbon reduced or removed from the atmosphere by the project or activity".[233]

137. This context may give rise to various situations for which clear legal answers do not seem to exist at the moment. For instance, it has been noted that "it is unclear whether a VCC seller has an obligation to guarantee the quality (or the existence) of the underlying [c]arbon [p]roject and which party bears the risk of the continued validity of the VCC" and that "it remains to be determined whether the VCC seller could be held liable for the shortfall in carbon offsets or others issues affecting the VCC".[234]

---

[231] Verra, *Terms of Use. Verra Registry*, supra note 133, Section 1.5.

[232] For instance, GHG removed from the atmosphere through forestry-based projects have a greater risk of reversal because of exposure to wildfires.

[233] CFTC, "Commission Guidance Regarding the Listing of Voluntary Carbon Credit Derivative Contracts; Request for Comment", supra note 182, p. 89417.

[234] UNIDROIT, *Issues Paper*, supra note 21, para. 102.

138. According to market participants, VCMs currently operate "largely on a 'buyer beware' model, where VCC buyers are expected to carry out proper diligence on, for example, the [c]arbon [p]roject [d]eveloper and its track record", even if the "lack of complete information may hinder a VCC buyer's ability to properly carry out such diligence".[235] Nevertheless, should a buyer find that the VCCs it purchased are subsequently cancelled, or if this buyer faces legal actions due to the lack of environmental integrity of the VCCs used to substantiate a mitigation claim, questions could arise regarding the legal remedies available to this buyer against the seller. Thus, uncertainties persist at the moment regarding the extent to which a purchaser would be legally protected.

139. A transfer of VCCs may correspond to the sale of VCCs between a seller and a buyer, but it may also correspond to the transfer of VCCs between two different registries. While most of the registries are currently not interconnected, these kinds of transfers could be achieved by the cancellation of VCCs in one registry and the reissuance of the same amount of VCCs in another registry. In such cases, legal experts consulted for the preparation of this study raised the query of whether the legal nature of VCCs would change upon their transfer from one registry to another.

140. A last aspect related to the transfer of VCCs which deserves consideration is whether VCCs can be considered fully interchangeable, i.e. fungible. Whether two things may be deemed fungible (i.e. when one considers that they can substitute for each other to fulfil the same function) depends on the context in which they are assessed. They may be deemed fungible for a specific purpose and not for another.[236] In the case of VCMs, there are different dimensions of the life of VCCs in which fungibility may be assessed.

141. For instance, fungibility could be assessed from the perspective of contractual practice. In that case, VCCs could be deemed fungible if the same terms of contract are used by VCMs participants for the trading of any type of VCC, regardless of the identity of the independent carbon standard setter that issued it. Fungibility could also be assessed from the perspective of the interoperability between VCMs. If an account holder is requested by an independent carbon standard setter to surrender VCCs to address a situation of reversal, in many cases the account holder will only be allowed to surrender VCCs issued by this carbon standard setter. In that context, whether VCCs are fungible is intrinsically linked to market segmentation and the interoperability of the registries.

142. Another perspective from which fungibility could be assessed is that of what VCCs are ultimately made for, i.e. substantiating a mitigation claim in a (public) statement. The fact there "already exists a degree of uniformity in the way VCCs are measured"[237] (each VCC corresponds to one ton of GHG reduced or removed from the atmosphere) could be viewed as an indication that VCCs may be considered fungible in this context. However, VCCs are generated by different projects and different independent carbon standard setters, and the level of environmental integrity of each VCC might not necessarily be identical, or at least be perceived as such by market participants. Moreover, some VCCs are deemed eligible to be used for compliance purposes under programmes such as CORSIA, while others are not. In the world of VCMs, it is usually said that all VCCs are not created equal and that – just like with diamonds (and unlike gold) – the value of VCCs is judged on a variety of metrics.

143. It has been argued that "ensuring broad fungibility of VCCs is key to driving deep, liquid markets" and "that VCCs should, as far as possible, be interchangeable for the purposes of satisfying obligations between market participants to transfer

[235] Ibid., para. 104.

[236] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, p. 16 (noting that: "[b]anknotes, for example, are fungible to satisfy monetary obligations, but can be regarded as specific items of property (each note is serialized) for other purposes, such as tracing").

[237] UNIDROIT, *Issues Paper*, supra note 21, para. 108.

