

# Stock Capital:

Decentralized Carbon Credit Protocol with Bitcoin-Backed Reserve.

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## Abstract

Two of the biggest challenges in integrating sustainability into the financial market are access and stability. Stock Capital addresses these issues by combining ReFi (Regenerative Finance) with the usability of RWAs (Real World Assets), creating an ecosystem where real-world assets are tokenized and globally accessible.

Stock Capital connects investors from the crypto industry to the environmental preservation and sustainability sector. Through the tokenization of sustainable bonds, carbon credits, and socio-environmental projects, it enables direct investments in environmental protection in an institutional and scalable way.

# 1. Decentralized Carbon Credits Protocol with Bitcoin-Backed Reserve

The Stock Capital introduces an innovative approach to decentralized finance (DeFi) focused on sustainability, integrating decentralized carbon credits with a reserve mechanism collateralized by Bitcoin. The core objective of the protocol is to ensure financial stability through a Bitcoin reserve, reducing volatility and increasing the credibility of digital assets backed by carbon credits.

## Protocol Architecture

The protocol is designed to be Layer-1 compatible, ensuring modular interoperability across multiple blockchain networks.

## Bitcoin-Based Pricing Mechanism

The price of carbon credits will be dynamic and adjusted in relation to the price of Bitcoin, ensuring a market value aligned with the protocol's reserve.

The pricing of carbon credits follows the formula:

$$P_{CC} = k \cdot P_{BTC}$$

Where:

- $P_{CC}$  the unit price of a carbon credit;
- $P_{BTC}$  is the real-time price of Bitcoin;
- $k$  is a correlation coefficient adjustable by the protocol.
- For correlation coefficient levels, the protocol will consider 0.0001.

## Collateralized Bitcoin Reserve Mechanism

A fraction of the resources from the sale of STOCK tokens is allocated to a Bitcoin reserve registered on-chain, protected by Merkle Proof attestations.

A fraction of the resources from the sale of carbon credits is allocated to a Bitcoin reserve registered on-chain, protected by Merkle Proof attestations.

The reserve functions as an economic stabilizer, ensuring liquidity and trust in Stock Capital's tokenized carbon credit instruments.

All transactions involving reserve assets are transparently verifiable through zero-knowledge proof (ZKP) methodologies.

## **Explanation of the Fundamental Elements of the Formula**

The unit price of a carbon credit represents the financial value assigned to each metric ton of CO<sub>2</sub> compensated. This price is dynamically adjusted based on market demand and the value of the Bitcoin reserve, ensuring transparency and stability in the trading of carbon credits.

The real-time price of Bitcoin reflects the current market value of the carbon credits. However, fluctuations in the price of Bitcoin do not influence the issuance of new carbon credits, nor do they affect existing credits. Only the price of the carbon credits available for trade will be adjusted according to the variation of Bitcoin.

## **Decentralized Autonomous Organization (DAO) Governance Model**

Governance decisions, including the use of the Bitcoin reserve and the allocation of funding, are managed through a governance framework based on DAO (Decentralized Autonomous Organization).

Stock token holders have voting rights on critical issues, such as project funding, reserve liquidation, and the definition of incentive structures.

The protocol adopts quadratic voting and participation-weighted decision-making, aiming to avoid governance centralization.

## **Cryptographic Security and Regulatory Compliance**

The protocol developed by Stock Capital adopts cutting-edge security mechanisms to ensure immutability, verifiability, and decentralization:

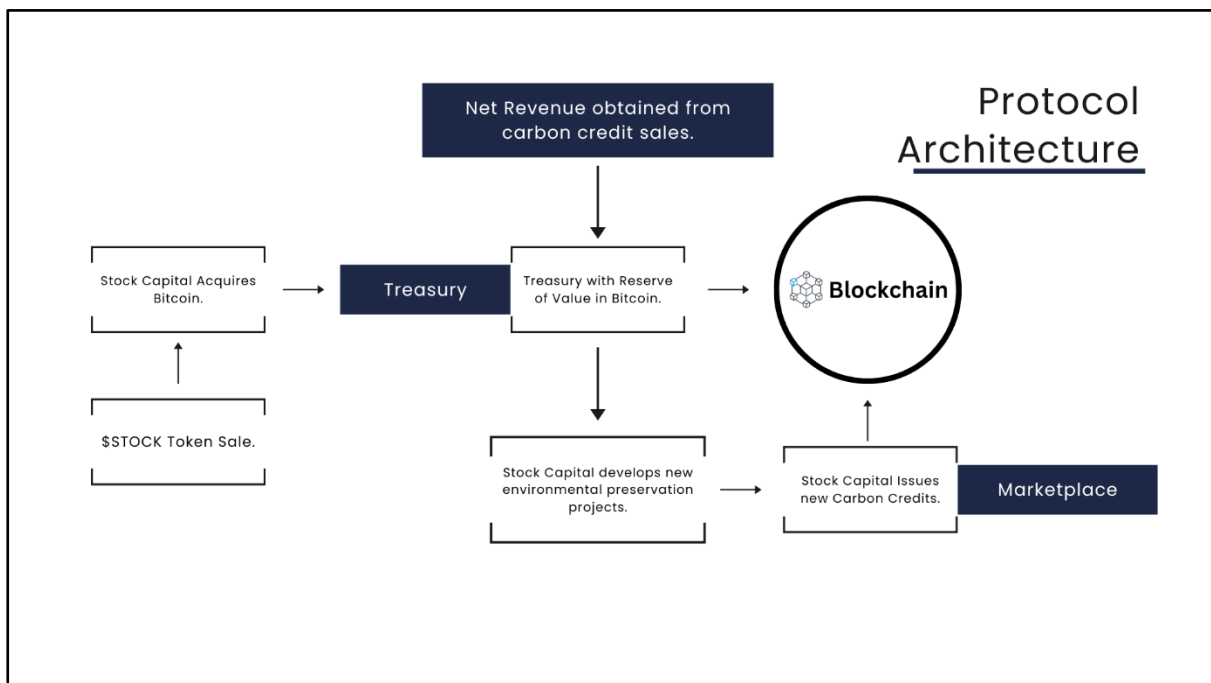
- Proof of Reserves (PoR) audits conducted via ZK-SNARKs, confirming Bitcoin collateralization in a non-intrusive manner.

- Decentralized Identity (DID) frameworks for user onboarding compatible with KYC, without compromising privacy.
- Multi-sign treasury management, with encryption to mitigate systemic risks.

## Reserve Settlement Strategies and Capital Allocation

In the event of strategic liquidation of the Bitcoin reserve, funds will be allocated exclusively to:

1. Financing new environmental and social impact projects, ensuring alignment with sustainability goals.
2. Incubation and development of decentralized technologies for sustainability, promoting innovation in ReFi (Regenerative Finance).
3. Token buybacks and liquidity optimization, ensuring a stable and liquid ecosystem.
4. Distribution of dividends to governance token holders, encouraging long-term engagement.



## 2. Conclusion

Stock Capital presents a new infrastructure for sustainable investments by combining tokenization of real-world assets (RWA), decentralized governance, and an economic model based on transparency and traceability. The protocol redefines how environmental assets, such as carbon credits, are accessed and traded, eliminating historical barriers to liquidity and interoperability.

Through blockchain technology, Stock Capital establishes a reliable ecosystem, enabling investors to acquire and manage sustainable assets efficiently and at scale. The integration with a Bitcoin-backed reserve model strengthens the financial stability of the system, ensuring the long-term viability of carbon offsetting in the global market.

The demand for decarbonization and sustainability solutions is growing exponentially, and Stock Capital is positioning itself at the forefront of this movement, creating a safe, accessible, and economically viable environment for investors, companies, and stakeholders in the sector. Its decentralized approach, based on emerging technology, drives a future where environmental impact and financial return coexist in harmony, redefining the role of capital in the regeneration of the planet.