

Ilaria Espa & Zaker Ahmad, *Market-based climate mitigation, Article 6 of the Paris Agreement and international trade law: new rules, existing practices, and continued concerns*
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MARKET-BASED CLIMATE MITIGATION, ARTICLE 6 OF THE PARIS AGREEMENT AND INTERNATIONAL TRADE LAW: NEW RULES, EXISTING PRACTICES, AND CONTINUED CONCERNS

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Article 6 guidelines on market-based mitigation completed the Paris Agreement Rulebook and provided details on how to establish international compliance carbon markets based on the transaction of carbon credits between countries. In this article, the authors take stock of the new regulatory developments and assess their implications for international trade law. The authors examine the rules agreed at the latest Conferences of the Parties (COPs) to the United Nations Framework Convention on Climate Change (UNFCCC) against the reality of the fast-growing voluntary carbon market (VCM). In addition, the authors assess how far the new carbon markets space, created by the Article 6 guidelines, may pose problems of coordination and/or conflict with the rules of the World Trade Organization (WTO). Key challenges that will potentially be faced by developing countries, followed by a focus on more work to be done in this area, have also been identified by the authors. In short, the authors find that while the new rules agreed at the latest COPs in Glasgow and in Sharm el-Sheikh aim at ensuring robust accounting and high quality of carbon credits, there is the risk that they do not succeed in bringing the necessary level of convergence between Article 6 transactions and the VCM market. To the extent that the VCM is by far the fastest-growing segment of the carbon markets space, further steps are needed to ensure greater alignment with Article 6 of the Paris Agreement. The authors also find that any assessment of Article 6 transactions under WTO law is conditional upon finding that carbon credits can be characterised either as a good/product or a service. If included within the scope of multilateral trade rules, claims of discrimination and subsidisation are foreseeable, affecting not only upcoming mitigation projects but also the credits transitioning from the Kyoto Protocol (KP) regime. Obviously, the challenges highlighted in this article disproportionately affect developing countries, due to

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the latter hosting the mitigation activities. Further research is needed to ensure a positive-sum integration between trade and climate rules regarding market-based mitigation.

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I. INTRODUCTION

On November 13, 2021, in Glasgow, United Kingdom (UK), the COP to the UNFCCC, serving as the Meeting of Parties to the Paris Agreement (CMA), finally established the guidelines to develop international compliance carbon markets. This was a historic achievement in many ways. The Glasgow guidelines not only completed the Paris rulebook, but also provided, for the first time in the history of the UNFCCC, multilaterally accepted pathways for market-based mitigation. Furthermore, as the authors later discuss, the guidelines seek to make a step forward in methodologically ensuring environmental integrity, sustainable development, and

robust emission accounting over the previous KP regime. However, with the emergence of new rules, there are concerns over how these may integrate existing carbon market practises as well as over how they might interact with other rules regulating international trade in carbon credits, including the rules of the World Trade Organization (WTO). The present article examines these concerns and their implications for mutual supportiveness between international trade and climate change regimes.

This article provides an account of the new rules – approved in Glasgow and further developed at the recent COP27 at Sharm el-Sheikh in late 2022 – and then examines the questions they pose for the regulation of the carbon markets space, both compliance and voluntary in Part II. It then examines the compatibility of the emerging Article 6 transactions with WTO rules governing multilateral trade relations in Part III. Key challenges identified include the continued possibility of discrimination and subsidisation claims against WTO Members hosting mitigation activities. Not only do such lingering issues question the real progress on ensuring trade and climate policy coherence, but they also pose particular hurdles to the ability of developing countries to remain on a low-carbon development pathway, as the authors discuss in Part IV. The authors conclude by underscoring the need for more and deeper research on the topic in Part V.

II. MARKET-BASED MITIGATION: CURRENT RULES AND PRACTICE

Current efforts to develop multilateral rules governing market-based mitigation under the Paris Agreement build upon the lessons learned from the KP. The flexibility mechanisms admitted by the KP led to the emergence of several emission trading systems (ETS),¹ whereas the “clean development mechanism” (CDM)² and “joint implementation” (JI)³ schemes opened the possibility to trade Certified Emission Reduction (CER) units and Emission Reduction Unit (ERU) units, respectively. Despite the Protocol’s success in launching many mitigation-cooperation activities that resulted in significant emission reductions over the years,⁴

¹ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, Article 17, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol].

² *Id.* art. 12.

³ *Id.* art. 6.

⁴ Until 2021, the CDM has registered 8217 mitigation activities resulting in more than 2.1 billion CERs (each CER = 1MtCO₂ mitigation); *See* United Nations Framework Convention on Climate Change, *Annual Report of the Executive Board of the Clean Development Mechanism to the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol* FCCC/KP/CMP/2021/4 (Sept. 21, 2021) at 4 <https://unfccc.int/sites/default/files/resource/cmp2021_04E.pdf> [hereinafter UNFCCC Report].

it faced significant crisis, especially during the second commitment period (2013-2020).⁵ Not only has it failed to gain multilateral acceptability due to the imposition of binding commitments only on developed countries, but also its working practices have been challenged.⁶ The environmental integrity of the CDM mechanism, and the credits it generated, have been challenged, as evidence has shown poor determination of emission baselines, resulting in no net mitigation (i.e., lack of 'additionality') and no contribution to sustainable development.⁷ As the second commitment period has expired, CDM activities are now suspended.⁸ However, CERs that have already been issued will remain in circulation.⁹

After agreeing to the blueprint of a new, two-track, cooperative market-based mitigation approach under Article 6 of the Paris Agreement in 2015, it took relentless negotiations among state parties to finalise two sets of implementing guidelines giving effect to that framework.¹⁰ This was completed in 2022 at the COP26 in Glasgow, which also marked the official completion of the Paris Rulebook. One of those two guidelines allows for an updated CDM-type mechanism as envisaged in Article 6.4 of the Paris Agreement, i.e., a centralised, supranational framework for the registration and approval of credit-generating projects (hereafter, Article 6.4

⁵ For an overview, see Kazunari Kainou, *Collapse of the Clean Development Mechanism Scheme under the Kyoto Protocol and Its Spillover: Consequences of 'Carbon Panic'*, VOXEU CEPR (Mar. 16, 2022) <https://cepr.org/voxeu/columns/collapse-clean-development-mechanism-scheme-under-kyoto-protocol-and-its-spillover> [hereinafter Kainou].

⁶ Christopher Napoli, *Understanding Kyoto's Failure*, 32(2) SAIS REV. OF INTL. AFFAIRS 183 (2012); Amanda M. Rosen, *The Wrong Solution at the Right Time: The Failure of the Kyoto Protocol on Climate Change*, 43(1) POLITICS & POLICY 30 (2015).

⁷ Peter Newell, *The Political Economy of Carbon Markets: The CDM and Other Stories*, 12(1) CLIMATE POLICY 135 (2012); Axel Michaelowa, *A Call to Action: But Too Late, in Vain?: Climate Change, Carbon Markets and the CDM: A Call to Action*, 13 CLIMATE POLICY 408 (2013).

⁸ United Nations Framework Convention on Climate Change, *Decision 2/CMP.16, Report of the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol on Its Sixteenth Session, Held in Glasgow from 31 October to 13 November 2021: Addendum Part Two*, FCCC/KP/CMP/2021/8/Add.1 (Mar. 8, 2022) ¶ 6-8 <https://unfccc.int/sites/default/files/resource/cmp2021_08_add1E.pdf>.

⁹ The transfer of CERs in the context of the transition from the CDM regime to the new Article 6.4 mechanism established under the Paris Agreement was disciplined at COP27. United Nations Framework Convention on Climate Change, *Draft Decision -/CMA.4, Guidance on the mechanism established by Article 6, paragraph 4, of the Paris Agreement*, Advanced Unedited Version Annex I, §§ I-II <<https://unfccc.int/cop27/auv>> [hereinafter UNFCCC Draft Decision -/CMA.4].

¹⁰ It is relevant to also note that the Paris Agreement rules and new guidelines also deal with non-market approaches (Article 6.8). This remains outside the scope of discussion undertaken here.

mechanism, or the mechanism).¹¹ The other track allows parties to voluntarily cooperate on authorisation, certification, and transfer of carbon credits, known as “internationally transferred mitigation outcomes” (ITMOs).¹²

As UNFCCC negotiations were rather slow in regulating the carbon market and states’ use of carbon credits in fulfilment of their respective nationally determined contributions (NDCs) under the Paris Agreement, a tandem growth has taken place in private markets, catering to the voluntary and compliance demands of the non-state entities. This has come to be known as the voluntary carbon market (VCM). Purchase, holding, and transfer of carbon credits allow private entities to either meet mandatory requirements or make voluntary climate claims, such as ‘climate neutral’, or ‘net zero’, regarding respective products and services. However, VCM certification standards (hereafter, carbon standards) that monitor, verify, and approve transactions in carbon credits vary greatly in terms of their transparency, stringency, and final price. The advent of the Glasgow rules has driven the gap between compliance and voluntary markets even further. Potential questions arising in these markets are discussed below.

A. GLASGOW (COP 26) GUIDELINES ON ARTICLE 6

Although the Article 6 guidelines were supposed to be agreed upon by 2018 initially, it proved to be impossible due to disagreements among countries over accounting methods, sharing of proceeds for adaptation, and transition of credits issued under the CDM.¹³ Most parts of the guidelines on market-based mitigation have now been agreed upon at the Glasgow climate summit (COP26/CMA3). The following paragraphs provide an account of the main highlights of the Article 6 guidelines.

1. Article 6.2 Cooperative Approaches: Guidelines and Practice

¹¹ United Nations Framework Convention on Climate Change, *Decision 3/CMA.3, Rules, Modalities and Procedures for the Mechanism Established by Article 6, Paragraph 4, of the Paris Agreement: Annex* FCCC/PA/CMA/2021/L.19 (Nov. 13, 2021) <https://unfccc.int/sites/default/files/resource/cma2021_L19E.pdf> [hereinafter UNFCCC Decision 3/CMA.3].

¹² United Nations Framework Convention on Climate Change, *Decision 2/CMA.3, Guidance on Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement: Annex* FCCC/PA/CMA/2021/L.18 (Nov. 13, 2021) <https://unfccc.int/sites/default/files/resource/cma2021_L18_adv.pdf> [hereinafter UNFCCC Decision 2/CMA.3].

¹³ Axel Michaelowa et al., *Negotiating Cooperation under Article 6 of the Paris Agreement*, EUROPEAN CAPACITY BUILDING INITIATIVE (Nov. 2019) 5-8 <<https://ecbi.org/sites/default/files/Article%206%202019.pdf>>.

Article 6.2 guidelines provide for rules and conditions for the issuance of ITMOs that are “*real, verified, and additional*” on or after 2021.¹⁴ Parties to the Paris Agreement that meet the eligibility requirements are allowed to approve mitigation activities within their territory and authorise ITMOs transactions. Eligibility requirements include having the framework and capacity to perform robust accounting and tracking of emissions.¹⁵ Once authorised by the host country, ITMOs can be transferred so that another country can meet its own NDC targets or, for instance, another entity can meet other mitigation purposes (e.g., airline operators wanting to offset emissions under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) or companies seeking to meet obligations under an Emission Trading System (ETS) or carbon tax, or a mandatory offsetting scheme, or even to support so-called voluntary claims (in the VCM)). Parties are also encouraged to voluntarily cancel a portion of the ITMOs to ensure net global mitigation. Key highlights of Article 6.2 guidelines are briefly outlined in the following paragraphs.

