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Climate Action &
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Association

Insight: Strengthening Carbon Asset Management and Cooperative Approaches in Latin America

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Abstract

Climate finance flows have increased in recent years - yet remain far below the levels required to achieve the 1.5°C pathway outlined by the Intergovernmental Panel on Climate Change (IPCC). Cooperative approaches -under Article 6 of the Paris Agreement- have emerged as a key mechanism to mobilize private finance and enhance efficiency, offering an opportunity for countries to trade internationally transferred mitigation outcomes (ITMOs) and generate high-quality credits through the Paris Agreement Crediting Mechanism (PACM). This paper examines the transition from the Clean Development Mechanism (CDM) to Article 6.4, highlighting the importance of robust standards and practices to safeguard environmental integrity and equity.

The analysis focuses on Latin America, where a second wave of compliance markets is emerging. Countries such as Mexico, Chile, and Colombia are advancing emissions trading systems (ETSs) alongside carbon taxes, creating opportunities to broaden sectoral coverage and accelerate technological transformation. Building an effective ETS requires robust measurement, reporting, and verification (MRV) systems, strong legal frameworks, institutional capacity, and policy coherence with subsidy reforms and nationally determined contributions (NDCs).

Cost-containment mechanisms—including banking, borrowing, and price floors/ceilings—are essential to stabilize markets and maintain political support. Integrating domestic ETSs with international cooperative approaches under Article 6 offers Latin American countries new opportunities to access finance and technology, but success will depend on institutional readiness, governance, and the credibility of carbon asset management systems. Ultimately, the region’s ability to align domestic and international instruments will determine whether carbon markets contribute meaningfully to systemic transformation and sustainable development.

1. Introduction

Climate finance flows have grown significantly in recent years, from approximately USD 632 billion annually between 2019 and 2020 to USD 1.3 trillion in 2023 (Climate Policy Initiative, 2023). Yet the Intergovernmental Panel on Climate Change (IPCC, 2023) estimates that USD 5–7 trillion annually is required to achieve the 1.5°C pathway, underscoring a massive shortfall. This gap reflects not only insufficient mobilization but also structural misalignment between current flows and the systemic transformation required. Public actors have borne most of the burden, with governments contributing over half of total flows, while private sector contributions remain limited, particularly in adaptation.

Against this backdrop, the Paris Agreement introduced cooperative approaches under Article 6 as a means to enhance efficiency and mobilize private finance. Article 6.2 enables bilateral trading of internationally transferred mitigation outcomes (ITMOs), while Article 6.4 establishes the Paris Agreement Crediting Mechanism (PACM), designed to replace the Clean Development Mechanism (CDM) with stricter rules on baselines, additionality, and monitoring (UNFCCC, 2025). These mechanisms are intended to safeguard environmental integrity and equity, ensuring that international cooperation does not result in higher global emissions compared to a scenario without such cooperation (Schneider & La Hoz Theuer, 2019).

At the same time, domestic carbon pricing instruments—such as carbon taxes and emissions trading systems (ETSs)—are proliferating worldwide, with more than 73 initiatives implemented to date (World Bank Group, 2024). In Latin America, a second wave of compliance markets is emerging, with countries such as Mexico, Chile, and Colombia advancing ETSs alongside existing carbon taxes. These instruments are expected to broaden sectoral coverage, reinforce private sector investment, and accelerate technological transformation. Yet their effectiveness depends on robust measurement, reporting, and verification (MRV) systems, strong legal frameworks, and institutional capacity. Policy coherence is equally critical: inconsistent measures, such as maintaining fossil fuel subsidies while introducing ETSs, risk undermining effectiveness and investor confidence (IPCC, 2023).

Designing ETSs also requires careful consideration of cost-containment mechanisms. Banking and borrowing provisions, price floors, and ceilings are essential to stabilize markets, reduce volatility, and maintain political support. Without such mechanisms, allowance price fluctuations can discourage private investment and weaken public trust in carbon markets (ICAP, 2025). For Latin America, where economic volatility and political sensitivity around energy prices are pronounced, these design features are particularly important. Integrating domestic ETSs with international cooperative approaches under Article 6 offers new opportunities to access finance and technology, but success will depend on institutional readiness, governance, and the credibility of carbon asset management systems.

This paper explores the evolution of cooperative approaches under Article 6, the transition from CDM to PACM, and the requirements for building robust ETSs in Latin America. It highlights the importance of cost-containment mechanisms, policy coherence, and international linkage, arguing that the region’s ability to align domestic and international instruments will determine whether carbon markets contribute meaningfully to systemic transformation and sustainable development.

