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CORRESPONDING ADJUSTMENTS AND THE VOLUNTARY CARBON MARKET

Why We Should Not Mandate Corresponding Adjustments Until We Better Understand Host Country Behavior

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Environmental Defense Fund

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Corresponding Adjustments and the Voluntary Carbon Market

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Abstract

Whether corresponding adjustments (CAs) should be required for voluntary carbon market (VCM) transactions has become one of the most contested design questions in international climate policy. This paper synthesizes the arguments for and against requiring host country authorization and corresponding adjustments for credits used by companies for purely voluntary purposes, and argues that the debate is being conducted on the wrong terms. CAs are legally required under Article 6.2 and for compliance schemes such as CORSIA, but the Paris Agreement is silent on voluntary corporate claims. The question is therefore one of policy incentives rather than accounting integrity. Its answer turns on three unresolved empirical parameters: how far host country climate ambition responds to the availability of international carbon finance (displacement); how sensitive VCM finance is to the costs and uncertainty that CA requirements introduce; and how far buyers and the public distinguish between CA-backed claims and other claims. Until these are better understood, mandating CAs risks suppressing high-quality mitigation finance without a demonstrated integrity benefit, particularly where NDCs and authorization infrastructure are underdeveloped. The paper proposes a conditional and progressive approach: no blanket mandate now, rigorous credit quality and credible corporate commitments as the foundation, and differentiated CA requirements as evidence and infrastructure develop. It closes with a research agenda to resolve the three parameters.

Key Words

corresponding adjustments, voluntary carbon market, Article 6, Paris Agreement, host country authorization, nationally determined contributions, double claiming, environmental integrity, carbon crediting, climate finance

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Corresponding Adjustments and the Voluntary Carbon Market

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1. Introduction

This paper synthesizes existing arguments for and against the application of corresponding adjustments (CAs) — or more precisely, the requirement of a host country authorization — in the context of voluntary carbon market (VCM) transactions. It examines the potential implications for environmental integrity, for the climate ambition of both buyer and host countries, and for the continued viability of private climate finance. The paper is addressed to a technical and policy audience of practitioners, academics, and officials engaged with Article 6 of the Paris Agreement and voluntary carbon market governance.

The debate over corresponding adjustments in the VCM has become one of the most contested design questions in international climate policy. At its surface, it appears to be a technical accounting dispute: Should host countries be required to adjust their national emission balances when carbon credits generated in their territories are used by foreign companies to meet voluntary climate commitments? In reality, as this paper argues, the question is not primarily one of accounting integrity. It is a question of policy incentives — specifically, of how host country climate ambition responds to the availability of international private carbon finance, and whether mandating CAs would, on balance, strengthen or weaken global climate outcomes. Those are empirical questions. The honest answer, this paper argues is that, at this point in time, I do not know.

1.1 Structure of the paper

The paper proceeds as follows. Section 2 sets out the factual and institutional background: the accounting logic of CAs under the Paris Agreement, how they differ from the Kyoto Protocol's budget-based system, and the implications for two important international frameworks in which CA requirements are currently either operational or under active discussion — the CORSIA

aviation scheme and the voluntary carbon market. Section 3 turns to the analytical core of the paper, examining the main arguments for and against applying CAs to VCM transactions. It organises that debate explicitly around two distinct questions — accounting integrity and policy effectiveness — and, for the policy effectiveness question, around three empirical parameters whose values should determine whether mandating CAs would improve or harm climate outcomes. Section 4 synthesizes the analysis into a risk framework that can inform differentiated rather than blanket CA requirements. Section 5 concludes by returning to the three empirical parameters and setting out the research agenda that would need to be completed before a definitive determination on CA requirements could responsibly be made.

1.2 The thesis

The paper's central thesis can be stated simply: the debate over corresponding adjustments in voluntary carbon market transactions (i.e., when there is no expectation that companies will be using the credits for compliance with domestic systems, and in turn that governments will not be accounting these in their books) is being conducted on the wrong terms. Whether CAs should be required for such transactions, I will argue, is not primarily a question of accounting integrity — it is a question of policy incentives. It depends, in particular, on how host country climate ambition actually responds to the availability of international carbon finance — a key empirical variable that remains poorly understood. Until that variable, and the two related parameters discussed in this paper, are better understood, mandating CAs risks destroying demand for high-quality mitigation finance without any demonstrated benefit to environmental integrity or increased ambition.

A secondary finding, developed in Section 3, is that the question of whether CAs are required cannot be answered in the abstract: it depends on the nature of the claim being made by the corporate buyer. The paper argues that, under two conditions — (1) credible, science-based, value-chain-wide mitigation commitments by the company, and (2) use of high-quality, additional credits — voluntary offsetting or compensation claims can be made without CAs without compromising environmental integrity in any demonstrable way. These are not novel conditions; they are conditions that responsible corporate climate governance already demands. What is novel is the argument that, when these conditions are met, the case for mandating CAs on top of them is weak, and the cost in terms of suppressed climate finance is real.

1.3 Corresponding Adjustments: the accounting rationale

One of the foundations of effective international climate cooperation — and of any credible voluntary private sector mechanism — is the clarity and comparability of commitments. Stakeholders, civil society, and governments can only evaluate, compare, and exert pressure to raise ambition if the commitments made by either countries or companies are transparent and verifiable, and if progress against them is reported in a way that avoids double counting the same reductions. Accounting systems exist to make this possible.

Under the Paris Agreement, sovereign commitments take the form of Nationally Determined Contributions (NDCs). In voluntary corporate frameworks, commitments may take the form of science-based targets under the Science Based Targets initiative (SBTi), net-zero commitments under Race to Zero, or similar undertakings. When a company or country pays for emission reductions achieved in another country, a question inevitably arises: who should get credit for those reductions? The buyer, because it paid for them? The host country, because they occurred in its territory and may contribute to its NDC? Both cannot claim the same tonne — that would be double counting. Accounting systems must resolve this.

In a simple world, the resolution is straightforward: If a buyer claims credit for an emission reduction, the seller must give it up. The seller's reported achievement decreases by the volume transferred; the buyer's increases commensurately. In the Kyoto Protocol, this logic was embedded in the architecture of the system itself, through a tradable unit budget that automatically debited and credited national accounts with every transfer. The Paris Agreement, with its much more diverse array of NDC types and its emphasis on national flexibility, lacks an equivalent automatic mechanism. Corresponding adjustments are the patch designed to fill that gap: they require that, where a mitigation outcome is transferred internationally and used toward an NDC or another authorized international purpose, the host country's emission balance is adjusted upward (as if its own burden had increased) and, where applicable, the acquiring country's balance is adjusted downward.

1.4 Two questions, not one

The debate over whether CAs should be required for VCM transactions has suffered, in my view, from a persistent failure to distinguish two fundamentally different questions.

Question A — Accounting integrity: Do CAs prevent double counting under Paris Agreement rules? Are they technically required, as a matter of international accounting architecture, for VCM transactions?

Question B — Policy effectiveness: Do CAs, in practice, advance the policy goals of higher climate ambition and effective use of climate finance — or do they undermine them by suppressing private climate finance without a corresponding improvement in environmental outcomes?

These are separate questions, and they have different answers. Question A has a relatively clean answer, developed in Section 3.1: CAs are legally required for government-to-government Article 6.2 trades, and for compliance offsetting schemes such as CORSIA, but they are not legally mandated for purely voluntary, private sector VCM transactions by the Paris Agreement or any CMA decision. Whether they are ethically required for such transactions depends on the nature of the corporate claim being made — a question that is also not resolved by the treaty framework and is examined in Section 3.5.

Question B is harder. It is fundamentally an empirical question about incentives, and the honest answer is that the evidence needed to resolve it does not yet exist. Much of this paper is devoted to identifying the specific parameters that would need to be understood before that question can be responsibly answered, and the research agenda that would generate the needed evidence.

The conflation of Questions A and B is not merely an analytical inconvenience. It has practical consequences. If CAs are treated as a matter of accounting integrity — a technical requirement flowing automatically from the architecture of the Paris Agreement — then the burden of proof falls on those who oppose them to explain why double counting is acceptable. If, on the other hand, CAs are treated as a policy instrument with costs and benefits that depend on empirical parameters, then the burden of proof falls on proponents to demonstrate that the benefits outweigh the costs. The paper argues for the second framing.

1.5 Three empirical parameters

Parameter 1: The responsiveness of host country climate ambition to the availability of international carbon finance. This is the displacement, or perverse incentive, question: Would a host country reduce its own domestic climate effort if it knew that international finance in the form of voluntary carbon market transactions would flow in to

support activities in its territory anyway? If displacement is significant and systematic, then non-CA VCM trades generate no additional climate benefit even when the individual credits are additional in project terms. If it is negligible — because NDC ambition is driven by other factors — then the accounting concern disappears. This parameter is the most important of the three, and the least understood.

Parameter 2: The elasticity of VCM carbon finance supply to the cost and uncertainty introduced by CA requirements. Even if CAs would improve environmental integrity, the relevant policy question is whether the benefit (in terms of reduced displacement risk) outweighs the cost (in terms of suppressed carbon finance). This requires understanding how sensitive project developers, host countries, and corporate buyers are to the additional transaction costs, legal risks, and political uncertainties that authorization requirements would impose. World Bank modeling suggests these costs could be substantial for many host countries (International Bank for Reconstruction and Development / The World Bank, 2022), but more granular data across geographies and project types is needed.