As regards market-based mitigation activities under the new guidelines, additionality is a key requirement, as mentioned above. While details remain in short supply in the guideline,¹⁶ arguably, it would require demonstration that the activity undertaken would not be feasible in the absence of the carbon revenue.¹⁷ Additionality should also require ensuring that the planned activities are not already part of the host state’s Nationally Determined Contributions (NDC) or policy goals.¹⁸

The guidelines establish methods for transparent, accurate, complete, and consistent corresponding adjustments of emissions.¹⁹ The corresponding adjustment ensures that the amount of additional mitigation performance added to the ITMO purchasing country’s emissions trajectory is correspondingly taken off from the

¹⁴ UNFCCC Decision 2/CMA.3, *supra* note 13, ¶ 1.

¹⁵ *Id.* ¶ 3-4.

¹⁶ *Additionality under Article 6.2 of the Paris Agreement*, Gold Standard 2022, at 8, https://www.goldstandard.org/sites/default/files/additionality_under_article_6.2_of_the_paris_agreement.pdf.

¹⁷ *Id.* at 14, 25.

¹⁸ See *Tools for the Demonstration and Assessment of Additionality*, PERSPECTIVES CLIMATE GROUP 2022, CONCEPT NOTE II-AMT TOOL01 at 6-8, https://www.perspectives.cc/public/fileadmin/user_upload/II-AMT_2022_TOOL01_-_Tool_for_the_demonstration_and_assessment_of_additionality_Concept_Note_Version_April_2022_Perspectives_Climate_Research_Freiburg.pdf [hereinafter *Tools for Demonstration & Assessment*].

¹⁹ UNFCCC Decision 2/CMA3, *supra* note 13, ¶ 7.

trajectory of the host country.²⁰ While corresponding adjustments are meant to avoid double counting, their operationalisation still remains incomplete.²¹

To ensure transparency of the accounting, the guideline suggests two layers of tracking and record keeping. First, parties entering into cooperative approaches are required to develop (or access) and continuously maintain a registry keeping track of the ITMOs' authorisation, first transfer, transfer, acquisition, use towards NDCs, authorisation for use towards other international mitigation purposes (e.g., CORSIA), and voluntary cancellation.²² Second, the UNFCCC Secretariat is directed to develop a new accounting and reporting platform to keep track of the cooperative arrangements as well as offer the services of an international registry, should the parties opt to use them.²³

Parties must submit an initial report prior to the authorisation of ITMOs, which, *inter alia*, provides information regarding the quantification of their NDCs, ITMO metrics, proof of environmental integrity, and their contribution to sustainable development.²⁴ Each successive cooperative arrangement would require parties to update their respective initial reports. In addition, parties are required to submit annual and biennial reports, detailing information regarding their cooperation.²⁵ A technical expert review will be conducted to ensure the overall consistency of the reports with the guidelines.²⁶

In addition to the governance of approval and transfer of the ITMOs, the guidelines encourage parties to contribute to sustainable development. Parties are required to report their measures ensuring environmental integrity, minimisation of environmental and social impact, contribution to sustainable development objectives, and overall contribution to the eleventh preambular recital of the Paris

²⁰ *Id.* ¶ 7-14.

²¹ Timid steps forward have been made at the recent COP27 in Sharm el-Sheikh, but the regime is still to be clarified, especially for what concerns the interplay between compliance/voluntary markets and authorised/non-authorised ITMOs. United Nations Framework Convention on Climate Change, Draft Decision -/CMA.4, Matters relating to cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement, Advanced Unedited Version <https://unfccc.int/sites/default/files/resource/cma2022_L15E.pdf>. *See also*, COP27: *What happened on Article 6 and carbon markets, and (why) does it matter?*, GOLD STANDARD (Nov. 24, 2022), <https://www.goldstandard.org/blog-item/article-6-webinar-series>.

²² UNFCCC Decision 2/CMA 3, *supra* note 13, ¶ 29-30.

²³ *Id.* ¶ 31-36.

²⁴ *Id.* ¶ 18.

²⁵ *Id.* ¶ 20-24.

²⁶ *Id.* ¶ 25-28.

Agreement.²⁷ Lastly, parties engaging in cooperative approaches as well as other stakeholders are ‘strongly encouraged’ to share part of their proceeds by contributing to adaptation efforts.²⁸ Parties are also ‘encouraged’ to voluntarily cancel a portion of the ITMOs to ensure overall mitigation of global emissions.²⁹ The language used is purely hortatory, which is a key contrast with the Article 6.4 mechanism guidelines, discussed later.

Keeping in parallel with the development of the voluntary cooperation guidelines outlined above, many interested state parties have already started exploring the contours of such arrangements in practice, either through individual pilot studies or different forms of bilateral cooperation.³⁰ As they provide a glimpse into future interactions and their implications, some of these are briefly mentioned below:

Canada: Canada and Chile entered into an environmental cooperation agreement in 1997 in the context of the Free Trade Agreement (FTA) signed between the two countries.³¹ In furtherance of that cooperation, as well as to implement its NDC commitment of providing up to 2.65 billion dollars of climate finance to developing countries, Canada is supporting Chile to reduce the emission of methane gas in its waste sector.³² The *Reciclo Orgánicos* programme is established to achieve that as well as put in place a robust monitoring, review, and verification mechanism.³³ It is

²⁷ *Id.* ¶ 18, 22 (sub-para b, f, and g) (The eleventh recital of the Paris Agreement Preamble acknowledges climate change as a common concern of humankind and urges Parties, “when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity”).

²⁸ *Id.* ¶ 37.

²⁹ *Id.* ¶ 39.

³⁰ UNEP COPENHAGEN CLIMATE CENTRE, UNEP CCC ARTICLE 6 PIPELINE ANALYSIS AND DATABASE, <https://article6pipeline.org/> (The data on Article 6 pipeline activities compiled by the UNEP and the DTU put the number around 50, as of November 2022) [hereinafter UNEP Copenhagen Climate Centre].

³¹ GOVT. OF CANADA, OVERVIEW OF THE CANADA-CHILE AGREEMENT ON ENVIRONMENTAL COOPERATION (Oct. 26, 2022) <https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-countries-regions/latin-america-caribbean/canada-chile-environmental-agreement.html> [hereinafter Canada-Chile Agreement].

³² Joachim Roth et al., Commentary, *Current Status of Article 6 of the Paris Agreement: Internationally Transferred Mitigation Outcomes (ITMOs)*, INT’L INST. FOR SUSTAINABLE DEV., (Dec. 11, 2019) [hereinafter Roth].

³³ Canada-Chile Agreement, *supra* note 32, at 4-8.

possible that the mitigation achieved beyond Chile's NDC commitment will be issued as ITMOs.³⁴

Japan: Since 2010, Japan has been voluntarily cooperating with countries under the Joint Crediting Mechanism (JCM).³⁵ The mechanism shares similarities with the Article 6.2 cooperation framework and can potentially be transitioned to the latter.³⁶ As of November 2022, Japan has agreements with 25 countries under the JCM and has 65 registered mitigation projects.³⁷

Sweden: In 2020, the Swedish Energy Agency (SEA) had conducted nine virtual pilot studies in Chile, Colombia, Indonesia, Kenya, Mongolia, Nigeria, and the Philippines to explore the best ways to conduct mitigation activities under Article 6.³⁸ In the same year, the SEA approved six project proposals to advance into the detailed planning stage.³⁹ Five detailed mitigation activities have been designed on that basis, comprising biogas production in the Dominican Republic and Argentina; efficient stoves in Ethiopia; solar photovoltaics (PVs) for health centres in Ghana; and green hydrogen production in South Africa.⁴⁰ In 2021, the country signed its first Article 6.2 cooperation agreement with Ghana, which was followed by similar agreements signed with Nepal and the Dominican Republic in 2022.⁴¹

Switzerland: Switzerland has already entered into several bilateral voluntary cooperation agreements under the Article 6.2 framework. As of now, the country has agreements with Peru, Ghana, Senegal, Georgia, Vanuatu, the Dominican Republic, Thailand, Morocco, and Ukraine.⁴² One pilot project to produce efficient

³⁴ Roth, *supra* note 33, at 4.

³⁵ THE JOINT CREDITING MECHANISM, OVERVIEW OF THE JOINT CREDITING MECHANISM (JCM), <https://gec.jp/jcm/about/> [hereinafter Overview of JCM].

³⁶ ASIAN DEVELOPMENT BANK, ARTICLE 6 OF THE PARIS AGREEMENT: DRAWING LESSONS FROM THE JOINT CREDITING MECHANISM-VERSION II, <https://www.adb.org/publications/article-6-paris-agreement-lessons-jcm-v2>.

³⁷ Overview of JCM, *supra* note 36.

³⁸ Swedish Energy Agency, *Virtual Pilots for Article 6* (July 4, 2022), <https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/paris-agreement/operationalizing-article-6-lessons-from-the-swedish-energy-agencys-virtual-pilots/>.

³⁹ Swedish Energy Agency, *Cooperation under the Paris Agreement* (June 18, 2021), <https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/paris-agreement/cooperation-under-the-paris-agreement/>.

⁴⁰ *Id.*

⁴¹ Swedish Energy Agency, *Bilateral Climate Agreements* (Jan. 9, 2023), <https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/paris-agreement/bilateral-climate-agreements/>.

⁴² FEDERAL OFFICE FOR THE ENVIRONMENT (FOEN), *BILATERAL CLIMATE AGREEMENTS* (2022), <https://www.bafu.admin.ch/bafu/en/home/topics/climate/info->

cook stoves is ongoing in Peru. Meanwhile, one mitigation project, i.e., climate-smart rice cultivation in Ghana, has been registered and authorised for the issuance and use of ITMOs.⁴³

2. Guidelines on Article 6.4 Mechanism

Guidelines regarding implementation of Article 6.4 of the Paris Agreement provide the framework for a centralised institutional mechanism replacing the CDM under the KP. The key to governance and function devolves upon the ‘Supervisory Body’, a new geographically-fair and gender-equitable representation of Paris Agreement parties.⁴⁴ The activity cycle that eventually results in Article 6.4 emission reductions (i.e., 6.4 ERs) begins with the approval of an activity design.⁴⁵ The approval is dependent on, *inter alia*, the effective establishment of an emission baseline and the demonstration of additionality in accordance with the methodologies to be approved by the Supervisory Body. While methodologies can be developed by the activity participants, those must follow the fundamental principles⁴⁶ and approaches⁴⁷ supplied in the guidelines. After appropriate activity design, its registration is dependent on host country approval, validation by an independent ‘designated operational entity’ (DOE), and verification thereof by the Supervisory Body.⁴⁸ After registration, the activity will be closely monitored by an impartial DOE, and upon completion, 6.4 ERs will be issued by the mechanism registry upon successful verification and certification.⁴⁹ When issued, it is mandatory for a portion of the 6.4 ERs to go to the adaptation fund and for another small portion to be cancelled.⁵⁰ As can be assumed, many of the detailed rules to implement Article 6.4 remain in

specialists/climate--international-affairs/staatsvertraege-umsetzung-klimauebereinkommen-von-paris-artikel6.html.

⁴³ FEDERAL OFFICE FOR THE ENVIRONMENT (FOEN), REGISTERED COMPENSATION PROJECTS ABROAD (2022), <https://www.bafu.admin.ch/bafu/en/home/themen/thema-klima/klimawandel-stoppen-und-folgen-meistern/schweizer-klimapolitik/kompensation-von-co2-emissionen/auslaendische-klimaschutzprojekte-und-emissionsminderungszertifi/liste-registrierte-kompensationsprojekte-ausland.html>.

⁴⁴ UNFCCC Decision 3/CMA.3, *supra* note 13, ¶ 3-24.

⁴⁵ *Id.* ¶ 30-32.

⁴⁶ *Id.* ¶ 3 (Methodologies are required to be, among others, ambitious over time, be real, transparent, below ‘business as usual’, avoid emission leakage, and align to the Paris Agreement goal in the long-term.).

