The role of market operators in scaling up voluntary carbon markets

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Key points

- Voluntary carbon markets have the potential to reduce greenhouse gas emissions through the price mechanism, but several issues prevent the scaling of these markets.
- This article asks which roles market operators authorized under the Markets in Financial Instruments Directive (MiFID II) can play in the scaling up of voluntary carbon markets.
- To this end, the article discusses the regulatory frameworks applicable to compliance and voluntary carbon markets, the structure of these markets and the key issues.
- The conclusion is that MiFID II-authorized market operators can indeed play several key roles in the scaling up of voluntary carbon markets, provided that they ensure continued compliance with the organizational requirements imposed by the MiFID II framework.

1. Introduction

As the effects of climate change are affecting countries across the globe, companies are increasingly turning to voluntary carbon markets to offset their greenhouse gas emissions (GHGE).[1] Carbon markets comprised two types of markets: markets which are embedded in governmental GHGE reduction schemes (compliance markets) and markets that are the result of private initiatives (voluntary markets). Voluntary markets are more and more harnessed by public actors to reduce GHGE, allowing regulated entities to use voluntary credits for compliance purposes.[2] However, issues concerning integrity, liquidity and quality are beleaguering these markets, causing inefficiencies and distorting price formation. If voluntary carbon markets are to support climate change mitigation strategies and if supply is to meet the growing demand for voluntary carbon credits (VCCs), these markets need to resolve these issues in order to grow (scale up).[3] This article investigates which roles market

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1 Global Financial Markets Association and Boston Consulting Group, 'Unlocking the Potential of Carbon Markets to Achieve Global Net Zero' (October 2021) 33 (hereafter: 'GFMA/BCG Report'). There are several strategies to reduce GHGE by companies, and the present purpose is not to advocate for carbon markets or other carbon pricing mechanisms over alternative strategies. For a discussion of carbon pricing, see M Elkerbout and others, 'From Carbon Pricing to Climate Clubs—How to Support Global Climate Policy Coordination towards Climate Neutrality' (CEPS Research Report 2022-01, March 2022), 4.

2 International Organization of Securities Commissions, 'Voluntary Carbon Markets—Discussion Paper' CR/06/22 (November 2022) 5.

3 Taskforce on Scaling Voluntary Carbon Markets, 'Final Report', January 2021, (n 86) 4.

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operators authorized under the Markets in Financial Instruments Directive (MiFID II)[4] could play in scaling up these markets. Market operators already facilitate transactions in voluntary markets, but their involvement is relatively limited. Given their experience with operating multilateral systems and providing transparency in markets in financial instruments, they could contribute to the resolution of these issues. The conclusion of this article is that market operators can indeed fulfil several key roles in voluntary markets while observing their obligations under MiFID II.

This article is structured as follows. Section 2 introduces the notion of carbon markets, their regulatory embeddings, the trading process in primary and secondary markets and the roles of key actors in these markets. Section 3 identifies the issues in voluntary carbon markets. Section 4 starts with a concise refresher of the relevant MiFID II provisions governing organizational requirements and continues with an analysis of the compatibility of each key role with these provisions. Section 5 sets out the main conclusions and some final thoughts.

2. Regulation

The term 'carbon markets' is a catch-all term covering different markets that involve different actors and different asset classes. At one end, the term covers regulated markets within 'cap-and-trade systems', ie systems in which governments set the total amount of certain greenhouse gases (cap) that can be emitted by the entities regulated under the system ('regulated entities') and allow the entities to buy and trade the emission allowances (EAs).[5] The term also covers markets in 'baseline-and-crediting systems', ie systems in which governments incentivize polluters to reduce GHGE by granting credits to those that reduce their emissions more than they otherwise are obliged to, and which they can sell to other entities covered by the respective system.[6] These systems use markets as a component of broader environmental regulation, specifically carbon pricing.[7] The term furthermore covers 'international emissions trading systems', ie systems that allow countries to issue carbon credits to other countries or private entities. Most notable are the mechanisms under the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC) [providing certified emission reduction (CER) units and emission reduction units (ERUs)] and under its successor, the Paris Agreement [providing internationally transferred mitigation outcomes (ITMOs)].[8]

4 Directive 2014/65/EU on markets in financial instruments.

5 OECD, 'Emission Trading Systems' <https://www.oecd.org/> accessed 30 July 2022; Elkerbout and others (n 1) 4.

6 OECD (n 5).

7 Elkerbout and others (n 1) 4.

8 Elkerbout and others (n 1) 4. The UNFCCC is an international environmental treaty that sets out the basic legal framework and principles for international climate cooperation. The Kyoto Protocol to the UNFCCC operationalizes the UNFCC by committing countries to limit and reduce GHGE in accordance with agreed individual targets using market-based mechanisms. The Paris Agreement succeeds the Kyoto Protocol and countries' activities must now be transferred to the market-based mechanisms of that Agreement. See The City of London Corporation, the UK Voluntary Carbon Markets Forum and Clifford Chance LLP, 'Enabling the Voluntary Carbon Market in the Context of the Paris Agreement' (8 December 2022) <https://www.theglobalcity.uk> accessed 8 December 2022.

At other end, the term covers 'voluntary markets', ie unregulated markets in which private entities or governments sell carbon credits to entities seeking to voluntarily offset some or all of their GHGE.[9] Thus, as discussed above, there are essentially two types of carbon markets: 'compliance markets', which are either cap-and-trade or baseline-and-crediting systems that may interact with international emission trading systems,[10] and 'voluntary markets'. In the European Union (EU), the relevant assets traded on compliance markets are EAs, CERs and ERUs (now replaced by ITMOs), and the assets traded on voluntary markets are VCCs (also called 'offsets').[11]

This section provides a concise overview of compliance and voluntary markets and their regulation, with a focus on the EU. The discussion shows that in designing carbon market regulation, the EU has focused on compliance markets as a mandatory carbon pricing mechanism applicable to a select number of sectors, while mostly disregarding voluntary markets. The sustainable action plans communicated by the European Commission (EC)[12] put forward a regulatory approach that focuses on compliance markets[13] without a clear regulatory objective for voluntary markets.

