Nau: Data Stablecoin on AO

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Abstract

GiB is a new stablecoin that represents the fixed cost of storing 1 GiB of data on the Arweave network. This eliminates the need for users and enterprises to worry about the unpredictable price fluctuations of the native AR token, allowing them to purchase data storage credits at a predictable cost. Beyond simple storage, GiB enables new financial use cases. Users can speculate on the future price of data storage by holding the token or by shorting it through a lending protocol. The Nau protocol, which is responsible for issuing GiB, also offers additional opportunities. It allows for leveraged trading of the AR token and creates new yield-generating opportunities for users.

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1 Introduction

The Nau Protocol represents a paradigm shift in decentralized finance (DeFi) by introducing the first borrowing protocol specifically designed for the permanent data storage economy. Built on the Arweave's hyper-parallel computer, AO, Nau enables users to mint GiB tokens, a revolutionary stablecoin pegged not to fiat currency, but to the fundamental unit of data storage: one gibibyte (GiB) of permanent storage on the Arweave network.

The protocol implements a three token system where AR[1] tokens serve as collateral for minting GiB, while NAU tokens capture the value generated by protocol operations. Through sophisticated liquidation mechanisms and automated rebalancing systems, Nau maintains the GiB peg while providing sustainable yields to participants across multiple roles within the ecosystem. Importantly, Nau operates as a completely permissionless protocol with no governance layer, ensuring that the system remains trustless and resistant to centralized control or manipulation.

Despite the compelling value proposition of permanent storage, AR token holders face significant liquidity constraints when participating in the Arweave ecosystem. The current paradigm requires users to choose between holding AR tokens for long-term value appreciation and ecosystem participation, or spending AR tokens for immediate storage needs or liquidity requirements. This binary choice creates suboptimal economic outcomes for participants. Long-term believers in the permanent storage thesis are forced to sell their holdings to access liquidity, while users needing immediate storage capacity must make permanent commitments of their AR tokens.

Nau Protocol addresses these limitations by creating the first comprehensive DeFi infrastructure specifically designed for the permanent storage economy. The protocol's core innovation lies in GiB, a stablecoin that maintains a 1:1 peg with the cost of storing one gigabyte of data permanently on Arweave. This design creates several transformative capabilities: capital efficiency through leveraging AR holdings while maintaining storage economy exposure, utility-backed stability derived from fundamental data storage utility, ecosystem alignment by pegging GiB to storage capacity rather than external currencies, and sustainable value capture through the NAU token.

Critically, GiB also introduces storage cost predictability, enabling users and developers to plan and allocate resources with confidence, insulated from the volatility of the underlying AR token. This predictability makes the permanent storage economy more accessible, scalable, and user-friendly for both individual users and institutional participants.

The Nau Protocol implements several key innovations that distinguish it from existing DeFi borrowing protocols: automated stability mechanisms that continuously monitor collateralization ratios and market conditions, a dual liquidation system using both stability pool liquidations and redistribution mechanisms, storage-native rebalancing that automatically burns or mints tokens

[1] All references to AR throughout this document refer to wAR (wrapped AR tokens) which operate on the AO network with full value equivalence to native AR.

when GiB trades below or above peg, and incentive alignment ensuring all participants are aligned with the long-term health of the storage economy. The absence of governance tokens or voting mechanisms ensures these systems operate autonomously according to predetermined algorithmic rules, eliminating human intervention and potential governance attacks.

The protocol embodies a fundamental shift toward utility-backed decentralized finance that aligns financial incentives with real-world value creation. By enabling users to leverage their participation in the storage economy while maintaining exposure to its long-term growth potential. The Nau Protocol creates a new category of financial infrastructure that bridges the gap between speculative DeFi and productive economic activity. Through careful protocol design, robust risk management, and alignment with the broader trends shaping the digital economy, Nau Protocol is positioned to become the foundational financial layer for the permanent storage economy, enabling new forms of economic activity and value creation that were previously impossible in the decentralized finance landscape.

2 Users

The Nau Protocol serves diverse participants in the permanent storage economy, each with unique needs and use cases. These user stories illustrate how different actors benefit from GiB's stability and the protocol's financial infrastructure.

2.1 Influencer

Background: Alice runs a growing blog and podcast, generating 50GiB of content monthly that she wants to preserve permanently for her audience and potential licensing deals.

Challenge: Alice believes in permanent storage but struggles with AR's volatility. When she budgeted $500 for monthly storage costs, AR's price fluctuations meant she sometimes couldn't afford her planned uploads, disrupting her content schedule.

Nau Solution: Alice purchases GiB tokens monthly, knowing exactly how much storage she can afford regardless of AR price movements. She can budget predictably - 50 GiB tokens always equals 50GiB of permanent storage. When AR prices rise, her storage costs remain stable, and when prices fall, she benefits from the protocol's automatic rebalancing.

Outcome: Predictable storage costs enable Alice to maintain consistent content production and plan long-term archival strategies without worrying about token volatility.

2.2 Enterprise Storage Provider

Background: DataVault Inc provides permanent storage services to Fortune 500 companies, handling 10TB of new data monthly with strict SLA requirements and predictable pricing commitments.

Challenge: DataVault signs annual contracts with fixed storage pricing but faces significant risk from AR volatility. A 50% AR price increase could eliminate their profit margins, while price decreases create competitive pressure to lower prices mid-contract.

Nau Solution: DataVault uses GiB tokens to eliminate price volatility risk:

- Purchases GiB in bulk during contract negotiations, locking in storage costs
- Offers clients transparent, stable pricing based on GiB's storage peg
- Hedges existing AR holdings by minting GiB against them
- Maintains emergency GiB reserves for unexpected demand spikes

Outcome: DataVault provides competitive, stable pricing to enterprise clients while protecting profit margins from token volatility. Their predictable cost structure enables better business planning and more aggressive market expansion.

2.3 Defi Enthusiast

Background: Bob is an experienced DeFi trader who believes the permanent storage economy will grow significantly as data generation accelerates globally.

