SURYA COIN

(OHM)

Abstract: Surya Coin Staking Platform

The **Surya Coin Staking Platform** is a secure, blockchain-native staking infrastructure built around the native currency of the Surya Network. Designed to facilitate seamless participation and rewarding yields, it empowers users to stake their Surya tokens directly on the platform.

Key components include:

- **Dedicated Blockchain & Explorer**: The platform operates on the Surya Network's proprietary chain, and users can monitor all transactions, blocks, and wallet activity in real time through **Suryascan**, the official blockchain explorer Suryascan.
- **Staking Mechanics**: Users stake their Surya tokens (symbol OHM) in a secure environment. The platform handles stake management, including tracking active stakes and reward accrual. Users can efficiently monitor—via the platform's dashboard—the status and performance of their stakes Surya.
- **Real-Time Dashboard & Wallet Integration**: The staking interface supports wallet connection and displays real-time updates on stake status, enabling users to view staking amounts, durations, and earned rewards.
- **Transparent and User-Centric**: By combining staking functionality with real-time transparency via Suryascan, the platform ensures users have full visibility into on-chain activities. This strengthens trust by offering auditability through the public explorer.
- **Objectives & Benefits**:
    - Encourage user participation and retention by providing reliable, straightforward staking.
    - Enhance utility and demand for the Surya coin via staking rewards.
    - Foster community engagement by offering clear, transparent, and easy-to-use staking features.

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Vision

The vision behind **Surya Network as the Value Layer of the Internet** is to usher in a world where value can be created and exchanged freely and globally, just as we create and exchange information today. It is a world that enables new – fairer, more inclusive, and more efficient – forms of human collaboration, innovation, and governance. We strongly believe that realizing this vision can significantly advance society.

To make this ambitious vision a reality, **Surya Network's infrastructure must continuously evolve**. Specifically, it must achieve exponential scalability without compromising on security, decentralization, or user experience.

To address this, a reimagined **Surya Network Architecture** has been introduced as part of the Surya community effort. This design transforms Surya into a **network of scalable, SVM (Surya Virtual Machine) powered chains**, while maintaining **full EVM compatibility** through a flexible **Mapping Layer**. This mapping layer allows seamless interoperability between SVM-native applications and existing EVM ecosystems, enabling developers to deploy dApps across both environments with minimal friction.

The architecture is built for **limitless scalability** – supporting a practically unlimited number of chains that can interact seamlessly and instantly. Cross-chain communication within Surya Network happens without requiring additional trust assumptions, ensuring **secure and frictionless interoperability** across the ecosystem.

This architecture fully realizes our core requirement: **exponential scalability with uncompromised security, inclusivity, and user experience** – making Surya Network the foundation of the next generation of decentralized applications and digital economies.