Compliance markets

The EU has put in place a comprehensive cap-and-trade system. The key regulations constituting that system are the EU ETS Directive,[14] the European Climate Law,[15] Regulation (EU) 2018/842[16] and Regulation (EU) 2018/841.[17]

The EU ETS Directive is central to the EU's climate policy. It is the 'key tool for reducing greenhouse gas emissions in a cost-effective way' and constitutes the core of the cap-and-trade system.[18] The European Climate Law introduced a temporal limit on the system. At the latest by 2050, GHGE and greenhouse gas removals must be balanced, ie emissions should be 'net zero' by then.[19] Consequently, the EU ETS Directive gradually reduces the number of available EAs on an annual basis with a pre-specified

9 IOSCO Discussion Paper (n 2) 5.

10 The markets falling under art 6 of the Paris Agreement (and previously the Clean Development Mechanism of the Kyoto Protocol) can also be considered to be 'compliance offset markets'. See International Organization of Securities Commissions, 'Compliance Carbon Markets—Consultation report' CR/07/22 (November 2022), 3.

11 The EC considers carbon credits as an example of system-external offsets. See Commission Recommendation (EU) 2021/2279 of 15 December 2021 on the use of the Environmental Footprint methods to measure and communicate the lifecycle environmental performance of products and organizations, para 4.4.11.

12 European Commission, 'The European Green Deal' (COM(2019) 640 final), 'Action Plan: Financing Sustainable Growth' (COM(2018) 97 final) and 'Strategy for Financing the Transition to a Sustainable Economy' (COM(2021) 390 final).

13 European Commission, 'The European Green Deal' (n 12), paras 2.1.1 and 3, for example.

14 Directive 2003/87/EC of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community.

15 Regulation (EU) 2021/1119 of 30 June 2021 establishing the framework for achieving climate neutrality.

16 Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement.

17 Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework.

18 Recital 13 European Climate Law.

19 Art 2.1 European Climate Law.

linear factor.[20] Regulation (EU) 2018/842 introduced national targets for the reduction of GHGE by 2030 to meet commitments under the Paris Agreement and Regulation (EU) 2018/841 requires Member States to balance GHGE and greenhouse gas removals from land use, land use change and forestry.[21]

The EU ETS Directive requires Member States to oblige companies that are engaged in specified regulated activities and emit specified greenhouse gases in the course of those activities,[22] to acquire EAs in order to engage in those activities. More specifically, the Directive covers aviation activities and activities in 'stationary installations' (combustion or production),[23] such that aircraft operators and operators of stationary installations must have EAs (respectively, called 'aviation allowances' and 'general allowances'). In the remainder of this article, 'EAs' will refer to these EAs and 'regulated entities' will refer to the operators covered by the Directive. A revision of the EU ETS Directive is currently under negotiation, which would increase the scope of compliance markets by including maritime transport and emissions from buildings and road transport.[24] In addition to EAs, regulated entities can also use CERs and ERUs up to their allocation limit.[25] It is expected that a similar regime will be put in place for ITMOs.

Key actors

The key actors in EU compliance markets are:

1. The EC, which operates the Union Registry;
2. Member States, which act as issuers of EAs;
3. Entities covered under the EU ETS Directive, as well as financial intermediaries, which act as purchasers and sellers; and
4. Market operators authorized under MiFID II, which are involved in the facilitation of primary and secondary markets.

Primary markets

The creation and issuance of EAs take place in primary markets. The EC creates an EA by recording the allowance in the (European) Union Registry.[26] After its creation, the issuance of an EA takes place through (1) an allocation by a Member State to a specific operator in the EU free-of-charge, or (2) an auction by a Member State through a process regulated in

20 Arts 9 and 9a EU ETS Directive.

21 Recital 12 European Climate Law.

22 Annex I EU ETS Directive.

23 A full list of activities is set out in Annex I to the EU ETS Directive.

24 Procedure 2021/0211/COD. The proposal has entered trilogue negotiations, but it seems unlikely that a final agreement will be found before the end of 2022.

25 This is the result of Directive 2004/101/EC of 27 October 2004 amending the EU ETS Directive (Linking Directive). See also G Bryant, *Carbon Markets in a Climate-Changing Capitalism* (CUP 2019) para 3.1; arts 11a and 11b EU ETS Directive.

26 Commission Delegated Regulation (EU) 2019/1122 of 12 March 2019 supplementing Directive 2003/87/EC of the European Parliament and of the Council as regards the functioning of the Union Registry.

the Auctioning Regulation.[27] Under the Auctioning Regulation, EAs are sold by means of standardized electronic contracts for either two-day spots (delivery no later than second trading day) or five-day futures (delivery no later than fifth trading day).[28] Bidders submit bids during one given bidding window without seeing bids submitted by other bidders, and each successful bidder pays the same auction clearing price for each allowance regardless of the price bid.[29] Access to auctions as a direct bidder is restricted to regulated entities (including undertakings in the same group, as well as public bodies/state-owned entities controlling them and certain business groupings), investment firms authorized under MiFID II and credit institutions authorized under the Credit Requirements Directive.[30] The investment firms and credit institutions can also bid on behalf of their clients.[31]

Secondary markets

The trading of EAs takes place in secondary markets, where purchasers of EAs in primary markets can freely engage in the trading of these EAs.[32] According to ESMA, secondary market trading in EAs takes place both via trading venues authorized under MiFID II[33] and over-the-counter (OTC) transactions. The transactions on trading venues generally do not involve EAs, but rather derivatives in EAs, more specifically: (1) contracts with a daily expiry, called 'daily futures' or 'spot', (2) futures with various maturities and (3) options on futures.[34] In fact, many regulated entities take long futures positions with investment firms to acquire EAs instead of purchasing them on the spot market.[35]

The key frameworks that apply to the trading of EAs on those trading venues, to the extent relevant here, are MiFID II, the Markets in Financial Instruments Regulation (MiFIR),[36] the Market Abuse Regulation[37] (MAR) and the European Market Infrastructure Regulation (EMIR).[38] Since EAs (and related derivatives) are 'financial instruments' in the sense of MiFID II, trading venues that organize trading in EAs are

27 Commission Regulation (EU) No 1031/2010 of 12 November 2010 on the timing, administration and other aspects of auctioning of greenhouse gas emission allowances. See ESMA, 'Final Report on Emission Allowances and Associated Derivatives' (28 March 2022) ESMA70-445-48 (hereafter: 'ESMA Report 2022') para 5.

