Bubble Protocol Token Design

v1.1

The Bubble Protocol project is envisaged as a community-driven DAO, underpinned by a robust platform utility token system. This white paper presents a dual-token proposal: a governance token dedicated to empowering DAO operations and a utility token designed for cloud storage service transactions. In these pages we break down the design of the token ecosystem, the incentives for stakeholders, and the overall tokenomics.

SUMMARY

- There are **two tokens** planned: a governance token and a utility token.

- **Governance Token**: for voting on project direction, grant allocation, reward distribution and utility token management; tokens are burned to create utility tokens and minted to reward governance token holders based on utility token fees.

- **Utility Token**: for payment of cloud storage; staked by storage providers under proof-of-service; platform takes a fee which is used to reward governance token holders.

- **Trust Accounts** to support micropayments for short-lived or small bubbles; uses payment channels to minimise blockchain fees.

- **NFTs** for payments for large storage leases and subscription offers.

- **Badges** for reputation; earned by storage providers the more storage they provide and the more bubbles they host; earned by users the more storage and bubbles they use.
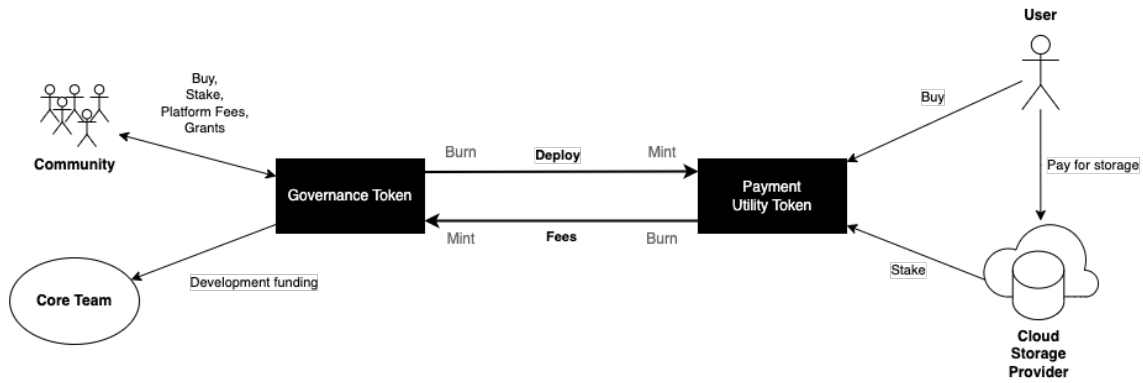
Figure 1: *Token Overview*

The Bubble Token Ecosystem

Value Proposition

| Value Created | 1) Off-chain cloud storage for dapps with private data capability, fine-grained access controls, on-chain control and real-time notifications.

2) Self-managing, regulation compliant customer data storage/accounts for Web2 organisations experimenting with web3. |
|---|---|
| Value Capture Mechanism | a) Platform fees generated from protocol adoption.

b) Protocol adoption will increase platform fee payments made to governance tokenholders leading to demand and price appreciation of the governance token. |

Stakeholders

- **Users:** *users and developers running dapps and other services on the bubble protocol platform.*

- **Cloud Storage Providers:** *cloud services offering generic cloud bubble storage.*

- **Community:** *governance tokenholders interested in the project's success who govern the project and earn rewards from platform fees.*

- **Core Team:** *the core platform development team.*

Stakeholder Benefits

Users

1. The value propositions above.
2. Reputation badges

Cloud Storage Providers

1. Storage payments
2. NFT subscription payments
3. Reputation badges
4. Option to be a governance tokenholder and share in the Community benefits

Community

1. Project governance
2. Share of platform fees
3. Investment growth

Core Team

1. Development opportunities
2. Wages
3. Vested token rewards
4. Bonus tokens

Behavioural Incentives

Users

1. Reputation badges encourage community engagement

Cloud Storage Providers

1. Reputation badges encourage quality of service
2. Staking utility tokens is required to be a cloud storage provider. Penalties based on Proof-of-Service audits encourages quality of service.