Parameter 3: The sensitivity of corporate buyers and the public to different types of corporate climate claims. The debate over CAs is partly a debate about what claims companies may legitimately make, and whether buyers, investors, and the general public differentiate between CA-backed claims and non-CA contribution claims. If the market is largely indifferent — or if contribution claims can be designed to be credible without CAs — then the case for mandating CAs to support corporate credibility is weaker than proponents assume.

These three parameters are empirically unresolved. The conclusion of this paper revisits each of them and identifies the specific research needed to generate the evidence that would allow the CA question to be answered with confidence.

1.6 Scope and context

This paper focuses on VCM transactions involving non-state actors — primarily companies — purchasing carbon credits generated by projects or programmes in other countries and using those credits to meet voluntary climate commitments. It does not address government-to-government Article 6.2 cooperative approaches, for which CAs are clearly required under the Paris Agreement and CMA decisions. It also does not address the use of credits for CORSIA compliance, which is also clearly a CA-eligible use under Decision 2/CMA.3 (Glasgow, 2021).

The paper is specifically about the contested middle ground: purely voluntary corporate use of credits that is not directed toward any sovereign compliance obligation.

The paper draws on the existing academic and gray literature, including **Müller and Michaelowa (2019)** on accounting operationalization under Article 6; **Schneider and La Hoz Theuer (2019)** on environmental integrity; **La Hoz Theuer, Schneider, and Broekhoff (2019)** on transfers outside NDC scope; **Streck, et al. (2023)** on double claiming and corresponding adjustments; the OECD's analysis of the interplay between voluntary and compliance carbon markets (2024); and **Streck (2025)** on contribution claims and environmental integrity. A full reference list is provided at the end of the paper.

2. Background: What Are Corresponding Adjustments and How Do They Work?

This section provides the factual and institutional context for the debate that follows in Section 3. It explains the accounting logic of corresponding adjustments under the Paris Agreement, traces how they differ from the accounting arrangements of its predecessor the Kyoto Protocol, sets out the relevant treaty text and COP decisions, and describes the two most important international frameworks in which CA requirements are currently operational or proposed: the CORSIA aviation scheme and the voluntary carbon market. The aim is to provide a common factual foundation on which the analysis of Section 3 can rest; every claim made here is supported by treaty text, COP decisions, or published research.

2.1 Corresponding adjustments under the Paris Agreement

2.1.1 The treaty foundation

Article 6 of the Paris Agreement, adopted in Paris in December 2015, recognises that "some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions."[1] It establishes three instruments for such cooperation: a framework for bilaterally agreed cooperative approaches involving internationally transferred mitigation outcomes

[1]Paris Agreement, Article 6, para. 1. FCCC/CP/2015/10/Add.1, 12 December 2015. Full text at: https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf

(Article 6.2); a centrally governed mechanism under UNFCCC authority (Article 6.4); and a framework for non-market approaches (Article 6.8).

The accounting obligation at the centre of this paper flows from Article 6.2, which requires that Parties engaging in cooperative approaches "**shall apply robust accounting to ensure, inter alia, the avoidance of double counting."**[2] Article 6.3 specifies that the use of internationally transferred mitigation outcomes toward NDCs "**shall be voluntary and authorized by participating Parties.**"[3] The general accounting obligation under Article 4.13, which applies to all Parties regardless of whether they use Article 6, further requires that Parties "**promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting**."[4]

The specific mechanism for avoiding double counting in international transfers is the corresponding adjustment (CA). A corresponding adjustment is an accounting entry applied to the national emission balance of a Party that transfers a mitigation outcome internationally: the host country (the transferring Party) records an increase in its emissions balance equivalent to the volume transferred, reflecting the fact that it can no longer count that mitigation outcome toward its own NDC. Where the acquiring Party uses the transferred outcome toward its own NDC, it records a commensurate decrease in its emissions balance. The practical effect is that the same tonne of CO2 equivalent can only be counted once — either by the host country or by the acquiring Party, but not both.

2.1.2 The Glasgow rulebook: Decision 2/CMA.3 and subsequent decisions

The detailed rules for applying corresponding adjustments under Article 6.2 were adopted at COP26 in Glasgow in November 2021 as Decision 2/CMA.3.[5] This decision defines the key concepts and sets out the mechanics of the CA system in the decision's Annex.

Internationally transferred mitigation outcomes (ITMOs). The Annex defines an ITMO as a mitigation outcome that is transferred between Parties and used toward an NDC or

[2]Paris Agreement, Article 6, para. 2. The same paragraph requires that Parties "shall apply robust accounting to ensure, inter alia, the avoidance of double counting."
[3]Paris Agreement, Article 6, para. 3. The requirement for authorization by **participating Parties** is a key element distinguishing Article 6.2 ITMOs from unilateral transactions.
[4]Paris Agreement, Article 4, para. 13: 'Parties shall account for their nationally determined contributions. In accounting for anthropogenic emissions and removals corresponding to their nationally determined contributions, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting."
[5]UNFCCC, Decision 2/CMA.3, *Guidance on Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement*, Glasgow, November 2021. FCCC/PA/CMA/2021/10/Add.1. Available at: https://unfccc.int/sites/default/files/resource/cma2021_10_add1_adv.pdf

another authorized international purpose.[6] An ITMO is measured in metric tonnes of CO2 equivalent or in non-GHG metrics, and must be real, verified, and additional. The unit is not limited to project-level credits; it can represent mitigation outcomes from policies, programmes, or jurisdictional-level activities.

Authorization. Authorization is a decision by the host Party specifying whether and for what purpose a mitigation outcome may be used internationally. Decision 2/CMA.3 establishes that there are three components of authorization: authorization of the cooperative approach itself; authorization of the ITMOs for a specified use; and authorization of the entities participating in the cooperative approach.[7] Critically, authorization by the host Party is what triggers the CA obligation: it is the act of authorization — not merely the transfer of a credit — that creates the accounting liability.

Three categories of use, and when CAs apply. Decision 2/CMA.3 establishes three distinct pathways for the use of mitigation outcomes:

- Use toward the achievement of an NDC by an acquiring Party (Article 6.2 ITMO). This triggers a CA on both sides: the host Party records an upward adjustment to its emissions balance (as if its own NDC burden were increased by the volume transferred), and the acquiring Party records a downward adjustment.
- Use for other international mitigation purposes (OIMP), such as CORSIA compliance. This triggers a CA on the host Party's side only. The acquiring entity (e.g. an airline) is not a Party to the Paris Agreement and therefore cannot make a corresponding adjustment in a national inventory.
- Non-authorized transfers (sometimes called "mitigation contribution" units). Where a host Party does not authorize a mitigation outcome for NDC use or OIMP, no CA is required or applied. Under Article 6.4, such units are designated "mitigation contribution A6.4ERs." The authorization status of such credits has no stated implications under Paris Agreement treaty text or any CMA decision for the types of claims a corporate buyer may make. What claims are appropriate for buyers of non-

[6]Decision 2/CMA.3, Annex, para. 1(d) defines *internationally transferred mitigation outcomes (ITMOs)* as mitigation outcomes that are transferred between Parties. Para. 2 specifies that the first transfer triggers the obligation to apply corresponding adjustments.

[7]Decision 2/CMA.3, Annex, para. 1(f). The annex defines "**international mitigation purposes***"* as use toward the achievement of the nationally determined contribution of an acquiring Party, and "**other purposes***'* as other uses authorized by the host Party, including for CORSIA and other non-NDC compliance frameworks. Both categories together are referred to as '**other international mitigation purposes**.*"*

authorized credits — whether offsetting, contribution, or other — is not addressed by the UNFCCC framework and is the central contested question examined in Section 3.

Further guidance was adopted at COP27 in 2022 (Decision 6/CMA.4)[8] and operational details are elaborated in the UNFCCC Secretariat's Article 6.2 Reference Manual (2023).[9]

2.1.3 Inventory accounting and target accounting: a necessary distinction

Before examining the mechanics of CAs further, it is important to distinguish two separate types of accounting that are frequently conflated in discussions of this topic, as noted by Müller and Michaelowa (2019)[10] and reflected in UNFCCC training materials.

Inventory accounting refers to the measurement and reporting of actual greenhouse gas emissions and removals occurring within a national boundary. National inventory systems aim to reflect, as accurately and completely as possible, the physical reality of what is emitted and removed in a given year. They are governed by IPCC guidelines and are designed to be comparable across countries. The transparency framework of the Paris Agreement, set out in Article 13, requires all Parties to regularly submit national inventory reports.

Target accounting refers to the system of rules used to assess whether a country is meeting its nationally determined contribution. Unlike inventory reporting — which describes what happened — target accounting describes whether a country has met its commitment. Target accounting must therefore be shaped by the nature of the commitment being made: what the NDC covers, what metrics it uses, and what accounting approaches are applied.

Corresponding adjustments operate in the **target accounting** domain, not the inventory domain. A CA does not change what actually happened in terms of physical emissions. It changes how those emissions are attributed for the purpose of assessing NDC compliance. This distinction matters for two reasons.