28 Art 4 Auctioning Regulation.

29 Art 5 Auctioning Regulation.

30 Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firm; art 18 Auctioning Regulation. Persons dealing on own account or providing investment services in respect of EAs exempted under art 2.1.j MiFID II may also bid directly, under certain circumstances.

31 Ibid.

32 GFMA/BCG Report (n 1) 41–4.

33 Art 4.1.24 MiFID II.

34 ESMA Report 2022 (n 27) paras 16–18.

35 Ibid 7.

36 Regulation (EU) No 600/2014 of 15 May 2014 on markets in financial instruments.

37 Regulation (EU) No 596/2014 of 16 April 2014 on market abuse.

38 Regulation (EU) No 648/2012 of 4 July 2012 on OTC derivatives, central counterparties and trade repositories. European Commission, 'Report from the Commission to the European Parliament and the Council on the Functioning of the European Carbon Market in 2020 pursuant to Articles 10(5) and 21(2) of Directive 2003/87/EC' COM(2021) 962 final, para 5. Regulation (EU) 2017/1129 and Directive 2004/109/EC do not apply to EAs because they fall outside of the definition of securities (respectively, art 2.a of the Regulation and art 2.a.1 of the Directive).

within the scope of the Directive's regulatory perimeter and must comply with its provisions.[39] As MAR applies to financial instruments (in the sense of MiFID II) admitted to trading on a trading venue, trading parties must respect its provisions and market operators must prevent and detect abusive behaviour.[40] The Central Securities Depositories Regulation (CSDR) also applies to EAs, as CSDR cross-refers to the definitions of 'financial instruments' and 'emission allowances' under MiFID II.[41] Therefore, transactions in EAs must be settled no later than the second business day following the trading (T + 2), unless they are negotiated privately.[42] CSDR also requires trading venues and central securities depositories to implement measures to prevent and address settlement fails.[43] Finally, pursuant to EMIR counterparties to derivatives transactions involving EAs must report those trades to a trade repository.[44]

Operationally, the trading process proceeds in two steps.[45] First, a market participant places a buy or sell order for a derivative on EAs in the order book of a trading venue. Secondly, if the order matches an opposite order and both the buyer and the seller keep their positions open until maturity, the process established by the relevant central clearing party must be followed to ensure that EAs are delivered from the account of the seller to the account of the buyer in the Union Registry and that the seller gets the corresponding amount of cash from the buyer.[46]

As there is no obligation to trade EAs and related derivatives on a trading venue, they can also be exchanged OTC between any two entities. The transactions may involve regulated entities as well as other entities.[47] The counterparties to an OTC transaction have the contractual freedom to decide on the terms and conditions of the transaction (which is one of the incentives to trade OTC), but the delivery of the allowance will always take place through the Union Registry.[48] To the extent that the trading involves derivatives, EMIR is applicable such that these OTC transactions must be reported to a trade repository.[49]

39 Art 4.1.15 and Annex I, s C, sub-ss 4 and 11 MiFID II.

40 Art 1 MAR. Particularly relevant are the rules on market manipulation (arts 15 and 16 MAR). Side note: MAR also applies to the auctioning of EAs in primary markets.

41 Art 2.1.8 CSDR (referring to art 4.1.15 MiFID II) and art 2.1.39 (referring to Annex I, s C, point 11, of MiFID II).

42 Art 5 CSDR.

43 Arts 6–7 CSDR and Commission Delegated Regulation (EU) 2018/1229 of 25 May 2018 supplementing Regulation (EU) No 909/2014 of the European Parliament and of the Council with regard to regulatory technical standards on settlement discipline.

44 Art 9.1 EMIR; ESMA Report 2022 (n 27) 51, 56.

45 ESMA Report 2022 (n 27) paras 16–18.

46 Ibid. The Union Registry and the European Union Transaction Log (EUTL) track the ownership of general and aviation allowances by recording the amounts owned in the accounts and the transactions between accounts. The Union Registry is a registry system composed of accounts that hold EAs, that Member States must use to allocate EAs (art 4 Auctioning Regulation). The EUTL is a standardized electronic database established to keep records of the transactions between the accounts in the Union Registry [art 5 Commission Delegated Regulation (EU) 2019/1122].

47 ESMA Report 2022 (n 27) para 20.

48 Ibid.

49 Art 9.1 EMIR; ESMA Report 2022 (n 27) 51, 56.

Voluntary markets

As said, voluntary markets are markets in which entities acquire or trade VCCs on a voluntary basis, ie without a regulatory obligation to acquire them.[50] Essentially, a VCC is a certificate issued by a carbon standard on the basis of its own certification requirements, certifying that and how much the underlying project will reduce or remove carbon emissions.[51] Each certificate is transferable and normally represents an emission reduction of one ton of CO_2.[52] There is no regulatory regime applicable to voluntary markets or VCCs,[53] but the EC has acknowledged their importance and has published a proposal to regulate the certification of carbon removal.[54]