VCCs".[238] To that end, legal experts have suggested that it would be key "to determine the minimum parameters required for VCCs to be considered equivalent for the purposes of discharging an obligation to transfer a VCC (for example, under relevant trading documentation)".[239] Thus, despite their variances, VCCs could be considered fungible for trading purposes, provided that they meet certain quality thresholds.[240]

E. Treatment in case of insolvency

144. A predictable legal environment for the trading of VCCs also implies the ability of market participants to understand how VCCs will be treated in cases of insolvency. Yet, at the moment, legal experts are of the view that situations of insolvencies could pose various legal challenges.

145. This would be the case, for instance, with the insolvency of a private actor operating a registry in which VCCs are recorded. The insolvency of a VCC registry could potentially "lead to the 'perishing' of the digital carbon credit", depending on how the VCC's legal nature is characterized.[241] However, if, under property law, VCCs are qualified as an intangible property, and if it is considered that the function of VCCs registries is only to evidence the existence of the VCCs (i.e. that they are not constitutive of VCCs existence), it would then be conceivable from a legal standpoint to conclude that VCCs have not ceased to exist.[242]

146. The insolvency of a project proponent, whose project has already generated VCCs that are transacted on the secondary market, could also raise legal questions, especially if these VCCs are the result of GHG removals. For instance, one could wonder whether the disappearance of the legal entity which was responsible for ensuring that the carbon remains stored in the reservoirs (e.g. trees, soils, subsurface) would affect the validity of the VCCs that have been generated by this project and which are traded on the secondary market.

147. In addition, issues could appear concerning the fate of VCCs owned by a person who entered into an insolvency proceeding. To give an example, if the creditor and the insolvent person both have accounts in the same registry, could the VCCs still be transferred from one account to the other if the insolvent person refuses to instruct the registry to execute this transfer?

148. In any case, the literature suggests that the way in which VCCs will be treated in situations of insolvency will likely depend on the legal characterization they receive under property law. It is also contended that the UNCITRAL Model Law on Cross-Border Insolvency and related instruments could provide some guidance to assist States in addressing situations of insolvency involving VCCs.[243]

F. Dispute settlement

149. VCMs form a complex ecosystem that relies on a web of legal relationships between various actors. In addition, climate mitigation projects that lead to the issuance of VCCs are always carried out under the jurisdiction of a State, and in a territory that has its own economic, social, and cultural realities. It follows that the legal disputes that may arise in connection with VCCs may take different forms and involve different kinds of parties.

---

[238] ISDA, *Legal Implications of Voluntary Carbon Credits*, supra note 174, p. 16.

[239] Ibid.

[240] Ibid. However, some analysts note that the market has now moved away from fungibility, with "pools of liquidity" emerging. This shift is attributed to buyers becoming increasingly discerning about the underlying project and the details of particular VCCs that they are purchasing.

[241] UNIDROIT, *Issues Paper*, supra note 21, para. 123.

[242] At the first session of the UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits, one person argued that these "orphan" VCCs could be rescued by another registry, which would harbour them.

[243] UNIDROIT, *Issues Paper*, supra note 21, para. 121.

150. At a first level, disputes can arise between the actors that are directly involved in VCMs and that play a role in the issuance and the trading of VCCs. Such disputes may oppose, inter alia: a project proponent and a validation or verification body; a project proponent and an independent carbon standard setter; an independent carbon standard setter and a validation or verification body; a project proponent and an investor; a project proponent and a VCCs purchaser; a VCCs buyer or seller and an independent carbon standard setter; a VCCs buyer or seller and a validation or verification body; a buyer and a seller of VCCs; two independent carbon standard setters or two registries.

151. How each of these forms of disputes would be settled would likely depend on the provisions included in the contracts that underpin the activities of VCMs participants, and the law that applies to these contracts. In that regard, it should be noted that the documentation of the independent carbon standard setters often contains provisions that limits their liability.[244] However, given the specificities of VCMs, a question for consideration is whether specific common principles, rules, or practices should be developed to achieve a certain level of consistency and predictability in the way in which these disputes are settled.

152. At a second level, disputes could arise between the actors that are directly involved in VCMs and public authorities. For instance, regulatory changes in the country where a climate mitigation project is conducted could affect its economic viability, thus opening the door to possible claims under investment law. [245] Public authorities could also initiate legal actions against project proponents and project developers, but also entities that trade VCCs, for failure to comply with domestic legislation.