2. Cooperative Approaches under Article 6

Article 6 introduces cooperative mechanisms that allow Parties to engage in international carbon trading. Article 6.2 enables bilateral trading of Internationally Transferred Mitigation Outcomes (ITMOs), supported by corresponding adjustments to national inventories. Article 6.4 establishes the Paris Agreement Crediting Mechanism (PACM), overseen by a Supervisory Body, designed to replace the Clean Development Mechanism (CDM) with stricter rules on additionality, baselines, and monitoring (UNFCCC, 2025). Studies suggest that cooperative approaches could save Parties more than USD 300 billion annually by 2030 through efficiency gains (University of Maryland & Pacific Northwest National Laboratory, 2022). However, the IPCC (2023) cautions that while cooperative approaches can reduce costs and mobilize private capital, they are not a substitute for scaled-up public finance. Carbon markets must safeguard environmental integrity, ensure equitable distribution of benefits, and avoid undermining ambition.

3. Transition from CDM to Article 6.4

The CDM provided valuable experience in project-based carbon finance but faced criticisms of weak additionality, over-crediting, and uneven distribution of projects, with most activity concentrated in China, India, and Brazil, while least developed countries received relatively little investment (Mustapha, 2022). Recognizing both the value and shortcomings of the CDM, Parties to the Paris Agreement agreed to establish a new mechanism under Article 6.4. Successive COP decisions have gradually operationalized the PACM: COP26 in Glasgow (2021) adopted - the Article 6 Rulebook, COP27 clarified procedures for the Supervisory Body, COP28 advanced methodological guidance, COP29 strengthened standards for baselines and leakage, and COP30 in Belém (2025) fully operationalized the mechanism (UNFCCC, 2021; UNFCCC, 2025). Article 6.4 seeks to address CDM shortcomings through standardized baselines, rigorous additionality tests, and enhanced monitoring requirements. For developing countries, this transition offers opportunities to access finance and support Sustainable Development Goals, but also presents challenges related to governance, institutional capacity, and equity.

4. Carbon Pricing in Latin America

Carbon pricing mechanisms have emerged as one of the most widely adopted market-based instruments for reducing greenhouse gas emissions. With more than 73 global initiatives implemented, they provide evidence of effectiveness in internalizing the external costs of emissions while mitigating economic disruptions (World Bank Group, 2024). In Latin America, the first wave of carbon pricing relied primarily on carbon taxes, often introduced alongside fossil fuel subsidies. This policy mix created contradictions: subsidies delayed investment in clean energy sources, while taxes sought to incentivize efficiency. The IPCC (2023) estimates that subsidy reform could reduce CO₂ emissions by 1–4% and total GHGs by up to 10% by 2030. A second wave of compliance markets is now emerging, with several countries preparing to implement ETSs to complement existing carbon taxes. These ETSs are expected to broaden sectoral coverage, reinforce private sector investment, and accelerate technological transformation.

5. Building an Effective Emissions Trading System (ETS)

Designing and implementing an ETS requires careful attention to institutional, technical, and political dimensions. At its core, an ETS is a cap-and-trade system: regulators set a cap on total emissions, allocate allowances to covered entities, and permit trading of those allowances to achieve reductions cost-effectively. To establish such a system, governments must first ensure **robust emissions data**. Accurate measurement, reporting, and verification (MRV) frameworks are essential to define the scope of coverage, identify sectors and entities subject to regulation, and set credible baselines. Without reliable data, caps risk being either too lenient or too stringent, undermining both environmental integrity and economic feasibility (IETA, 2025).

Second, **legal and institutional readiness** is critical. ETSs must be grounded in national legislation that clearly defines compliance obligations, enforcement mechanisms, and penalties for non-compliance. Institutional capacity is needed to operate registries, oversee allowance allocation, and monitor trading activity. Transparent governance builds trust among market participants and ensures accountability. Third, **system design choices**—including cap

trajectory, allocation methods (free allocation vs. auctioning), and the role of offsets—determine both environmental outcomes and economic impacts. Cost-containment provisions such as banking and borrowing, price floors and ceilings, and allowance reserves can help stabilize markets and maintain political support in the face of volatile prices (ICAP, 2025).

a. Building an Effective Emissions Trading System (ETS)

Core Requirements

Creating an ETS requires a combination of technical, institutional, and political readiness. The essential building blocks include:

- **Robust MRV (Measurement, Reporting, and Verification) systems:** Accurate emissions data is the foundation of an ETS. Countries must establish reliable inventories and sectoral baselines to define coverage and set credible caps (World Bank Group, 2024).
- **Legal frameworks:** National legislation must clearly define compliance obligations, penalties, and enforcement mechanisms. Without legal certainty, investor confidence and compliance will be weak (IETA, 2025).
- **Institutional capacity:** Governments need registries to track allowances, oversight bodies to monitor trading, and enforcement agencies to ensure compliance. Transparency and governance are critical for credibility (ICAP, 2025).
- **System design choices:** Cap trajectory, allocation methods (auctioning vs. free allocation), and offset rules determine both environmental outcomes and economic impacts. Cost-containment provisions such as banking, borrowing, and price floors/ceilings help stabilize markets (ICAP, 2025).
- **Policy coherence:** ETSs must align with carbon taxes, subsidy reforms, and NDC targets. Inconsistent policies—such as maintaining fossil fuel subsidies while introducing ETSs—undermine effectiveness (IPCC, 2023).
- **International linkage:** Readiness to connect with Article 6 cooperative approaches allows countries to access finance and technology through ITMOs and high-quality credits (UNFCCC, 2025).

Table 1. Key System Design Choices for ETSs

Design Element	Options / Mechanisms	Implications for Environmental Outcomes	Implications for Economic Impacts
Cap trajectory	Declining cap vs. static cap	Determines long-term emission reductions	Influences allowance scarcity and price stability
Allowance allocation	Free allocation vs. auctioning	Free allocation may weaken incentives; auctioning ensures polluter-pays principle	Auctioning raises revenue for climate programs; free allocation reduces compliance costs
Offset rules	Use of domestic offsets; international offsets	Can expand mitigation scope but risks integrity if quality is weak	Provides cost-effective compliance flexibility
Cost-containment	Banking, borrowing, price floors/ceilings	Banking/borrowing promote long-term integrity; price floors prevent collapse	Stabilizes allowance prices; reduces volatility and political risk
Compliance flexibility	Multi-year compliance periods; reserve mechanisms	Supports environmental integrity if well-designed	Reduces compliance burden and increases predictability

Source: ICAP (2025); IETA (2025).

Table 2. Policy Coherence Requirements for ETSs

Policy Area	Coherence Requirement	Risks of Incoherence	Example in Latin America
Carbon taxes	ETS should complement existing carbon taxes	Overlap may create double regulation or loopholes	Chile exploring ETS alongside carbon tax
Fossil fuel subsidies	Subsidies should be phased out to align with ETS	Subsidies undermine ETS price signals	Several countries maintain subsidies while taxing carbon
NDC targets	ETS cap must align with NDC trajectory	Misalignment risks overselling ITMOs and missing targets	Mexico's ETS linked to NDC commitments
Other climate policies	ETS should integrate with renewable energy and efficiency policies	Fragmentation reduces effectiveness	Colombia considering ETS integration with Article 6 cooperative approaches

Source: IPCC (2023); World Bank Group (2024).

b. Cost-Containment Mechanisms in Emissions Trading Systems

A critical -design challenge- in ETSs is managing allowance price volatility. Excessive price spikes can undermine political support and impose sudden costs on regulated entities, while price collapses can erode incentives for low-carbon investment. To address this, ETSs incorporate cost-containment mechanisms that stabilize markets and provide predictability for both governments and businesses.

Banking and Borrowing

- **Banking** allows regulated entities to save unused allowances for future compliance periods. This promotes cost-effective abatement by enabling firms to reduce emissions early when it is cheaper and use banked allowances later when reductions may be more expensive. Banking also creates a long-term incentive for investment in low-carbon technologies, as firms can benefit from future scarcity.
- **Borrowing** permits entities to use allowances from future compliance periods in the present. While this provides short-term flexibility, it can create risks if future caps are tightened and allowances become scarce. To mitigate these risks, borrowing is often limited to small volumes or short time horizons (World Resources Institute, 2009).

Price Floors and Ceilings

- A **price floor** sets a minimum allowance price, preventing market collapse and ensuring a stable incentive for emissions reductions. For example, the UK ETS introduced a floor price to guarantee continued investment in renewables even when allowance prices fell (World Bank Group, 2023).
- A **price ceiling** caps the maximum price of allowances, protecting firms from excessive compliance costs and political backlash. Ceilings are often implemented through allowance reserves or government intervention when prices exceed a threshold. However, if set too low, ceilings risk undermining environmental ambition by flooding the market with allowances (Sustainability Directory, 2025).
- Hybrid approaches combine floors and ceilings to create a “price corridor,” balancing environmental integrity with economic stability.