VCCs relate to a range of different project types that seek to either remove carbon from the atmosphere (carbon removal) or prevent more carbon from going into the atmosphere (carbon avoidance or reduction).[55] While both public and private actors are active in voluntary markets, private actors purchase the majority of VCCs.[56] Some purchasers may be regulated entities, since VCCs can be used in some countries for compliance within certain cap-and-trade programmes up to a certain level. This dual usage of VCCs (for compliance and voluntary purposes) has led to some overlap between compliance and voluntary markets, resulting in so-called 'quasi-mandatory' carbon markets.[57]

Key actors

There are a number of key actors in voluntary markets:

1. project owners or developers, usually NGOs or (national, regional or municipal) governmental bodies, which develop the projects underlying the VCCs and sell the credits to the market;[58]
2. carbon standards, which set the requirements for certification, issue the certificates and are in charge of the monitoring and verification of the quality and validity of VCCs;
3. registries, which store information and track the VCCs from issuance to cancellation;
4. verifiers/validation bodies and assurers, which develop assurance programmes;[59]

50 IOSCO Discussion Paper (n 2) 5.

51 Allen & Overy and ISDA, 'Voluntary Carbon Markets: Analysis of Regulatory Oversight in the US' (June 2022) (hereafter: 'ISDA Report 2022') 4.

52 IOSCO Discussion Paper (n 2) 8.

53 There are of course legal requirements that apply to the creation, issuance and trading of VCCs, see below.

54 European Commission, 'Commission Work Programme 2023: A Union Standing Firm and United' COM(2022) 548 final, para 3.1. In its Communication on Carbon Cycles, in which it proposes (its own VCCs), it mentions voluntary carbon credits are part of the system of incentives that is expected by stakeholders in the industry (European Commission, 'Commission Staff Working Document Accompanying the Communication from the Commission to the Parliament and the Council on Sustainable Carbon Cycles' (SWD(2021) 451 final) para 1). The EC has already published a proposal for a regulation on an EU certification of carbon removals, see 2022/0394/COD.

55 ISDA Report 2022 (n 51) 3.

56 Ibid.

57 ISDA, 'Legal Implications of Voluntary Carbon Credits' (December 2021) (hereafter: 'ISDA Report 2021') 27.

58 ISDA Report 2022 (n 51) 3.

59 ISDA Report 2021 (n 57) 27.

5. individuals, traders, corporates, compliance entities, financial institutions and intermediaries, governments and non-governmental organizations, which act as sellers and buyers;[60] and
6. market operators, which offer opportunities for trading on secondary markets.[61]

In practice, a single actor can have multiple roles. For example, Rabobank has set up a service in which it operates as an issuer, registrar and intermediary of VCCs. With its 'Rabo Carbon Bank' initiative, it works with its corporate lending clients active in the farming sector. After they share their data on a dedicated portal, Rabobank (1) assists with the creation of a future regenerative plan, (2) calculates the impact of the plan, (3) issues and registers its own VCCs for the relevant clients,[62] (4) acts as an intermediary (broker) of the sale of the credit to purchasers (other clients), and (5) provides the farmers with the proceeds of the sale.[63] The bank therefore effectively internalizes the entire market process.

Issuers of traditional financial instruments can also use those instruments as vehicles for VCCs. For example, issuers of bonds can include non-monetary coupon payments that take the form of VCCs. By way of illustration, the International Finance Corporation has issued bonds that give investors the right to acquire either cash or carbon credit coupons.[64] Similarly, the Bank of International Settlements Innovation Hub is working towards green bonds that provide 'mitigation outcome interest' in the form of carbon credits.[65] Instead of bonds, issuers could also use shares to distribute VCCs as a 'dividend in kind'.[66] In some structures, carbon credits could be used as collateral, rather than distributed. For example, Intertrust Group assists issuers with the structuring of transactions in which EAs are deposited in a foundation, after which economic rights attached to the EAs are assigned to a special purpose vehicle and used as collateral to issue green bonds.[67] VCCs could be used in the same manner.

Primary markets

The primary market for VCCs involves the creation and issuance of those VCCs by a developer to a purchaser with the involvement of a carbon standard and a validation body, mostly OTC. There are no licensing requirements for these standard-setting entities or

60 Ibid.

61 Ibid.

62 The bank's credits are not certified, but it reportedly works with certification bodies to validate its methodology. See Rabobank, 'Carbon Credits' <https://www.rabobank.com> accessed 20 August 2022.

63 Rabobank, 'Carbon Farming' <https://www.rabobank.com> accessed 20 August 2022. It has recently brokered a sale of credits, see Rabobank, 'Rabo Carbon Bank verkoopt eerste Carbon Credits op Nederlandse bodem' (13 April 2022) <https://www.rabobank.com> accessed 20 August 2022.

64 International Finance Corporation, 'IFC Issues Innovative $152 Million Bond to Protect Forests and Deepen Carbon-Credit Markets' (31 October 2016) <https://pressroom.ifc.org> accessed 20 August 2022.

65 Official Monetary and Financial Institutions Forum, 'BIS Turns to Blockchain to Drive a New Type of Green Bond' (19 April 2022) <https://www.omfif.org> accessed 20 August 2022; Bank of International Settlements Innovation Hub, 'Genesis 2.0: Prototyping Use of Smart Contracts for Carbon Credits Attached to Green Bonds' <https://www.bis.org/> accessed 20 August 2022.

66 London Stock Exchange, 'Voluntary Carbon Markets' <https://www.londonstockexchange.com> accessed 25 November 2022.

67 Intertrust Group, 'How to Turn EUA Carbon Credits into Green Bonds' (3 November 2021) <https://www.intertrustgroup.com> accessed 20 September 2022.

rules governing the standard-setting process.[68] The standard normally does not certify the project itself. Most standards work with independent validation bodies that are accredited in accordance with the ISO 14060 family of GHG standards to provide validation or verification services.[69]

The VCC is recorded on a registry, ie a centralized recordkeeping system of all registered projects for which VCCs are issued, that tracks the entire lifecycle of the VCCs (generation, issuance, transfer, retirement and cancellation).[70] Registries of VCCs are operated by standards (in respect of the credits that carry their certification[71]) or independent registries.[72] Unlike the Union Registry, which records all EAs, there is no single universal registry for all VCCs and no global standard-setting norm.[73] The primary markets for VCCs and EAs are thus fundamentally different from each other.

