DAOPowerStableCoin (PSC) Whitepaper

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Abstract

DAOPowerStableCoin (PSC) is an upgradeable stable coin protocol designed to mint stable-value tokens by burning approved assets. The system uses oracle-based price feeds, a dynamic collateralization ratio, and DAO-driven governance to achieve stability and decentralization. This whitepaper outlines the methodology, protocol architecture, and long-term vision of DAOPowerStableCoin.

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1 Introduction

1.1 Background

Stable coins are integral to the decentralized finance (DeFi) ecosystem, enabling users to hedge volatility and transact with a stable unit of account. However, traditional stable coin models often rely on centralized reserve management or purely algorithmic self-correction. DAOPowerStable-Coin (PSC) aims to bridge these approaches with a flexible, DAO-governed architecture and an upgradeable contract design.

1.2 Motivation

- **Transparency:** Users demand insight into stable coin collateral and mechanics.
- **Flexibility:** Market conditions can change rapidly; the system must adapt (collateral ratio, new oracles, etc.).
- **Decentralized Governance:** Vital for trust minimization and community-driven evolution.

2 System Architecture

2.1 Burn-to-Mint Mechanism

PSC mints new stable coins (PSC tokens) by burning approved ERC20 assets. Users deposit an asset, which is transferred to a burn address, while the contract mints PSC based on the asset's USD price and a collateralization ratio (governed by the DAO).

2.2 Oracles and Deviation Threshold

Multiple Chainlink (or other) price feeds are used. A deviation threshold ensures that if one feed returns an outlier price, minting reverts. This reduces manipulation risk.

2.3 Collateralization Ratio

Represented in basis points (e.g., 8000 = 80%). This ratio is adjustable by the DAO or authorized owner account. It determines how much PSC is minted relative to the USD value of the burned collateral.

2.4 Upgradeable Design

DAOPowerStableCoin uses a UUPS upgradeable pattern. The contract's logic can be updated, pending a timelocked governance proposal. This approach allows the protocol to evolve while minimizing disruption.

3 Token Economics

3.1 Minting Fees and Transfer Fees

When a user deposits an asset, a small fee can be taken in basis points (transferFeeBP). Over time, these fees can accrue to a DAO treasury or reward pool as determined by governance.

3.2 Reserves and Redemption

The DAO or authorized owner can deposit assets as reserves. Users holding PSC may redeem stable coins for underlying assets if the system has sufficient reserves. This ensures a partial safety net and user confidence.

3.3 Governance Token (Optional)

PSC can rely on an existing DAO token or a new governance token for on-chain voting. Ownership or staking of the governance token could be required to propose parameter changes.

4 Governance & DAO Structure

4.1 Access Control

- **DAO Address:** Proposes and finalizes upgrades, sets ratio thresholds, can pause/unpause minting, etc.
- **Owner or Multisig:** Optionally retains emergency or backup privileges if the project is in early stages.

4.2 Upgrade Process

1. **ProposeUpgrade:** The DAO or Owner calls `proposeUpgrade` with the new implementation contract address.
2. **Time Lock:** The `upgradeDelay` ensures that a waiting period occurs (e.g., 24 hours) for community review.
3. **Finalize:** Once the delay expires, `_authorizeUpgrade` is called, updating the logic.

5 Risk Analysis

5.1 Oracle Risks

Even with multiple feeds, oracle downtime or manipulation is a possibility. Deviation checks mitigate but do not eliminate risk. Backup oracles may be considered.

5.2 Governance Attack

A compromised DAO or malicious owner could propose harmful upgrades or manipulate the collateral ratio. The time lock and community vigilance reduce this attack vector.

5.3 Smart Contract Vulnerabilities

A professional audit and bug bounty program are strongly recommended. All upgrades must be tested on testnets before mainnet deployment.

6 Roadmap

- **Phase 1:** Contract development, local testing, testnet deployment.
- **Phase 2:** Audits, bug bounties, mainnet launch, initial governance setup.
- **Phase 3:** Liquidity incentives, oracle expansions, cross-chain bridging.
- **Phase 4:** Mature DAO ecosystem, stable coin adoption, further enhancements.

7 Conclusion

DAOPowerStableCoin aims to create a stable, flexible, and community-governed solution to stable coin issuance. By merging decentralization, robust oracles, and dynamic upgradeability, PSC aspires to be a trustworthy pillar in the DeFi ecosystem.

Contact & Community:

- Website: https://powerstablecoin.github.io/PSC/
- Github: https://github.com/PowerStableCoin/PSC/
- Twitter: https://x.com/DPSC2025