6. Challenges in Latin America

Latin America faces a distinct set of challenges in the development and implementation of emissions trading systems (ETSs). One of the most persistent obstacles is the prevalence of fossil fuel subsidies, which send contradictory signals to investors and undermine the effectiveness of carbon pricing instruments. Subsidies reduce the incentive to shift toward cleaner energy sources, while ETSs and carbon taxes aim to increase the cost of carbon-intensive fuels. This

policy incoherence creates inefficiencies and delays investment in renewable energy and energy efficiency (IPCC, 2023).

Political sensitivity around energy prices further complicates ETS adoption. Governments in the region often face strong public resistance to measures perceived as increasing fuel or electricity costs, which can delay or dilute reforms. Limited institutional capacity also poses a challenge, particularly in establishing robust measurement, reporting, and verification (MRV) systems. Without reliable emissions data, it is difficult to set credible caps, allocate allowances fairly, or enforce compliance. Fragmented policy landscapes—where carbon taxes, subsidies, and nascent ETSs coexist—risk creating overlapping regulations and mixed signals for both domestic and international investors.

Cost-containment mechanisms are particularly important in this context, given the region’s economic volatility and political sensitivity. Mexico’s ETS pilot phase incorporated banking provisions to provide flexibility for regulated entities, allowing them to save allowances for future compliance periods. This design feature helps stabilize markets and provides predictability for businesses. In Chile and Colombia, ongoing discussions emphasize the need for price stabilization measures, such as price floors and ceilings, to maintain investor confidence and prevent allowance price volatility from discouraging private investment (ICAP, 2025; Echevarria, 2023). Without such mechanisms, ETSs risk losing political support and failing to attract the private capital needed to drive technological transformation.

Latin America’s challenges are not only technical but also political and institutional. Addressing fossil fuel subsidies, strengthening MRV systems, and embedding cost-containment mechanisms into ETS design are essential steps to ensure that carbon markets deliver both environmental integrity and economic stability.

Examples

- **Mexico’s ETS:** Mexico launched its Emissions Trading System in 2020, becoming the first national cap-and-trade program in Latin America. It applies to direct CO₂ emissions from large, fixed sources in the energy and industry sectors that emit at least 100,000 tonnes annually, including facilities such as power plants, oil and gas operations, cement, steel, and chemical industries. This threshold covers about 40% of national greenhouse gas emissions and nearly 90% of those reported in the National Emissions Registry (RENE). The pilot phase (2020–2022) tested allowance allocation, compliance monitoring, and stakeholder engagement, followed by a transitional phase in 2022, and is now moving toward full operational implementation with rules being finalized in 2024–2025 (ICAP, 2025).
- **Chile:** Chile has introduced a carbon tax as a cornerstone of its climate policy and is actively exploring the design of an Emissions Trading System to complement it. Current discussions focus on expanding sectoral coverage beyond power generation and large industrial emitters, while also aligning the system with Article 6 cooperative approaches under the Paris Agreement. This dual strategy aims to strengthen domestic mitigation efforts while positioning Chile to participate in international carbon markets and enhance the flexibility of its climate commitments (World Bank Group, 2024).
- **Colombia:** Colombia has advanced policy discussions on the potential integration of an ETS with international cooperative approaches, reflecting its ambition to become a regional leader in carbon market development. Building on its existing carbon tax and offset mechanisms, Colombia is considering how a domestic trading system could be linked with Article 6 mechanisms, thereby enabling cross-border cooperation and market connectivity. These efforts highlight Colombia’s role in shaping regional climate governance and its interest in leveraging international partnerships to scale mitigation outcomes (IETA, 2025).

These examples highlight that Latin America is entering a second wave of compliance markets, where ETSs will reinforce existing carbon taxes and broaden sectoral coverage to accelerate technological transformation.