⁴⁷ *Id.* ¶ 36 (The methodology approaches can be based on (i) best available technology; (ii) ambitious benchmarks; or (iii) downward adjusted existing or historic emission levels).

⁴⁸ *Id.* ¶ 40-49.

⁴⁹ *Id.* ¶ 50-55.

⁵⁰ *Id.* ¶ 58-61.

development even after the latest COP, meaning that it would be many months, if not years, before the mechanism is fully operational.⁵¹

A host party can authorise 6.4 ERs issued by it to be transferred as ITMOs.⁵² In such a case, the rules on corresponding adjustments become applicable to those credits. Furthermore, subject to the fulfilment of application and approval deadlines as well as methodological requirements, current CDM projects are allowed to transition into the new institutional regime.⁵³ Similarly, the mechanism also allows existing CERs from CDM projects registered on or after 2013 to be included in the new mechanism registry.⁵⁴ However, such credits have a limited lifetime, as they may be used to satisfy only the first round of NDC commitments.⁵⁵ More decisions on the matter remain pending.⁵⁶

B. ARTICLE 6 GUIDELINES AND EXISTING CARBON MARKETS

The new direction of multilateral regulation on market-based mitigation raises questions about its implications for the existing variety of carbon credits and, most importantly, the issue of regulatory compatibility with credits transacted in the voluntary carbon market. There are three broad categories of Article 6 transactions that take place, briefly outlined below along with a visual aid (Figure 1).⁵⁷

⁵¹ Further level of detail when it comes to the rules, modalities, and procedures for the mechanisms, including the processes for implementing the transition of activities from the CDM and the transfer of CERs was given in UNFCCC Draft Decision -/CMA.4, *supra* note 10. At the same time, the latest COP introduced the concept of 6.4ERs not specified as authorised for use towards achievement of NDCs and/or for other international mitigation purposes ('mitigation contribution 6.4ERs'), which may be used, inter alia, for results-based climate finance, domestic mitigation pricing schemes, or domestic price-based measures, for the purpose of contributing to the reduction of emission levels in the host Party. *Id.* Annex I, § IV, ¶ 29 (b) (It is not yet clear, however, whether mitigation contribution 6.4ERs would need to be correspondingly adjusted).

⁵² UNFCCC Decision 2/CMA.3, *supra* note 13, ¶ 1(g).

⁵³ UNFCCC Decision 3/CMA.3, *supra* note 12, ¶ 73; UNEP Copenhagen Climate Centre, *supra* note 25 (According to the UNEP DTU data, as of November 2022, there are more than 800 mitigation projects and programs that are ready to be included into the new mechanism).

⁵⁴ UNFCCC Decision 3/CMA.3, *supra* note 12 ¶ 74.

⁵⁵ *Id.* ¶ 75; UNFCCC Draft Decision -/CMA.4, *supra* note 10, Annex I, ¶ 22-24.

⁵⁶ UNFCCC Draft Decision -/CMA.4, *supra* note 10, Annex I, ¶ 6-10 [This includes the lack of approved Article 6.4 methodologies for the purposes of transitioning CDM activities].

⁵⁷ This figure generally indicates the origin and the potential destination of the credits. One should not read it as a representation of the relative scale of the flows.

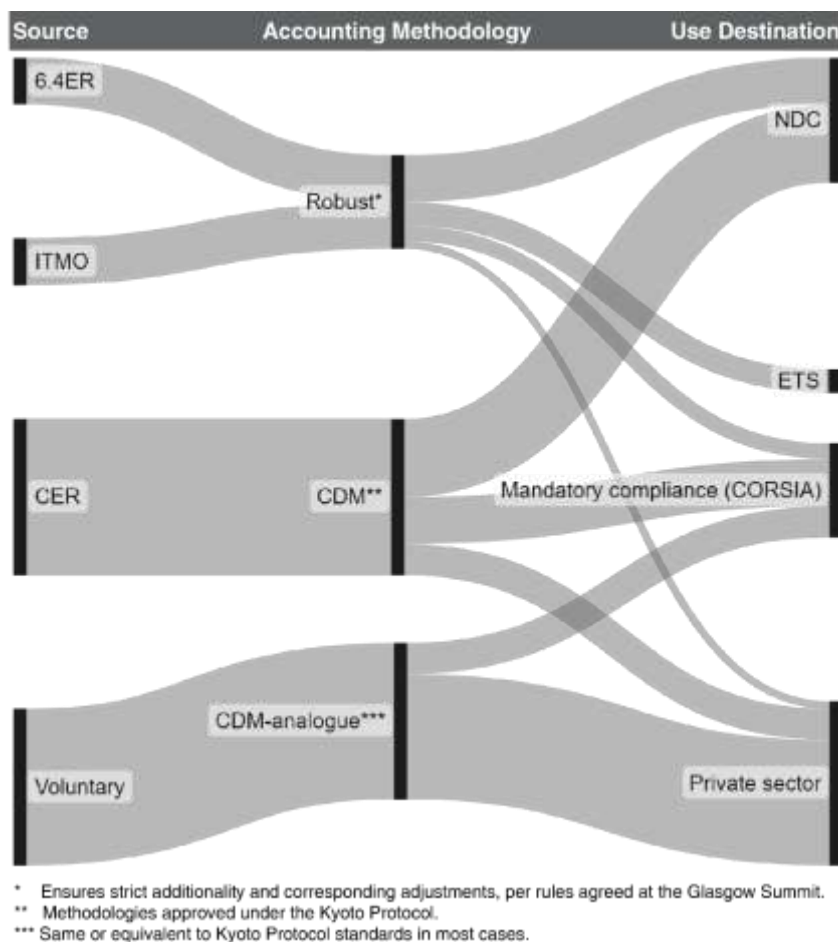


Figure 1: Source and destination of carbon credits

Transactions to fulfil NDC commitments: These are made by states towards fulfilment of their respective NDCs.⁵⁸ Credits that are capable of being traded in this category include those arising from the CDM (i.e., CERs) at present and from new Paris mechanisms (i.e., ITMOs and 6.4ERs) in the future. Some host countries also retain voluntary credits produced within their own territory to meet NDCs.⁵⁹

⁵⁸ A study of 124 updated NDCs finds that 102 of them mention market-based cooperation. Out of that 17 explicitly mention Article 6.2 and 6 mention Article 6.4 of the Paris Agreement. Victoria Brandemann et al., *Implementing Paris Cooperatively: Update on Market Mechanisms in the Latest NDC Submissions*, WUPPERTAL INSTITUT POLICY PAPER 5/2021 at 5–6.

⁵⁹ For example, the authorised Australian Carbon Credit Units produced by private entities under government regulation can be sold back to the government, counting towards the

Transactions to meet mandatory mitigation obligations: This category is comprised of transactions among private parties under a mandatory (compliance) scheme setting up markets for specific industries or sectors within or across governments. This includes domestic and regional emission trading schemes (e.g., EU-ETS) as well as carbon markets set up under international regulation (e.g., CORSIA). The tradability of credits depends on the particular requirements of the respective scheme. For example, until 2020, CERs and ERUs were eligible for transactions in the EU-ETS, subject to certain threshold limitations.⁶⁰ The CORSIA scheme allows voluntary credits to be used, subject to standard-specific exclusions, including the avoidance of double counting.⁶¹

Voluntary transactions: The third category comprises the transactions that take place voluntarily between private entities (the so-called VCM). As the market is voluntary, there is no particular regulation on the nature of credits that can be bought and sold, which has resulted in credit offerings that are based on a diverse range of offsetting activities, regulated by varying standards, and resulting in different prices. These permits further allow businesses to make specific climate claims with respect to their products and services. At present, the voluntary market remains the fastest growing segment of the global carbon market. The authors take a closer look at the voluntary carbon market (VCM) below with a view to assess the potential impact of the Glasgow guidelines on its continued growth and expansion.

1. Structure, Operation, and Growth of the VCM

Stakeholders in the voluntary carbon market can be roughly divided into four categories, with some overlaps in between, namely: (i) producers; (ii) regulators; (iii) intermediaries; and (iv) consumers. The first group is comprised of project developers and managers implementing the mitigation activity. The activity in

latter's mitigation commitments. *See* AUSTRALIAN GOVT., DEPT. OF CLIMATE CHANGE, ENERGY, THE ENVIRONMENT AND WATER, EMISSIONS REDUCTION FUND, <https://www.dceew.gov.au/climate-change/emissions-reduction/emissions-reduction-fund> [hereinafter Australia Emission Reduction Fund].

⁶⁰ EUROPEAN COMMISSION, USE OF INTERNATIONAL CREDITS, https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/use-international-credits_en.

⁶¹ ICAO DOCUMENT, CORSIA ELIGIBLE EMISSIONS UNITS (Mar. 2022), https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/ICAO%20Document%2008_CORSIA%20Eligible%20Emissions%20Units_March%202022.pdf; ICAO DOCUMENT: CORSIA EMISSIONS UNIT ELIGIBILITY CRITERIA, https://www.icao.int/environmental-protection/CORSIA/Documents/ICAO_Document_09.pdf.

question can generate mitigation through emission avoidance (e.g., renewable energy or energy efficiency projects), or through removals (e.g., afforestation, technology-based carbon capture, and sequestration). There are several carbon standards, discussed below, that perform the role of a regulator. If the mitigation activity complies with the relevant standards, corresponding credits will be entered into the registry for issuance. In addition, the governments of the host country may also issue specific rules regarding VCM activities in a sector and thereby share the role of a regulator. Intermediaries are individuals or firms that collect and bundle the credits issued to the consumers. The consumers are any individual, firm, or other private or public entity interested in holding such credits. Figure 2 below provides a schematic overview of carbon credit transactions in the VCM.⁶²

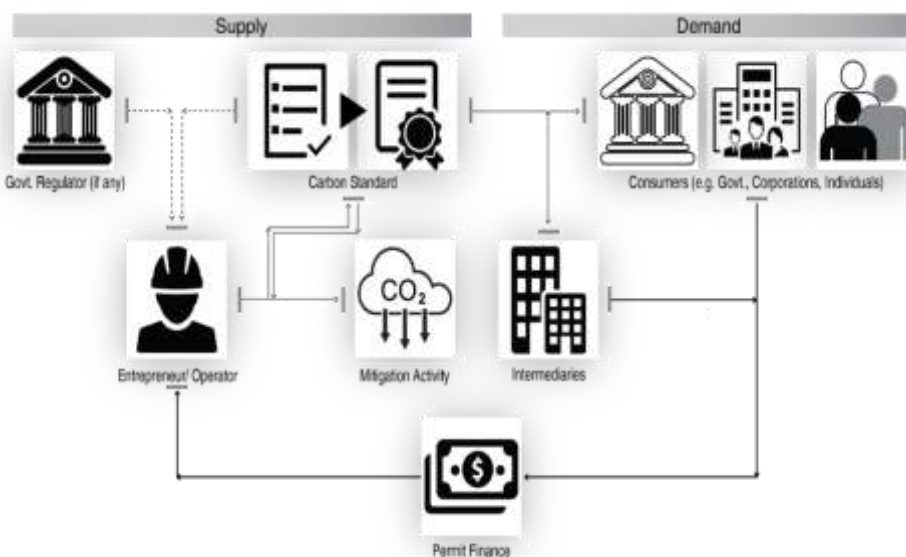


Figure 2: Schematic overview of the voluntary carbon market.