First, CAs can only function properly when the scope of NDCs is clearly defined: if it is unclear which sectors and gases a country's NDC covers, it may be impossible to determine whether a

[8]UNFCCC, Decision 6/CMA.4, Matters Relating to Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement, Sharm el-Sheikh, November 2022. FCCC/PA/CMA/2022/10/Add.2.
[9]UNFCCC Secretariat, *Article 6.2 Reference Manual for the Accounting, Reporting and Review of Cooperative Approaches*, 2023. Available at: https://unfccc.int/sites/default/files/resource/Article_6.2_Reference_Manual.pdf
[10]Müller, B. and Michaelowa, A. (2019). How to operationalize accounting under Article 6 market mechanisms of the Paris Agreement. *Climate Policy*, 19(7): 812–819. doi: 10.1080/14693062.2019.1599803. The paper distinguishes between a "**target-based"**accounting approach (analogous to the Kyoto budget system) and an "**emission-based**" approach (anchored in national inventories), recommending the latter as better suited to the diversity of Paris Agreement NDCs.

transferred mitigation outcome should trigger a CA. This creates a practical problem for CAs in the context of many developing country NDCs, which remain incomplete or imprecisely specified.

Second, accounting integrity does not imply environmental integrity.[11] A technically correct CA system, in which the right adjustments are applied to the right emission balances at the right time, does not guarantee that the underlying mitigation outcomes are real, additional, or permanent. These are distinct quality criteria that must be assured by the methodology, verification, and governance of the credits themselves. The CA is an accounting tool; it cannot substitute for rigorous quality standards at the project or programme level.

2.1.4 How the Paris Agreement differs from the Kyoto Protocol

Understanding why corresponding adjustments work the way they do under the Paris Agreement requires understanding how it differs from its predecessor. The contrast is stark and has been examined in detail in the academic literature.[12]

Under the Kyoto Protocol (1997), Annex B Parties held quantified emission budgets expressed as Assigned Amount Units (AAUs). Each unit was equivalent to one tonne of CO2 equivalent of allowed emissions.[13] The three flexibility mechanisms — International Emissions Trading (Article 17), Joint Implementation (Article 6), and the Clean Development Mechanism (Article 12) — all generated units (respectively AAUs, Emission Reduction Units/ERUs, and Certified Emission Reductions/CERs) that could be added to or subtracted from national budgets. Compliance was determined by comparing the units held at the end of the commitment period with measured emissions. Because every unit was interchangeable with every other unit of the same type, and because every transaction was a direct subtraction from one budget and addition to another, double counting was structurally precluded.

The Paris Agreement's architecture is fundamentally different in two respects.

[11]The distinction between accounting integrity and environmental integrity is a recurrent theme in the academic literature on Article 6. Schneider and La Hoz Theuer (2019, op. cit.) note that a technically correct CA system — one that correctly debits and credits national emission balances — does not in itself guarantee that the underlying mitigation outcomes are real, additional, or permanent. These are distinct quality criteria that must be ensured at the level of methodology and project design.

[12] See, e.g., Rajamani, L. et al. (2021). National "fair shares" in reducing greenhouse gas emissions within the principled framework of international environmental law. Climate Policy, 21(8), 983–1004; and Bodansky, D. (2016). *The Paris Climate Change Agreement: A New Hope?* American Journal of International Law, 110(2), 288–319.

[13]Under the Kyoto Protocol, Annex B Parties held quantified emission budgets expressed as Assigned Amount Units (AAUs). Each credit unit issued under the Clean Development Mechanism (one CER) or Joint Implementation (one ERU) was equivalent to one AAU, and transactions involved simple additions and subtractions to national emission budgets. See UNFCCC, *Mechanisms under the Kyoto Protocol*, available at: https://unfccc.int/process/the-kyoto-protocol/mechanisms

First, there is no universal emission budget. Instead of a single target type, NDCs vary enormously in form: economy-wide absolute emission reduction targets (typically for developed countries), sectoral targets, policies-and-measures commitments, conditional and unconditional elements, and intensity-based targets (emissions per unit of GDP or output). As of the 2026 NDC submission round, of the 108 NDCs submitted, only 71 countries had adopted economy-wide targets covering all sectors and greenhouse gases; others remained sectoral or conditional. This heterogeneity means there is no single common unit that can simply be 'moved' between national accounts as under Kyoto.[14][15]

Second, there is no automatic accounting mechanism. Without a single target type, there is no equivalent of the Kyoto unit registry system that inherently prevents double counting. Instead, the Paris Agreement builds accounting obligations into Article 4.13 and Article 6.2, relying on national reporting and corresponding adjustments to prevent double claiming. But the CA system is grafted onto a diversity of NDC structures, making it technically more complex to implement — particularly for NDCs with limited sector coverage, where it may be difficult even to determine whether a given mitigation activity falls within the scope of the NDC.

The practical implication, noted by Schneider, La Hoz Theuer and colleagues in the academic literature, is that applying CAs outside the NDC scope creates additional challenges: transfers from sectors not covered by an NDC cannot be directly netted against the NDC target, requiring "buffer registry" approaches or expanded NDC coverage.[16]

2.1.5 Rationale and limitations of corresponding adjustments

Given this context, the rationale for CAs is straightforward: they are the mechanism by which the Paris Agreement's accounting system attempts to replicate, across heterogeneous NDC structures, the function that the Kyoto unit budget system performed automatically. By requiring that a host country "add back' to its emission balance any mitigation outcome it

[14]Article 4, para. 4 of the Paris Agreement states: "Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time toward economy-wide emission reduction or limitation targets." As a result, many NDCs from developing countries remain sectoral, conditional on financial support, or expressed in terms of policies and measures rather than quantified emissions budgets.
[15]As of the 2025 NDC submission round, of the 108 NDCs submitted, 71 countries set economy-wide targets covering all sectors and greenhouse gases. The remainder included sectoral targets, conditional targets, or policies-and-measures commitments. See World Resources Institute, *Despite Some Progress, Countries' New Climate Plans Largely Fall Short*, November 2025. Available at: https://www.wri.org/insights/assessing-2025-ndcs
[16]Schneider, L. and La Hoz Theuer, S. (2019). Environmental integrity of international carbon market mechanisms under the Paris Agreement. *Climate Policy*, 19(3): 386–400; La Hoz Theuer, S., Schneider, L. and Broekhoff, D. (2019). Outside in? Using international carbon markets for mitigation not covered by nationally determined contributions (NDCs) under the Paris Agreement. *Climate Policy*, 19(8). doi: 10.1080/14693062.2019.1674628.

transfers internationally, the CA system ensures that the same tonne cannot be used twice — by both seller and buyer — to demonstrate progress against NDC targets.

The obligation to apply CAs attaches to authorized transfers used toward NDCs or other international mitigation purposes. The mechanics, as set out in Decision 2/CMA.3 and elaborated in the Article 6.2 Reference Manual, require CAs to be applied on a year-by-year basis, consistent with the NDC implementation period.[17]

The limitations of CAs, however, are equally important to understand:

- CAs ensure accounting integrity but not environmental integrity. A CA correctly debits and credits national accounts, but it does not guarantee that the mitigation outcome being transferred was real, additional, or permanent. A host country could, in principle, apply a CA in respect of credits that were not actually additional, producing correct accounts but no real climate benefit.
- CAs only function where NDCs are well-defined. Where an NDC lacks clear sector coverage or quantitative targets, it may be practically impossible to determine what a CA should look like. This is not a theoretical concern: many developing country NDCs remain incomplete in ways that make CA implementation technically difficult.
- CAs impose a real cost on host countries. As demonstrated by World Bank modeling using the Global Change Analysis Model (GCAM), applying a CA requires a host country to in effect increase its NDC burden by the volume of units transferred internationally, potentially requiring it to undertake more expensive domestic abatement to meet its NDC. The same modeling suggests that many or most host countries would need to charge CA-related fees well above US$25/tCO2e in addition to the credit cost to cover this opportunity cost.[18]

[17]Decision 2/CMA.3, Annex, para. 8 sets out the detailed calculation method for applying corresponding adjustments on an annual basis, adding net first transfers to the host country's emissions balance and subtracting ITMOs used toward the NDC from the acquiring Party's emissions balance. See also: UNFCCC Secretariat, *Article 6.2 Reference Manual*, 2023, pp. 35–48, for worked examples across different NDC accounting approaches.

[18]World Bank, Corresponding Adjustment and Pricing of Mitigation Outcomes, Working Paper, Washington D.C., 2023. The paper notes: “The Global Change Analysis Model (GCAM) suggests that many or most host countries would need to charge Corresponding Adjustment fees well above US$25/tCO2e in addition to the cost of the emission reduction credits. Such Corresponding Adjustment cost is NDC-specific and varies depending on the level of NDC ambition.” Available at: https://documents1.worldbank.org/curated/en/099061123165527000/pdf/P174187-a22acebb-8808-4d19-8ec0-b67fe1192ab2.pdf

These limitations are relevant to understanding what the CA system can and cannot achieve. Whether they bear on the case for applying CAs to the voluntary carbon market — which operates under a different legal and governance framework — is addressed in Section 3.

2.1.6 The current state of Article 6 negotiations and implementation

Article 6 negotiations have continued at successive COPs since Glasgow. Decision 6/CMA.4 (Sharm el-Sheikh, 2022) addressed further guidance on Article 6.2 cooperative approaches, including issues of transparency and review. Work on Article 6.4 has been progressed through the Supervisory Body, with further CMA decisions adopted in Dubai (2023) and Baku (2024). As of 2026, the Article 6.4 mechanism is in the process of operationalization, with the Supervisory Body having approved a set of methodologies and a registry system under development.[19][20]

Authorization infrastructure remains nascent in most countries. The first Letters of Authorization for CORSIA-eligible credits were issued in early 2024. Bilateral Article 6.2 agreements have been concluded between a small number of Parties (notably Switzerland — Ghana, Japan — various bilateral partners under the Joint Crediting Mechanism, and Singapore — several ASEAN partners), but the broader population of potential host countries — including many of those that host the largest volumes of VCM activity — does not yet have operational authorization frameworks in place.

