

MSE Market Commentary

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Tokenized Settlement Infrastructure

Why Physical Commodity Trade Needs a Different Architecture

The institutional embrace of real-world asset tokenization accelerated decisively in 2025. BlackRock's BUIDL fund, launched on Ethereum in March 2024, approached \$3 billion in assets under management by early 2026. JPMorgan's Kinexys platform had processed over \$2 trillion in cumulative blockchain transaction volume since inception — including tokenized collateral, intraday repo, and cross-border payment operations — averaging over \$3 billion daily by late 2025. Franklin Templeton, Fidelity, Apollo, and Siemens all deployed institutional tokenization initiatives and live digital asset programmes during the year. Total on-chain tokenized real-world assets — excluding stablecoins — grew by approximately 266% over 2025, closing the year at roughly \$18.6 billion according to RWA.xyz data.

The EU's Markets in Crypto-Assets Regulation entered full application on 30 December 2024, providing a harmonised compliance framework for digital asset service providers across the bloc. McKinsey projects the tokenized asset market reaching between \$2 and \$4 trillion by 2030. The institutional narrative is reinforced by new entrants weekly.

The question worth examining is whether this momentum is being directed at the right problem.

What Is Actually Being Tokenized

The current RWA wave is overwhelmingly concentrated in financial instruments: US Treasuries, private credit, tokenized fund shares, and money-market products. Tokenized Treasury-linked products exceeded several billion dollars in on-chain value by late 2025. These are assets

whose primary challenges are access, liquidity, and administrative friction — minimum investment thresholds, T+2 settlement delays, cross-border distribution barriers. Tokenization addresses all three: fractional ownership, near-instantaneous on-chain settlement, and 24/7 global distribution without correspondent intermediaries.

These are genuine improvements. But they are improvements to a system that, for large institutional participants, already functions with a high degree of legal certainty, regulatory clarity, and counterparty reliability. The US Treasury market is among the deepest and most liquid in the world. Private credit is illiquid by structure but legally well-defined. The problems being solved are real but incremental.

Physical commodity trade presents a structurally different set of problems — and a structurally different need for infrastructure.

The Problem That Is Not Being Solved

Global merchandise trade reached \$33 trillion in 2024 according to UNCTAD data. A substantial share is physical commodities — metals, energy, agricultural products — moving through cross-border supply chains that depend on documentary credit instruments, correspondent banking networks, and bilateral contractual frameworks developed over decades.

The Asian Development Bank estimated the global trade finance gap at \$2.5 trillion — the volume of trade that could not be financed due to bank risk appetite constraints, documentation requirements, and counterparty assessment limitations. That gap falls disproportionately on producers in emerging markets: precisely the segment most exposed to commodity price volatility, FX instability, and the settlement delays inherent in correspondent banking chains.

The structural problems in physical commodity settlement are distinct from those in financial markets. They include: counterparty risk between parties who may not share a legal jurisdiction or a common counterparty registry; settlement timing mismatches between physical delivery and payment that create working capital gaps; opacity of chain of custody that prevents financial institutions from extending credit without costly independent verification; and the growing requirement from regulators

and end-buyers to provide auditable ESG and origin data embedded in the transaction record rather than appended after the fact.

None of these problems are solved by tokenizing a US Treasury. They require infrastructure built specifically for the transaction characteristics of physical trade: multi-party, multi-jurisdictional, with physical delivery as the terminal event rather than a secondary option.

What the Architecture Requires

Effective tokenized settlement infrastructure for physical commodity trade requires four properties that most current RWA platforms do not possess simultaneously.

First, **fiat settlement integration without crypto intermediation**. Industrial producers and buyers operate in fiat currencies under banking relationships carrying AML, KYC, and correspondent obligations. An infrastructure requiring cryptocurrency exposure at any point in the transaction chain will not achieve B2B adoption at scale. The settlement instrument must be anchored to verified fiat flows on both issuance and redemption.

Second, **physical delivery as a legally enforceable outcome**. The token must represent a contractually binding claim on a physical commodity — not a synthetic exposure or a secondary-market instrument. This requires offtake agreements with producers legally mirrored in the digital layer, and a clearing function that verifies delivery conditions as a condition of settlement finality.

Third, **chain-of-custody certification as a native feature**. ESG traceability is no longer a reporting add-on. Under the EU Corporate Sustainability Reporting Directive, the EU Taxonomy, CBAM, and supply chain due diligence frameworks now active across major jurisdictions, buyers require verified origin data that travels with the transaction record. Infrastructure that cannot generate audit-ready chain-of-custody certificates alongside settlement records will be displaced by infrastructure that can.

Fourth, **regulatory compatibility across jurisdictions of origin and destination**. Switzerland's DLT Act, in force since August 2021, established a clear legal category for ledger-based securities and a

licensing framework for DLT trading facilities — creating a structurally appropriate domicile for commodity settlement infrastructure. MiCA’s full application from December 2024 adds a harmonised EU compliance pathway. But most commodity flows originate outside these jurisdictions, requiring legal structures that function under the laws of Kazakhstan, Australia, the UAE, India, or Latin American producer countries — not merely under Swiss or EU frameworks.

The Market Position This Creates

The convergence of regulatory pressure — ESG disclosure requirements, carbon border adjustments, supply chain due diligence legislation — with the structural inadequacy of existing settlement infrastructure creates a defined market need. Industrial buyers need verifiable origin. Producers need access to working capital that does not depend on correspondent banking relationships across three jurisdictions. Financial institutions need instruments carrying the legal certainty and ESG metadata required under their own compliance frameworks.

The infrastructure that addresses this need does not look like a tokenized Treasury fund. It looks like a settlement layer bridging the physical supply chain — producer to logistics to buyer — with programmable payment logic and embedded compliance documentation, structured to function in fiat, legally enforceable in multiple jurisdictions, and designed from the outset for B2B counterparties rather than retail or DeFi participants.

This architecture is not yet widely deployed. It is, however, the direction in which regulatory pressure, ESG requirements, and the economics of commodity supply chains are converging.

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