

CARBON CREDIT MECHANISMS: THE IMPORTANCE OF TRANSPARENCY

Photograph: Joshua Woroniecki, Unsplash

These two papers examine whether voluntary carbon credit mechanisms can remain a credible tool for climate mitigation given widespread concerns about their environmental and social effectiveness.



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Summary of Delacote et al.
(2024), Nature Sustainability

Strong Transparency Required for Carbon Credit Mechanisms: Summary

Research and policy question

This paper examines whether voluntary carbon credit mechanisms can remain a credible tool for climate mitigation given widespread concerns about their environmental and social effectiveness. The central policy question is whether the shortcomings of carbon offsetting can be addressed through incremental methodological improvements, or whether a fundamental shift toward much stronger transparency across the entire value chain is required. The authors focus on transparency as a prerequisite for restoring trust in carbon credits and for enabling meaningful regulation, evaluation and accountability.

Methodological approach

The paper adopts a synthesis and diagnostic approach, drawing on a large empirical literature evaluating the impacts of carbon offset projects across sectors such as avoided deforestation (REDD+), improved forest management and clean cooking. Rather than presenting new quantitative estimates, the authors review evidence on additionality, leakage, permanence and co-benefits, and assess how limitations in data availability undermine credible impact evaluation. They systematically examine existing transparency practices across offset registries, private standards and emerging regulatory initiatives, highlighting where information disclosure remains incomplete or inconsistent.

Findings

The review reveals consistent evidence of overcrediting and weak additionality across many offset project types, particularly in forest-based credits. Leakage and non-permanence further reduce the net climate impact of credited activities. These technical shortcomings are exacerbated by severe transparency gaps. Key information on project locations, baselines, reference areas, monitoring results, credit transactions, prices and the distribution of revenues is often unavailable to researchers, regulators and civil society. This opacity prevents independent verification of claims, enables greenwashing and risks transforming voluntary carbon markets into a 'market for lemons', where low-quality credits drive out high-quality ones.

Policy implications

The authors argue that strong, mandatory transparency is a necessary condition for any credible carbon credit mechanism. Voluntary certification and rating initiatives alone are unlikely to deliver sufficient disclosure due to incentives to minimize stringency and protect commercial interests. Regulatory intervention is therefore required to mandate disclosure of project-level data, transaction information, prices and value sharing along the supply chain, including benefits accruing to local communities. Improved transparency would support fraud prevention, credible impact evaluation, better market design and fairer distributional outcomes. Without decisive action

on transparency, the paper concludes that carbon offset markets are unlikely to regain credibility or contribute meaningfully to climate mitigation.

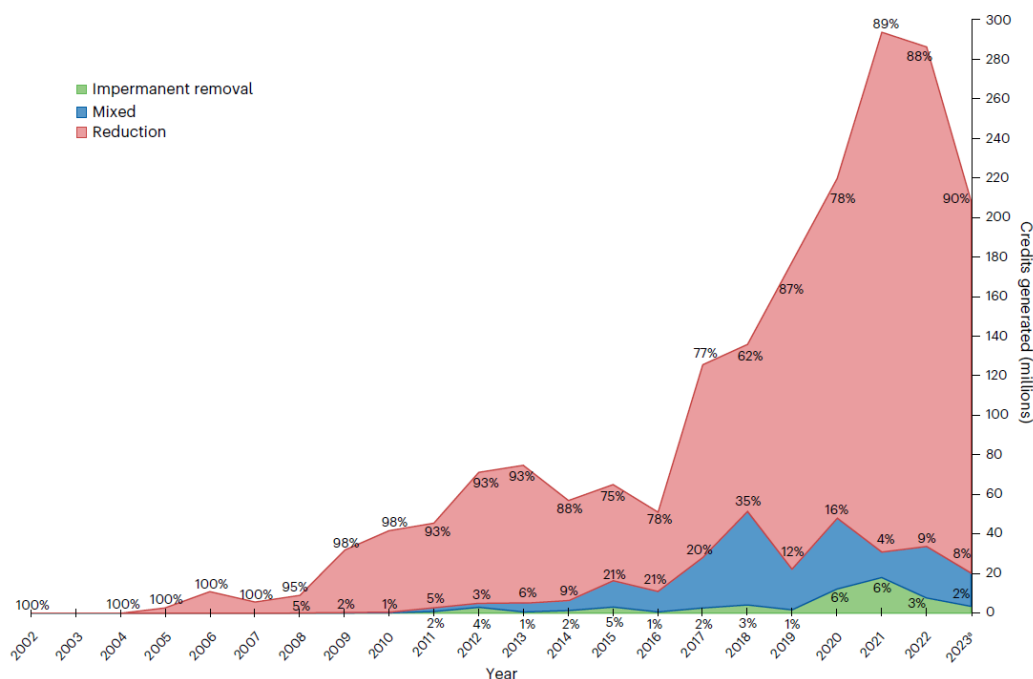


Fig. 1 | Issuances by reduction/removal over time. Number of credits generated over time by the VCM categorized by type: reduced emissions, impermanent removals and mixed. Figure reproduced under a Creative Commons licence CC BY 4.0.

Document	Reference	Region	Regulation level	Contents related to transparency
Mission Zero: Independent Review of Net Zero	58	United Kingdom	Direct	Recommends establishment of a carbon credit and offset regulator by 2024 (Pillar 6.5)
Voluntary Carbon Markets and Offsetting	59	United Kingdom	Direct	Necessity of governmental intervention to reinforce guidance and regulate the VCM
The Carbon Removal Certification Framework	60	European Union	Direct	Minimum quality standards for carbon removals
Decree-Law 4/2024	61	Portugal	Direct	Establishment of an electronic national platform for registering carbon projects, market agents and transactions
Discussion Paper on Voluntary Carbon Markets	62	International	Trading	Publicly available data to promote transparency and price discovery in voluntary carbon markets

Table 1. Examples of regulatory impulses for transparency on the VCM

Links and materials

Delacote, P. et al. (2024). Strong transparency required for carbon credit mechanisms. Nature Sustainability. <https://doi.org/10.1038/s41893-024-01310-0>

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