153. A third level of disputes involves VCMs participants and the public, or the civil society. For instance, local communities may initiate legal proceedings to prevent a climate mitigation project from being carried out, alleging that such project would cause harm to the local environment or human rights violations. As explained above, civil society could also sue companies which have retired VCCs to substantiate a mitigation claim, on the ground that the retired VCCs lack environmental integrity and do not correspond to genuine emission reductions or removals of GHG.

154. It is also important to stress that independent carbon standard setters have developed in-house complaints and appeals procedures through which the decisions that they take may be objected, even by the civil society. Some verification and validation bodies also have procedures of this kind in place. However, questions may arise regarding how complaints submitted through these procedures are addressed, as well as concerns as to whether they offer equivalent procedural safeguards and guarantees as those, for instance, that exist in the judicial system or in some regulatory dispute settlement systems (notably in terms of transparency).

[244] Verra, *Terms of Use. Verra Registry*, supra note 133, Section 13 (Section 13.1 states that "neither Verra nor the Verra Registry Software Provider warrants that the information in the Verra Registry is correct, complete, current, or accurate, or that the software programs used in the Verra Registry will be error or bug-free, secure or free from service disruption"; Section 13.3 states that "Verra and the Verra Registry Software Provider hereby disclaim any such warranties, including but not limited to warranties of merchantability, non-infringement or fitness for a particular purpose, and any implied warranties arising from any course of dealing, usage, or trade practice").

[245] Similarly to claims that are brought against governments following the winding down of cap and trade emissions (for example, ICSID Case No. ARB/20/52 (Koch Industries, Inc. and Koch Supply & Trading, LP v. Government of Canada)) (see above, footnote 76).

G. Issues of applicable law[246]

155. The operation of voluntary carbon markets often includes a range of actions and participants located in or across different jurisdictions.[247] The connections of the relevant carbon projects with a specific jurisdiction in the first step in the lifecycle of verified carbon credits may be different from the situs where the verifying body accredited by a carbon standard setter operates. From these first stages, contractual arrangements between project developers and carbon standard setters pose questions on the applicable law, and the jurisdiction to settle eventual disputes, arising from the verification process. Throughout the lifecycle of the verified carbon credit, the number of cross-border actions and transactions that take place add complexity to the question of the applicable law and jurisdiction, since the different stages of the commercialization and circulation of verified carbon credits and their participants are multi-sited. The following example illustrates the complexity: a project that led to the creation of the verified carbon credit can be located in one country different from the place of business of the company which carried out this project and has acquired ownership over the verified carbon credit; the carbon standard setter that has issued the verified carbon credit can operate in a third country; and the entity that runs the verified carbon credit registry can be located in yet another country.

156. Some of the private international law questions that arise in the operation of voluntary carbon markets may initially seem to be the same questions traditionally arising from international commercial contracts. It may therefore appear that existing instruments in the field of international commercial contracts could potentially answer these questions. However, there are several challenges in applying traditional connecting factors to determine, for example, the applicable law to transactions in the carbon market. The lifecycle of verified carbon credits is built on a web of multi-sited legal agreements and transactions, and challenges arise in attempting to use a single predominant connecting factor, such as one party's location (depending on the point in the transaction or unit lifecycle at which the relevant issues arise).[248] The nature of contractual arrangements between market participants, particularly in the voluntary carbon markets, may also differ considerably.

157. Further complexity is added by the fact that some verified carbon credits have not only been digitally certified but that other steps in the transaction, such as the tokenization of units and their registration in distributed storage mechanisms such as those based on distributed ledger technologies, have taken place in the secondary market.[249] These other steps give rise to other possible connecting factors, creating more questions as to how the applicable law and jurisdiction may be determined. Significant fragmentation in the domestic approaches taken in this regard remains, in particular in relation to the digitization of different stages of the process, including the type of technology used and the contractual relationships behind these stages (including where these stages have been outsourced to third-party providers). Other private international law questions concerning the applicable law and jurisdiction linked to the voluntary market transactions arise where verified carbon credits have been brought to the commercial market by intermediaries or brokers, including where such exchanges are performed on digital platforms between participants who may have no legal connection with the standard setters. Other questions that arise against this background are the extent to which verified carbon units are potentially subject

[246] This section contains inputs provided by the Permanent Bureau of the Hague Conference on Private International Law.

[247] See ISDA, *Legal Implications of Voluntary Carbon Markets*, December 2021, available at www.isda.org/a/38ngE/Legal-Implications-of-Voluntary-Carbon-Credits.pdf.

[248] See para. 13 of "Proposal for Exploratory Work: Private International Law Issues related to Carbon Markets", Preliminary Document No 7 REV REV of March 2024 available at www.hcch.net under "Governance", then "Council on General Affairs and Policy" (hereinafter, "Prel. Doc. No 7 REV REV").