2.2 Current Approaches to accounting for international transfers

2.2.1 International aviation: the CORSIA scheme

The most important operational comparator for the voluntary carbon market CA debate is the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), established by the International Civil Aviation Organization (ICAO).

The scheme. CORSIA was agreed by ICAO member states at the 39th ICAO General Assembly in 2016 through Resolution A39-3.[21] Its objective is to stabilize net carbon dioxide emissions

[19] UNFCCC (2022). Decision 6/CMA.4 — Matters Relating to Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement. FCCC/PA/CMA/2022/10/Add.2. Available at: https://unfccc.int/documents/624444

[20] UNFCCC, Article 6 Overview, available at: https://unfccc.int/process-and-meetings/the-paris-agreement/article6. The CMA has continued to refine Article 6 rules at successive COPs: Decision 7/CMA.4 (Dubai, 2023) addressed further guidance on Article 6.4; authorization requirements were further specified at CMA 6 in Baku (2024) under Art. 6.2 Decision (FCCC/PA/CMA/2024/14).

[21] ICAO Resolution A39-3 (2016) introduced CORSIA, establishing a global market-based measure to stabilize net carbon dioxide emissions from international aviation at 2020 levels. The current operative resolution is A41-22

from international aviation at 2020 levels. Airlines are required to monitor, report, and verify their CO2 emissions from covered international routes, and must offset any increase in emissions above the established baseline by acquiring and retiring eligible carbon credits.

Institutional context. CORSIA is administered by ICAO, a specialized UN agency, separately from the UNFCCC. International aviation emissions have historically not been included in national GHG inventories or NDCs, with countries instead reporting them as memo items.[22] ICAO and the International Maritime Organization (IMO) were designated as the responsible bodies for addressing emissions in their respective sectors. This means CORSIA operates in a regulatory space that is parallel to, but not part of, the Paris Agreement framework.

The double counting problem and its resolution. When CORSIA was being operationalized, it quickly became apparent that allowing airlines to use carbon credits generated within host country territories — where the host country also counted the same reductions toward its NDC — would result in the same mitigation outcome being claimed twice. The rules adopted at Glasgow (Decision 2/CMA.3) resolved this by designating CORSIA as a permitted "**other international mitigation purpose**" under Article 6.2.[23] Host countries that choose to authorize credits for CORSIA use must apply a corresponding adjustment to their own emission balance, ensuring that the CORSIA-eligible reductions are netted out of the host country's NDC.

In practice, this means that for credits with a 2021 or later vintage to be eligible for CORSIA Phase 1 (2024–2026) and subsequent phases, they must carry a host country Letter of Authorization (LoA) confirming both the authorization and the host country's commitment to apply the CA.[24]

(2022). ICAO SARPs for CORSIA are contained in Annex 16, Volume IV, 1st Edition (effective 1 January 2019). See: https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx

[22]International aviation emissions have historically been excluded from national GHG inventories and NDCs. Under the UNFCCC reporting guidelines, countries report international aviation and maritime emissions as *memo items* in their national inventories, with no agreed allocation of responsibility between origin and destination countries. ICAO and the International Maritime Organization (IMO) were designated as responsible bodies for addressing their respective sector emissions.

[23]EASA, ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA): "Rules for international carbon markets under Article 6 of the Paris Agreement were adopted at the UNFCCC COP26 meeting in 2021. These rules require a host country to authorize carbon credits for 'international mitigation purposes', such as CORSIA, and to ensure that these emission reductions are not used to achieve its National Determined Contribution (NDC) under the UNFCCC process." Available at: https://www.easa.europa.eu/en/domains/environment/icao-carbon-offsetting-and-reduction-scheme-international-aviation-corsia

[24]Climate Impact Partners, CORSIA Explained, March 2026: "For Phase 1 and all subsequent phases, CORSIA-eligible credits with a 2021+ vintage must be authorized by the host country for international use under Article 6. This authorization requires the host country to perform a Corresponding Adjustment (CA) to prevent 'double counting' —

Compliance vs. voluntary: an important asymmetry. CORSIA is a compliance framework: airlines from participating ICAO states have legally binding obligations to offset their emissions above the baseline. The credits they use are CORSIA Eligible Emission Units (CEEUs), which must meet strict ICAO eligibility criteria. The decision to require CAs for CORSIA-eligible credits therefore reflects a specific policy judgment: that in a mandatory compliance context, where the airline is making a direct claim of offsetting, the relevant governments and ICAO member states decided, in that compliance context, that the same tonne should not also be counted in a host country's NDC.[25]

The relationship between the CORSIA CA requirement and the voluntary carbon market CA debate is examined in Section 3.

Host country optionality. While CAs are required for credits used in CORSIA compliance, it remains at the host country's discretion whether to authorize credits for CORSIA purposes at all. IATA has noted this creates a potential scarcity: host countries may choose not to release credits for CORSIA use, either because of the CA cost or for other policy reasons, which can constrain the supply of eligible credits.[26]

2.2.2 The voluntary carbon market

The voluntary carbon market (VCM) is a decentralised market in which private sector entities — primarily companies — voluntarily purchase carbon credits generated by projects or programmes that reduce or remove greenhouse gas emissions. Unlike CORSIA, participation is not mandated by law or intergovernmental agreement; it is driven by corporate climate commitments, investor expectations, reputational considerations, and, increasingly, regulatory guidance from voluntary standard-setters.

The VCM and the Paris Agreement. Article 6.1 of the Paris Agreement explicitly *"**recognizes the important role of the private sector**"* in achieving mitigation outcomes,[27]

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ensuring the same reduction isn't claimed by both the country for its national targets and the airline for CORSIA." Available at: https://www.climateimpact.com/news-insights/insights/corsia-explained

[25]HFW, *Airline Offsetting Obligations Under CORSIA Explained*, July 2024, notes the important asymmetry: CORSIA requires host country CAs to prevent double claiming, but places the compliance obligation on the aircraft operator, not the host country. Where a host country fails to apply CAs, ICAO's Technical Advisory Body initially placed the burden on the carbon standard (e.g., Gold Standard, Verra) to provide insurance or replacement mechanisms. See: https://www.hfw.com/insights/corsia-eligible-emission-units-and-an-airlines-offsetting-obligations/

[26] IATA (2023). CORSIA Implementation Elements. International Air Transport Association. Available at: https://www.iata.org/en/programs/environment/corsia/. See also the ICAO CORSIA documentation on host country authorization requirements.

[27]Paris Agreement, Article 6, para. 1.

and the broader net zero ambition of the Agreement's Article 4 has provided the backdrop for a rapid expansion of corporate climate commitments. As of the early 2020s, a large and growing share of global corporate revenues was covered by some form of net zero or carbon neutrality commitment, with many companies using VCM credits as part of their strategy. Forecasts from UNFCCC and other sources have projected mid-range VCM demand of approximately 1 GtCO2e per year by 2030, with scenarios of 2–5 GtCO2e per year by 2050.[28]

The two-pathway architecture established at Glasgow. Decision 2/CMA.3 created two distinct pathways for credits used for voluntary purposes, with fundamentally different CA implications:[29]

- **Authorized credits** (sometimes called "Article 6-aligned" or "CA-backed" credits): the host country has provided authorization, committing to apply a CA to its emission balance. These credits function as ITMOs when used toward an acquiring Party's NDC or toward OIMP such as CORSIA. Corporate buyers of such credits can be confident that the host country has "given up" the right to count the same reduction in its NDC. The buyer's claim is backed by the host country's accounting adjustment.
- **Non-authorized credits** (sometimes called "mitigation contribution" credits or, under Article 6.4, "mitigation contribution A6.4ERs"): the host country has not issued authorization, and therefore has not committed to any CA. The host country retains the right to count the underlying emission reductions toward its own NDC. The factual position is that the underlying reductions have not been adjusted out of the host country's emission balance. What corporate claims — if any — are appropriate in light of that fact is not resolved by any treaty text or CMA decision and is the central contested question of this paper.

The corporate claims debate. The emergence of these two pathways has intensified the debate over what types of claims companies may legitimately make. Two positions have emerged in the literature and among standard-setters:

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[28]The VCM has grown substantially since 2015 alongside corporate net zero commitments. Forecast midrange scenarios project voluntary demand reaching approximately 1 GtCO2e per year by 2030. See: UNFCCC Secretariat, *Introduction to International Voluntary Carbon Markets*, UNFCCC Workshop presentation, available at: https://unfccc.int/sites/default/files/resource/Session%204-%20Introduction%20to%20International%20VCMs.pdf

[29]Decision 2/CMA.3, Annex, para. 1(f) and related provisions. The text distinguishes between: (a) ITMOs authorized for use toward the achievement of an NDC; (b) ITMOs authorized for other international mitigation purposes (such as CORSIA); and (c) mitigation outcomes not so authorized. Only categories (a) and (b) trigger CAs. Category (c) — the 'non-authorized' pathway — is the relevant one for most current VCM transactions by private sector entities.