From a trade point of view, the VCM, much like other carbon markets, is an amalgamation of several layers of transactions in products and services. As will be discussed in the following section, depending on the characterisation of carbon credits as a product or a financial asset, production and transfer of credits can involve trade in goods, or alternatively a series of trade in services (e.g., accounting,

⁶² Charlotte Streck et al., *Chapter 5: What is a carbon credit?*, THE VOLUNTARY CARBON MARKET EXPLAINED (Dec. 2021) at 2, <https://vcprimer.org/chapter-5-what-is-a-carbon-credit/> [hereinafter Streck].

auditing, and financial services). More traditionally, mitigation activities can lead to increases in import demand for new inputs (e.g., parts for electric vehicles) or export of new climate-friendly end-products (e.g., renewable electricity).

Currently, the VCM is witnessing exponential growth. According to the Climate Focus, between 2010 and 2021, the total annual amount of carbon credits issued by the four biggest carbon standards increased from 33 MtCO₂eq to 352 MtCO₂eq.⁶³ Credit supply continues to be dominated by emission avoidance activities, among which nature-based solutions (e.g., forest preservation) and renewable energy generation remain key. Given the increasing demand for such credits from the private sector, the growth trend is likely to continue. In contrast to the market growth, the prices of carbon credits remain fragmented across classes and highly volatile depending on credit vintage, additional sustainable development features, as well as power asymmetry between stakeholders, etc.⁶⁴

2. Post-Glasgow Regulatory Implications for the VCM

While the Glasgow guidelines impose requirements prohibiting double counting and ensuring environmental integrity upon governments responsible for the emission accounting, approval, and authorisation of the credits,⁶⁵ carbon standards regulating the VCM fall short of that. By 2020, almost 90% of all private permits were being regulated under two main standards, i.e., the Verified Carbon Standard (VCS, 68.5%) and the Gold Standard (GS, 20.1%).⁶⁶ These standards accept and are often based on the approved CDM methodologies,⁶⁷ hence, they also suffer from the same shortcomings. For example, if a private mitigation project initiates an activity planned to be undertaken by the government in the future, it may nevertheless be deemed additional under the CDM and VCM methodologies but not under the new

⁶³ VOLUNTARY CARBON MARKET DASHBOARD, RETIREMENT DATA AND NON-RETIRED VOLUMES,

<https://app.powerbi.com/view?r=eyJrIjoiNGI5ZDY1ZWU0ZGU0NS00MWRmLWFKNjQtMTUyYTMxMTVjYWQyIiwidCI6IjUzYTJrjNzZkLWI2MjU0eU0tNGFhNi1hMTAzLWQ0M2MyYzIxYTMxMiIsImMiOiJ9&pageName=ReportSection68c2510fa4171bdf82a9>.

⁶⁴ Streck, *supra* note 63, ¶ 3–4.

⁶⁵ See Part II.A above.

⁶⁶ Charlotte Streck et al., *Chapter 7: What is the role of carbon standards in the voluntary carbon market?*, THE VOLUNTARY CARBON MARKET EXPLAINED (2021), <https://vcmprimer.org/chapter-7-what-is-the-role-of-carbon-standards-in-the-voluntary-carbon-market/>. Among others, the American Carbon Registry (ACR) and the Climate Action Reserve (CAR) accounted for another 10% of VCM.

⁶⁷ *Clean Development Mechanism (CDM) Methodologies*, VERRA, <https://verra.org/methodology/cdm-methodologies/>; *Energy Methodologies*, GOLD STANDARDS, <https://www.goldstandard.org/content/energy-methodologies-0>.

Glasgow guidelines.⁶⁸ Similarly, if a VCM mitigation project is situated in an industry or sector covered by the host country NDC, there is a significant possibility that the mitigation represented by the credit has also been measured towards the fulfilment of the host country NDC, thereby resulting in double counting.

However, the separation between the government and carbon standards with regard to the regulation of voluntary carbon credits is not always watertight. There are instances where VCM permits have been incorporated into a government regulatory measure. For example, in the United Kingdom, the mandatory emission reporting procedure also allows a company to optionally report emission offsets, subject to the condition that they are based on the domestic Woodland Carbon Credit, or other ‘good quality’ credits.⁶⁹ In South Africa, the amended Carbon Offset Regulations, which are part of the domestic Carbon Tax Act,⁷⁰ allow a portion of the mandatory carbon tax payable to be offset by holding specifically listed credits, including voluntary ones.⁷¹ The government can also be the project developer or partner in mitigation activities and offer credits in the voluntary market.⁷²

⁶⁸ For the necessary methodological improvement under the Paris Article 6 compared to the CDM tools, see the proposed new tools by Michaelowa and others. Tools for Demonstration & Assessment, *supra* note 19; *Tool for Robust Baseline Setting*, PERSPECTIVES CLIMATE GROUP 2022, CONCEPT NOTE II-AMT TOOL02, https://www.perspectives.cc/public/fileadmin/user_upload/II-AMT_2022_TOOL02_-_Tool_for_robust_baseline_setting_Concept_Note_Version_April_2022_Perspectives_Climate_Research_Freiburg.pdf.

⁶⁹ HM GOVERNMENT, ENVIRONMENTAL REPORTING GUIDELINES: INCLUDING STREAMLINED ENERGY AND CARBON REPORTING GUIDANCE (2019), 50-57, 64-65, Annex-G, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/850130/Env-reporting-guidance_inc_SECR_31March.pdf.

⁷⁰ Carbon Tax Act 15 of 2019 (S. Afr.), https://www.gov.za/sites/default/files/gcis_document/201905/4248323-5act15of2019carbontaxact.pdf.

⁷¹ At present the VCS and the GS are allowed, in addition to the CDM credits. *See* CARBON OFFSET ADMINISTRATION SYSTEM, <https://carbon.energy.gov.za/Home.aspx> (last visited Sept. 20, 2022).

⁷² *See Jurisdictional and Nested REDD+ (JNR)*, VERRA <https://verra.org/project/jurisdictional-and-nested-redd-framework/> (One such scheme is the REDD+ compliant standard dealing with afforestation and reforestation offered to the governments by Verra); For the challenges on admitting REDD+ activities into the Glasgow rulebook, *see* Nicolas Kreibich & Christof Arens, *REDD+ and the Article 6 Rulebook: Will There Be Crediting of Forestry Activities under Article 6?*, WUPPERTAL INSTITUT POLICY PAPER NO. 01/22 https://www.carbon-mechanisms.de/fileadmin/media/dokumente/Publikationen/Policy_Paper/REDDplus_Art6.pdf.

The difference in the underlying methodology between the Article 6 Rulebook and the voluntary carbon standards poses potential challenges for the VCM to be integrated with the multilateral carbon market in the long run.⁷³ On one hand, Paris-aligned credits can be transferred to meet NDC commitments of other countries or for other purposes after corresponding adjustment. On the other hand, voluntary credits, albeit certified, are shut out of the NDC compliance market to the extent that they are not correspondingly adjusted and remain ineligible towards compliance with a number of national schemes (e.g. the EU and the Swiss ETS). One outcome of this is a significant difference in terms of the robustness and quality of carbon permits available in the voluntary carbon market. The methodological difference may further call into question the legitimacy of integrating voluntary credits into government mitigation policies and plans, or, in turn, potentially inducing carbon standards to make corresponding improvements.

One of the several collaborative efforts⁷⁴ to improve the VCM standards is the Voluntary Carbon Market Integrity Initiative (VCMI). The VCMI developed a draft code, requiring businesses to engage in transparent accounting, reporting, and to use high quality carbon credits to be able to make claims of climate neutrality or net zero.⁷⁵ The code, however, stopped short of requiring credits to be correspondingly adjusted, and thus failed to bridge the existing methodological gap. Another initiative, i.e., the Integrity Council for the Voluntary Carbon Market (IC-VCM) has introduced Core Carbon Principles that emphasise the requirement of additionality and the avoidance of double counting.⁷⁶ The Principles, too, however, fall short of the robustness demanded by the Paris Article 6 Rulebook. Overall, the methodological variability among VCM credits can be expected to remain in the short to medium run.

III. TRADE LAW IMPLICATIONS: OLD RULES, NEW CONCERNS

Since the early days of market-based mitigation efforts, academics have speculated about their potential conflict with multilateral trade rules.⁷⁷ In practise, however,

⁷³ Nicolas Kreibich, *Keeping Promises?*, 10(2) CARBON MECHANISMS REVIEW 32-39 (2022).

⁷⁴ *Id.* ¶ 35-37.

⁷⁵ *Provisional Claims Code of Practice*, VOLUNTARY CARBON MARKETS INTEGRITY INITIATIVE, <https://vcmintegrity.org/wp-content/uploads/2022/06/VCMI-Provisional-Claims-Code-of-Practice.pdf>.

⁷⁶ *Core Carbon Principles*, INTEGRITY COUNCIL FOR THE VOLUNTARY CARBON MARKETS (IC-VCM), <https://icvcm.org/wp-content/uploads/2022/07/ICVCM-Public-Consultation-FINAL-Part-2.pdf>.

⁷⁷ See also Jacob Werksman, *Greenhouse Gas Emissions Trading and the WTO*, 8 REV. OF EUROPEAN COMMUNITY & INT'L ENV'T L. 251 (1999) [hereinafter Werksman]; Annie Petsonk, THE KYOTO PROTOCOL AND THE WTO: INTEGRATING GREENHOUSE GAS

transactions in emission permits have not faced any legal challenge at the WTO so far. It may be tempting, but nonetheless erroneous, to, therefore, conclude that trade and climate domains will continue on a non-conflicting path regarding carbon credits. The absence of any trade dispute in the past does not mean that no such challenges can be made at all. Rather, the expanding market for credits, growing public regulatory interventions, diverse public-private partnerships, heterogeneity of standards, and a great degree of price variation, as outlined before, only indicate that the emergence of trade disputes may only be a matter of time and opportunity. At the same time, however, WTO rules, when involved, may also have an ordering effect by helping to remove protectionist distortions from carbon markets and ensuring a level playing field.⁷⁸ Hence, (re)tracing possible trade law implications of market-based mitigation transactions, especially in the light of recent developments, remains a necessary and important task.

With regard to Article 6 transactions and WTO law, there are three substantive legal scopes that may catch these interactions, either in an overlapping or an alternating fashion. First, the multilateral agreements on trade in goods in Annex 1A of the Marrakesh Agreement will come into play,⁷⁹ if carbon credits are considered as a 'product' or 'good'. Second, the General Agreement on Trade in Services (GATS) in Annex 1B of the aforementioned agreement is attracted in case credits are considered as financial assets, making Article 6 transactions potentially akin to financial services. Third, to the extent governments' purchases of credits can be viewed as public procurement, there is also the possibility for application of the WTO plurilateral Agreement on Government Procurement.

EMISSIONS ALLOWANCE TRADING INTO THE GLOBAL MARKETPLACE, 10 DUKE ENV'T L. & POL. FORUM 185 (1999) [hereinafter Petsonk]; Mark Storey & Magnus Lodefalk, *Climate Measures and WTO Rules on Subsidies*, 39 J. WORLD TRADE 23 (2005); Cinnamon Carlarne, *The Kyoto Protocol and the WTO: Reconciling Tensions Between Free Trade and Environmental Objectives*, 17 COLO. J. INT'L ENV'T. L. & POL'Y 45 (2006) [hereinafter Carlarne]; Christina Voigt, *The Clean Development Mechanism and WTO Rules*, in SUSTAINABLE DEVELOPMENT AS A PRINCIPLE OF INTERNATIONAL LAW: RESOLVING CONFLICTS BETWEEN CLIMATE MEASURES AND WTO LAW 233-258 (Martinus Nijhoff Publishers, 2009) [hereinafter Voigt].

⁷⁸ Aaron Cosbey & Andrei Marcu, *The Paris Agreement's Article 6 and the WTO: Points of Convergence*, CENTRE FOR INTERNATIONAL GOVERNANCE INNOVATION (Apr. 27, 2020), <https://www.cigionline.org/articles/paris-agreements-article-6-and-wto-points-convergence/>.