7. Integration of Domestic ETSs with International Cooperative Approaches

The convergence of domestic ETSs with international cooperative approaches under Article 6 represents a critical opportunity for Latin American countries. Domestic ETSs, when linked to international crediting schemes, can mobilize private investment and accelerate technological transformation. Cooperative approaches such as Article 6.2 and Article 6.4 provide pathways for countries to access finance and technology through ITMOs and high-quality credits. However, success depends on institutional readiness, governance capacity, and credibility. Host countries must establish transparent registries, safeguard against overselling mitigation outcomes, and ensure corresponding adjustments are properly applied. Developing positive and negative lists of eligible activities can help governments prioritize projects that require international cooperation while protecting domestic climate goals. Ultimately, strengthening carbon asset management in the region requires not only technical innovation but also coherent alignment of domestic and international instruments to ensure that climate finance contributes meaningfully to systemic transformation.

8. Conclusion

Latin America's emerging carbon markets illustrate both the promise and complexity of market-based climate policies. The region is entering a second wave of compliance markets, with countries such as Mexico, Chile, and Colombia advancing emissions trading systems (ETSs) alongside existing carbon taxes. This dual approach reflects binding national commitments under the Paris Agreement and the need to broaden sectoral coverage to accelerate technological transformation. Yet the coexistence of ETSs, carbon taxes, and fossil fuel subsidies highlights the challenges of policy coherence. Without subsidy reform, carbon pricing instruments risk sending contradictory signals to investors and delaying the transition to clean energy.

The integration of domestic ETSs with cooperative approaches under Article 6 offers new opportunities to access finance and technology, particularly through internationally transferred mitigation outcomes (ITMOs) and high-quality credits under the Paris Agreement Crediting Mechanism (PACM). However, success will depend on institutional readiness, robust governance, and the credibility of carbon asset management systems. Countries must establish transparent registries, safeguard against overselling mitigation outcomes, and ensure corresponding adjustments are properly applied. Cost-containment mechanisms, including banking, borrowing, and price floors/ceilings—are essential to stabilize markets, reduce volatility, and maintain political support.

Ultimately, Latin America's ability to align domestic carbon pricing instruments with international cooperative approaches will determine whether carbon markets contribute meaningfully to systemic transformation. If achieved, this dual strategy could position the region as a leader in carbon markets, leveraging both domestic and international instruments to drive sustainable development. The challenge is not only technical but also political and institutional: building trust, ensuring equity, and safeguarding environmental integrity. By addressing these dimensions, Latin America can transform carbon asset management into a cornerstone of its low-carbon future.

9. References

- Broekhoff, D., & Spalding-Fecher, R. (2021). Assessing crediting scheme standards and practices for ensuring unit quality under the Paris Agreement. *Carbon Management*, 12(6), 635–648. <https://doi.org/10.1080/17583004.2021.1994016> ([doi.org in Bing](#))
- Climate Policy Initiative. (2023). *Global Landscape of Climate Finance 2023*.
- Echevarria, J. (2023, March 29). LatAm making unequal ETS progress. *Latest Market News*.
- Intergovernmental Panel on Climate Change (IPCC). (2023). *AR6 Synthesis Report*.
- International Carbon Action Partnership (ICAP). (2025). *Mexican Emissions Trading System Factsheet*. <https://icapcarbonaction.com>
- International Emissions Trading Association (IETA). (2025). *Strengthening Carbon Markets in Latin America and the Caribbean: Recommendations for Robust Carbon Pricing Instruments*. <https://ieta.org>
- Mustapha, S. (2022). *Revisiting the Clean Development Mechanism: Equity and Effectiveness*.

- Rudman, R. (2025, March 20). Mexico's ETS: A new compliance market in Latin America. *AFS Commodities*.
- Schneider, L., & La Hoz Theuer, S. (2019). Environmental integrity of international carbon market mechanisms under the Paris Agreement. *Climate Policy*, 19(3), 386–400.
<https://doi.org/10.1080/14693062.2018.1521332> ([doi.org in Bing](#))
- Sustainability Directory. (2025). *What Is the Concept of Price Floor and Price Ceiling in an ETS?*
- United Nations Framework Convention on Climate Change (UNFCCC). (2021). *COP26 Decisions on Article 6*.
- United Nations Framework Convention on Climate Change (UNFCCC). (2025). *COP30 Decisions on Article 6.4*.
- University of Maryland & Pacific Northwest National Laboratory. (2022). *The Potential Cost Savings of Cooperative Approaches under Article 6*.
- World Bank Group. (2023). *Putting a Price on Carbon with an ETS*.
- World Bank Group. (2024). *State and Trends of Carbon Pricing 2024*.
- World Resources Institute. (2009). *Bottom Line on Cost Containment in Cap-and-Trade Programs*.