- **The offsetting/compensation claim** position: proponents of this view hold that a company making carbon neutrality or offsetting claims should only be able to do so on the basis of authorized, CA-backed credits, on the grounds that the integrity of such claims requires that the reductions not also be counted by the host country toward its NDC. This is a contested normative position, not a requirement of treaty text.[30]
- **The contribution claim** position: a company can validly support global climate mitigation through the purchase and retirement of non-authorized credits, without claiming to offset its own emissions, provided the credits meet high quality standards. Under this model, the company is financing mitigation in the host country; any potential overlap with the host country's NDC accounting is a matter for the host country's governance, not the company's claim. The concept of contribution claims, first articulated in 2016, was endorsed under Article 6.4 at CMA4 (2022) through the creation of the 'mitigation contribution' unit.[31]

Both pathways are recognized in practice, and the question of which is appropriate for different types of corporate actors, commitments, and credit quality has not been resolved — neither by UNFCCC decisions nor by voluntary standard-setters such as the ICVCM or VCMI.[32]

Market integrity and the current landscape. The voluntary carbon market has faced significant integrity challenges in recent years. Multiple investigative reports (from 2022 to 2024) raised questions about the additionality and permanence of major project categories, contributing to a sharp decline in market confidence and credit retirements. In response, the Integrity Council for the Voluntary Carbon Market (ICVCM) published its Core Carbon Principles (CCPs) in 2023, establishing threshold quality criteria. The VCMI published its Claims Code of Practice in 2023, providing a framework for corporate claims. As of early 2026,

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[30]Streck, C., et al. (2023). "Double Claiming and Corresponding Adjustments: A Deep Dive into the Double Counting of Emission Reductions, Corresponding Adjustments, and their Implications for the Voluntary Carbon Market." *Climate Focus*, November 2023. Available at: https://climatefocus.com/wp-content/uploads/2023/11/Double-Claiming-and-Corresponding-Adjustments.pdf

[31]Streck, C. (2025). "Ensuring environmental integrity of voluntary carbon market claims: understanding and framing VCM contribution claims." *Climate Policy* (Advance Online). doi: 10.1080/14693062.2025.2557234. The paper traces the concept of **contribution claims** to Hermwille and Kreibich (2016), notes their endorsement at CMA4 under Article 6.4 (the *"mitigation contribution"* unit), and analyses the conditions under which contribution claims can uphold environmental integrity.

[32]The ICVCM's Core Carbon Principles (CCPs), published in 2023, establish threshold quality criteria for carbon credits. VCMI's Claims Code of Practice (2023) provides a framework for corporate claims using high-quality credits. Neither framework currently mandates CAs as a requirement for valid corporate claims, though both emphasize additionality, permanence, and avoidance of double counting at the credit level.

the VCM is in a period of structural adjustment, with a reorientation toward higher-quality credits and a significant reduction in retirement volumes relative to peak years.

Against this backdrop, the CA question takes on heightened importance: the debate over whether CAs should be required for valid corporate claims is simultaneously a debate about the commercial viability of the VCM, the policy architecture of Article 6, and the environmental integrity standards applicable to corporate climate claims — none of which are currently resolved by treaty text or CMA decisions.

2.2.3 Other relevant accounting frameworks

Beyond CORSIA and the VCM, several other international financing frameworks interact with the CA question.

Results-based finance (RBF). A number of multilateral and bilateral programmes — including the World Bank's Carbon Initiative for Development (Ci-Dev), the Forest Carbon Partnership Facility (FCPF), and bilateral programmes such as REDD+ payments under the Green Climate Fund — make payments to host country governments for verified emission reductions. Where such payments are authorized and the reductions are intended for use toward a buyer's NDC, CA obligations arise under Decision 2/CMA.3. The design of RBF programmes therefore increasingly incorporates Article 6 compliance requirements.

Compliance carbon market linkages. Several compliance carbon markets have explored or implemented linking arrangements under which emission allowances from one system are recognized in another. Where such linkages involve cross-border transfers of units, they may interact with Article 6 CA requirements. The EU ETS has not to date formally adopted Article 6 authorization requirements for its allowances, but the question of how compliance market linkages interact with Paris Agreement accounting remains an area of active policy development.

3. Discussion and Analysis: To Adjust or Not to Adjust?

The debate over whether corresponding adjustments should be required for voluntary carbon market transactions is one of the most contested design questions in international climate governance. It has generated substantial literature, deep disagreements among practitioners and academics, and, since the Glasgow decision of 2021, a two-pathway architecture that defers resolution rather than providing one. This section examines the main arguments for and against requiring CAs in the VCM, organised around the two distinct questions introduced in Section 1:

first, the accounting integrity question, and second, the policy effectiveness question. Within the second, the analysis is structured around the three empirical parameters — host country responsiveness, supply elasticity, and buyer sensitivity — that determine whether mandating CAs would, on balance, improve or harm climate outcomes.

Before proceeding, a note on framing. The literature on this topic is not neutral. Some of the most prominent contributions — particularly from think tanks focused on accounting integrity — argue strongly for CA requirements, framing non-CA VCM trades as inherently problematic. This paper takes a different starting point: it treats CA requirements as a policy instrument with costs and benefits, and evaluates the arguments on both sides with as much symmetry as the evidence allows. Where proponents of CAs make strong claims, those claims are examined critically. Where opponents of CAs make strong claims, those are examined with equal rigor. The paper does not pretend to be agnostic — I conclude that mandating CAs at this stage would be premature — but I aim to represent both sides of the debate fairly.

3.1 The Accounting integrity question: Are CAs technically required?

The foundational argument for requiring CAs in the VCM rests on an accounting claim: that if a host country counts a mitigation outcome toward its NDC and a corporate buyer also claims that outcome — whether for carbon neutrality, net zero, or any other purpose — the same tonne has been counted twice. This, it is argued, is double counting, and double counting undermines the environmental credibility of both the host country's NDC and the company's climate claim.

The accounting claim is not wrong, as far as it goes. If both a sovereign government and a private company genuinely claim the same emission reduction, and that reduction is counted in two separate ledgers without any adjustment, then the aggregate of their claims overstates the actual mitigation achieved. In a world of perfect information and precise NDC coverage, this would be a real problem.

But the claim goes further than the evidence in several respects, and needs to be carefully disaggregated.

3.1.1 Nested versus parallel accounting systems

A central distinction in this debate is between nested and parallel accounting systems. The Paris Agreement is an intergovernmental treaty. Its accounting obligations bind Parties — sovereign states — not private sector entities. A company purchasing a carbon credit is not a Party to the

Paris Agreement. It does not have NDC obligations. Its climate commitments, whether under the Science Based Targets initiative, Race to Zero, or any other framework, are voluntary and governed by separate institutional architectures.

If a corporate buyer does not surrender its credits to its government for use in meeting that government's NDC obligations, there is no direct intersection between the company's transaction and sovereign Paris Agreement accounting. The company operates in a parallel accounting system — separate from, though morally related to, the Paris framework. Private sector transactions that are not intended to serve a country's Paris Agreement commitments do not impact the accounting of sovereign nations under the Paris Agreement. They are therefore part of a parallel, not nested, system.

This is not a technicality. It has substantive implications. If the systems are genuinely parallel — if a company's use of a non-authorized credit has no legal or accounting effect on the host country's NDC balance — then the double-counting problem, in its strict accounting sense, does not arise. The host country retains the right to count the underlying reductions toward its NDC. The company claims to have contributed to or offset its own emissions. Both claims can coexist without either ledger being arithmetically incorrect.

Proponents of applying CAs respond that even if the systems are legally parallel, they are not ethically parallel: a company claiming carbon neutrality on the basis of reductions that a host country is simultaneously using to meet its NDC is making a claim that is ethically misleading, even if technically not a breach of Paris Agreement rules. The public, it is argued, would not accept such an arrangement if it understood it. This is a more defensible version of the accounting integrity argument, but it is now explicitly a normative argument, not a technical one. And as a normative argument, it must be weighed against the costs of the policy it implies — which brings us to the policy effectiveness question addressed in Sections 3.2 through 3.4.

3.1.2 What the treaty framework actually says about corporate claims

An important discipline in this debate is to be precise about what the Paris Agreement and CMA decisions actually say, and what they do not say. As noted in Section 2, the treaty framework establishes when corresponding adjustments are required of sovereign Parties. It is entirely silent on what corporate claims may or may not be made on the basis of different categories of carbon credits. Decision 2/CMA.3 creates a distinction between authorized and non-authorized transfers for the purpose of sovereign accounting. It does not specify that authorized credits are the only legitimate basis for corporate offsetting claims, or that non-authorized credits may only

support contribution claims. Those are positions held by various parties in the debate — they are not what the treaty text says.

This matters because much of the pro-CA literature presents the case for requiring authorization as if it followed directly from the logic of the Paris Agreement. It does not. The leap from "sovereign accounting requires CAs for authorized transfers" to "corporate offsetting claims require authorized credits" is a normative and policy argument, not a treaty interpretation. It should be evaluated as such.

3.1.3 The CORSIA precedent and what it does and does not establish

Proponents of CAs frequently invoke CORSIA as a precedent: the international community decided, in that context, that CA requirements were necessary to avoid double counting between airline compliance claims and host country NDCs. Does CORSIA establish a principle that should apply to VCM transactions?

It is worth being precise about what the CORSIA precedent actually establishes. CORSIA is a mandatory compliance framework: airlines from participating ICAO states have legally binding obligations to offset emissions above the baseline. When an airline purchases credits for CORSIA compliance, it is making a compliance claim — legally equivalent, in its own system, to the claim a country makes when it counts a unit toward its Kyoto commitment. It is precisely this compliance nature that motivated the requirement for CAs: the concern was that the same reduction would be used to discharge two legal compliance obligations in two different systems.