Secondary markets

VCCs are traded via exchange-traded futures and options, OTC bilateral swaps and other derivatives, or physical carbon transactions in the spot market.[74] If traded on trading venues, derivatives on VCCs will generally be covered under the definition of 'financial instruments' under MiFID II and thus subject to MiFID II, as well as MAR[75] and CSDR.[76] They generally fall in the scope of MiFID II because a VCC will be a 'commodity' under Commission Delegated Regulation (EU) 2017/565[77] in most cases, such that the derivatives fall under section C (7) of Annex I to MiFID II. The relevant requirements are that the derivative contract is (1) equivalent to a contract traded on an EU or third country trading venue, with regards to the price, the lot, the delivery date and other contractual terms; and (1) standardized so that the price, the lot, the delivery date and other terms are determined principally by reference to regularly published prices, standard lots or standard delivery dates. In most cases, these requirements will be met. The derivatives, whether traded on-venue or OTC, will also be covered by EMIR.[78]

68 ISDA Report 2022 (n 51) 4.

69 See, eg the requirements set by Verra in respect of its Verified Carbon Standard <https://verra.org/> accessed 20 September 2022.

70 ISDA Report 2022 (n 51) 4.

71 See, eg Verra's Verified Carbon Standard (VCS) Registry and Climate, Community, & Biodiversity Standards (CCBS) Registry <https://registry.verra.org/> accessed 20 September 2022 and APX's Gold Standard registry <https://registry.goldstandard.org/projects> accessed 20 August 2022.

72 Examples are APX (North American Renewables Registry and Tradable Instrument for Global Renewables Registry), Winrock International (American Carbon Registry) <https://americancarbonregistry.org/> accessed 20 September 2022, the Climate Action Reserve (Registry) <https://www.climateactionreserve.org/about-us/> accessed 20 September 2022 and IHS Markit (Environmental Registry) <https://ihsmarkit.com/products/environmental-registry.html> accessed 20 August 2022.

73 ISDA Report 2022 (n 51) 4.

74 Ibid 7–9.

75 Arts 2.1 and 3.1.1 MAR.

76 ISDA Report 2021 (n 57) 11.

77 Arts 2.6 and 7 Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing MiFID II as regards organizational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive.

78 ISDA Report 2021 (n 57) 11.

3. Scaling issues

There are several issues in voluntary markets that prevent the upscaling of these markets: (1) lack of standardization and quality, (2) low liquidity, (3) low transparency, (4) lack of market integrity and consequently (5) distorted price formation.

Standardization and quality

There are two standardization issues. The first issue pertains to the legal qualification of VCCs. In the absence of a global or regional standard, the legal qualification of a VCC differs depending on the jurisdiction in which it is created.[79] A VCC can be considered intangible property or a bundle of legal rights. If considered intangible property, the VCC represents access to the certification that the holder has removed or reduced (directly or via an intermediary) carbon from the atmosphere in line with the applicable standards.[80] The ownership of the property is evidenced by the registry entry and established in accordance with the relevant carbon standard and registry rules.[81] Alternatively, a VCC can be qualified as a bundle of private law contractual rights against the project developer, verifier, carbon standard and registrar.[82] Unless harmonizing standards are adopted, the national differences in the legal qualification of VCCs represent a barrier to a pan-European voluntary market.[83]

The second issue pertains to the diversity of carbon standards and their methodologies. Due to the lack of standardization, it is complicated for buyers to assess the quality of the projects and the VCCs.[84] VCCs are very heterogeneous and there is no common methodology or taxonomy that buyers can use to compare the credits.[85] Furthermore, quality issues regarding the environmental impact of VCCs, which relate to additionality,[86] leakage,[87] double counting[88] and permanence,[89] are a major concern. Other key issues are the inconsistency in monitoring, reporting and verification practices among these standards,[90]

79 Ibid 9–11.

80 Ibid.

81 Ibid.

82 Ibid.

83 ISDA Report 2021 (n 57) 13; IOSCO Discussion Paper (n 2) 16–17.

84 ISDA Report 2022 (n 51) 4.

85 GFMA/BCG Report (n 1) 12–13; IOSCO Discussion Paper (n 2) 15–16.

86 Additionality means that the VCCs actually lead to reductions or removals (would not have occurred in the absence of the VCCs) and covers financial aspects (financial additionality) and regulatory aspects (regulatory additionality). See R Mendelsohn, R Litan and J Fleming, *A Framework to Ensure that Voluntary Carbon Markets Will Truly Help Combat Climate Change* (Brookings Institute, September 2021); Taskforce on Scaling Voluntary Carbon Markets, 'Phase II Report' (8 July 2021) 71; GFMA/BCG Report (n 1) 41.

87 Leakage occurs when the generation of VCCs leads to an increase in emission elsewhere due to the displacement of production and associated GHGEs to jurisdictions with weaker or absent climate policies. GFMA/BCG Report (n 1); Elkerbout and others (n 1) 18.

88 Integrity Council for Voluntary Carbon Markets, *Public Consultation Part 3: Summary for Decision Makers* (2022) 6: 'The key problem is that different kinds of use or claims can be simultaneously backed by the same VCC or that the same reduction or removal leads to different and overlapping claims (double registration, double claiming and double use, collectively double counting)'.

89 Permanence means that the emission reduction is permanent, GFMA/BCG Report (n 1) 41; Integrity Council for Voluntary Carbon Markets (n 88) 13.

90 GFMA/BCG Report (n 1) 12–13.

and conflicts of interest between buyers on the one end, and developers, verification bodies and traders on the other end.[91] Resolving these issues in a standardized manner is essential to scale up voluntary markets.[92] To address these issues, several initiatives are already working on global standards. For example, the Taskforce for Scaling Voluntary Carbon Market is working on a global standard, the Core Carbon Principles (CCPs), has created the Integrity Council for the Voluntary Carbon Market, which has launched a public consultation on draft CCPs, as well as an Assessment Framework and an Assessment Procedure.[93] The existing leading carbon standards, Verra and the Gold Standard, are also vying for global adoption of their standards.