Community

1. Staking governance tokens leads to a share of platform fees
2. *TODO*: *voting method and incentives*

Core Team

1. Vested token rewards encourage long-term loyalty and achievement

Token Architecture

The diagram below shows the token and smart contract architecture that makes up the Bubble Protocol ecosystem. Each entity in the diagram is described below.
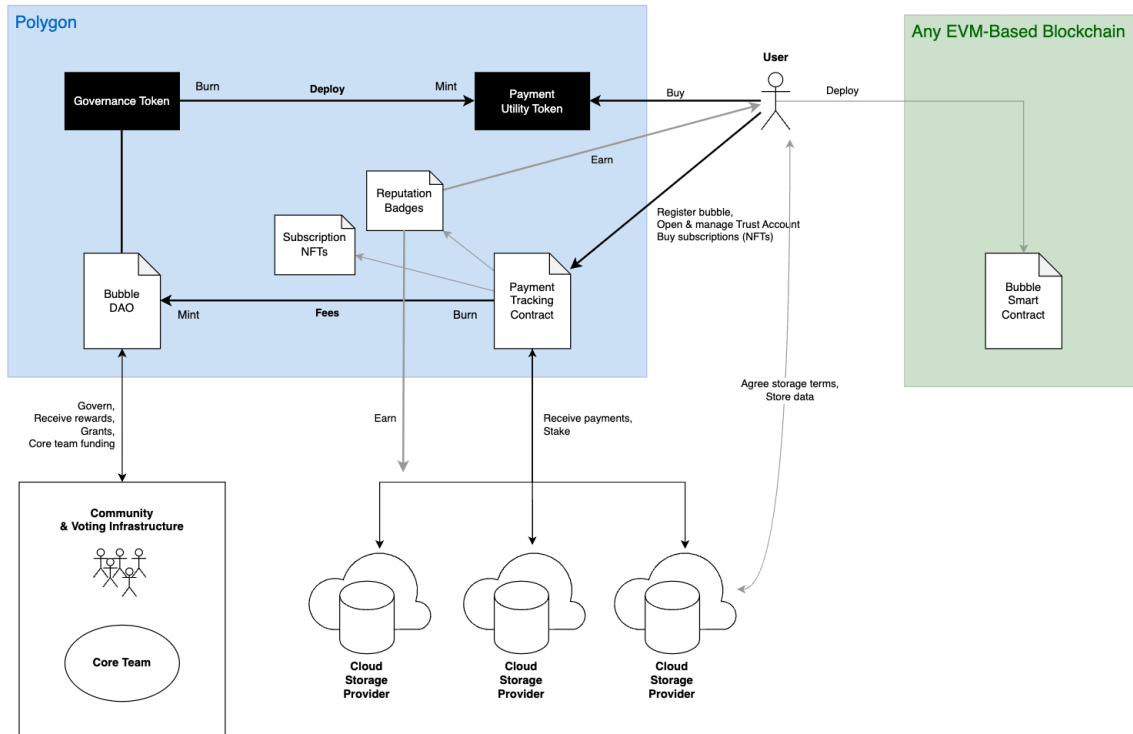

Figure 2: *Token Architecture*

1. **Governance Token**

   A project governance token is introduced to decentralise decision making and to give holders a say in how the project is run. Token holders can vote on important project decisions through the DAO and off-chain voting infrastructure. Tokenholders are responsible for releasing development funds to the core team, awarding grants to the wider community and for creating project utility tokens.

   Project utility tokens are created by burning a number of governance tokens at a conversion rate determined by the DAO. This creates deflationary pressure on the governance token as new project features are released or as adoption grows requiring more utility tokens to be minted. This document identifies a single utility token - the Payment Utility Token - but others may be added to the project if needed.

   New governance tokens are minted in response to fees taken by each utility token market, again at a conversion rate determined by the DAO. These new governance tokens are then distributed to tokenholders. Tokenholders can stake their governance tokens to recieve a proportion of platform fees and share in the success of the project.

2. **Payment Utility Token:**

A dedicated utility token is introduced for facilitating transactions within the Bubble Protocol ecosystem. The token streamlines payments, subscriptions, and other financial interactions, such as users monetising their own data.

3. **Platform-Wide Payment Tracking Contract:**

Trust Accounts are held by a centralised smart contract on the platform, which tracks the status and balance of each account. This contract is responsible for managing and recording all financial transactions related to storage services, including Trust Accounts and subscription NFTs. It is also responsible for taking platform fees.

4. **Trust Accounts with Cloud Storage Services:**

Trust Accounts are a way to make micropayments to storage providers for small or short lived bubbles. Without micropayments, blockchain fees would likely limit the feasibility of bubble storage to long-term bubbles or large data sets where users are willing to pay enough.

Users open a Trust Account with their chosen cloud storage service provider and load it with an appropriate amount of the payment utility token. The Trust Account manages the funds and transactions between the user and the provider, reducing the need for frequent on-chain transactions. The user can use the same Trust Account for multiple bubbles hosted with the same provider.

Cryptographic Agreement for Service Terms

When deploying a bubble, users register their bubble's smart contract with the payment tracking contract. If paying with a Trust Account, registration includes a cryptographic agreement, signed by both the user and the cloud service provider. This agreement specifies the terms of service, including payment amount and frequency.

Automated Payment Calculations and Platform Fees

The payment tracking contract algorithmically calculates the amount owed to the server based on the terms in the cryptographic agreement. Upon closure of a Trust Account or when a 'claim payment' transaction is made, the contract updates the parties' balances after deducting a platform fee for maintenance and development of the ecosystem.

5. **Subscription NFTs:**

These are an alternative payment method to Trust Accounts. They allow users a simple way to pay upfront for bubble hosting services. The provider defines their own hosting terms and NFT price, including request limits, storage limitations and bubble type limitations.

For example, an NFT could provide 1 year hosting for any number of bubbles up to 1GB in total storage with a 100k per day request limit.

6. **Reputation Badges:**

Badges are platform NFTs that are awarded to regular platform users to incentivise use and to act as badges of honour.

Badges are also awarded to storage providers for achievements such as hosting many users, supporting specific blockchains and meeting their Proof-of-Service audits.