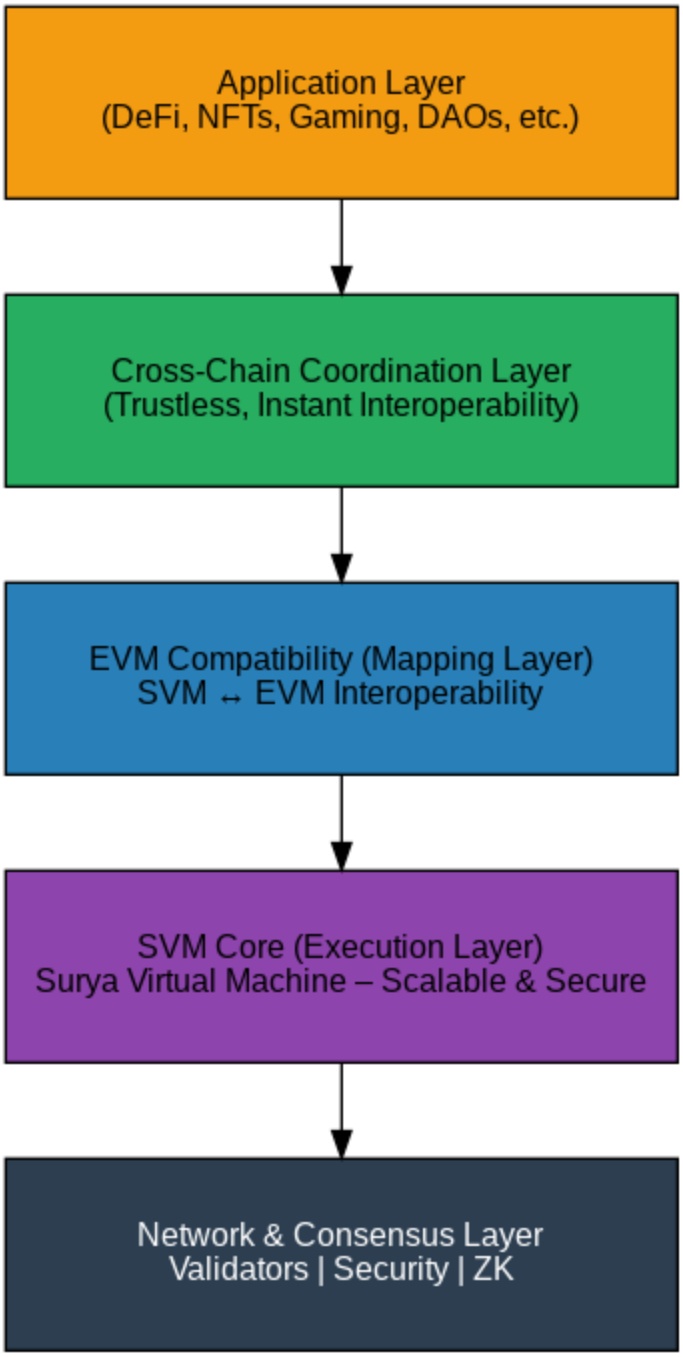


Figure 1. Surya protocol architecture

To coordinate, secure and grow this powerful network, an advanced, well-designed protocol economy and mechanism design are necessary. This inspired the creation of **SURYA**.

Relevant work

In this chapter we outline relevant native token design examples, the utility they assign to the token as well as notable advantages and disadvantages.

2.1 Bitcoin (BTC)

BTC is the native token of the Bitcoin protocol, and it's the first prominent native token implementation.

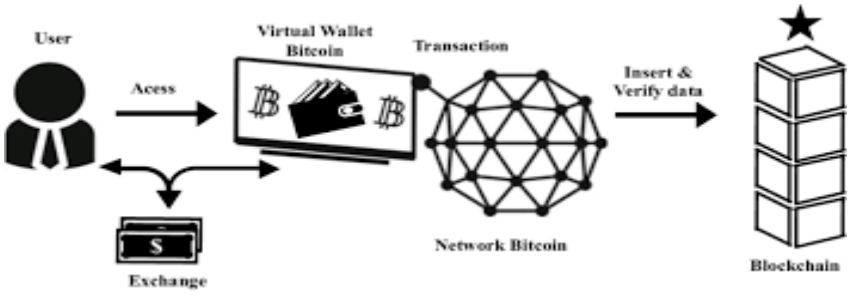
The utility of BTC is twofold:

- Miner rewards: The protocol emits BTC and distributes it to protocol validators, aka miners;
- Transaction fees: Users pay fees in BTC for every transaction, which prevents spam and provides additional incentives for miners.

One advantage of the BTC design is a deterministic, i.e. predictable supply. Normally, tokens with deterministic supply are more attractive to holders and can capture value better than those with non-deterministic supply.