Liquidity

Voluntary carbon markets also suffer from liquidity issues. These issues are partially endemic: some purchasers acquire VCCs to cancel or retire them as means to offset their emissions.[94] As cancellation or retirement means that the VCCs cease to exist and thus cannot be traded anymore, VCCs may not change hands often.[95] But the main issue is that VCCs are predominantly traded OTC, in fragmented markets, causing voluntary markets to lack liquidity.[96] The bilateral nature of OTC trading makes it unequipped to generate high trading volumes to the same degree as a public trading venue. Furthermore, these OTC markets lack a common trade and post-trade infrastructure.[97] Market operators could stimulate the development of liquid markets by facilitating open, broad market participation through a common infrastructure.[98]

Transparency

Voluntary markets are generally not as transparent as markets in financial instruments. First, unlike issuers of those instruments, the key actors in these markets are not subject to granular public disclosure obligations pertaining to the VCCs' characteristics. VCCs are not directly in the scope of the Prospectus Regulation[99] or the Transparency Directive [once amended by the Corporate Sustainability Reporting Directive (CSRD)].[100] Issuers will probably have to disclose to which degree they have used VCCs to offset emissions, under the CSRD's technical standards prepared by the European Financial Reporting

91 IOSCO Discussion Paper (n 2) 15–16.

92 Chairman R Behnam of the Commodity Futures Trading Commission, 'Opening Statement at the CFTC Voluntary Carbon Markets Convening' (2 June 2022) <https://www.cftc.gov> accessed 20 August 2022, who refers to 'integrity' and 'credibility'.

93 Documentation available via <https://icvcm.org/public-consultation/> accessed 20 August 2022.

94 ISDA Report 2021 (n 57) 26; R Idell, V Agarwal and R Fuller, 'Carbon Markets Update' (UBS 2022) <ubs.com> accessed December 2022.

95 ISDA Report 2021 (n 57) 26.

96 Taskforce on Scaling Voluntary Carbon Markets, Report 2021, 41.

97 Ibid 43.

98 IOSCO Discussion Paper (n 2) 21–2.

99 Art 2.a Regulation (EU) 2017/1129 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market. The case that VCCs would be issued as 'dividend in kind' under equity securities or coupons under debt securities, is beyond the scope.

100 Art 2.1, sub-ss a and b Directive 2004/109/EC, considering the same limitations as the foregoing note.

Advisory Group (EFRAG).[101] Finally, VCCs are not directly subject to disclosure by financial market participants under the Sustainable Finance Disclosure Regulation.[102]

Secondly, transactions in VCCs are not always subject to public disclosure. As discussed above, MiFIR transparency obligations only apply on trading venues and to systematic internalizers, and only in respect of financial instruments relating to VCCs, not the credits themselves. As most transactions are conducted OTC, voluntary markets lack publicly accessible market data (eg prices and volumes) and reference data (eg instrument, market and counterparty identifiers).[103] The trading parties are not obliged to report their transactions in VCCs to a repository, if they do not involve derivatives. In addition, GHG programme registries do not track prices and established registries (eg Gold Standard and Verra) have very limited availability of price, volume and transaction data for market participants.[104] This lack of transparency affects market efficiency, which in turn hampers the scaling of voluntary markets.[105]

Price formation

Due to the aforementioned issues, VCCs are often sold at steeply discounted prices, compared to prices in compliance markets.[106] They all contribute to distortions in the price formation process of voluntary markets.[107] Moreover, the absence of an institution that seeks to ensure that market conduct is orderly rather than abusive, can cause buyers to lose confidence in market prices.[108] These behavioural effects should not be underestimated. For example, where the lack of standardization causes high-quality VCCs to be undervalued due to the existence of low-quality VCCs in the market, leading to a market for 'lemons', the loss of confidence could accelerate the process.[109] More generally, behavioural effects could amplify the impact of the aforementioned issues due to greater price volatility in voluntary markets.[110]

4. Market operators

The institutional role of market operators in the markets for financial instruments means that these actors are potentially well-placed to address the scaling issues in voluntary

101 'ESRS E1 Climate Change', Disclosure Requirement E1-13—GHG mitigation projects financed through carbon credits (see also other places), and related 'Basis for conclusions'.

102 Regulation (EU) 2019/2088 on sustainability-related disclosures in the financial services sector. Similarly, J Cornillie, 'Can the New European Sustainable Finance Rules Improve the Integrity of Voluntary Carbon Markets', EUI School of Transnational Governance Policy Paper series (October 2022, Issue 2022/28), ss 3 and 4.

103 C Blaufelder and others, 'A Blueprint for Scaling Voluntary Carbon Markets to Meet the Climate Challenge' McKinsey & Company Report (29 January 2021) <mckinsey.com> accessed December 2022.

104 Taskforce on Scaling Voluntary Carbon Markets, Report 2021, 43.

105 Behnam (n 92); IOSCO Discussion Paper (n 2) 23.

106 Frontier Economics, 'Fixing Failing Carbon Offset Markets' (2021) <https://www.frontier-economics.com> accessed 22 August 2022.

107 GFMA/BCG Report (n 1) 12–13.

108 IOSCO Discussion Paper (n 2) 22–3.

109 G Akerlof, 'The Market for "Lemons": Quality Uncertainty and the Market Mechanism' (1970) 84 Quarterly Journal of Economics 488; Frontier Economics (n 106).

110 For a general discussion of behavioural effects in financial markets, see G Akerlof and R Shiller, *Animal Spirits—How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism* (Princeton University Press 2009) 131 ff.

markets, provided that the necessary activities are compatible with the requirements of the MiFID II framework. This section discusses this compatibility.