[249] See para. 21 of Prel. Doc. No 7 REV REV.

to cross-border securities laws, and the corresponding implications for private international law rules in such cases.

158. Moreover, overriding mandatory rules and public policy may limit the usual default to party autonomy rules in the traditional choice of law agreements in international commercial contracts involving verified carbon credits. Questions arise, for example, concerning the mandatory application of the law of the forum or another State with a substantial connection with the subject of the agreement. In some jurisdictions, specific requirements may also need to be met for an offsetting claim to be deemed lawful, which are prescribed in the domestic law of the State in which it is incorporated and which may differ from the law applicable to the activities of the carbon standards that issued the verified carbon credit.

159. The circulation of verified carbon credits also raises questions about possible connecting factors and potential substantial links between project proponents, verified carbon credit holders or owners, and the place where the mitigation project is carried out (for example, in the case of nature- based projects) with implications on the applicable law. Questions on how to locate the primary connection between a carbon credit and related transactions, in particular when considering the overlapping regulatory frameworks applicable to the offsetting claims, must be answered in the applicable law analysis before the legal treatment of the carbon credit can be identified.

160. Different jurisdictions have attached different legal treatments to carbon credits leading to a highly fragmented market and a lack of consistency around the legal characterization of the tradeable credits. This lack of consistency extends to treatment of registries, certification mechanisms, third party assignments and transfers of verified carbon credits.[250] Identifying the relevant objective connecting factors that could point to the applicable law for the various transactions occurring in the life cycle of verified carbon credits would contribute to greater clarity and certainty in the voluntary carbon markets and reduce the risk of exploitation, legal and regulatory loopholes, and greenwashing.[251] As the voluntary carbon market scales up, numerous other questions relating to private international law will be identified with the increase in the use cases and the participants in these transactions.[252] Further work in this area may provide answers to these private international law questions, including those relating to the role of party autonomy, applicable law and jurisdiction in the case of disputes arising from the creation and cross-border circulation of verified carbon credits.

[250] See para. 17 of Prel. Doc. No 7 REV REV.

[251] See para. 18 of Prel. Doc. No 7 REV REV.

[252] The HCCH has started to monitor the private international law aspects of voluntary carbon markets as mandated by its governing body during its meeting in March 2024. See C&D Nos. 18 and 19 of the 2024 CGAP meeting.

Annex I

Glossary

Baseline-and-credit mechanism	Type of ***emissions trading scheme (ETS)*** under which: (i) a GHG emission or GHG removal baseline is defined (according to a business-as-usual scenario, historical average, or performance standard or benchmark); and (ii) emission reductions or removals achieved that outperform that baseline are rewarded with ***carbon credits*** that can, in principle, be traded and used by another entity to offset its emissions generated elsewhere.
Cap-and-trade system	Type of ***emissions trading scheme (ETS)*** under which: (i) an upper limit on GHG emissions is fixed, and ***emission allowances*** are issued on the basis of this limit; (ii) entities that are covered by this system receive, or must purchase, tradable ***emission allowances***; and (iii) at the end of a compliance period, covered entities are required to surrender as many allowances as the amount of CO_2 equivalent they have emitted.
Carbon credit	Generic term that refers to any of the different types of units that are traded on ***carbon markets***.
Carbon market	Market on which ***carbon credits*** are traded.
Compliance carbon market	Type of ***carbon market*** created by a mechanism that: (i) is administered by a public authority; and (ii) involves the issuance of ***carbon credits*** or require, or permit, the use of ***carbon credits*** for compliance purposes. Also known as regulatory ***carbon market***.
Corresponding adjustments	Correspondence of actions that must be carried out, by virtue of the Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement, by: (i) a party to the Paris Agreement that first transfers ***ITMOs*** (which must remove the mitigation outcomes achieved in its territory and transferred abroad as ITMOs from its books of account); and (ii) another party that uses the ***ITMOs*** towards its nationally determined contribution (which must add the mitigation outcomes that the ITMOs purchased represent to the mitigation outcomes achieved domestically).
Emission allowance	Type of ***carbon credit*** delivered by a regulator under a cap-and-trade system which entitles its holder to emit a certain amount of CO_2 equivalent (usually one ton).
Emissions trading scheme (ETS)	Any type of schemes that involves the issuance of ***carbon credits*** or requires or permits the use of ***carbon credits***. Cap-and-trade systems and baseline-and-credit systems are specific kinds of ETS.
Independent carbon standard setter	Private law entity that certifies that climate mitigation projects have generated reductions in GHG emissions or removals of GHG from the atmosphere. Upon specific conditions, an independent carbon standard setter offers to issue ***verified carbon credits*** when GHG reductions and removals, that have been verified according to its own standards, have occurred. Examples of independent carbon standard setters include the Verified Carbon Standard (VCS/Verra), the Gold Standard, the American Carbon Registry, and Climate Action Reserve.