⁷⁹ Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154, 33 I.L.M. 1144 (1994) (this can potentially attract the General Agreement on Tariffs and Trade (GATT) 1994, the Agreement on Agriculture (AoA), the Agreement on Subsidies and Countervailing Measures (ASCM), and the Agreement on Technical Barriers to Trade (TBT)).

In the following paragraphs, the authors trace various pathways to characterise Article 6 transactions under international trade rules. Then the authors move on to highlight the conflicts that may potentially arise. The authors then outline the positive contributions that can possibly be made by international trade rules to strengthen the carbon markets space.

A. ARTICLE 6 TRANSACTIONS AND THE SCOPE OF WTO LAW

1. Transactions as Trade in Goods

In the absence of any direct solution in WTO law or case law, the answer to the question whether something as intangible as a carbon credit can be considered to be a ‘product’ depends largely on inductive logical arguments based on analogical supports from a few relevant disputes. Early academic writings on the topic generally concur that emission permits, despite capable of being owned and traded, are not ‘products’. The reasons for such a conclusion include the intangibility of such permits,⁸⁰ the absence of state practice of treating such permits as goods in the GATT schedules, as well as the absence of any tariff classification category for any such products.⁸¹ One pre-WTO, unadopted GATT panel report in *Canada – Measures Affecting the Sale of Gold Coins*, has also been frequently cited as a reference, where it was held that if gold coins were used solely as a means of payment, they would remain out of the GATT’s purview.⁸² However, GATT rules will apply when they are used as investment goods.⁸³ Drawing parallels between carbon permits and other negotiable instruments like money, some have concluded that, on balance, there is hardly any chance for such permits to be treated as ‘goods’ or ‘products’.⁸⁴

⁸⁰ Werksman, *supra* note 78, at 255; Carlarne, *supra* note 77, at 66.

⁸¹ Petsonk, *supra* note 78, at 199-200.

⁸² Report of the Panel, *Canada—Measures Affecting the Sale of Gold Coins*, L/5863 (Sept. 17, 1985) GATT BISD at 13 (1985).

⁸³ *Id.*; Petsonk, *supra* note 78, at 201; Christina Voigt, *International Emission Trading and WTO Rules*, in SUSTAINABLE DEVELOPMENT AS A PRINCIPLE OF INTERNATIONAL LAW: RESOLVING CONFLICTS BETWEEN CLIMATE MEASURES AND WTO LAW 207, 210 (Martinus Nijhoff Publishers, 2009).

⁸⁴ Werksman, *supra* note 78 at 255; Petsonk, *supra* note 78, at 200. A more nuanced take can be found in CHRISTINA VOIGT, SUSTAINABLE DEVELOPMENT AS A PRINCIPLE OF INTERNATIONAL LAW: RESOLVING CONFLICTS BETWEEN CLIMATE MEASURES AND WTO LAW 210 (Martinus Nijhoff Publishers, 2009). Vranes remains open to the possibility of GATT coverage. Erich Vranes, *Climate Change and the WTO: EU Emission Trading and the WTO Disciplines on Trade in Goods, Services and Investment Protection*, 43 J. OF WORLD TRADE 707, 718 (2009) [hereinafter Vranes].

In contrast, however, it must also be admitted that there is growing evidence supporting the possibility of intangible objects being accepted as goods. As Deane argues, the absence of HS classification does not categorically preclude an object from being listed in a WTO Member's schedule of commitments.⁸⁵ The WTO Appellate Body agrees that intangible characteristics, e.g., health effects, can be a valid factor to be taken into account while comparing the extent of competitive relationships among products in the marketplace.⁸⁶ In the context of fulfilling the definitional requirement of a subsidy, the Appellate Body explained, in *United States – Softwood Lumber IV*, that the grant of an intangible right (e.g., logging right) was considered to amount to a 'supply of good' in those cases where such a right is linked to a tangible object.⁸⁷ In *Canada – Renewable Energy*, the panel accepted electricity to be a 'good', as entitlements to it can be traded despite its intangible nature.⁸⁸ This characterisation was later upheld by the Appellate Body as well.⁸⁹ Another implicit endorsement of the possibility of 'intangible goods' came from the Appellate Body in the context of interpreting trade in services concessions. While examining the GATS schedule of China, the Appellate Body in *China – Publications and Audiovisual*

⁸⁵ FELICITY DEANE, EMISSIONS TRADING AND WTO LAW: A GLOBAL ANALYSIS 62-63 (Edward Elgar Publishing, 2015) (The author has drawn support from a panel decision holding that the HS nomenclature is not an exhaustive account of the universe of products) [hereinafter Deane].

⁸⁶ Appellate Body Report, *European Communities — Measures Affecting Asbestos and Asbestos Containing Products*, ¶ 113 WT/DS135/AB/R, DSR 2001:VII 3243 (adopted Mar. 12, 2001) [hereinafter *European Communities — Measures Affecting Asbestos and Asbestos Containing Products*]; Appellate Body Report, *United States — Measures Affecting the Production and Sale of Clove Cigarettes*, ¶ 117, WT/DS406/AB/R, DSR 2012:XI 5751 (adopted Apr. 24, 2012) [hereinafter *United States — Measures Affecting the Production and Sale of Clove Cigarettes*].

⁸⁷ Appellate Body Report, *United States — Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, ¶ 75 WT/DS257/AB/R, DSR 2004:II 571 (adopted Feb. 17, 2004); In a later dispute, it was explained that grant of an intangible right does not automatically amount to 'government supply of goods' under article 1 of the subsidies agreement. Panel Report, *United States—Measures Affecting Trade in Large Civil Aircraft (Second Complaint)*, ¶ 7.460 WT/DS353/R, DSR 2012:II 649 (adopted Mar. 23, 2012); JAMES MUNRO, EMISSIONS TRADING SCHEMES UNDER INTERNATIONAL ECONOMIC LAW 57, 59 (1st ed., Oxford University Press 2018) [hereinafter Munro].

⁸⁸ Panel Report, *Canada — Certain Measures Affecting the Renewable Energy Generation Sector / Canada—Measures Relating to the Feed-in Tariff Program*, ¶ 7.11, 7.229, 7.243, WT/DS412/R and Add.1, WT/DS426/R and Add.1 (adopted May 24, 2013) [hereinafter *Canada — Certain Measures Affecting the Renewable Energy Generation Sector*].

⁸⁹ Appellate Body Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector / Canada—Measures Relating to the Feed-in Tariff Program*, ¶ 5.111, 5.128-129, WT/DS412/AB/R; WT/DS426/AB/R, DSR 2013: I 7 (May 24, 2013) [hereinafter *Canada – Certain Measures Affecting the Renewable Energy Generation Sector AB Report*].

Products mentioned that it could cover “both tangible, and intangible goods, as well as services”.⁹⁰

Although the authors see that there is room for a category of intangible products, e.g., electricity, or rights attached to tangible products to be governed by the multilateral rules for trade in goods, carbon credits do not belong to that group by any form of analogy. Unlike carbon credits, products like electricity, though intangible, are the outcome of a consistent manufacturing process. Credits are created through an accounting exercise, meaning that production is not determined by a certain mitigation activity (e.g., afforestation or the introduction of electric vehicles), but rather by the accounting of it. As a result, two identical mitigation activities may not both generate credits, whereas two different emission reduction activities may generate credits with identical characteristics. Furthermore, even though Article 6 transactions take place between state parties, the credits themselves do not travel or cross borders in any meaningful way, thereby making it impossible for them to be subject to customs duties or other charges that are the hallmarks of any good.

2. Transactions as Trade in Services

Perhaps the better alternative is to argue that carbon credits are a ‘financial asset’ within the meaning of the GATS Annex on Financial Services.⁹¹ Credits correspond to the definition of a ‘financial asset’, i.e., a “liquid asset that gets its value from a contractual right or ownership claim”.⁹² The credit revenue is an indispensable financial component in the commercial viability of the original mitigation activity. The credits can also be held as investment over time, and their prices are dependent on various market forces, including demand, thereby allowing room for speculation.⁹³ Formal exchanges also exist to trade in carbon credits.⁹⁴

⁹⁰ Appellate Body Report, *China — Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, ¶ 364, WT/DS363/AB/R, DSR 2010:I 3 (Dec. 21, 2009).

⁹¹ Other, less plausible options include characterisation of carbon credits as a derivative, transferrable security, or a negotiable instrument. *See* Munro, *supra* note 88, at 88-91; Vranes, *supra* note 85, at 718-719.

⁹² James Chen, *Financial Asset Definition*, INVESTOPEDIA (Mar. 20, 2021) <https://www.investopedia.com/terms/f/financialasset.asp>.

⁹³ Mike Azlen et al., *Carbon as an Emerging Asset Class*, CFA INSTITUTE (Oct. 05, 2020), <https://www.cfainstitute.org/en/research/industry-research/case-study-carbon-as-emerging-asset-class>.

⁹⁴ *See*, among others, *Carbon Trade Exchange: The Next Generation of Carbon Trading*, CTX GLOBAL, <https://ctxglobal.com/about/>.

There is a significant likelihood that carbon credits will be included in the broader, residual scope of the term ‘financial asset’ as used in the GATS Annex on Financial Services. The Annex defines banking and financial services in Article 5(a) by listing a number of activities performed by such services, including *inter alia*:

(x) Trading for own account or for account of customers, whether on an exchange, in an over-the-counter market or otherwise, the following:

...

(F) other negotiable instruments and financial assets, including bullion.

...

(xiv) *Settlement* and clearing services for financial assets, including securities, derivative products and other negotiable instruments.⁹⁵

The wide scope of the notion of ‘financial asset’ has been recognised in the *China – Electronic Payment Services* dispute.⁹⁶ The panel noted there that its ordinary meaning encompasses virtually all forms of ‘financial instruments’.⁹⁷ However, assessing the term in the context of Article 5(a)(xiv) of the GATS Annex, the panel concluded that financial assets have to be intended as a sub-category of negotiable instruments.⁹⁸ Given the nature and use of carbon credits, they could likely fall within the broad understanding of financial assets in the Annex.⁹⁹ This would, in turn, render the services involved in the issuance, maintenance, and transfer of such credits (e.g., emission baseline auditing, carbon registries, trading intermediaries, and formal credit exchanges) as financial services within the meaning of GATS.

Coverage of services surrounding carbon credits trading under the GATS as supply of financial services additionally requires that those be “offered by a financial service supplier of a Member”.¹⁰⁰ This holds relevance for Article 6 transactions, which remain unexplored in the literature. According to the Annex on Financial Services, a financial service supplier is a natural or juridical entity ‘of a Member’, except a

⁹⁵ General Agreement on Trade in Services 1994, Apr. 15, 1994, Annex on Financial Services, Art. 5(a), Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 1869 U.N.T.S. 183 [emphasis supplied] [hereinafter Annex on Financial Services].

⁹⁶ Panel Report, *China–Measures Affecting Electronic Payment Services*, WT/DS413/R and Add.1, DSR 2012:X 5305 (adopted on Aug. 31, 2012).

⁹⁷ *Id.* ¶ 7.146.

⁹⁸ *Id.* ¶ 7.159. It is partially misleading, as the authors note that the structure in Article 5(a)(x)(F) clearly shows negotiable instruments and financial assets as separate categories.

⁹⁹ Vranes, *supra* note 85, at 719-720. Vranes holds that this is the most likely characterisation of emission certificates under the GATS.

¹⁰⁰ Annex on Financial Services, *supra* note 96, art. 5.

