

Carbon Stablecoin Framework Patented by Singapore's Alpha Ladder Group to Power Sustainable Cross-Border Payments and FX

The patented Carbon Stablecoin Framework powers a new era of scalable, regulated and sustainable cross-border payments and FX.

SINGAPORE, SINGAPORE, July 30, 2025 /EINPresswire.com/ -- [Alpha Ladder](#) Group Pte. Ltd. (ALG), Singapore's digital green group, is proud to announce that its AI ESG subsidiary, [MVGX](#) Tech Pte. Ltd. (MVGX), has been granted patent protection in Singapore for its CNT[®] Carbon Stablecoin framework, a blockchain-native system that converts verified decarbonisation activities into programmable carbon-backed stablecoins.

This patented system forms the backbone of Alpha Ladder Group's global digital green infrastructure. It authenticates real-time decarbonisation data, converts it into carbon credit assets, and tokenises them into carbon stablecoins with audit-grade precision. In doing so, it elevates carbon from a niche asset class into a programmable financial instrument for cross-border payments & FX trading, laying the foundation for a sustainable and inclusive financial system that rewards verified net-zero efforts.



Alpha Ladder Group

From Real-World Carbon Data to Programmable Carbon Stablecoins

The CNT[®] patent (SG 11202307853U), titled "Method and System for Trading Assets and Their Carbon Footprint Status", initially filed in July 2021, was approved under the international Patent Cooperation Treaty before being granted in Singapore. Powered by IoT sensors and AI technologies, the CNT[®] patent framework represents a next-generation system of

decarbonisation-anchored smart contracts that dynamically, uniquely, and transparently reflects the decarbonisation process of real-world assets—ranging from energy efficiency for buildings, renewable energy infrastructure for power grid, reforestation projects, and direct air capture for carbon sequestration.

The framework also addresses regulatory and market complexities arising from Nationally Determined Contributions (NDCs) and Article 6 of the Paris Agreement. The CNT® patent leverages a structure similar to American Depositary Receipts (ADRs), enabling the separation of national identity from environmental and financial characteristics of a verified carbon credit, a capability empowered and enhanced by robust distributed ledger technologies.

Built on NFDt®: Digital Twins for Real-World Asset Tokenisation

The CNT® patent is built on top of the Non-Fungible Digital Twin (NFDt®) technology, a foundational framework for Real-World Assets (RWA) tokenisation with a blockchain-native architecture, designed to represent real-world assets digitally with evolving performance and operational characteristics. The NFDt® technology was also approved under the international Patent Cooperation Treaty, with patent recently awarded to Alpha Ladder Finance Pte. Ltd., another subsidiary of Alpha Ladder Group.

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The CNT® Carbon Stablecoin Framework is the "antimatter" of Bitcoin — scarce and programmable, but with a climate-positive impact. This patent marks a milestone in sustainable finance innovation."

Dr Bo Bai, Chairman and Co-Founder of Alpha Ladder Group

From Decarbonisation to Carbon Stablecoins: Verified & Tokenised

The first proof-of-concept (POC) for CNT® carbon stablecoin was launched in September 2021 and issued as a Collective Investment Scheme (CIS) unit token under Singapore's Securities and Futures Act (SFA).

This early carbon stablecoin was backed by Chinese Certified Emission Reduction (CCER) carbon credits, generated from a wind power project in Zhangjiakou City, co-host of the 2022 Winter Olympics. The project was verified and registered with China's national carbon credits registry.

To ensure transparency and accountability, NFDt technology was utilised to create a unique,



CNT® Carbon Stablecoin Framework: A Patented Innovation by MVGX, a Subsidiary of Alpha Ladder Group

traceable, and tamper-proof digital representation of each carbon credit.

Through the CNT® tech platform and the Capital Markets Services Licences (CMSL) of Alpha Ladder Finance (formerly Cyberdyne Tech Exchange), the carbon stablecoins were issued and test-traded with another financial institution. The goal: to explore digitalised voluntary emission reduction (VER) trading without interfering with Nationally Determined Contributions (NDCs).

Investors can either trade CNT® carbon stablecoins or deactivate them permanently to achieve carbon neutrality, generating a blockchain-verified Carbon Neutrality Certificate in the process.

Unlike static and legacy carbon registry models, this patented system anchors each carbon reduction activity or asset to a live and unique digital twin that evolves over time. Emission reductions are kept in a permanent record, verified against national registries, and linked to smart contracts that manage the creation and deactivation of carbon stablecoins.

Dual Accounting for a Decarbonised Portfolio Strategy

The CNT® patent's claims also govern the activities by organisations to establish platforms to trade financial instruments with a carbon footprint tag. Considering carbon balance sheets in a similar manner as financial balance sheets, such a dual monetary-and-carbon accounting system for financial instruments allows investors to optimize both value and carbon footprint of their investment portfolios, creating potential Pareto optimisation for asset allocation, with both financial and environmental impacts in consideration.

At its core, this CNT® patent innovation enables programmable decarbonisation. Whether it is for an office building, power plant, or major public event, each asset is given a birth certificate on-chain, with follow-on decarbonisation data linked through a time series of smart contracts. The system lets exchanges, companies, investors, and external auditors check decarbonisation performance in real-time and monitor total impact with digital rigour.



MVGX



Alpha Ladder Finance



MetaComp

Carbon Stablecoin for Cross-Border Payments: A New Digital Green Infrastructure that is Sustainable, Equitable and Scalable

With over US\$190 trillion in annual cross-border payment and US\$7 trillion in daily foreign exchange trading, the global payments and FX ecosystem remains dependent on a complex, fragmented network of legacy systems. Blockchain and distributed ledger technologies were originally envisioned to solve these challenges. However, while Bitcoin was a pioneering innovation, it evolved into an energy-intensive and environmentally unsustainable asset. Its limited scalability and high transaction costs made it unsuitable for cross-border payments. Instead, it has become widely regarded as “digital gold”, a value-preservation and appreciation assets.