Challenge: Bob wants exposure to Arweave's growth but needs capital flexibility for other trading opportunities. Holding AR tokens long-term conflicts with his active trading strategy.

Nau Solution: Bob deposits his $ARholdingsascollateraltomint$GiB tokens, maintaining his storage economy exposure while accessing liquid capital. He uses minted GiB for:

- Yield farming opportunities on other protocols
- Providing liquidity to GiB trading pairs
- Speculating on storage demand by holding or shorting GiB
- Leveraging his AR position while earning fees from borrowers

Outcome: Bob maintains his bullish AR thesis while accessing 62.5% of his holdings' value as liquid capital (at 160% collateralization), effectively creating leveraged exposure to permanent storage growth.

2.4 Yield Farmer

Background: Carol seeks sustainable yield opportunities in DeFi but prefers protocols with real-world utility over purely speculative farming.

Challenge: Most high-yield opportunities carry significant smart contract risk or depend on unsustainable token emissions. Carol wants yield backed by genuine economic activity.

Nau Solution: Carol participates in multiple protocol roles:

- **Stability Pool Supplier:** Deposits GiB tokens to earn NAU rewards and discounted AR from liquidations
- **NAU Staker:** Stakes NAU tokens to earn a share of protocol borrowing fees
- **Liquidity Provider:** Provides GiB liquidity on DEXs, earning trading fees plus potential NAU incentives

Outcome: Carol earns sustainable yield backed by real storage economy activity. Her returns come from genuine economic value (storage demand) rather than inflationary token emissions.

2.5 Long-term AR Holder

Background: Dan bought AR tokens early and believes strongly in permanent storage's future, but needs periodic liquidity for personal expenses and other investments.

Challenge: Dan doesn't want to sell his AR holdings and lose exposure to long-term growth, but occasionally needs access to capital. Traditional lending protocols don't support AR collateral.

Nau Solution: Dan deposits his AR tokens as collateral and mints GiB tokens when he needs liquidity. He can:

- Access up to 62.5% of her holdings' value without selling
- Maintain full exposure to AR appreciation
- Repay his GiB debt gradually over time trading fees plus potential NAU incentives
- Use borrowed GiB for personal needs or additional investments

Outcome: Dan preserves his long-term AR position while accessing needed liquidity, effectively getting the best of both holding and spending his tokens.

These user stories demonstrate how the Nau Protocol creates value for diverse participants while building a sustainable, utility-backed financial ecosystem around permanent data storage. Each user benefits from GiB's stability while contributing to the protocol's overall health and growth.

3 Architecture

3.1 System Overview

The Nau Protocol operates as a decentralized borrowing system built on the AO computer ecosystem, implementing a sophisticated multi-component architecture designed to maintain stability, efficiency, and security. The protocol consists of four primary components that work in concert to enable storage-backed lending and maintain the GiB peg:

1. **Vaults:** The core lending mechanism where users deposit AR tokens as collateral to mint GiB
2. **Stability Pool:** A community-funded insurance mechanism that handles liquidations and maintains system stability
3. **Staking Pool:** A value capture mechanism where NAU token holders earn protocol fees
4. **Automated Monitoring System:** A cron job-based infrastructure that maintains system health and executes critical operations

Each component is designed with specific security, efficiency, and decentralization principles that ensure the protocol can operate autonomously while maintaining the critical peg between GiB and storage capacity.

3.2 Vaults

The vault system represents the primary interface between users and the protocol, enabling the creation of collateralized debt positions (CDPs) backed by AR tokens.

Vault Initialization Process:

1. User selects amounts, AR to deposit and GiB to borrow/mint
2. System verifies minimum collateralization ratio (160%)
3. GiB tokens are minted to user's address
4. Vault parameters are recorded in the protocol registry

Collateralization Requirements: The protocol enforces a minimum collateralization ratio of 160%, meaning users must deposit AR tokens worth at least 1.6 times the value of GiB they wish to mint. This ratio was selected through extensive modeling to balance capital efficiency with system stability, accounting for the volatility characteristics of AR tokens and the critical importance of maintaining the GiB peg.

Dynamic Collateral Valuation: The system continuously monitors the AR/GiB exchange rate through integration with Arweave's native pricing mechanisms. As the cost of storage fluctuates based on network demand and AR's volatility, vault collateralization ratios are automatically recalculated to ensure system-wide stability.

Maintenance Operations:

- **Deposit:** Users can deposit additional AR tokens, improving their collateralization ratio
- **Withdraw:** Users can withdraw AR tokens, while maintaining a positive MCR
- **Repay:** Users can repay GiB debt
- **Borrow:** Users can borrow more GiB, while maintaining a positive MCR

Fee Structure: Every vault creation incurs a borrowing fee calculated as a percentage of the minted GiB amount. The fee structure is dynamically adjusted based on system utilization and market conditions, ensuring optimal capital efficiency while maintaining protocol sustainability. This fee serves multiple purposes:

- Compensates the protocol for operational costs
- Provides sustainable revenue for NAU token stakers
- Creates economic friction that prevents excessive leverage

Example: The fee stands at 2%. The borrower opens a new vault by depositing 200 AR and draws 50 GiB. Being charged a 2% fee on the 200 AR, the borrower will obtain 50 GiB, while incurring a debt of 51 GiB (50 + 1). To close the Trove and fully retrieve the 200 AR, the borrower needs to repay 51 GiB.

3.3 Stability Pool

The Stability Pool represents one of the protocol's core components, serving as a decentralized insurance mechanism that socializes liquidation risks across willing participants. Unlike traditional lending protocols that rely on individual liquidators, the Stability Pool enables community-funded stability through a shared risk model.