Furthermore, emissions from international aviation and maritime transport are excluded from national inventories. There is no overlap therefore between the scope of an airline inventory under ICAO/CORSIA and national inventories. For all practical accounting purposes, CORSIA airlines can be considered as a separate entity-like Party to the Paris Agreement.

Voluntary corporate commitments in the VCM are not analogous in this respect. A company purchasing credits to support a net-zero commitment, or to claim carbon neutrality, is not discharging a legal obligation. Its commitment is voluntary and self-imposed. The governance structures that determine what claims are credible are those of the ICVCM, VCMI, SBTi, and similar bodies — not the UNFCCC. Extending the CORSIA logic to the VCM would require demonstrating that voluntary corporate commitments are analogous to mandatory compliance obligations in the relevant sense. That case has not been made convincingly in the literature.

There is a further asymmetry worth noting. CORSIA's CA requirement applies because a host country chooses to authorize credits for CORSIA use — and authorization is precisely what triggers the CA obligation. In the VCM non-authorized pathway, by definition, no authorization has been issued and no CA is triggered. The question of whether companies should only use authorized credits for certain types of claims is a normative question for voluntary standard-setters, not a mechanical consequence of Paris Agreement rules.

3.2 The policy effectiveness question: Would CAs improve climate outcomes?

Even if one accepts that CAs are not strictly required by the treaty framework for VCM transactions, one might still argue that they should be mandated as a matter of policy — that they would produce better climate outcomes than the alternative. This is the stronger and more interesting version of the pro-CA argument, and it deserves serious engagement. Its force depends on the three empirical parameters introduced in Section 1. We take each in turn.

3.2.1 Parameter 1: Host country responsiveness — the displacement question

The most important question in the entire CA debate is whether the availability of international VCM finance leads host countries to reduce their own domestic climate effort. If the answer is yes — if VCM finance systematically displaces domestic public resources or suppresses NDC ambition — then non-CA trades generate no additional climate benefit at the global level, even when individual credits are additional at the project level. Under those circumstances, requiring CAs would be well-motivated: they would force a reckoning with the displacement effect by making it visible in national accounting.

There is also reason to think that the displacement risk varies significantly across country contexts. In countries with high NDC ambition and strong domestic climate governance, there may be real concern that private finance flows could substitute for public commitments. In countries with low NDC ambition — which represent the large majority of VCM host countries — the risk that private finance displaces meaningful domestic commitments is lower, precisely because those commitments are not binding constraints on domestic policy in the first place. Mandating CAs uniformly, as if displacement risk were uniform, would be a blunt instrument applied to a highly heterogeneous landscape.

The research agenda implied by this parameter is significant. Surveys of host country government attitudes toward VCM finance and NDC ambition-setting would help establish the

behavioral realities on the ground. The large literature on aid effectiveness — specifically, on whether international development aid displaces domestic public finance — offers directly applicable methodological frameworks and some sobering empirical lessons: displacement effects in aid contexts have been documented, but are far from universal and depend heavily on country governance characteristics (Boone, 1996; Djankov, Montalvo, and Reynal-Querol, 2008). Cross-country analysis of the relationship between historical carbon finance inflows and subsequent NDC ambition trajectories would be a more targeted contribution.

Until that evidence exists, the displacement concern — while legitimate — does not provide a sufficient basis for mandating CAs. Mandating CAs on the basis of a hypothetical displacement risk, without evidence of its magnitude or distribution, is equivalent to imposing a large and certain cost (suppressed climate finance) to address an uncertain and possibly small risk.

3.2.2 Parameter 2: Supply elasticity — the transaction cost question

The second parameter concerns the cost side of the CA policy instrument. Even if CAs would deliver some improvement in environmental outcomes by reducing displacement risk, the relevant policy question is whether the benefit outweighs the cost. That cost is the suppression of VCM finance that CA requirements would produce. Understanding the magnitude of that cost requires understanding how sensitive VCM flows are to authorization requirements.

The transaction costs of authorization are real and potentially large. World Bank modeling using the Global Change Analysis Model suggests that many or most host countries would need to charge CA-related fees well above US$25 per tCO2e in addition to the cost of the underlying emission reductions (International Bank for Reconstruction and Development / The World Bank, 2022). This is not a marginal add-on: for many project types, particularly nature-based solutions operating on thin margins, such a fee would render the project financially unviable.

The uncertainty dimension may be as important as the cost dimension. For companies and project developers considering long-term or advance purchase agreements — which are essential for establishing the demand certainty that capital-intensive projects require — the risk that a future government might refuse to issue authorizations, or withdraw previously issued ones, introduces a political risk premium that is extremely difficult to price. The risk of not being able to obtain corresponding adjustment-backed credits in the future — for example, if a subsequent national administration refuses to issue authorizations — could dissuade investment and corresponding early action. This risk is not theoretical: authorization infrastructure is, as of

2026, still nascent in most potential host countries, and political continuity of climate policy is far from guaranteed in many of them.

There is a further structural point about the incidence of CA costs. The more additional a carbon credit — the more dependent the underlying mitigation activity is on additional revenues from carbon finance — the more sensitive it will be to additional transaction costs. CA requirements would therefore disproportionately harm the highest-quality, most finance-dependent projects: exactly those that the VCM should be directing capital toward. Low-additionality projects, which are less dependent on carbon revenues, would be relatively less affected. A policy instrument that systematically disadvantages the most additional projects has a perverse quality structure.

Proponents of CAs respond that efficient authorization procedures could substantially lower these costs. This is true in principle, and there are good arguments for investing in authorization infrastructure as part of a long-term Article 6 architecture. Bilateral Article 6.2 agreements — between Switzerland and Ghana, between Japan and various partner countries under the Joint Crediting Mechanism, and between Singapore and several ASEAN partners — offer early evidence on what efficient authorization can look like. But the current reality is that most potential host countries do not have this infrastructure. Requiring CAs now, before that infrastructure exists, would freeze the VCM — not reform it.

3.2.3 Parameter 3: Buyer sensitivity — the corporate claims question

The third parameter concerns the demand side: how much do corporate buyers, their investors, and the general public actually differentiate between CA-backed and non-CA credits? And what types of claims does the market actually demand?

The assumption embedded in the pro-CA position is that CA-backed credits are necessary for credible corporate climate claims — that without authorization, companies cannot legitimately claim to have offset or compensated for their emissions. This assumption drives the argument that mandating CAs is necessary to protect the integrity of the corporate claims that sustain VCM demand.

But the empirical basis for this assumption is uncertain in several respects. First, there is no settled consensus among voluntary standard-setters on this question. Neither the ICVCM's Core Carbon Principles (2023) nor the VCMI's Claims Code of Practice (2023) mandates CA backing as a requirement for valid corporate claims. The SBTi's beyond-value-chain mitigation (BVCM) framework explicitly contemplates the use of credits without specifying that authorization is

required. These frameworks are the governance environment within which corporate VCM claims are actually evaluated, and they do not support the pro-CA conclusion.

Second, there is an important market reality: contribution claims — which do not assert that emissions have been offset or neutralized, but rather that the company has contributed to global mitigation — have not yet been adequately marketed or developed as commercial propositions. This is a real constraint, but it is not a permanent one. The framework for contribution claims is being actively developed: the concept was formally recognized under Article 6.4 at CMA4 (2022) through the creation of the "mitigation contribution" unit, and Streck (2025) provides a rigorous analytical framework for how contribution claims can maintain environmental integrity. The failure of contribution claims to date reflects a failure of market development, not a fundamental impossibility.

Third, the sensitivity of buyers to CA backing may vary significantly across buyer types. Large multinational companies with sophisticated ESG functions, operating in jurisdictions with detailed climate disclosure requirements, may indeed face growing pressure to use authorized credits. Smaller companies, or those in less regulated environments, may find contribution claims perfectly adequate for their purposes. A uniform CA requirement would treat these very different buyers identically — which seems ill-suited to the diversity of the market.

3.3 The NDC definition and coverage problem

A distinct set of arguments concerns the practical relationship between NDC coverage and CA applicability. Even setting aside the displacement question, there is a real technical problem: in many host countries, NDCs are not sufficiently defined to determine whether a given VCM activity falls within their scope. This creates difficulties for both sides of the CA debate.

The case for CAs despite undefined NDCs rests on two related points.

Proponents of CAs note that broadly defined NDCs — economy-wide targets, or targets covering entire sectors — could in principle cover most or all VCM activity in a host country, even where this is not explicit. On this view, the lack of NDC granularity is an argument for caution: better to apply CAs broadly than to allow potential double claiming in ambiguous cases.

There is also a concern about strategic behavior: countries might deliberately leave NDC scope ambiguous precisely in order to preserve the option of selling credits without applying CAs,

while still counting the underlying reductions toward their NDC. This would be a form of gaming the system that CA requirements are designed to prevent.

The case against CAs in the same circumstances is more technically decisive.

This is not a marginal concern. A corresponding adjustment is a specific accounting entry: it must specify what emission balance is being adjusted, in what sector, by what amount, in which accounting period. Where NDCs are expressed as policies and measures, or as conditional contributions with uncertain quantification, it may be genuinely impossible to determine what a CA should look like — let alone to verify that it has been correctly applied. Requiring CAs in these circumstances does not protect environmental integrity: it imposes an unverifiable accounting obligation and, in practice, blocks VCM activity without any corresponding benefit.