In contrast, stablecoins backed by fiats such as USD, operating on more efficient blockchains such as Ethereum and Solana, have gradually emerged as the leading application of blockchain technology for enabling efficient, scalable, and near real-time cross-border payments.

To address this, [MetaComp](#) Pte Ltd, another subsidiary of Alpha Ladder Group and a Major Payment Institution licensed by the Monetary Authority of Singapore (MAS) to provide Digital Payment Token (DPT) services and Cross-border Money Transfer services, recently announced the launch of StableX, a next-generation infrastructure platform purpose-built for cross-border FX payments powered by stablecoins.

StableX features an intelligent routing engine that dynamically determines the most efficient rail for each transaction — evaluating factors such as cost, speed, and settlement certainty. It facilitates non-USD to non-USD currency flows, processing transactions either via supported stablecoins (e.g., USDT, USDC, FDUSD) or traditional USD rails, depending on which delivers the best outcome.

For example, when a client initiates a transfer in Singapore Dollars (SGD), StableX may route the transaction through a supported stablecoin or USD before converting it into United Arab Emirates Dirhams (AED). This intelligent orchestration enables faster settlement, reduced friction, and continuous access to liquidity — transforming how institutions move money across borders.

By integrating the StableX engine, the Non-Fungible Digital Twin (NFD[®]) platform, and the CNT[®] carbon stablecoin framework, Alpha Ladder Group furthers its mission of “Digital Green Transformation with Technologies” by building a next-generation “Alpha Digital Green Infrastructure”. Powered by CNT[®] carbon stablecoins, this infrastructure is designed to make cross-border payments and global foreign exchange not only more sustainable, but also equitable and scalable, setting a new standard for responsible financial innovation.

Unlike conventional intermediaries, the CNT[®] carbon stablecoin can only be created through

verified decarbonisation effort such as reforestation and is issued on energy-efficient blockchains. This makes CNT® a carbon-negative intermediary by design — a meaningful innovation that contributes directly to sustainability goals while enabling faster, low-friction global transactions.

Moreover, any country with an established carbon registry system and verifiable processes can participate in issuing CNT® carbon stablecoins. This approach democratises stablecoin issuance, allowing nations actively pursuing net-zero goals to benefit from transparent and programmable access to green finance.

At a time when global carbon emissions have reached 41.6 billion tonnes (2024), the ability to scale a unified, trusted, and programmable infrastructure for carbon-linked digital finance is no longer optional, it is essential.

“In physics, the Big Bang is believed to have created equal amounts of matter and antimatter,” said Dr. Bo Bai, Executive Chairman and Co-Founder of Alpha Ladder Group. “In 2019, I began exploring what the “antimatter” equivalent of Bitcoin might be. Bitcoin functions as a digital intermediary, scarce in supply, increasingly difficult to produce, yet highly energy-intensive and environmentally damaging. I envisioned a digital intermediary with similar scarcity and production difficulty, but with the opposite environmental effect; one that contributes positively to reducing the global carbon footprint. That pursuit led to the concept of CNT® carbon stablecoins, a sustainable and equitable antimatter of Bitcoin.”

Dr. Bai added: “The journey to create a sustainable and equitable digital intermediary through technology innovation has been a long-term commitment, a marathon I’ve dedicated the past six years to. This patent represents a meaningful milestone, but the vision extends far beyond. I’m deeply grateful and fortunate to pursue this vision in Singapore, a global hub with a trusted business environment and a regulator like the Monetary Authority of Singapore (MAS) that combines rigour with progressive thinking.”

This announcement comes at a time of accelerating demand for stablecoin-powered cross-border payments & FX, alongside rising expectations for trusted carbon infrastructure. As regulators, capital markets, and consumers call for a new generation of digital green infrastructure, this patented framework positions Alpha Ladder Group at the forefront as a regulated, interoperable, and impact-driven digital green infrastructure builder for a sustainable future.

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About Alpha Ladder Group

Alpha Ladder Group (formerly MVGX Holdings) is a leading Digital Green Group shaping the future of financial innovation, financial technology, and sustainable technology. With a growing portfolio of subsidiaries, we deliver capabilities across climate SaaS, stablecoin enabled payment and wealth services, and green impact investments.

Driven by cutting-edge technologies such as blockchain and AI, we empower sustainable investments, build digital financial infrastructure, and pioneer wealth innovation. Through our vision of Digital Green Transformation with Technologies, we're building a smarter, more resilient, and responsible financial ecosystem—one that mirrors the universe's own journey from elemental simplicity to structured brilliance.

At Alpha Ladder, our name isn't just symbolism - it's how we move the world forward to pursue infinite alpha, one particle at a time.

To learn more about us, please visit www.alphaladder.com.

About MVGX Tech

MVGX Tech, a subsidiary of Alpha Ladder Group and headquartered in Singapore, is a pioneer in sustainability compliance solutions across seven key markets in Asia-Pacific, with a growing presence. We offer a comprehensive suite of services, including digital measurement, Reporting, and Verification (MRV), regulatory compliance reporting, carbon credit advisory and trading, capacity building, and access to green finance.

Leveraging proprietary AI inference models and the region's most extensive emissions factor database, MVGX streamlines sustainability compliance, making it simpler, scalable, and seamless. Our plug and play solutions enable businesses to lower the cost of regulatory compliance while unlocking capital —whether by securing green finance or monetising carbon credits.

Discover how MVGX is shaping the future of sustainability compliance at www.mvgx.com.

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The Conscious Clan

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