‘public entity’, which supplies a financial service.¹⁰¹ This framing, as the authors note, has both inclusionary and exclusionary criteria. First, the GATS coverage would only include credit trading related services that originate within the jurisdictional boundaries of a WTO Member. It leads to the probability that services rendered by international institutions, e.g., the new Article 6.4 mechanism and common registries established by the UNFCCC secretariat to assist Article 6.2 cooperative approaches, may remain outside the GATS scope. Second, within the operative scope of GATS, the aforementioned formulation excludes ‘public entities’. Public entities are defined as those that are “principally engaged in carrying out governmental functions or activities for governmental purposes”.¹⁰² It includes, but is not limited to, the governments, central banks, and monetary authorities of a WTO Member, and excludes those that commercially carry out financial services. The extent to which the voluntary cooperation schemes developed under Article 6.2 of the Paris Agreement would be excluded from the scope of the GATS would thus depend on whether or not the transactions amounted to governmental functions or activities. It is only the secondary transactions through intermediaries and exchanges in the private market, as well as the operations of carbon standards, that bear the greatest likelihood of coming under the scope of GATS.

3. Transactions as Government Procurement

To the extent that carbon credit transactions are found to be either trade in goods or trade in services, there is also a possibility that a government’s purchase of such credits would be considered as ‘covered procurement’ under the WTO plurilateral Agreement on Government Procurement (GPA).¹⁰³ The GPA signatories determine themselves, through positive commitments that form part of the Agreement as annexes, the goods, services, and procurement entities that are to come within the Agreement’s scope. Procurements that fall within the annexed commitments and are undertaken for governmental purposes shall become ‘covered procurements’ upon which the provisions of the GPA apply.¹⁰⁴ While there are no positive commitments made by the Members party to the GPA with regard to carbon credits, some commitments in the financial services sector can be potentially broad enough to cover Article 6 transactions.¹⁰⁵ However, as the GPA covers procurements made for

¹⁰¹ *Id.* art. 5(b).

¹⁰² *Id.* art. 5I(i).

¹⁰³ World Trade Organization, *Agreement on Government Procurement as Amended by the 2012 Protocol Amending the Agreement on Government Procurement*.

¹⁰⁴ *Id.* art. II:2.

¹⁰⁵ For example, the financial sector commitment of the European Union in Annex 5, Appendix I of the GPA includes ‘insurance services’, and ‘banking and investment services’. It can be argued that the latter category is wide enough to cover purchase of carbon credits.

government purposes, only permits acquired by governments towards NDC compliance may come within the Agreement's scope.

B. ISSUES OF CONFLICT WITH TRADE RULES

Once Article 6 transactions are found to be covered by multilateral trade rules, one can foresee a number of new and potentially conflicting issues emerging. Claims of discrimination can arise when government measures distort the carbon markets to the detriment of foreign suppliers and service providers in a way that cannot be justified under available WTO exceptions. Market access regulation can also trigger claims of WTO-inconsistent quantitative restrictions. Similar claims of distortion regarding existing markets for end-products and services that utilise the credits may arise. One particularly important issue in the end-products market would be claims of illegal subsidisation with respect to production activities that depend on credit revenue-based finance for commercial viability. Lastly, there can be possible claims of breach of GPA commitments in case a signatory Member's purchase of carbon credits comes under the scope of 'covered procurements'. Key issues emerging in such cases of potential conflict are outlined below.

1. Market Characteristics, Scope and 'likeness' among Credits

For any claim of discrimination to exist under WTO rules, it is an obvious prerequisite that there are comparable (or 'like' in WTO terminology) goods and services that compete in the same market. While the latter is not foreseen to play a major role in the existing markets for end-products and services related to mitigation activities, the situation may be different in the new market for carbon credits. Given that such credits will be used domestically either to meet NDC targets or for private purposes, there are two possible ways by which the market can be defined by a WTO panel. One approach would be to recognise one unified domestic market, i.e., the market for all carbon credits. This would allow the panel to perform a likeness analysis across all types of credits and credit suppliers, hence, putting the legal distinction between the voluntary and compliance markets into question. Alternatively, drawing inspiration from the Appellate Body reasoning in *Canada – Renewable Energy*,¹⁰⁶ markets can be considered as a creation of law,¹⁰⁷ thereby

¹⁰⁶ Canada — Certain Measures Affecting the Renewable Energy Generation Sector, *supra* note 89.

¹⁰⁷ Canada — Certain Measures Affecting the Renewable Energy Generation Sector AB Report, *supra* note 89 ¶ 5.186-5.188 (In the context of finding the benefit benchmark to determine the existence of a subsidy, the Appellate Body in that dispute drew a distinction between government intervention and distortion of an existing market vis-à-vis creation of a market that would otherwise not exist through regulation. The latter according to the Appellate Body deserves to be assessed in terms of its own constituting characteristics).

recognising the distinction between the VCM that spontaneously exists and the compliance market catering to the NDCs that is created by the Paris Rulebook and corresponding domestic regulations. In that case, assessment of likeness and possible discrimination would be conducted only amongst the eligible credits for each market without calling into question legally established boundaries.

Although references to ‘like products’ appear in different legal contexts across the span of WTO rules on trade in goods,¹⁰⁸ the central goal of the assessment is the same. Determination of likeness calls for an examination of all comparable attributes of the products that influence the way they compete in a given market.¹⁰⁹ The attributes are generally compared in four categories: (i) product characteristics; (ii) end-use; (iii) consumer preferences in the market; and (iv) Harmonised System (HS) classification.¹¹⁰ These categories are not exhaustive or legally mandated, and WTO adjudicatory bodies are free to take into account any other evidence that influences the competitive relationship between products.¹¹¹ With regard to trade in services, reference is made to ‘like services and service suppliers’ in Articles II:1 and XVII of the GATS. While the reference differs from the GATT context as it also calls for likeness between service suppliers, it was clarified that it is a holistic analysis of likeness taking into account attributes of the services and service suppliers, with a view to examining the extent of the competitive relationship between them.¹¹² The criteria for consideration can be (i) the characteristics of services and service suppliers, (ii) consumer preferences, and (iii) the description and classification of

¹⁰⁸ In the GATT, ‘likeness’ determines the scope of non-discrimination commitments in Articles I, II:2, and II:4. It has the same function in Article 2.1 of the WTO Agreement on Technical Barriers to Trade (TBT). The TBT Agreement is relevant in particular when it comes to evaluating any trade restrictive effects linked to the variety of carbon standards that governments may use when purchasing credits to contribute towards or beyond existing national NDC targets.

¹⁰⁹ PETER VAN DEN BOSSCHE & WERNER ZDOUC, *THE LAW AND POLICY OF THE WORLD TRADE ORGANIZATION: TEXT, CASES AND MATERIALS* 316-318 (4th ed., Cambridge University Press 2017) [hereinafter Bossche & Zdouc]; European Communities — Measures Affecting Asbestos and Asbestos Containing Products, *supra* note 87, ¶ 99.

¹¹⁰ Bossche & Zdouc, *Id.*, at 318.

¹¹¹ Appellate Body Report, *Philippines—Taxes on Distilled Spirits*, ¶ 131, WT/DS396/AB/R, WT/DS403/AB/R, DSR 2012:VIII 4163 (adopted on Dec. 21, 2011); European Communities — Measures Affecting Asbestos and Asbestos Containing Products, *supra* note 87, ¶ 102-103; United States - Measures Affecting the Production and Sale of Clove Cigarettes, *supra* note 88, ¶ 116-120.

¹¹² Appellate Body Report, *Argentina—Measures Relating to Trade in Goods and Services*, ¶ 6.25, 6.31 WT/DS453/AB/R and Add.1 (adopted on May 09, 2016).

services (e.g., under the UN Central Product Classification).¹¹³ Like in GATT, these are not strict, legally mandated criteria.¹¹⁴

Given that carbon credits are considered products, assessments of likeness under the GATT or the TBT Agreement have to consider the similarities of the credits' end-use against the potential differences regarding underlying mitigation activities, emission accounting standards (e.g., environmental integrity and corresponding adjustments), additional attributes, and consumer preferences. The larger the cumulative divergence among the credits, the lesser would be the extent of their competition in the defined market. This divergence will be most pronounced between credits regulated under Article 6 of the Paris Agreement and others, as long as the private carbon standards are not upgraded to the level of methodological parity. Alternatively, if the supply of carbon credits is considered as a financial service and the suppliers thereof as financial services suppliers, the determination of likeness among them is even more ambiguous. Carbon credit suppliers can vary to a great degree. There are first instance suppliers, e.g., governments, or the independent crediting mechanisms that also issue carbon credits. However, once the credits enter the private market, they can be bought and sold by various types of intermediaries, which can range from private individuals to firms and trading exchanges. As a result, while the characteristics of service may remain similar, there is variation in the attributes of service suppliers, which may, depending on the circumstances of a case, influence consumer preferences. Like trade in goods, finding likeness here would depend on the degree of similarity across credit suppliers' attributes.

In the market for end-products and services using carbon credits to make climate claims, the essential question regarding likeness would be whether products or services that are otherwise identical should nonetheless be considered different due to their emission-related attributes. This is the much-discussed non-product-related process and production methods (NPR-PPM) question in trade law.¹¹⁵ As the current jurisprudence stands, the authors note that even the intangible emission profile of products, including offsets thereof, would be a valid factor to be taken into account in a likeness assessment if it can be shown that such attributes have an

¹¹³ *Id.* ¶ 6.32; Bossche & Zdouc, *supra* note 111, at 334.

¹¹⁴ *Id.*

¹¹⁵ Kateryna Holzer, *Process and Production Methods (PPMs)*, in ELGAR ENCYCLOPEDIA OF INTERNATIONAL ECONOMIC LAW (Thomas Cottier et al. eds., Edward Elgar Publishing 2017); Christiane R. Conrad, *Processes and Production Methods (PPMs)*, in WTO LAW: INTERFACING TRADE AND SOCIAL GOALS (1st ed., Cambridge University Press 2011); Donald Regan, *How to Think about PPMs (and Climate Change)*, in INTERNATIONAL TRADE REGULATION AND THE MITIGATION OF CLIMATE CHANGE: WORLD TRADE FORUM (Thomas Cottier et al., Cambridge University Press 2009); Steve Charnovitz, *The Law of Environmental PPMs in the WTO: Debunking the Myth of Illegality*, 27 YALE J. OF INT'L L. 59 (2002).

impact on the competitive relationship between the products, either by informing the consumer or in any other fashion.¹¹⁶ Whether emission offsetting is sufficient to distinguish products and services otherwise alike, however, remains a question to be answered on a case-by-case basis.

2. Issues of Discrimination

The manner in which discrimination claims may emerge, with relation to Article 6 transactions, would depend on the characterisation of credits. Regarding trade in goods, a claim of a breach of the GATT, or the more specialised TBT Agreement rules, or both, is possible. Alternatively, claims of breach regarding trade in credit-related services will fall under the GATS. Lastly, there is a possibility that inter-governmental agreements on market-based mitigation are challenged as discriminatory government procurement contracts.

Although in all cases the claims would, in essence, be those of distortion of competitive market conditions to the detriment of the legally protected interests of a credit supplier, the feasibility of the claim is guided by the structure and scope of the particular agreements in each legal context. Claims under GATT Article I (the most-favoured nation or MFN rule) or Article III (the national treatment or NT rule) would allow border and internal government measures of both fiscal and non-fiscal nature to be challenged. With regard to the TBT Agreement, however, claims of discrimination under Article 2.1 would be limited to ‘technical regulations’. This means that to successfully challenge a credit-related measure under the TBT Agreement, it has to be shown not only that credits are products, but also that the measure in question regulates the credit characteristics, or its related process and production in a mandatory fashion.¹¹⁷ Under the services-regulatory paradigm, claims of an MFN breach under GATS Article II can involve any credit-related government measure affecting trade in services. However, for a claim of an NT breach to be successful, it has to be shown that the challenged measure affects trade in services in a sector in which the government has made market access commitments in its GATS schedule.¹¹⁸ With regard to the GPA, it has been discussed above that the measure challenged has to be a ‘covered procurement’.¹¹⁹ In practice, trade discrimination concerns are most likely to pertain to the way any government measure regulates access to the credit market. Based on a successful

¹¹⁶ ZAKER AHMAD, WTO LAW AND TRADE POLICY REFORM FOR LOW-CARBON TECHNOLOGY DIFFUSION: COMMON CONCERN OF HUMANKIND, CARBON PRICING, AND EXPORT CREDIT SUPPORT, 173-175, 190-201 (Brill Nijhoff 2021).