Operational Mechanics:

- Users voluntarily deposit GiB tokens into the stability pool
- Deposited tokens serve as liquidation capital for undercollateralized vaults

- In exchange, stability pool depositors earn predictable NAU token rewards
- During liquidations, deposited GiB is burned and depositors receive the liquidated AR collateral

Primary Liquidation (Stability Pool Active): When a vault falls below the Liquidation Ratio (130%), the automated monitoring system triggers a liquidation process that utilizes stability pool funds:

1. **Liquidation Detection:** Cron job identifies undercollateralized vault
2. **Stability Pool Assessment:** System verifies sufficient GiB tokens in pool
3. **Token Burning:** GiB tokens equal to vault debt are burned from stability pool
4. **Collateral Distribution:** Liquidated AR tokens are distributed pro-rata to stability pool depositors
5. **Vault Closure:** Undercollateralized vault is permanently closed

This mechanism ensures that liquidations occur efficiently without requiring external liquidators while providing attractive returns to stability pool participants through the acquisition of discounted AR tokens.

Example:
Assuming 1 GiB = 2 AR/GiB

Vault	Old Coll	Old Debt	Old CR	Coll Gained	Debt Gained	New Coll	New Debt	New CR	Net Gain AR
A	100	25	200%	+66.6	+26.7	166.7	51.7	161%	13.3
B	200	40	250%	+133.3	+53.3	333.3	93.3	181%	26.7
C	300	50	300%	+200	+80	500	130	192%	40
D	400	160	125%	-400	-160	0	0	0	-80
Total	1000	275	182%	0	0	1000	275	182%	0

3.4 Staking Pool

The Staking Pool allows users to earn a share of the protocol's revenue, and gives underlying value to the secondary token, NAU.

Operational Mechanics:

- Users voluntarily deposit NAU tokens into the staking pool
- In exchange, staking pool depositors earn GiB token rewards
- These GiB tokens are generated during vault creation, from minting fees
- The amount of tokens received is spread proportionally to their stake in the pool

3.5 Automated Monitoring System

The protocol's automated monitoring system operates through a sophisticated cron job infrastructure that continuously monitors system health and executes critical operations without human intervention.

Primary Monitoring Functions:

- **Price Feed Updates:** Regular synchronization with Arweave storage pricing
- **Collateralization Monitoring:** Continuous assessment of all vault ratios
- **Liquidation Execution:** Automatic triggering of liquidation processes
- **Peg Maintenance:** Monitoring and correction of GiB market pricing

Primary Monitoring Functions: Every 5 minutes

A soft peg is ensured due to a partnership with Permanent Data Solutions that enforces that their products, such as ArDrive and Turbo, always value 1 GiB as worth 1GiB of storage. To prevent a "death-spiral", the automated system implements a sophisticated rebalancing mechanism to maintain the GiB peg to storage capacity.

De-peg Detection: The system continuously monitors GiB trading prices across integrated decentralized exchanges. When the token price deviates significantly from the cost of 1 GiB storage, the rebalancing mechanism activates:

GiB is undervalued:

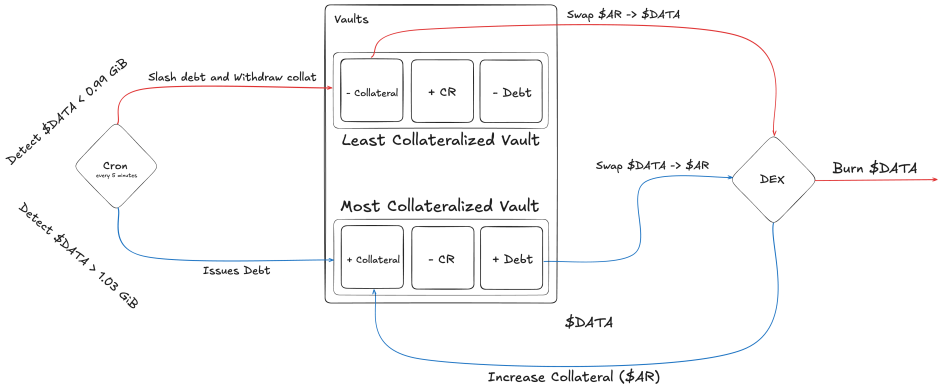
1. **Market Analysis:** System calculates the magnitude of de-peg
2. **Vault Adjustment:** Most undercollateralized vault loses some GiB and some AR
3. **Token Purchase:** Protocol automatically purchases undervalued GiB tokens
4. **Token Burning:** Purchased tokens are permanently removed from circulation
5. **Peg Restoration:** Reduced supply pressure helps restore price equilibrium

GiB is overvalued:

1. **Market Analysis:** System calculates the magnitude of de-peg
2. **Stablecoin Issuance:** Most overcollateralized issues some GiB

3. **Token Sale:** Protocol automatically sells overvalued GiB tokens for AR
4. **Vault Adjustment:** Purchased AR is deposited in the vault increasing ICR
5. **Peg Restoration:** Increased supply pressure helps restore price equilibrium

This mechanism ensures that GiB maintains its utility value while providing natural arbitrage opportunities for market participants.



3.6 Oracle

The current AO architecture presents unique challenges for price feed integration, as the platform does not yet support native HTTP outcalls that would enable direct API communication from within processes. To address this limitation, Nau implements a hybrid oracle solution that bridges external data sources with our AO-native protocol through dedicated infrastructure nodes.

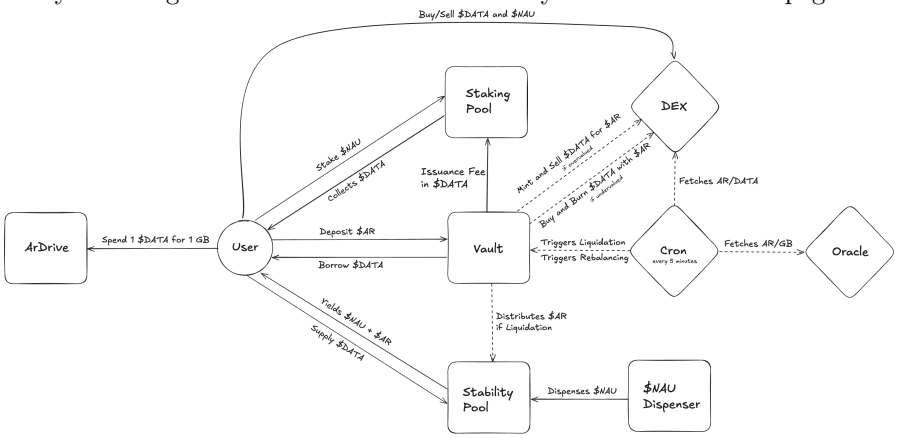
Our oracle system operates through a Node.js server architecture that aggregates storage pricing data from multiple Arweave network APIs, creating a robust and tamper-resistant price feed. The server continuously polls various data sources to calculate time-weighted average storage costs, ensuring accuracy and preventing manipulation from any single source. This aggregated pricing information is then transmitted directly to our AO process, maintaining real-time synchronization between market conditions and protocol operations.