7. **Audits for Data Integrity:**

Providers must stake an amount proportional to the amount of storage they are providing. "Proof-of-Service" audits challenge storage providers to prove they are holding customer

data and that they are meeting their claimed performance levels. Failure to meet these audits will result in some or all of their stake being lost. Providers are awarded NFT badges when they regularly pass their audits.

This ensures the integrity and availability of the stored data and provide users with confidence in the reliability and security of the storage services.

Tokenomics

Governance Token

- **Name**: Bubble Governance Token
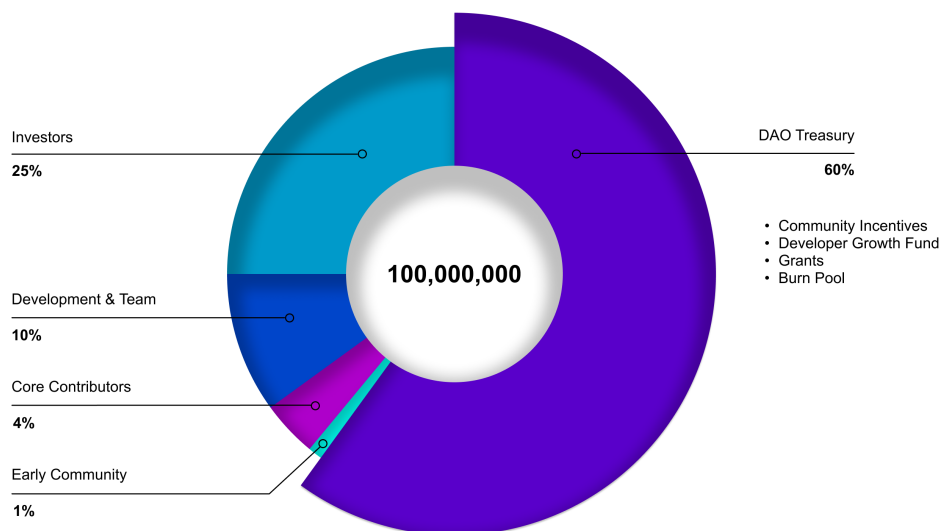- **Ticker**: BGT
- **Total Supply**: 100 million

Figure 3: *Token Distribution*

DAO Treasury

The majority of the tokens will be held by the project DAO under the control of tokenholders via on-chain voting mechanisms. These tokens are for social and development purposes, and for burning to allow utility tokens to be minted.

The DAO treasury will allow the Bubble governance community to provide grants, incentives and rewards for contribution to both the wider community and developers building on the platform. They may also provide grants to the core team if needed. All grants will need to be proposed, discussed and voted on.

Investors

Investors include any private investors and a community sale. Private investors will be subject to a 3-year lockup period.

Development & Team

These tokens are designed to reward team members and to give the team a vested interested in the long term success of the project. Every team member will be subject to a 3-year lockup period on receipt of their tokens.

Core Contributors

These tokens reward the project founders, advisors and all those who have given their time and energy to make the project a success leading up to DAO genesis. Tokens will be locked for 12 months and then released linearly over the following 4 years.

Early Community

These tokens reward early community members who help promote the project through social media or other means. Up to 1% of tokens will be granted, depending on the number of participants and their accomplishments. If less than 1% are granted, the remainder will be allocated to the DAO treasury. There will be no lockup period for these tokens.

Supply Schedule

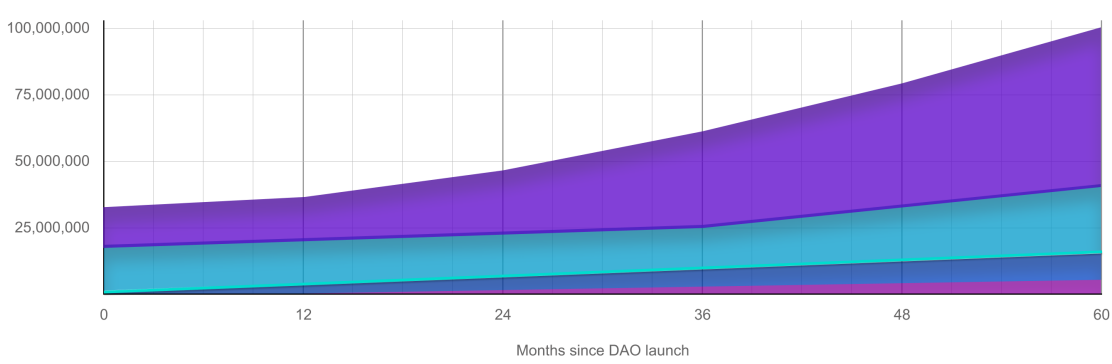Much of the token supply will be locked on genesis and released under the following vesting schedule over 5 years.

Figure 4: *Vesting Schedule*

Utility Token

The utility token will be launched by the DAO on completion of the development of the payment infrastructure. The name, ticker, supply and distribution of this token will be subject to DAO governance.

Supply of this token will be linked to the DAO through a burning and minting process linked to supply and platform fees, as described in Token Architecture above.