3.4 Country preparedness and the authorization infrastructure problem

Closely related to the NDC coverage question is the question of host country preparedness to implement authorization and CA requirements in practice. This involves both technical capacity and institutional readiness, and it has significant implications for where the burden of proof should lie in the CA debate.

One response to the preparedness gap is to treat it as a solvable problem.

Proponents of CAs argue that the current lack of authorization infrastructure in most host countries is a reason to invest in building it, not a reason to forgo CA requirements indefinitely. Bilateral Article 6.2 agreements provide a model; EDF's own *Ministry Playbook for Corresponding Adjustments* (2024) offers practical guidance for host country governments on how to design and implement authorization frameworks. On this view, the sequencing should be: set the standard now, build the infrastructure, and allow the VCM to evolve toward the standard over time.

There is also a concern about moral hazard: if CA requirements are deferred until infrastructure is in place, there may be no incentive for host countries to build that infrastructure. The requirement itself may be what drives the investment in preparedness.

I am not persuaded that this framing is adequate.

The counter-argument is more than a transitional concern about timing. The evidence points clearly in one direction: only some countries will be able to benefit from voluntary market

actions — and these will tend to be the larger or more sophisticated ones who need less help. If CA requirements are imposed now, the VCM will concentrate in a small number of countries with existing authorization frameworks — the very countries that are already better positioned to attract climate finance through other channels. The countries that would benefit most from VCM finance — those with large mitigation potential, high poverty rates, and limited access to climate finance — are also the ones least likely to have authorization infrastructure in place.

The CDM precedent is instructive here, though the lesson cuts both ways. Under the CDM, Designated National Authorities (DNAs) were required as a condition of project approval. In many cases, host countries did eventually develop DNA capacity — but the process was slow, uneven, and in some cases created rent-seeking opportunities and legal uncertainty. Assuming that authorization infrastructure will emerge organically in response to CA requirements, without substantial capacity-building support, is optimistic on the basis of that precedent.

There is also a theoretical point about the marginal cost of abatement that deserves attention. The point deserves direct statement: in theory, host countries should participate in carbon markets by offering their higher-cost mitigation opportunities (leaving lower-cost options for domestic action), which the market then identifies as worth financing. In practice, however, countries do not operate according to a textbook marginal abatement cost curve. Requiring CA infrastructure as a precondition for market participation would in effect limit participation to countries that have already developed sophisticated climate policy frameworks — which is where the “highest-hanging fruit” is likely to be, not the lowest-cost mitigation opportunities.

4. Synthesis: Toward a Conditional and Progressive Approach

The analysis in Section 3 does not yield a simple answer to the CA question — and rightly so, because the question does not have a simple answer. What it yields instead is a clearer map of the considerations that should govern the answer, a stronger identification of where the genuine uncertainties lie, and a set of interim policy positions that are defensible in the current state of knowledge. This section draws those threads together into a coherent approach.

4.1 What the analysis establishes

On accounting integrity. Corresponding adjustments are legally required for government-to-government transfers under Article 6.2 of the Paris Agreement, and for credits used in

mandatory compliance frameworks such as CORSIA. They are not legally required for purely voluntary, private sector VCM transactions. The Paris Agreement and CMA decisions are entirely silent on what corporate claims may or may not be made on the basis of different categories of credits. The accounting integrity argument for mandating CAs in the VCM is therefore a normative and policy argument, not a technical one, and must be evaluated as such.

On the CORSIA precedent. CORSIA establishes that CAs are appropriate for mandatory compliance offsetting schemes. It does not establish a general principle that all carbon credit use — including purely voluntary purchases by companies — requires CA backing. The analogy between airline compliance obligations and voluntary corporate commitments does not hold in the relevant respects.

On NDC coverage and workability. In the majority of potential VCM host countries, NDCs are insufficiently defined and authorization infrastructure is insufficiently developed for CA requirements to be technically workable at reasonable cost today. Mandating CAs in these circumstances would not protect environmental integrity — it would freeze VCM activity without any corresponding benefit. This is not a transitional problem that resolves quickly: building robust authorization infrastructure takes sustained investment and political commitment over multiple NDC cycles.

On the incidence of costs. The costs of CA requirements fall disproportionately on the most additional projects — those most dependent on carbon finance — and on the host countries with the least capacity to implement authorization systems. This is a perverse quality and equity structure for a policy instrument that is ostensibly designed to protect environmental integrity.

On corporate claims and quality. The case for requiring CA backing weakens substantially when companies meet the two following preconditions: credible, science-based, value-chain-wide mitigation commitments, and use of high-quality, additional credits. Under these conditions, the displacement-of-company-action concern is substantially addressed, and the parallel accounting argument is at its strongest. The integrity of the corporate claim rests on the quality of the commitment and the credit — not on whether the host country has applied a CA to its emission balance.

On additionality as the non-negotiable floor. Whatever the resolution of the CA debate, one conclusion is unambiguous: any claim based on the use of carbon credits — whether framed as offsetting, contribution, or anything else — must be grounded in genuinely additional

mitigation. Credits that would have occurred without carbon finance do not support any legitimate claim, under either the authorized or non-authorized pathway. The debate about CAs should not be used to lower the bar on credit quality; quality is a separate dimension from authorization status, and a prior one.

4.2 What remains genuinely uncertain

The three empirical parameters introduced in Section 1 remain unresolved, and the policy conclusions of this paper are conditioned on that uncertainty. We identify them here precisely because resolving them is the most important contribution that future research could make to this debate.

The displacement parameter. Whether host country climate ambition responds systematically to the availability of international carbon finance — and if so, in which country contexts and to what degree — is the pivotal unknown. If displacement is large and systematic, the case for CA requirements strengthens considerably, even in the current period. If it is small or context-specific, the case weakens. This is an empirical question that can be investigated, but has not yet been investigated with sufficient rigor or specificity.

The supply elasticity parameter. The sensitivity of VCM flows to the cost and uncertainty introduced by CA requirements — across different project types, geographies, and buyer categories — is not well documented. The World Bank modeling on CA opportunity costs provides a useful starting point, but more granular, project-level analysis is needed. Understanding at what price point authorization fees become prohibitive for different activity types would allow a much more precise calibration of any future CA requirement.

The buyer sensitivity parameter. Whether corporate buyers, their investors, and the public actually differentiate between CA-backed and non-CA credits — and whether that differentiation is growing or stable — has not been systematically studied. The answer has significant implications for the demand-side effects of any CA mandate. If buyers are largely indifferent to authorization status when high-quality, additional credits are used, the case for mandating CAs to protect market credibility is weaker than proponents assume.

4.3 A conditional and progressive approach

Given what is established and what remains uncertain, this paper proposes a conditional and progressive approach to CA requirements in the VCM — one that does not foreclose CA requirements permanently, but conditions their application on factors that are either already observable or can be made so through targeted research and institutional development.

In the short term — the current period. CA requirements should not be mandated as a blanket condition for VCM participation. The authorization infrastructure to implement them efficiently does not exist in most host countries. The empirical evidence for systematic displacement effects is insufficient to justify the certain costs of demand suppression. In this period, the priority should be on two parallel tracks: building authorization infrastructure in willing host countries, with appropriate international support; and enforcing rigorous quality standards for credits and credible commitment standards for corporate buyers — which are the true foundations of VCM integrity regardless of how the CA question is resolved.

In the medium term — as infrastructure and evidence develop. As authorization infrastructure becomes available in more host countries, and as the empirical picture on displacement becomes clearer, CA requirements can be introduced on a differentiated basis — applying in contexts where the risk framework developed in Section 3.6 indicates they are warranted, and not applying where it indicates they are not. This differentiation should be based on observable factors: NDC ambition and coverage, authorization infrastructure readiness, transaction volume relative to NDC scope, and the nature of the corporate claim being made.

This approach is explicitly conditional and revisable. If future research establishes that displacement effects are large and systematic in specific host country contexts, the appropriate response is to introduce targeted CA requirements in those contexts — not to maintain a blanket exemption. Equally, if evidence emerges that the two-precondition framework for legitimate corporate claims is being systematically gamed — with companies making SBTi commitments they do not intend to meet, or purchasing credits that nominally meet quality thresholds but do not in practice deliver additional mitigation — that would be a reason to revisit the framework. The position taken here is not a permanent exemption from CA requirements; it is a calibrated response to the current state of knowledge and infrastructure.

4.4 Implications for standard-setters and policymakers

The conditional and progressive approach has specific implications for the institutions whose decisions shape the VCM.

For voluntary standard-setters (ICVCM, VCMI, SBTi). The most important near-term contribution these bodies can make to the CA debate is not to mandate or prohibit CA backing for corporate claims, but to enforce the two preconditions rigorously: genuine, science-based mitigation commitments on the corporate buyer side, and robust additionality and quality standards on the credit side. If these preconditions are met, the CA question becomes considerably less acute. If they are not met — if companies are making carbon neutrality claims on the basis of weak commitments and low-quality credits — the problem is one of insufficient quality governance, not of insufficient CA coverage. Standard-setters should focus their energy accordingly.

For host country governments. Host countries that have the institutional capacity and the political will to develop authorization frameworks should be supported and encouraged to do so — not because CAs are required today for VCM transactions, but because building that infrastructure positions them well for the Article 6 landscape of the future, and because authorized credits will command a market premium as buyer sophistication increases. The *EDF Ministry Playbook for Corresponding Adjustments* (EDF, 2024) offers practical guidance on how to design these frameworks efficiently. For countries that do not yet have this capacity, the priority should be on NDC development and inventory improvement — the preconditions for any CA system to function properly.