Recognizing that centralized oracle infrastructure contradicts the decentralized principles underlying both Arweave and AO, we are committed to open-sourcing the complete oracle codebase. This transparency enables any community member to deploy their own oracle node, contributing to a distributed network of price feed providers that enhances system resilience and reduces single points of failure. The open-source approach also allows for community auditing and improvement of the oracle logic, ensuring that price feeds remain accurate and trustworthy as the protocol scales.

As AO continues to evolve and introduces native HTTP capabilities, we anticipate migrating to a fully on-chain oracle solution that eliminates external dependencies entirely. Until that infrastructure becomes available, our current hybrid model provides the necessary price feed reliability while maintaining the decentralized ethos that makes Nau a compelling addition to the AO ecosystem.

3.7 Full System

This diagram gives a bird's eye view of the whole protocol's functionalities and how they work together to ensure its sustainability and the stablecoin peg.



4 Economics and Tokenomics

4.1 Overview

The Nau Protocol implements a sophisticated three-token economic model designed to create sustainable value capture, align incentives across different user groups, and maintain the critical peg between $GiB and storage capacity. Each token serves a distinct purpose within the ecosystem while contributing to the overall stability and growth of the protocol.

Token Roles:

- **$AR Tokens**: Collateral asset providing the foundation for GiB creation
- **$GiB Tokens**: Storage-backed stablecoin pegged to 1 GiB of permanent storage
- **$NAU Tokens**: Governance and value capture token for protocol participants

This multi-token architecture enables the protocol to separate concerns between collateral provision, stable value transfer, and governance participation, creating a more robust and flexible economic system.

Asset	AR	GiB	NAU
Total Supply	66.000.000	N/A	100.000.000

Table 1: Total Supply of tokens

4.2 Data Storage Economics

To fully comprehend Nau's mechanics, it's essential to understand Arweave's storage pricing model, which forms the foundation of our protocol. Arweave calculates storage costs using two primary variables: Network Size, representing the total storage capacity deployed across the Arweave network, and Block Rewards, which is the compensation miners receive for maintaining network infrastructure. The relationship follows a clear economic principle where storage price is proportional to block rewards and inversely proportional to network size.

This pricing structure creates powerful long-term deflationary dynamics that benefit Nau users. Block rewards are algorithmically designed to decrease over time through the protocol's endowment mechanism, which conservatively estimate only 0.5% annual storage cost decline compared to the historical 38.5% actual decline. Simultaneously, as demand for permanent storage grows, rational miners deploy additional storage capacity, expanding the network size and further reducing storage costs. The result is that storage costs exhibit a natural downward trajectory over extended periods, making data storage an attractive borrowing asset with built-in depreciation potential.

While these long-term trends favor borrowers, Nau also incorporates mechanisms for operational stability in the short term. Storage costs use a 6-week rolling average that smooths out volatility and provides predictable pricing signals, effectively protecting against flash liquidations that could trigger unexpected position closures. This averaging mechanism gives vault operators sufficient time to adjust their positions while maintaining a manageable risk profile through the combination of stable short-term pricing and deflationary long-term trends.

The natural choice for collateral emerges from Arweave's native economics. Since Arweave measures storage costs exclusively in AR tokens, independent of fiat currencies like USD, the AR token becomes the optimal collateral for Nau positions. This creates native price correlation between collateral and borrowed assets, eliminates external currency risk, and simplifies liquidation mechanics within the Arweave ecosystem. This economic foundation positions Nau as a protocol that harnesses Arweave's deflationary storage economics while providing the stability and predictability necessary for effective lending and borrowing operations.

$$P_m^*(B) = \frac{\text{Block Reward}}{2 \cdot 1024 \cdot \text{Network Size}} \tag{1}$$

Price per minute

$$P_m(B) = \frac{\sum_{h_B-n}^{h_m} P_m^*(B_i)}{n} \tag{2}$$

Time weighted average price per minute

$$P(D) = 20 \cdot 200 \cdot 365 \cdot 60 \cdot 24 \cdot P_m(B) \tag{3}$$

price for permanent data (20 replicas, 200 years)

4.3 GiB Tokenomics

The GiB token represents the protocol's core innovation: a stablecoin whose value is intrinsically tied to the utility of permanent data storage rather than external financial assets. The peg mechanism operates through several complementary systems:

Direct Utility Backing: GiB maintains its value through direct utility rather than speculative trading. Each GiB token represents the right to store one gigabyte of data permanently on Arweave, creating inherent demand that grows with the digital economy.

Collateral-Backed Issuance: All GiB tokens are issued against AR collateral at a minimum 160% collateralization ratio. This overcollateralization ensures that even with significant AR price volatility, the protocol maintains sufficient backing to honor the storage peg.

Automatic Rebalancing: When market conditions cause GiB to trade below its storage value, the protocol automatically purchases and burns tokens to restore equilibrium. This mechanism is funded through protocol fees and operates continuously to maintain peg stability.

Elastic Supply Model: GiB implements an elastic supply mechanism where token issuance responds to market demand. As users create more vaults and mint additional GiB, the total supply increases proportionally with collateral deposits.

Deflationary Mechanisms: Several mechanisms create deflationary pressure on GiB supply:

- **Liquidation Burns**: $GiB tokens are permanently burned during stability pool liquidations
- **Rebalancing Burns**: Undervalued tokens are purchased and burned to maintain peg
- **Voluntary Burns**: Users can repay/burn $GiB to reduce their vault debt

Supply Growth Controls: The protocol implements borrowing fees that increase with utilization rates.

