Paying for Verified Carbon Reductions

Stablecoin settlement with correction and duplicate-claim controls

Jace Shim · November 2026 · https://doi.org/10.5281/zenodo.24581582

Abstract

A funder can pay for a measured emissions reduction and later discover that the verified quantity was overstated. This paper develops the carbon application of the Exogenous Value Monetization Model in Chapter 11 of Target Money. It distinguishes the evidence of mitigation, the rights represented by a carbon credit, and the payment used to settle an obligation. It proposes linking payment to a versioned record, reserving a share for corrections where warranted, and defining in advance how to handle duplicate claims. A worked example shows how a holdback absorbs part of a downward revision. A prospective study compares payment policies and settlement assets separately.

1. The transfer has cleared. The reduction has changed.

Imagine a small industrial plant that earns a performance payment for reducing methane emissions. The funder pays after a verifier signs off on 100 tonnes of carbon dioxide equivalent. A subsequent calibration check lowers the estimate to 85 tonnes. The transfer receipt still records the original amount. The relationship between the transfer and the revised environmental result depends on the contract and the correction process.

The question is whether faster settlement can coexist with credible correction. The Integrity Council for the Voluntary Carbon Market identifies tracking, independent verification and no double counting among its Core Carbon Principles. Its assessment framework describes registry procedures for erroneous issuance and retirement records. This paper takes those functions as institutional inputs and asks how to design payment around them.

2. What is verified carbon settlement?

Verified carbon settlement is the release of an agreed payment against a specified mitigation record or registry event, with a procedure for later correction. Monitoring evidence supports a quantity estimate under a stated methodology. A registry, where applicable, records issued units and their status. A payment record records the amount paid. Each answers a different question.

An outcome-finance contract can pay for independently verified mitigation without acquiring a credit or claiming an offset. A credit purchase requires delivery of the agreed asset as defined by the relevant program and contract. Where the agreement includes retirement, retain the retirement reference and identify the party on whose behalf it was recorded. If funding the same project from multiple sources is permitted, the agreement should specify which amounts and claims may overlap. A duplicate payment is an accounting problem, while double issuance, double use and double claiming require different checks at the relevant program or reporting level.

Record the project identifier, monitoring period, methodology, evidence version, and applicable registry and unit identifiers. Give each payable installment an identifier linked to the obligation. A payment operator can flag a repeated request for the same installment before release. Across projects or registries, new identifiers can refer to overlapping activity. Detecting that overlap requires comparing the underlying projects, periods and claim rights. A ledger can preserve the decision history and still depend on the quality and coverage of the records supplied to it.

3. A payment rule for revisions

Let q be the eligible quantity initially verified in tonnes of carbon dioxide equivalent, p the contracted amount per tonne, and h the fraction withheld until a defined review point. The initial payment is $p \times q \times (1 - h)$. After the review, the payer recalculates total entitlement using the eligible corrected quantity. If the corrected entitlement exceeds the amount already paid, the payer releases the difference. Where the amount already paid exceeds entitlement, the excess becomes a recovery item under the agreement. The agreement needs to specify who can authorize revisions and what happens to corrections identified after the review point.

In a hypothetical results-based contract, 100 tonnes are initially verified at USD 20 per tonne. A 10% holdback leaves USD 1,800 paid and USD 200 pending. If the accepted quantity falls to 85 tonnes, entitlement falls to USD 1,700. The pending amount is cancelled, and USD 100 remains to recover. Full upfront settlement would leave USD 300 to recover. A larger holdback would give the funder more protection while reducing the amount the project operator can use immediately. The example assumes an enforceable correction clause and illustrates exposure before recovery expenses.

The contract can also distinguish clerical revisions, changes in monitoring data, and later changes to credit status. A contested or stale record can suspend the affected component pending independent review, while approved components remain payable where the contract permits it. Corrections should be linked to the original record so that reviewers can reconstruct what each party knew when money moved.

4. When does stablecoin settlement help?

A fiat-referenced stablecoin can carry an approved payout where both parties can access the relevant payment and conversion services. Measure speed through the time at which funds become usable for the project, including conversion and withdrawal. Compare exchange spreads, custody, and reconciliation with those of the local alternative. The same contract logic can operate on a conventional payment rail. A fast payout does not change the environmental methodology or recover an overpayment by itself.

5. Testing the design

Use project-period records from comparable mitigation contracts. Compare immediate release with a defined holdback under the same payment rail and verification method. Track time to usable proceeds, capital held back, downward revisions, unrecovered excess and dispute costs. Test the proposition that holdbacks reduce unrecovered excess most where downward revisions are common and operators can bear the liquidity delay. Report effects separately for smaller projects.

Use the same independent review process to measure duplicate flags and false positives across designs. Distinguish a repeated invoice from overlapping rights across registries. A separate comparison can hold the contract and verification process fixed while varying

the payment rail. Follow revisions after initial payout, report the observation cutoff and identify cases still open at that date. The framework supplies hypotheses and no empirical estimates.

6. Relationship to the earlier papers

Programmable Money in Three Layers distinguishes value, purpose and evidence. This paper applies those roles to carbon outcomes and adds independently governed credit status, overlapping claims and post-payment corrections. When Do Programmable Vouchers Improve Public Spending? evaluates restrictions at checkout. The issue here is that a result can satisfy the initial payment rule and later be revised. The Tax of Distrust supplies a broader accounting framework whose cost categories can be used to compare the controls proposed here.

Keywords

Verified carbon reductions, stablecoin settlement, results-based climate finance, carbon credit registry, double counting, payment holdback, emissions verification.

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