For the UNFCCC and CMA. The Glasgow decision's two-pathway architecture was a pragmatic accommodation of the current state of readiness. It should be maintained, and not prematurely foreclosed in either direction. Future CMA decisions should focus on clarifying the governance of the non-authorized pathway, rather than on extending authorization requirements to cover all VCM activity.

For buyers and their financial institutions. Companies making voluntary climate commitments should focus, above all, on the two preconditions: robust, science-based mitigation commitments across their value chains, and purchase of credits that genuinely meet additionality and quality standards. The CA status of credits they purchase is a secondary consideration, and one that will become progressively more relevant as authorization infrastructure develops and as the market matures. Companies that are currently unable to source authorized credits — which is the situation of most buyers in most markets today —

should not conclude that they cannot make legitimate climate claims; they should focus on ensuring their claims rest on the quality foundations that matter most.

5. Conclusion: Getting Toward a Consensus — What Would It Take?

This paper has argued that the debate over corresponding adjustments in the voluntary carbon market has been conducted, to a significant degree, on the wrong terms. It has been framed as a question of accounting integrity — as if the answer followed mechanically from the structure of the Paris Agreement — when in reality it is a question of policy incentives, whose answer depends on empirical parameters that are not yet adequately understood. Resolving the CA question properly requires resolving those empirical questions first. Until they are resolved, a conditional and progressive approach — one that does not mandate CAs as a blanket requirement today, but builds toward a differentiated framework as evidence and infrastructure develop — is the most defensible position.

This section sets out what it would take to reach a genuine consensus on the CA question: the research agenda that would generate the missing evidence, and the institutional developments that would create the enabling conditions for a more definitive determination.

5.1 The research agenda

5.1.1 Research on host country responsiveness (Parameter 1)

The displacement question — whether the availability of VCM finance systematically reduces host country domestic climate effort — is the most important unresolved empirical question in the CA debate. Resolving it requires research at several levels.

At the most direct level, surveys of host country government officials and climate policymakers could establish how VCM finance is perceived in the context of domestic climate policy planning: is it viewed as additional to public resources, or as a substitute? Are NDC targets set with expectations about VCM inflows? Do changes in VCM volumes affect domestic budget allocations for climate action? These are questions that can be investigated through structured interviews and surveys, though they require access to government decision-making processes that is not always easy to obtain.

At a more aggregate level, cross-country analysis of the relationship between historical carbon finance inflows and subsequent NDC ambition trajectories could provide econometric evidence on displacement at the policy level. This analysis would need to control carefully for the many other factors that drive NDC ambition — domestic politics, development priorities, international diplomatic context, technology trajectories — which are all likely to be more important determinants than private carbon finance flows. The very difficulty of isolating a carbon finance effect in such an analysis is itself informative: it suggests that the displacement mechanism, even if real, is likely to be modest relative to other drivers of ambition.

The most directly applicable methodological framework is the large literature on aid effectiveness and the displacement of domestic public finance by international development aid. That literature — drawing on decades of experience with bilateral and multilateral aid flows — has found mixed results: displacement effects have been documented in some country contexts and aid modalities, but are far from universal, and depend heavily on recipient country governance quality, the conditionality structure of aid, and the degree to which aid is fungible within the recipient's budget (Boone, 1996; Djankov, Montalvo and Reynal-Querol, 2008; Rajan and Subramanian, 2008). Carbon finance differs from development aid in important respects — it is more fragmented, more project-specific, and less fungible — but the methodological lessons from that literature are directly applicable, and a synthesis of it for the carbon finance context would be a valuable contribution.

5.1.2 Research on supply elasticity (Parameter 2)

Understanding the supply elasticity of VCM finance to authorization requirements requires more granular data than currently exists. The World Bank modeling on CA opportunity costs (International Bank for Reconstruction and Development / The World Bank, 2022) provides a useful aggregate picture, but several additional research directions are needed.

Project-level analysis of the financial viability of different activity types — nature-based solutions, renewable energy, methane reduction, industrial efficiency — under different CA fee scenarios would allow a much more precise calibration of the point at which authorization fees become prohibitive. This analysis would ideally distinguish between marginal and infra-marginal projects: projects that are barely viable on current credit prices will be more sensitive to CA fees than projects with substantial margins.

Evaluation of the existing Article 6.2 bilateral authorization frameworks — including the Switzerland-Ghana agreement, Japan's Joint Crediting Mechanism bilateral agreements, and

the Singapore-ASEAN bilateral partnerships — would provide early empirical evidence on the administrative cost and efficiency of authorization in practice. These agreements are young, but even preliminary evidence on processing times, fee levels, and political risks would be informative.

Research on the perceived uncertainty premium — the additional cost that project developers and buyers assign to the risk of authorization being withdrawn or delayed — would complement the direct cost analysis. This uncertainty premium is likely to be at least as significant as the direct CA fee for long-term investment decisions, and it is currently not well-documented.

The CDM's DNA authorization process offers a historical analogue. A systematic retrospective on how DNA requirements affected CDM project development — including the extent to which complex or corrupt authorization processes diverted activity toward less scrutinized pathways — would provide evidence on the practical risks of authorization requirements in lower-capacity country contexts.

5.1.3 Research on buyer sensitivity (Parameter 3)

The buyer-sensitivity parameter has received the least systematic attention of the three, and is in some ways the most tractable to investigate through primary research.

Survey research on the preferences of corporate ESG and procurement functions regarding authorized versus non-authorized credits would establish whether the market premium for CA backing that proponents assume actually exists, and whether it is growing or stable. Discrete choice experiments — presenting buyers with hypothetical credit offers at different price and quality combinations — could establish willingness-to-pay for authorization status independently of other quality attributes.

Analysis of whether CA-backed credits command a market premium in the transactions that have already occurred — notably through early Article 6.2 bilateral agreements and the CORSIA authorization process — would provide revealed-preference evidence to complement stated-preference surveys. The data for this analysis are limited but growing as more authorized transactions are completed and reported.

Tracking the positioning of voluntary standard-setters over time — specifically, whether VCMI, ICVCM, and SBTi are moving toward making authorization a condition of their highest-tier claims classifications — would provide forward-looking evidence on the likely evolution of buyer

requirements. If the standard-setters converge on authorization as a requirement for certain claim types, the market will follow.

5.2 The institutional agenda

Beyond the research agenda, several institutional developments would substantially improve the conditions for a more definitive determination on CA requirements.

NDC improvement. The most fundamental enabler of CA requirements — and of meaningful carbon markets more generally — is the progressive improvement of NDC quality, coverage, and granularity across successive NDC cycles. As NDCs become more specific, the determination of whether a given VCM activity falls within NDC scope becomes more tractable, and the technical preconditions for CA implementation improve. The international community's investments in NDC support — through the NDC Partnership, the Global Environment Facility, and bilateral capacity-building programmes — are therefore directly relevant to the CA question, even when they are not framed in those terms.

Authorization infrastructure investment. Building efficient, transparent, and predictable authorization frameworks in willing host countries is a prerequisite for making CA requirements workable. This requires targeted capacity-building support — technical assistance for developing Article 6 strategies, registry systems, and DNA-equivalent authorization processes — as well as the development of international best-practice guidance. EDF's *Ministry Playbook* (EDF, 2024) and the ADB's work on national carbon market strategies (ADB, 2023) are valuable contributions in this direction. Expanding and systematising this support — and learning from the CDM's institutional experience, both positive and negative — should be a priority.

Quality governance of the VCM. Strengthening the quality governance of the VCM — through rigorous implementation of ICVCM Core Carbon Principles, robust corporate commitment standards under SBTi and VCMI, and effective third-party verification — is important regardless of how the CA question is resolved. As noted throughout this paper, quality is the non-negotiable foundation of any legitimate corporate climate claim. A VCM in which quality standards are consistently applied and enforced is one in which the preconditions for legitimate non-CA claims are more likely to be met — and one in which the risk of displacement of meaningful climate action is lower.

Data infrastructure. The empirical questions identified in Section 5.1 cannot be answered without better data on VCM transactions, carbon finance flows, NDC implementation, and host country policy responses. Improving the transparency of carbon market transactions — through registry interoperability, mandatory reporting of credit retirements and authorization status, and systematic collection of host country policy data — would create the empirical foundation for the research agenda this paper proposes. The UNFCCC's Article 6 reporting requirements, and the registry infrastructure under development for the Article 6.4 mechanism, are steps in the right direction.

5.3 Final observations

The case for patience is not a case for complacency. The three parameters identified in this paper are not unknowable — they are researchable, and the research should be undertaken urgently. The authorization infrastructure that would make CA requirements workable is not unbuildable — it requires sustained investment and political commitment, and that investment should begin now. The governance frameworks that would make corporate claims trustworthy without CA backing are not unavailable — they exist, and enforcing them rigorously is the most important near-term contribution to VCM integrity.

A genuine consensus on the CA question will require three things: better evidence on the empirical parameters, more developed institutional infrastructure for authorization, and a shared commitment among all parties to the debate — pro-CA and anti-CA alike — to let evidence rather than prior positions drive the policy. This paper is offered in that spirit. I don’t claim to have resolved the question. I have tried to clarify it, to have identified where the uncertainties genuinely lie, and to have proposed an approach that is defensible in the current state of knowledge and open to revision as that knowledge improves.

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