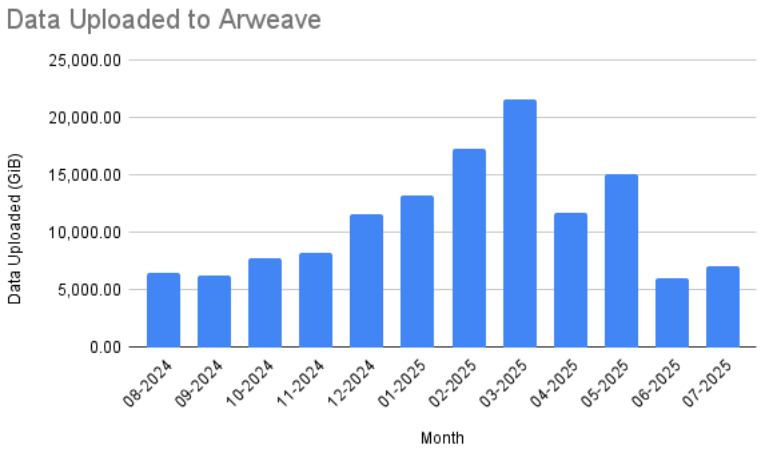
4.3.1 Circulating Supply

Understanding the appropriate GiB circulating supply requires analyzing Arweave's current data storage patterns and projecting future demand dynamics. Historical data from the past 12 months reveals significant variation in network storage utilization, with volumes ranging from a low of 6,000 GiB in June 2025 to a peak of 21,500 GiB in March 2025. This range demonstrates both the growing adoption of permanent storage and the natural fluctuations in demand across different market cycles.

For conservative modeling purposes, we establish a baseline assumption that network storage will consistently exceed 5,000 GiB, representing a floor based on existing committed data and organic growth trends. Given GiB's inherent stability advantages over direct AR token exposure for storage costs, we anticipate that the majority of users will prefer GiB for their storage transactions once the protocol achieves sufficient liquidity and market awareness.

Operating under a standard 200% overcollateralization ratio to ensure protocol security and account for AR token volatility, current market conditions suggest compelling growth potential. At the prevailing storage cost of approximately 2.2 AR per GiB, conservative projections indicate monthly TVL growth of 22,000 AR (valued at $143,000 currently), with corresponding GiB supply expansion of 5,000 tokens per month. These projections exclude additional demand from DeFi users who may utilize GiB for hedging, speculation, or yield farming strategies, suggesting that actual adoption could significantly exceed these baseline estimates.

This supply expansion model creates a self-reinforcing cycle where increased data storage demand drives GiB token utility, while growing token supply provides deeper liquidity for users seeking stable storage cost exposure. The resulting ecosystem positions GiB as both a practical storage utility token and a valuable DeFi primitive within the broader Arweave economy.

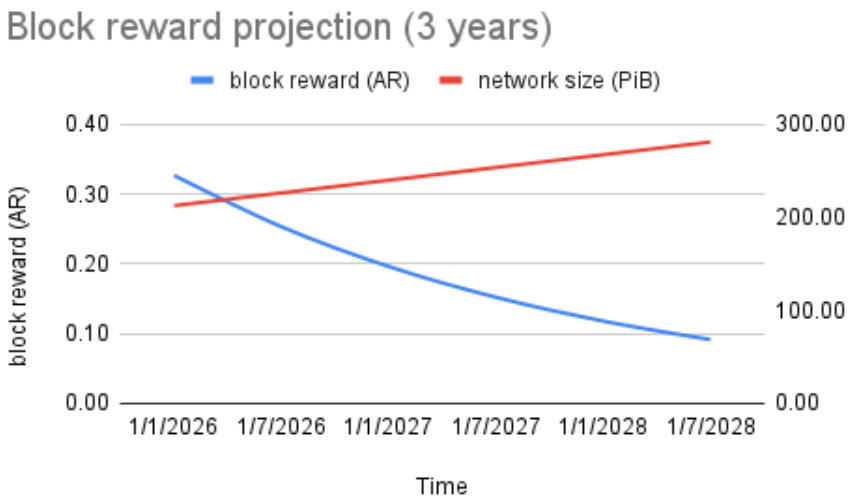


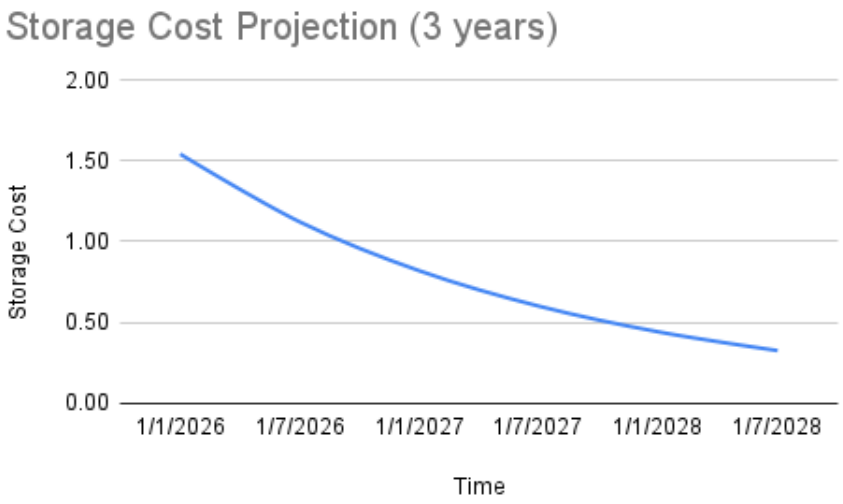
4.3.2 GiB Price Prediction

Predicting the future value of GiB requires analyzing the fundamental drivers of Arweave's storage economics, specifically the relationship between block rewards and network capacity growth. Historical analysis reveals that block rewards follow a highly predictable algorithmic function, demonstrating exceptional correlation when subjected to exponential regression analysis with an r^2 value exceeding 0.9. This strong correlation indicates that reward trends are mathematically determined rather than subject to market volatility, providing a reliable foundation for long-term price modeling.