¹¹⁷ Agreement on Technical Barriers to Trade, Apr. 15, 1994, Annex 1.1, Marrakesh Agreement establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S 120.

¹¹⁸ Bossche & Zdouc, *supra* note 110, at 400.

¹¹⁹ See *supra* III.A.3.

argument that both — included and excluded credits — are ‘like products’ or that they involve ‘like services and service suppliers’, a potential claimant has to further establish that the challenged government measure discriminates against excluded permits and suppliers thereof. Depending on the regulation, this can take various forms. One form would be to claim that voluntary cooperation arrangements under Article 6.2 of the Paris Agreement are *de jure* discriminatory, as they categorically exclude all but one WTO Member from the benefit of supplying credits to a country. A similar claim of *de jure* discrimination can be raised against a Member’s domestic regulation implementing the Article 6.4 mechanism, to the extent that it allows the purchase of 6.4 ERs to satisfy such Member’s NDC targets while entirely excluding voluntary credits of identical quality standards.¹²⁰ To the extent specific carbon credits will be allowed for the purposes of compliance with ETS schemes to the exclusion of others, those may also face discrimination challenges.¹²¹

To the extent the VCM is left to operate on its own, independent of any government regulatory interventions, it may remain outside the reach of multilateral trade rules. However, potential overlaps may emerge in cases where government regulation measures influence credit transactions in the private market. For example, government inclusion of specific carbon credits into a mandatory scheme (e.g., South African Carbon Tax Act)¹²² can be discriminatory if other comparable credits of foreign origin are excluded. Similarly, making domestically produced credits automatically eligible while imposing objective entry requirements on others, as in the UK emission reporting regulations,¹²³ may lead to violation of NT commitments. Further, the Australian practice of exclusively buying domestically generated voluntary credits (ACCU)s¹²⁴ may run counter to the NT principle while also potentially amounting to a *de facto* quantitative restriction. Similarly, discrimination may be found to occur in the market of products that optionally use carbon credits to make offset claims (e.g. carbon neutral), if such claims become the basis to treat those products differently by the government.

To the extent that the purchase of credits aimed at fulfilling NDC targets can be characterised as a ‘covered procurement’, voluntary cooperation agreements may constitute *per se* a breach of the non-discrimination obligation in Article IV of the revised GPA. Depending on the way partners in voluntary cooperation are chosen,

¹²⁰ Recall that many of the voluntary credits are produced following the CDM-compliant methodologies. See *supra* II.B.2.

¹²¹ Deane, *supra* note 86, at 73-74, 121-123; Kateryna Holzer, *WTO Law Issues of Emissions Trading* 16-18 (NCCR Trade Regulation, Working Paper No. 01, 2016) <https://boris.unibe.ch/84032/>; Munro, *supra* note 84, at 123-161.

¹²² See *supra* II.B.2.

¹²³ *Id.*

¹²⁴ See Australia Emission Reduction Fund, *supra* note 60.

there can be additional breaches of Article III (conditions of participation) and Article IX (qualification of suppliers) of that Agreement.

In the case of GATT or GATS claims, the respondent WTO Member would have the option to seek justification of the discrimination under general exception¹²⁵ or security exception¹²⁶ clauses. To the extent carbon credit supply would come under the GATS as a financial service, a WTO Member would be allowed to adopt prudential regulations as well.¹²⁷ In case of TBT claims, the analysis of discrimination under Article 2.1 already incorporates an examination of the legitimacy of the distinction. A technical regulation is not discriminatory if the less favourable treatment it results in can be exclusively attributed to a legitimate regulatory distinction.¹²⁸ Whether a challenged measure can be found as legitimate distinction under the TBT Agreement or justifiable under the GATT exceptions will depend on the exact nature of the measure at issue. Based on existing WTO case law, not only would it have to fall under a legitimate objective (e.g., protection of the environment or conservation of exhaustible natural resources), but it would also need to satisfy a necessity (e.g., as per Article XX (b) GATT or Article XIV (b) GATS) and/or proportionality (as per Article XX (g) GATT) test with regard to the stringency of the measure, as well as an additional fairness test with regard to its implementation (e.g., the chapeau of Article XX GATT or Article XIV GATS) for it to fall under a justifiable exception. Regarding discriminatory procurement claims under the GPA, so far as the first-transferred credits will be used towards national NDCs, a WTO Member can argue that this is a new form of procurement that is not covered under the extant GPA commitments.

3. Credit Revenue as a Subsidy

According to the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement), a subsidy is a financial contribution (in the form of a direct transfer of funds, revenue foregone, or the purchase or provision of goods or services) provided by the government or a public body, or alternatively, an income or price support,

¹²⁵ General Agreement on Tariffs and Trade, art. XX, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 187, 33 I.L.M. 1153 (1994) [hereinafter GATT]; General Agreement on Trade in Services, art. XIV, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 1869 U.N.T.S. 183, 33 I.L.M. 1167 (1994) [hereinafter GATS].

¹²⁶ GATT, *Id.*, art. XXI; GATS, *Id.*, art. XIV.

¹²⁷ Annex on Financial Services, *supra* note 96, ¶ 2(a); Deane, *supra* note 86, at 124–125.

¹²⁸ United States — Measures Affecting the Production and Sale of Clove Cigarettes, *supra* note 87, ¶ 182; Appellate Body Report, *United States — Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products*, ¶ 215-126 WT/DS381/AB/R, DSR 2012:IV 1837 (May 16, 2012).

benefiting the recipient.¹²⁹ Whether additional finance obtained through the sale of carbon credits amounts to subsidisation of a mitigation activity under WTO rules has to be assessed against this definitional framework.

So far, there is no clear indication of whether a carbon credit may be construed as a financial contribution or as an income or price support by the government or a public body. This is because such a determination would depend largely on the characteristics of the actual credit scheme that is challenged, and none has so far taken place. Nevertheless, certain conclusions may be drawn regarding the general trajectory of any such exercise. For example, carbon credits used towards a voluntary offsetting claim that remain outside the regulation or control of the government are highly likely to fall outside the ambit of the SCM Agreement.¹³⁰ In contrast, it may be argued that credits like 6.4ERs and ITMOs are provided by the government,¹³¹ because the host country plays a controlling role regarding activity registration, subsequent approval, and the issuance of those credits.¹³² Also, recalling that carbon credits are characteristically similar to financial assets, and are used to ensure the financial viability of the mitigation activity by augmenting income, approving their issuance to the credit of the mitigation activity entrepreneur could likely be claimed to amount to a financial contribution as a “direct transfer of funds”¹³³ or alternatively as income support.

In addition to establishing that a carbon credit is indeed a governmental financial contribution, a claimant would also need to prove that it results in a ‘benefit’ to the recipient, i.e., the mitigation activity entrepreneur, to satisfy the definitional standard of a ‘subsidy’. Governments can confer a ‘benefit’ to a subsidy recipient without

¹²⁹ Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Article 1, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14 [hereinafter Agreement on SCM].

¹³⁰ Appellate Body Report, *Canada — Measures Affecting the Importation of Milk and the Exportation of Dairy Products*, ¶ 97, WT/DS103/AB/R, WT/DS113/AB/R, DSR 1999:V 2057 (adopted on Dec 20, 2002); Appellate Body Report, *United States — Definitive Anti-Dumping and Countervailing Duties on Certain Products from China*, ¶ 290-294, WT/DS379/AB/R, DSR 2011:V 2869 (adopted on Mar. 11, 2011) (The established jurisprudence requires evidence of regulatory control, or exercise of similar authority over the measure either by the government or a public entity discharging government functions).

¹³¹ *Id.*

¹³² See *supra* II.A.2.

¹³³ Appellate Body Report, *United States — Measures Affecting Trade in Large Civil Aircraft (Second Complaint)*, ¶ 617, WT/DS353/AB/R, DSR 2012:I 7 (adopted on Mar. 12, 2012) [hereinafter United States — Measures Affecting Trade in Large Civil Aircraft (Second Complaint) AB Report]; see Bossche & Zdouc, *supra* note 110, at 776-777 (According to the WTO Appellate Body, the expression covers . . . conduct on the part of the government by which money, financial resources, and/or financial claims are made available to a recipient.).

even incurring any ‘net cost’ themselves,¹³⁴ as may be the case regarding carbon credits-based mitigation finance. Instead, a benefit is considered to exist when the government contribution in question makes the recipient ‘better off’ compared to a situation with no contribution.¹³⁵ This may lead one to conclude that the determination of benefit is straightforward with regard to carbon credits, as the additionality feature of the market-based mitigation schemes allows for credits to be approved and issued only in circumstances where the mitigation activity would not have been commercially viable otherwise.¹³⁶ However, before arriving at such a conclusion, the terms of the credit financing need to be compared with the terms available to the recipient in the private market.¹³⁷ Here again, one reaches a situation where the boundaries of the market and comparability across different types of credits play a role. If a dispute settlement panel considers all the credit financing the same, it will likely find that the government authorisation and resulting issuance of a 6.4ER or an ITMO allows the recipient to obtain a premium over the price of credits in the voluntary market.¹³⁸ Alternatively, if the panel qualifies Article 6 transactions as giving rise to a market of its own due to methodological distinction,¹³⁹ there will be no private market benchmark to compare with and the panel may need

¹³⁴ Panel Report, *Canada-Measures Affecting the Export of Civilian Aircraft*, ¶ 9.112, WT/DS70/R, DSR 1999:IV 1443 (adopted on Aug. 20, 1999); Appellate Body Report, *Canada — Measures Affecting the Export of Civilian Aircraft*, ¶ 154, WT/DS70/AB/R, DSR 1999:III 1377 (adopted on Aug. 02, 1999) [hereinafter *Canada — Measures Affecting the Export of Civilian Aircraft*].

¹³⁵ *Canada — Measures Affecting the Export of Civilian Aircraft*, *Id.*, ¶ 157; United States — Measures Affecting Trade in Large Civil Aircraft (Second Complaint) AB Report, *supra* note 133, ¶ 662; Bossche & Zdouc, *supra* note 110, at 787-788.

¹³⁶ See *supra* II.A.

¹³⁷ Appellate Body Report, *United States — Countervailing Measures on Certain Hot-Rolled Carbon Steel Flat Products from India*, ¶ 4.128, WT/DS436/AB/R, DSR 2014:V 1727 (adopted on Dec. 08, 2014); Bossche & Zdouc, *supra* note 110, at 788-792 (This is done in the legal context of Article 14 of the SCM Agreement, which provides various instances of comparison with private market benchmarks).

¹³⁸ The authors assume this to be the likely scenario, given the methodological robustness advantage as well as greater utility of ITMOs over voluntary credits. One research projected ITMO prices to likely remain between 10 and 30 USD/ton, which is also within the range of the carbon price generated by a number of compliance markets (with some notable exceptions including, most recently, the price of the EU (and Swiss) ETS allowances. In contrast, voluntary credits sell at less than 3 USD/ton. JONATHAN SCHWIEGER, URS BRODMANN & AXEL MICHAELOWA, Pricing of Verified Emission Reduction Units under Art. 6, 29–30 (2019), https://www.energimyndigheten.se/4a4d79/globalassets/klimat-miljo/internationella-klimatinsatser/sea-pricing-study_final.pdf.