Internationally transferred mitigation outcomes (ITMOs)	Status applied to emission reductions and removals that are generated within the territory of a party to the Paris Agreement, when that party authorizes the use of these emission reductions and removals towards the achievement of the nationally determined contribution of another party, or for other international mitigation purposes, as provided for in Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement.
Offsetting	Action of using ***carbon credits*** for calculating the net level of GHG emitted by an entity during a given period. An entity is usually said to have "offset" its emissions when it subtracts from the amount of GHG it actually emitted an amount of GHG represented by ***carbon credits***. Offsetting may be viewed as an accounting operation for the elaboration of a net GHG emissions balance.
Retirement of carbon credits	Action of transferring ***carbon credits*** from an account, which permits their transfer to any other account, to a specific account on which these credits will remain permanently registered and which no longer permits their transfer to any other account. ***Carbon credits*** are usually retired to indicate that these credits have been used for calculating a net GHG emissions balance and that they can therefore no longer be sold or used for ***offsetting*** purposes another time. Retirement of ***carbons credits*** enables entities that make an offsetting claim (i.e., that make a public statement about the level of their net emissions) to provide evidence for substantiating this claim.
Verified carbon credit	Type of ***carbon credit*** representing the achievement of a reduction or removal of one ton of CO_2 equivalent, which has been verified by a third party. Verified carbon credits may be issued by public authorities or ***independent carbon standard setters***.
Voluntary carbon market	Market on which the verified carbon credits issued by a specific public authority or a specific ***independent carbon standard setter*** are traded.

Annex II

List of acronyms

A6.4ERs	Article 6, paragraph 4, emission reductions issued under the mechanism established by Article 6, paragraph 4, of the Paris Agreement
ART	Architecture for REDD+ Transactions
AAUs	Assigned Amount Units
CSA	Canadian Securities Administrators (Canada)
CCUS	Carbon Capture, Utilization and Storage
CDP	Carbon Disclosure Project
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CERs	Certified Emission Reduction credits
CCERs	Chinese Certified Emission Reductions (China)
CDM	Clean Development Mechanism
CAD Trust	Climate Action Data Trust
CFTC	Commodities Futures Trading Commission (United States)
CEA	Commodity Exchange Act (United States)
CCMs	Compliance Carbon Markets
CCPs	Core Carbon Principles
EU	European Union
ERs	Emissions Reductions
ERPA	Emission Reduction Payment Agreement
ERUs	Emission Reduction Units
ETS	Emissions Trading Schemes
FTC	Federal Trade Commission (United States)
FCPF	Forest Carbon Partnership Facility
GHG	Greenhouse Gas
HCCH	Hague Conference on Private International Law
ICVCM	Integrity Council for Voluntary Carbon Markets
IPCC	Intergovernmental Panel on Climate Change
ICAO	International Civil Aviation Organization
IETA	International Emissions Trading Association
IOSCO	International Organization of Securities Commissions
ISDA	International Swaps and Derivatives Association
ITMOs	Internationally Transferred Mitigation Outcomes
MRV	Measurement, reporting, and verification
OECD	Organisation for Economic Co-operation and Development

OTC	Over the Counter
REDD+	Reducing Emissions from Deforestation and forest Degradation in developing countries, conservation of forest carbon stock, sustainable management of forests, and enhancement of forest carbon stocks
SBTi	Science Based Targets initiative
TSVCM	Taskforce on Scaling Voluntary Carbon Markets
DAPL Principles	UNIDROIT's Principles on Digital Assets and Private Law
UNFCCC	United Nations Framework Convention on Climate Change
VCCs	Verified Carbon Credits
VCS/Verra	Verified Carbon Standard (Verra)
VCUs	Verified Carbon Units (Verra)
VCMs	Voluntary Carbon Markets
VCMI	Voluntary Carbon Markets Integrity Initiative
WBG	World Bank Group
WRI	World Resources Institute
WWF	World Wide Fund for Nature