Network size projections present greater complexity, as capacity expansion depends on new participant adoption, market sentiment, and broader macroeconomic conditions affecting infrastructure investment. However, the fundamental thesis supporting permanent decentralized storage remains compelling as data generation continues accelerating globally and concerns about centralized platform censorship and data loss grow among enterprises and individuals alike. Based on current adoption trajectories and conservative growth assumptions, we project moderate network expansion of approximately 15 PiB per semester.

These projections account for the natural market cycles that affect infrastructure deployment while recognizing the underlying secular trend toward decentralized storage solutions. The predictable decline in block rewards combined with steady network growth creates a deflationary environment for storage costs, directly benefiting GiB holders who maintain exposure to these improving unit economics. This mathematical predictability in one variable and conservative estimation in the other provides a robust framework for understanding GiB's long-term value proposition as both a storage utility token and an appreciating asset within the Arweave ecosystem.



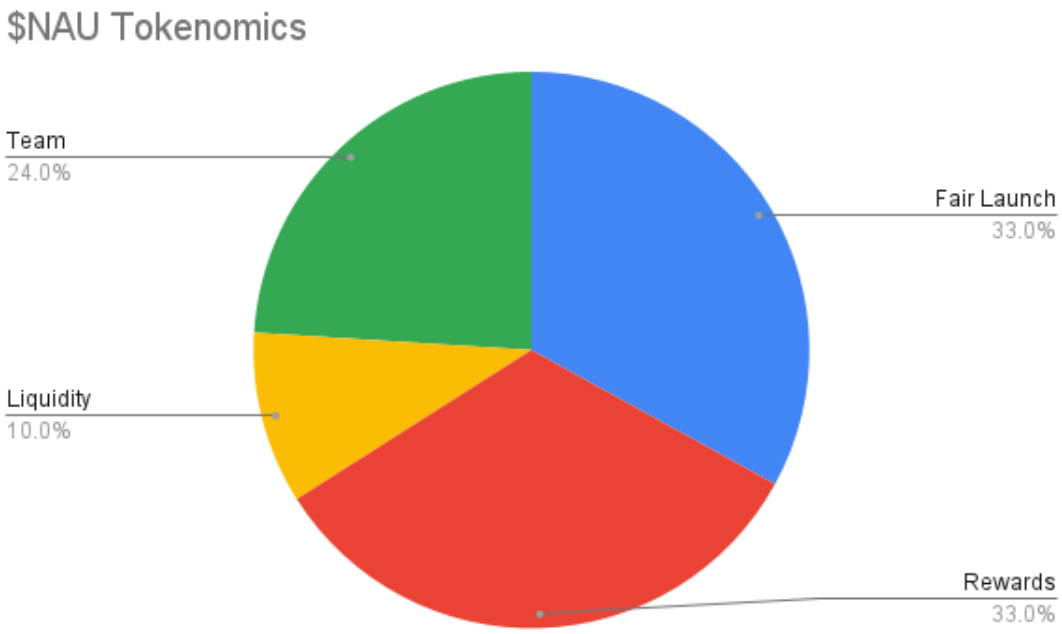


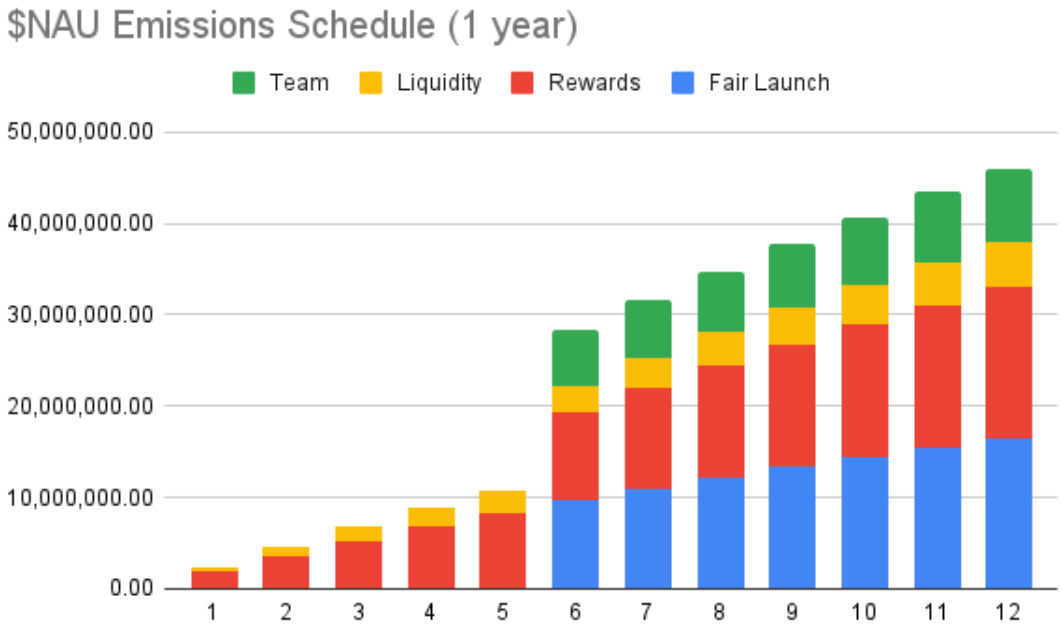
4.4 NAU Tokenomics

The NAU token serves as the protocol's primary value capture mechanism, providing sustainable revenue streams to participants who contribute to system stability and governance. NAU can be earned by supplying to the Stability Pool, obtained through AO's Fair Launch Process, or acquired via secondary markets on decentralized exchanges.

This Fair Launch Process prioritizes equitable distribution to the community and early participants, devoid of private deals. The token's supply will follow a yearly halving schedule, significantly incentivizing early engagement.