We consider BTC a legacy token design, we argue its disadvantages are multifold:

- It is an unproductive asset, it does not give its holders any meaningful role in the protocol nor the incentives to performs such a role;
- It does not leverage the opportunity to require stake in the native token for protocol validators and instead requires them to stake, i.e. invest external resources (mining equipment and electricity), thus making protocol less resilient and self-sustainable;
- It gradually reduces emission for mining rewards until it reaches zero, which introduces sustainability and security concerns (it is unclear if the security can be maintained once the emission rate becomes low or reaches zero);
- It does not introduce any type of economic support to the ecosystem;
- It does not give any governance rights to holders, although it can be argued that Layer 1 protocols such as Bitcoin should not utilize tokens for governance.



2.2 Ethereum (ETH)

ETH is the native token of the Ethereum protocol and ecosystem. With its innovative design, it established the next generation of native protocol tokens.

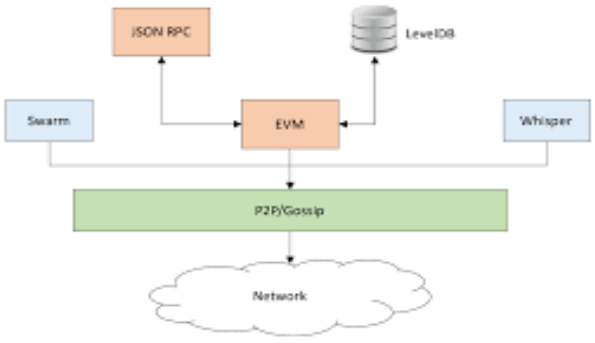
The utility of ETH is multifold:

- Validators staking: Ethereum's PoS (Proof-of-Stake) protocol requires validators to stake ETH in order to join the validator pool;
- Validator rewards: The protocol emits ETH and distributes it to protocol validators;
- Transaction fees: Users pay fees in ETH for every transaction, which prevents spam and provides additional incentives for validators.

The design of ETH has multiple advantages:

- It is a productive asset, its holders can participate in securing the network and they receive incentives for doing that;
- It disincentivizes malicious behavior of validators via in-protocol slashing, i.e. destroying tokens of malicious validators;
- It does not introduce security and sustainability concerns, given that it doesn't have supply cap like BTC;
- It provides economic support to the ecosystem via a predetermined portion of the initial supply allocated to the stewarding foundation.

One potential disadvantage of the ETH design is that it does not have fully predictable supply, given that token emission for validator rewards increases as more tokens get staked. However, this is successfully countered by the built-in mechanism that burns 1 a portion of every transaction fee, thus countering the impact of token emission for validator rewards. Another disadvantage is that the aforementioned economic support can not last indefinitely; the initial token allocation to the stewarding foundation will eventually get depleted. Lastly, it does not assign any governance right to token holders, although, as mentioned above, it can be argued that Layer 1 protocols should not utilize tokens for governance.



2.3 Cosmos (ATOM)

ATOM is the native token of the Cosmos Hub, the intended central blockchain of the Cosmos multi-chain ecosystem.

It has multifold utility, but only within Cosmos Hub:

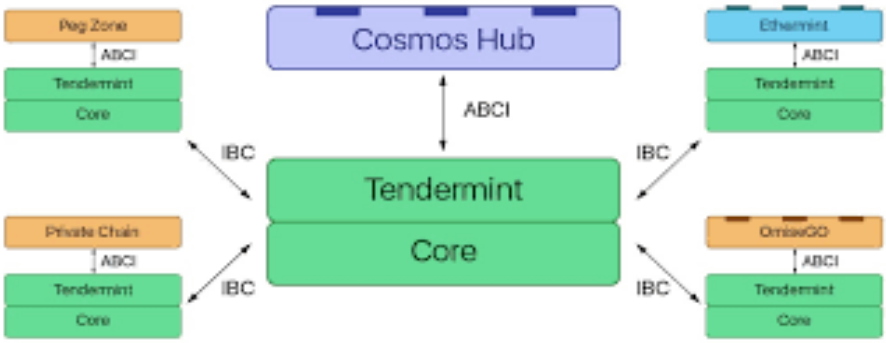
- Validators staking
- Validator rewards
- Transaction fees
- Governance

The design of ATOM has the following advantages:

- It is a productive asset, its holders can participate in securing Cosmos Hub and receive incentives for doing that;
- It does not introduce security and sustainability concerns, given that it doesn't have supply cap;
- It provides economic support to the ecosystem via a predetermined allocation to the stewarding foundation;
- It gives its holders governance rights via a comprehensive governance model.