¹³⁹ *Canada - Certain Measures Affecting the Renewable Energy Generation Sector* AB Report, *supra* note 90, ¶ 5.190 (The relevant market would, in this case, be defined as the market created by the specific methodologies underlying the carbon markets space as defined under Article 6 of the Paris Agreement and its Rulebook).

to construct a proxy price benchmark possibly based on the prices of other 6.4ERs and ITMOs over a period of time. In such a case, 'benefit' to recipient may not seem to exist.

Credits coming within the scope of the SCM Agreement may end up being considered illegal either automatically or upon proof of their specificity and adverse effect on the market. The former scenario would take place only when carbon credits are granted or approved and tied to either export or import substitution preconditions.¹⁴⁰ As long as governments avoid such measures, carbon credits will not be illegal *per se*. The latter situation would only involve subsidies that are specific and not general. A subsidy is specific when it is only given *de jure* or *de facto* to a certain enterprise, industry, or group.¹⁴¹ Carbon credits are highly specific, as they are only granted in connection with mitigation activities undertaken by a particular firm and are not automatically available to others. To the extent that credit revenue may amount to a specific subsidy under the SCM Agreement, however, a violation would materialise only if the mitigation activity being financed creates products that injure the interests of other Members as described under Articles 5 and 6 therein.

Beyond the limits of the SCM Agreement and depending on the nature of the planned mitigation activity, it is also possible for some of the credit generating activities to attract the provisions of the WTO Agreement on Agriculture (AoA). One pertinent example is the aforementioned Paris Article 6.2 cooperation project between Switzerland and Ghana to reduce emissions from rice cultivation.¹⁴² Under this project, the Environment Ministry of Ghana governs and authorises the ITMOs generated from the emission reductions achieved by training farmers in climate-smart water use techniques for rice cultivation.¹⁴³ In case any such activity is considered a subsidy, it may come under the AoA rules on (i) export subsidy, (ii) price-distorting domestic support, or (iii) non-price-distorting supports. Since the Nairobi Ministerial Decision in 2015, WTO Members have agreed to eliminate all agricultural export subsidies as outlined in Article 9 of the AoA.¹⁴⁴ As a result, the unlikely cases of agricultural mitigation activities made contingent on exports will be prohibited. Most cases of mitigation activities in the agriculture sector and involving

¹⁴⁰ Agreement on SCM, *supra* note 130, art. 3; UNFCCC Report, *supra* note 4; Kainou, *supra* note 6.

¹⁴¹ Agreement on SCM, *Id.* art. 2.

¹⁴² See *supra* II.A.1.

¹⁴³ UNDP, MADD GHANA - ALTERNATIVE WETTING AND DRYING FOR RICE CULTIVATION, at 7–8
https://www.bafu.admin.ch/dam/bafu/de/dokumente/klima/klima-kop-ausland-ab-2022/5001_MADD.pdf.download.pdf/5001_MADD.pdf.

¹⁴⁴ World Trade Organization, Ministerial Decision of 19 December 2015, WTO Doc. WT/MIN(15)/45; WT/L/980 (2015) (While there were several longer-term phase-out regarding different areas, most of them have expired by 2022).

the AoA are likely to involve the promotion of climate-smart practices, like the Switzerland-Ghana example above, which do not distort the market price of the agricultural outputs. Such non-price-distorting subsidies (e.g., training, research, and environmental programmes etc.), alternatively known as ‘green box’ supports, are not subject to any limitation under the Agreement.¹⁴⁵ Other forms of mitigation activities in the agriculture sector, if found to be a subsidy, shall have to remain within the agreed domestic support reduction commitments of the host WTO Member as recorded in Part IV of its GATT schedule of concessions.¹⁴⁶

Lastly, it should be noted that there are no rules governing the subsidisation of trade in services. As a result, activities that would cooperate to reduce emissions through the implementation of new services, e.g., implementing better mass transit systems, improving gas distribution services, etc., may not violate WTO rules on the ground of subsidisation at all.

C. THE PROMISE OF TRADE-CLIMATE COOPERATION IN PTAs

While foregoing paragraphs highlighted the possibility of legal conflicts when carbon credit schemes are designed without any forethought on their trade implications, here the authors point out that positive *ex-ante* coordination between trade and climate rules can bring positive-sum outcomes for all the parties involved. One such avenue could be to situate mitigation cooperation between parties in the context of existing or new preferential trade agreements (PTAs). Such embedding can be mutually beneficial, as the host country obtains secured access to climate-related solutions and the partner country can ensure better market access for its mitigation-related products and services. Moreover, any market access benefits exchanged between parties remain legally sheltered by the regional integration exceptions in GATT and GATS.¹⁴⁷ The same exception can also justify the exclusive transfer of credits between two or more PTA parties, to the extent such credits come within the purview of WTO rules. This would also see parties contributing to strengthen trade-climate cooperation as well as the utility and effectiveness of climate change obligations under existing PTAs.

As mentioned before, so far there is only the instance of Canada and Chile where a mitigation arrangement was built upon the cooperation platform of a PTA. However, there remains opportunity to further deepen this cooperation in the PTA context, especially by integrating arrangements for the potential transfer of carbon

¹⁴⁵ Agreement on Agriculture, Apr. 15, 1994, Annex 2, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 410.

¹⁴⁶ *Id.* art. 6.

¹⁴⁷ GATT, *supra* note 126 art. XXIV; GATS, *supra* note 126, art. V.

credits and related market access commitments, as mentioned above. Cognisant of such opportunities, Chile and Canada have started sharing their experiences and exchanging their views on replicating such cooperation with the Pacific Alliance and West African country groups.¹⁴⁸ It can be expected that further and deeper cooperation will take place in coming times.

IV. DEVELOPMENT DIMENSIONS

Given that the majority of the market-based mitigation activities take place in developing countries, the advent of Article 6 guidelines, resulting changes in carbon markets and related issues of compatibility with multilateral trade rules may have significant development implications. The challenges that may arise in this context, when compounded with other constraints, can even detract a host country from pursuing the path of market-based mitigation cooperation altogether. Some of the possible challenges are briefly mentioned hereunder.

The time-limited possibility of transitioning CERs under the new Article 6.4 mechanism, and its trade implications create unavoidable challenges for developing countries. The agreed 2013 cut-off date means that host countries will need to mandatorily cancel the CERs from before that period.¹⁴⁹ Not only has it exposed developing country suppliers to significant financial costs, but also the CERs eligible for transition may face legal challenges of *de jure* trade discrimination, when changing hands between countries. Shielding any such potential transfer of CERs between countries during their validity period may require special measures (e.g., dispute moratorium) taken at the WTO.

Furthermore, as the Paris Agreement calls for increasingly ambitious domestic mitigation commitments, even from developing countries, they now face a dilemma between hosting a particular mitigation activity to generate carbon credit revenue and undertaking the same to fulfil domestic mitigation commitments. Added to it are the new requirements of establishing an appropriate emission baseline and

¹⁴⁸ THE PACIFIC ALLIANCE, LESSONS LEARNED: THE CHILE-CANADA EXPERIENCE (June, 2021), <https://alianzapacifico.net/wp-content/uploads/2021/09/Lessons-Learned-The-Chile-Canada-Experience-South-South-Exchange-Webinar-Series-Final.pdf>.

¹⁴⁹ The implications vary largely among countries. Although big host countries are less exposed to the risks, developing countries with large shares of unused CERs (e.g., Bangladesh, Laos, and Vietnam) from before 2013 are significantly affected. AXEL MICHAELOWA ET AL., VOLUMES AND TYPES OF UNUSED CERTIFIED EMISSION REDUCTIONS (CERs), PERSPECTIVES CLIMATE GROUP, ZURICH UNIVERSITY OF APPLIED SCIENCES - SCHOOL OF MANAGEMENT AND LAW, UNIVERSITY OF ZURICH 46-50 (2021); ASIAN DEVELOPMENT BANK, FROM KYOTO TO PARIS—TRANSITIONING THE CLEAN DEVELOPMENT MECHANISM 25-26, 30-37 (2021) <https://www.adb.org/publications/kyoto-paris-clean-development-mechanism>.

corresponding adjustments to ensure methodological robustness, meaning most developing countries will face a steep knowledge curve and will require significant capacity building support. The added paradox is that the more support to specific mitigation activities are made possible with the assistance from the government, the higher becomes the likelihood that the end product will be considered as subsidised.¹⁵⁰

To the extent that least-developed countries (LDCs) will benefit from additional support to access mitigation technologies underlying Article 6 cooperation projects, it can be foreseen that the existing technology transfer commitment under Article 66.2 of the TRIPS Agreement will play a facilitative role. Yet, in practice, the transfer of technology under TRIPS Article 66.2 to LDCs remains largely ineffective due to the developed countries' vague reporting on one hand and the lack of vigorous and decisive engagement by the LDCs on the other.¹⁵¹ For this to change for the better, significant improvement needs to take place, including a strong leadership role from the LDC Members in the appropriate WTO fora.

V. LOOKING FORWARD

This article aimed at illustrating the latest developments taking place in the carbon markets space after the finalisation of the Paris Agreement Rulebook for what concerns Article 6 transactions. It also provided an analysis of the implications of such developments for international trade law. The authors found that when Article 6 transactions are measured with the trade yardstick, certain challenges are likely to emerge. Due to the design characteristics of the existing and emerging market-based mitigation mechanisms, they can be exposed to legal challenges under WTO rules. While new methodologies agreed in Glasgow and Sharm el-Sheikh for creation of ITMOs and 6.4ERs address existing legitimacy challenges surrounding Kyoto CERs and credits used to fulfil voluntary claims, so far there are no pathways for the latter to gain equivalence with the former. For now, Article 6 guidelines allow CERs to be used towards the NDC targets of the state parties, whereas similar voluntary credits cannot be so used despite their methodological parity in many cases. Such issues, including the issue of carbon credit finance being seen as potential subsidisation, are challenges that may break out on the trade front, complicating, in particular, developing countries' pathways toward a sustainable, low-carbon economic future. The actual ways such a dispute may arise depend again on many factors, including the nature of a mitigation activity and, more fundamentally, the characterisation of a carbon credit as a product or a service. So far, very few concrete answers are

¹⁵⁰ See *supra* III.B.3.

¹⁵¹ Jayashree Watal & Leticia Caminero, *Least-Developed Countries, Transfer of Technology and the TRIPS Agreement* (WTO Staff Working Paper, No. ERSD-2018-01, 2018).

available in the WTO domain, meaning that each of the issues discussed here deserves to be carefully parsed and further examined.

The risks identified in this article may endanger the possibility of further developing a robust and ever more ambitious body of market-based mitigation rules, in turn failing to address the untapped potential for more interaction and integration between climate and trade regimes in the carbon markets space. However, existing trade disciplines are not to be blamed for it. The multilateral trade rules serve to create a level playing field for suppliers of goods and services subject to the commitments made by the WTO Members and a margin of built-in policy space. Current evidence of misaligned practice between the two regimes is the consequence of long-term neglect, even active avoidance of the task of integration by states that are parties to both regimes. Integration of *ex-ante* considerations of trade law implications when implementing the new market-based approaches available under Article 6 of the Paris Agreement would not only ensure the avoidance of protectionism, but also encourage private sector participation in the mechanisms all over the world. It remains essential to develop a trade and sustainability perspective in shaping the carbon markets space, while prioritising the maintenance of a level playing field in the interest of gradual convergence between the compliance and voluntary markets and making the necessary support available to developing countries to ramp up climate action.