Regarding distribution, 33% of the total NAU supply is dedicated to community rewards and another 33% to the initial fair launch participation. The core team is allocated 24%, which vests at a rate of 0.4% of the total supply monthly over a five-year period. Additionally, 10% of the supply will be made available from day one to provide essential liquidity on decentralized exchanges. The total supply is 100 million tokens:


$NAU Tokenomics
Team
24.0%
Fair Launch
33.0%
Liquidity
10.0%
Rewards
33.0%


$NAU Emissions Schedule (1 year)
Team
Liquidity
Rewards
Fair Launch
50,000,000.00
40,000,000.00
30,000,000.00
20,000,000.00
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1
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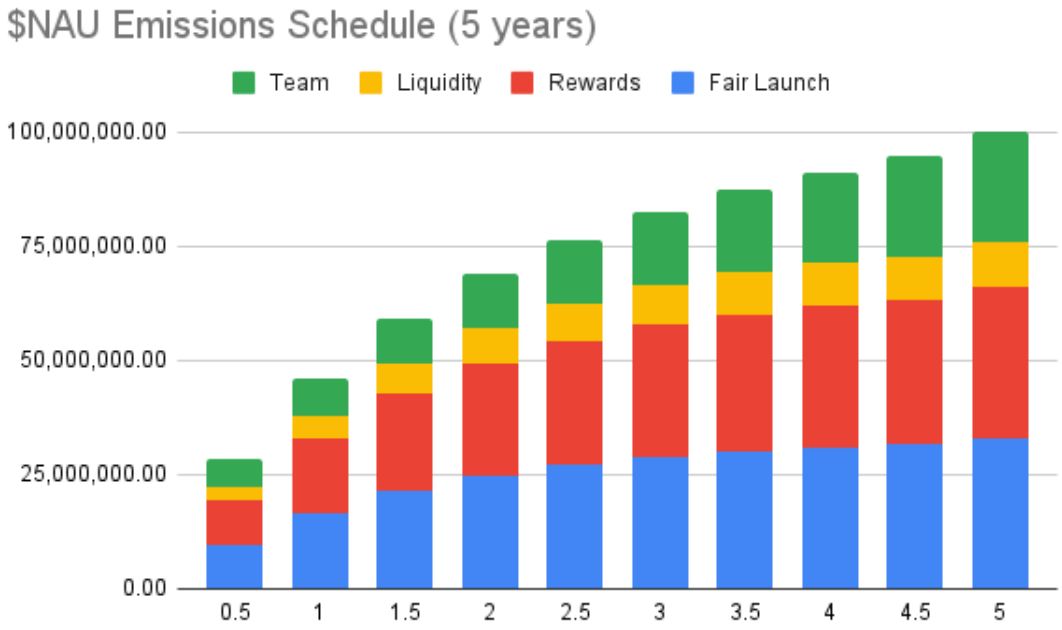


4.5 Fair Launch

As a native AO protocol, Nau embraces a community-centered approach to token distribution that aligns with the decentralized ethos of the Arweave ecosystem. Rather than conducting a traditional private sale that benefits institutional investors through discounted token allocations, Nau will distribute tokens directly to the community through a fair launch mechanism.

This fair launch process enables anyone interested in the project to participate by delegating their AR, DAI, or stETH tokens in exchange for NAU tokens. Token recipients can then stake their NAU holdings to earn a proportional share of protocol revenue, creating immediate utility and alignment between token holders and protocol success. This approach ensures that early supporters who believe in the project's vision can participate on equal terms, fostering genuine community ownership rather than privileging large capital allocators.

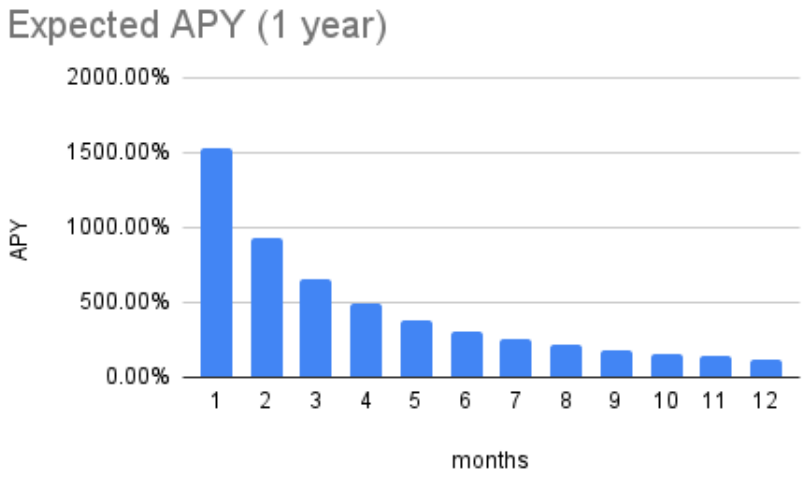
The fair launch serves as Nau's primary funding mechanism, with proceeds allocated toward essential development and marketing initiatives. At our target valuation of 10 million, the protocol will distribute one-third of the total token supply to the community. Based on current market conditions (1000 AR yields 16 AO, AO is $13.5, AR is $6.5), this distribution model requires approximately 550,000 AR in delegated stake, which would generate roughly 24.5 AO tokens per cycle (daily), translating to approximately $120,000 in annual funding for the project.

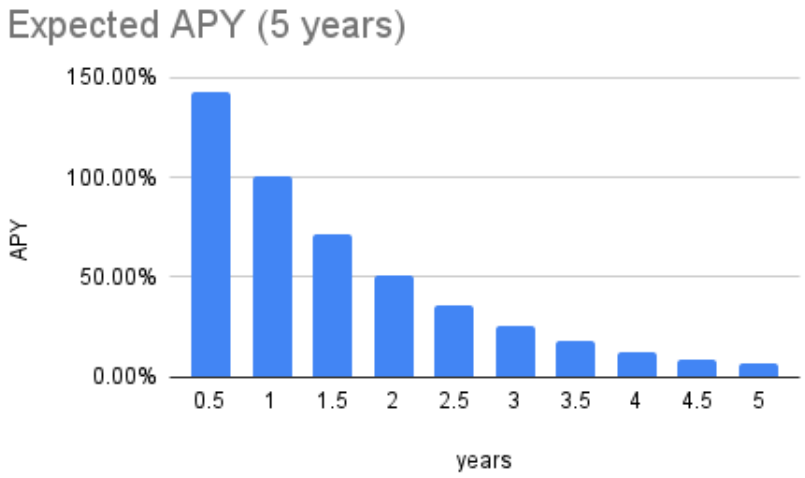
This funding structure creates a sustainable foundation for protocol develop-