Compatibility with MiFID II

Market operators authorized under MiFID II are allowed to operate all three types of trading venues: regulated markets, multilateral trading facilities and organized trading facilities.[111] MiFID II imposes organizational requirements that must be met for the purposes of such authorization, both initially and on an ongoing basis.[112] Even if they are formulated in abstract or high-level terms, the objective pursued with these provisions is quite specific: to ensure investor protection and the integrity of the regulated market operated by the entity acting in its capacity as market operator.[113] So, does MiFID II affect the operator's ability to undertake commercial activities outside this regulatory framework ('out-of-scope' activities)?

MiFID II's rules governing market operators focus on 'in-scope' activities and are silent on out-of-scope activities. In that sense, it is different from other Directives that lay down explicit rules on the pursuit of out-of-scope activities.[114] In the absence of explicitly restrictive legislative provisions, market operators should be able to enjoy the freedom of business enterprise as enshrined in Article 16 of the EU Charter of Fundamental Rights to engage in out-of-scope activities, if those activities are not at odds with the teleology of the MiFID II rules.[115] None of the recitals or provisions suggest that the objective of MiFID II is to *a priori* limit the market operator's freedom to engage in out-of-scope activities.[116] However, the pursuit of those activities cannot cause the operator to fail to comply with the organizational requirements under MiFID II. In my view, the operator must consider two specific organizational requirements when engaging in out-of-scope activities.

1. The first requirement is 'to have arrangements to identify clearly and manage the potential adverse consequences, for the operation of the regulated market or for its members or participants, of any conflict of interest between the interest of the regulated market, its owners or its market operator and the sound functioning of the regulated market.'[117] For example, a conflict of interest may arise if the operator simultaneously runs a regulated market and another multilateral system[118] (for example an unregulated trading platform for VCCs) with shared IT resources. In case of resource scarcity,

111 Arts 4.1.18, 5.2 and 44 MiFID II.

112 Title III MiFID II.

113 N Moloney, *EU Securities and Financial Markets Regulation* (3rd edn, OUP 2014) para V.7.3.1; M Lehmann and C Kumpan (eds), *European Financial Services Law—Article-by-Article Commentary* (Nomos Beck Hart 2019) 264–5. See Recital 164 and art 47.1 (introductory sentence) MiFID II.

114 For example, art 18.1 Directive (EU) 2015/2366 on payment services in the internal market.

115 Court of Justice of the European Union, Case C-283/11 *Sky Österreich* [2013] paras 42–48.

116 In practice, regulators do allow market operators to engage in economic activities outside the MiFID II framework, such as providing analytics services and trading technology. See, eg Deutsche Boerse Annual Report 2021, 23–4; Euronext Universal Registration Document 2021, 25–6.

117 Art 47.1.a MiFID II.

118 Art 4.1.19 MiFID II.

the operator may have financial incentives to (temporarily) favour the unregulated system.[119] In that case, the requirement obliges the operator to ensure that at all times sufficient resources are allocated to the regulated market as it has precedence over the unregulated system.[120]

2. The second requirement is 'to be adequately equipped to manage the risks to which it is exposed, to implement appropriate arrangements and systems to identify all significant risks to its operation, and to put in place effective measures to mitigate those risks.'[121] This requirement is aimed at the risks arising from operating the regulated market,[122] but the market operator should also consider the risks when engaging in out-of-scope activities that create risks which could affect the regulated market. For example, if a market operator operates a registry for VCCs on an IT infrastructure that also hosts the regulated market, the additional IT risks generated by this activity should be duly identified, managed and mitigated.

To reiterate the point: the market operator's discretion to engage in out-of-scope activities next to the operation of a regulated market, is limited by the organizational requirements in the sense that continuing compliance with the relevant transposed provisions must be ensured by the operator for those activities to be compatible with MiFID II. One way to mitigate the risks of non-compliance is by means of 'structural separation', ie setting up a subsidiary with its own IT infrastructure and governance through which these activities will be performed.[123]

Validation and acceptance of standards

Is performing validation services a compatible activity? A market operator could certify projects generating VCCs, using robust global standards, in order to promote standardization. In practice, this could involve the operator entering into arrangements with a carbon standard and receiving the necessary ISO accreditations.[124] Performing the role of validation body could be compatible with the MiFID II framework, especially if the activity is structurally separated. If the market operator also operates a market to which these VCCs (or related financial instruments) are admitted, it should ensure that transactions involving VCCs are not processed with preferential treatment, to steer clear of the conflict of interest rules. However, the market operator may be more effective at scaling up voluntary markets by expressly stating in its admission rules that VCCs certified under specified global robust standards may be eligible for admission to trading. In this respect, without suggesting any causal relationship, it is noteworthy that several major market operators mention in their

119 Lehmann and Kumpan (n 113).

120 Ibid.

121 Art 47.1.b MiFID II.

122 Lehmann and Kumpan (n 113) 267.

123 For some context on structural separation, see Commission Staff Working Document, SWD/2014/030 final.

124 See, eg the validation and verification eligibility requirements of Verra <https://verra.org> and the International Carbon Registry Program <https://carbonregistry.com/> both accessed August 2022.

information materials the widely adopted Green Bond Principles of the International Capital Markets Association.[125]

Registry and issuance

Could a market operator operate a registry of VCCs?[126] It is clear that since there are no licensing requirements applicable to registries of VCCs, a market operator could operate such a registry. In the financial instruments setting, market operators normally do not operate registries, as this role is reserved for central securities depositories authorized under CSDR as part of the settlement of trades in securities. However, from an efficiency standpoint, it makes sense for a market operator to organize both the trading and settlement of VCCs if that market operator has the technical expertise and resources to operate the registry, especially if the VCCs are issued in digital form. The DLT trading and settlement system (TSS) licence under the DLT Pilot regime is an example of this approach, as it allows a single entity to organize both activities in respect of DLT financial instruments.[127] This role seems *prima facie* compatible with MiFID II, provided certain mitigating measures are foreseen. Again, the operator cannot grant preferential treatment to the VCCs traded on its markets for which it operates the registry, eg by enabling shorter execution times for trades in those VCCs. Also, maintaining the registry can become very resource-intensive if the VCCs or related financial instruments are traded across trading venues managed by different market operators, a risk that must be mitigated. In addition, operating a registry exposes the market operator to liability risks in case of recording errors and lags.[128] These risks must be mitigated, and structural separation could help. As an aside, market operators have a number of options when deciding on the technological infrastructure of the registry. They could choose conventional technologies or opt for novel technologies such as blockchain technology, provided that the associated environmental risks can be mitigated.[129]