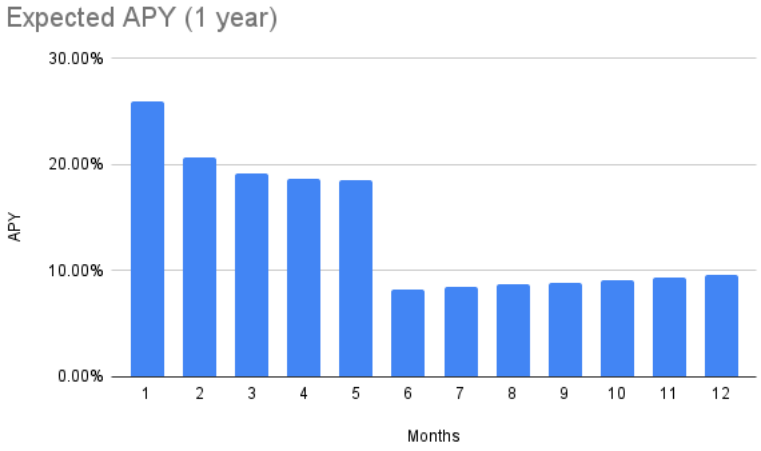
ment while maintaining decentralized ownership from inception. By bootstrapping through community participation rather than institutional investment, Nau establishes a token distribution that reflects genuine user interest and creates long-term alignment between protocol growth and community benefit. The model demonstrates how native AO protocols can achieve sufficient capitalization while preserving the decentralized principles that make permissionless finance valuable. Locking period of 6 months.

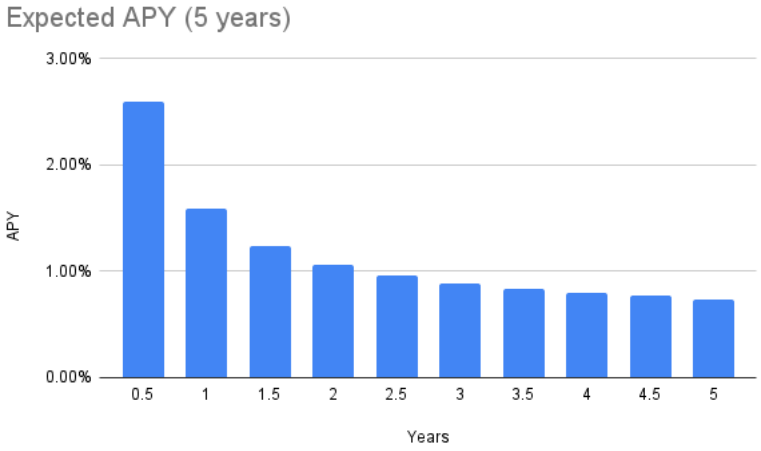
4.6 Projected Yields

Assuming we have a new 100 DeFi focused users every month, in addition to the 5000 GiB of GiB minted for data storage, and assuming a NAU valuation of $0.10 per token, with the current prices of Arweave, these are the projected APYs:




Expected APY (5 years)
150.00%
100.00%
50.00%
0.00%
APY
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
years


Expected APY (1 year)
30.00%
20.00%
10.00%
0.00%
APY
1
2
3
4
5
6
7
8
9
10
11
12
Months



4.7 Fee Structure

Example: GiB currently trades at **0.98GiB**, and the current base rate is **1.4%**. The system rebalances **10,000 GiB**, while the total GiB supply is **1 million**. The last rebalancing happened 3 hours ago and no liquidity has been issued in the meantime.

Decay rate: $b(t) = b(t-1) \cdot 0.94^{\delta(t)} = 0.014 \cdot 0.94^3 = 0.0116$

Increase rate: $b(t) = b(t-1) + \frac{\text{rebalanced amount}}{2 \cdot \text{total supply}} = 0.0116 + \frac{10{,}000}{2 \cdot 1{,}000{,}000} = 0.0166$

The base rate increased from **1.4%** to **1.66%**.

5 Concepts

Vault: a collateralized debt position (CDP), bound to a single Arweave address.

GiB: The data stablecoin that is issued from a user's vault and freely transferred to any Arweave address. Maintains parity with the price of 1 GiB of storage on Arweave.

Collateral: Wrapped AR tokens (wAR) that are used as security for a GiB loan. wAR maintains 1:1 value equivalence with native AR while operating on the AO network.

Collateralization Ratio (CR): The amount of collateral in relation to the stablecoin debt ($CR = \frac{\text{Collateral}}{\text{Debt}}$)

Individual Collateralization Ratio (ICR): A vault's CR.

Minimum Collateralization Ratio (MCR): Minimum ICR at vault creation. Below this value, borrowing is not permitted (160%).

Liquidation Ration (LR): Minimum acceptable ICR. Below this value, liquidation occurs (130%).

Total Collateralization Ratio (TCR): The overall protocol Collateralization Ratio. $TCR = \frac{\text{Total Collateral}}{\text{Total Stablecoins}}$

Borrower: A user that locks collateral (AR) in a vault and mints GiB tokens to their own address. They "borrow" GiB tokens against their collateral. Same as Minter.

Supplier: A user that has deposited GiB tokens to the Stability Pool, in order to earn collateral from liquidations, and receive NAU token issuance.

Staker: A user that has deposited NAU tokens to the Staking Pool, in order to earn GiB and collateral (AR) from borrowing fees.

Liquidation: the act of force-closing an undercollateralized vault and redistributing its collateral and debt to stability pool suppliers. The liquidated debt is offset with the Stability Pool, and the collateral distributed to depositors.

Redistribution: If the liquidated debt can not be offset with the Stability Pool, the system redistributes the liquidated collateral and debt directly to the active Vaults with >MCR collateralization ratio.

Rebalancing: The act of purchasing GiB on a secondary market and burning it in order to maintain the stablecoin's peg.