Trading

Market operators can (and already) operate markets in VCCs.[130] It is through this activity that they can be most effective in their contribution to scale up voluntary markets. As

125 International Capital Markets Association, 'Green Bond Principles—Voluntary Process Guidelines for Issuing Green Bonds' (June 2021) <https://www.icmagroup.org> accessed 20 August 2022.

126 The registry should be a 'transaction registry', ie a higher-end accounting system that has all of the features of a register (recording of EAs or VCCs on accounts), as well as the capability to transfer carbon units between account holders in the transaction registry (internal transfer), and/or the capability to transfer carbon units to another transaction registry (external transfer), see World Bank, Partnership for Market Readiness and Forest Carbon Partnership Facility, 'Emissions Trading Registries: Guidance on Regulation, Development and Administration' (2016) 2 <http://openknowledge.worldbank.org> accessed 20 August 2022.

127 The DLT Pilot Regime allows market operators to run a DLT TSS, see art 10 Regulation (EU) 2022/858.

128 A complicating factor is that the liability regime differs per jurisdiction, and may involve contract or tort law, in addition to potential administrative regulations applicable to VCCs.

129 IOSCO Discussion Paper (n 2) 18; K Kuralbayeva, 'Building the Potential of Blockchain in Voluntary Carbon Markets' (17 May 2022) <https://www.lse.ac.uk/granthaminstitute> accessed 20 August 2022.

130 A number of third country market operators have already started organizing voluntary markets. Noteworthy examples are the Abu Dhabi Global Market (ADGM), in cooperation with AirCarbon Exchange, ADGM, 'Abu Dhabi to Launch the First Regulated Carbon Credit Trading Exchange and Clearing House in the World' (29 March 2022) <www.adgm.com> accessed 25 November 2022; London Stock Exchange (n 66); the EEX Group's Nodal Exchange, see EEX, 'Voluntary Carbon Markets' <https://www.eex.

discussed above, primary voluntary markets are not subject to regulation, and secondary voluntary markets are only subject to regulation under MiFID II to the extent that the financial instruments used to trade VCCs are. Of course, this activity is essentially compatible with MiFID II, because market operation is at the heart of the authorization, but the operator must ensure continued compliance with the organizational requirements for the regulated market. A market operator could even go beyond organizing trading in VCCs and related derivatives. By also organizing the trading of financial instruments that invest in VCCs, such as exchange-traded funds,[131] or that pay out VCCs,[132] the operator could stimulate deeper, more liquid voluntary markets.

Provision of market data

A market operator could also provide market data in respect of VCCs to improve price transparency. Operating markets and providing market data go hand in hand, as market operators are under the obligation to provide pre-trade and post-trade data on transactions executed on their venues under MiFIR's market transparency rules.[133] As this activity is in-scope, there is in principle no compatibility issue. Those data should be made available to the public on a reasonable commercial basis with non-discriminatory access, and for free 15 minutes after publication.[134] Thus, if secondary market trading in VCCs would take place on trading venues, market transparency would significantly improve. A market operator could combine the data with other publicly available data, such as the data to be made available in the future via the European Single Access Point,[135] to further improve market transparency.

5. Conclusion

This article's main research question was exploratory: which roles can MiFID II-authorized market operators perform in voluntary carbon markets such that these markets can scale up? The answer to this question is that they can perform several key roles that have the potential to make a real impact. They can provide trading and market data services, their core institutional roles under MiFID II, addressing liquidity, transparency and market integrity issues. Additionally, they could provide validation and registry services or accept standards, to address quality, standardization and double-accounting issues. To be compatible with

com> accessed 27 November 2022; the Hong Kong Exchanges and Clearing Limited (HKEX), 'Core Climate—The New Carbon Marketplace from HKEX' <hkex.com.hk> accessed 1 December 2022.

131 E Boyde, 'Physical Carbon Credit ETF Wins Praise despite Some Misgivings' *Financial Times* (8 November 2021); A Willis, 'Carbon ETFs and You: Credit Where Credit May Not be Due—How to Profit from an Addiction to Oil and Coal, and Maybe Feel Good about It' *Morningstar* (21 April 2022).

132 R Eng and YP Yin, 'Tracking the Growth of Carbon Credits in Singapore and beyond' International Financial Law Review (6 July 2021). See section 'Voluntary markets, key actors' above.

133 Title II MiFIR (Transparency for trading venues), specifically art 26 MiFIR.

134 Art 13 MiFIR.

135 Proposal for a Regulation establishing a European single access point providing centralized access to publicly available information of relevance to financial services, capital markets and sustainability [2021/0378(COD)].

the MiFID II rules, market operators must ensure that they continue to meet the organizational requirements imposed by the national transpositions of the Directive.

The greater involvement of market operators in voluntary carbon markets has the potential to contribute substantially to the resolution of the scaling issues that beleaguer these markets, and ultimately stimulate a greater supply of more projects and more carbon credits to meet the growing demand. The scaling up of voluntary markets, underpinned by robust global standards, may lead to a greater use of carbon credits in all sectors of the economy that emit greenhouse gases. That development would improve the effectiveness of the carbon pricing mechanism, which is merely one among several necessary climate change mitigation strategies. At the speed with which climate change is deteriorating living conditions across the globe, scaling effective carbon markets is long overdue.