The disadvantages of ATOM design:

- It only has utility within Cosmos Hub; it is not used to run and secure other chains in the ecosystem, although there are initiatives to enable this;
- It facilitates a token-only governance model, which excludes other relevant stakeholders of the ecosystem (developers, prominent contributors, applications etc.) from decision making;
- Economic support it facilitates can not last indefinitely, since the token treasury will eventually get depleted.



2.4 Polkadot (DOT)

DOT is the native token of the Polkadot multi-chain ecosystem.

It has the same utility as ATOM, but generally across the whole Polkadot ecosystem:

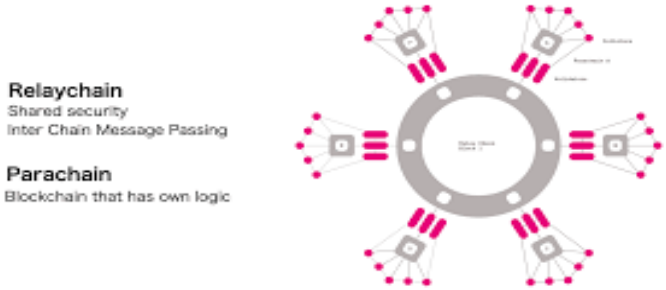
- Validators staking;
- Validator rewards;
- Transaction fees;
- Governance.

The design of DOT has the following advantages:

- It is a productive asset;
- It does not introduce security and sustainability concerns, given that it doesn't have supply cap;
- It provides economic support to the ecosystem via a predetermined allocation to the stewarding foundation;
- It gives its holders governance rights via a comprehensive governance model;
- It provides security for the whole ecosystem, i.e. all participating blockchains.

The disadvantages are:

- It mandates the usage of DOT as the validator staking token for all participating chains, thus reducing architectural options for developers of Polkadot chains;
- It introduces a significant level of friction for developers of Polkadot blockchains who are
  required to bid and lock significant amounts of DOT in order for their chains to become part of the ecosystem;
- It facilitates a token-only governance model, which excludes other relevant stakeholders of the ecosystem from decision making;
- Economic support it facilitates can not last indefinitely, since the token treasury will eventually get depleted.



2.5 Chainlink (LINK)

LINK is the native token of the Chainlink decentralized oracle network. It has utility across the whole Chainlink ecosystem, mainly for:

- Payment for data and oracle services;
- Staking by node operators to secure the network;
- Incentivizing reliable and accurate data delivery;
- Governance participation (future upgrades are expected to expand LINK's role in community governance).

The design of LINK has the following advantages:

- It is a **productive utility token**, directly tied to demand for oracle services in DeFi and Web3;
- It **secures the oracle network** by requiring node operators to stake LINK, aligning incentives with reliability;
- It provides **economic sustainability** through a fee-based model where smart contract users pay in LINK;
- It ensures **wide adoption across ecosystems**, as Chainlink is integrated into Ethereum, Polkadot, Cosmos, and many other blockchains;
- It gives LINK holders potential **future governance rights**, making the token both functional and participatory.

The disadvantages are:

- LINK is not a base-layer protocol token, but an **application-level utility token**, limiting its role in securing full blockchain ecosystems;
- Its **supply is capped at 1 billion**, which creates scarcity but reduces flexibility for future incentive expansion;
- High reliance on **oracle demand** — if DeFi usage declines, the utility of LINK could also decrease;
- Current governance use cases are still **underdeveloped**, meaning LINK functions more as an operational token than a comprehensive governance asset today;
- The **value of LINK depends heavily on adoption** of Chainlink services, introducing ecosystem-dependence risks.

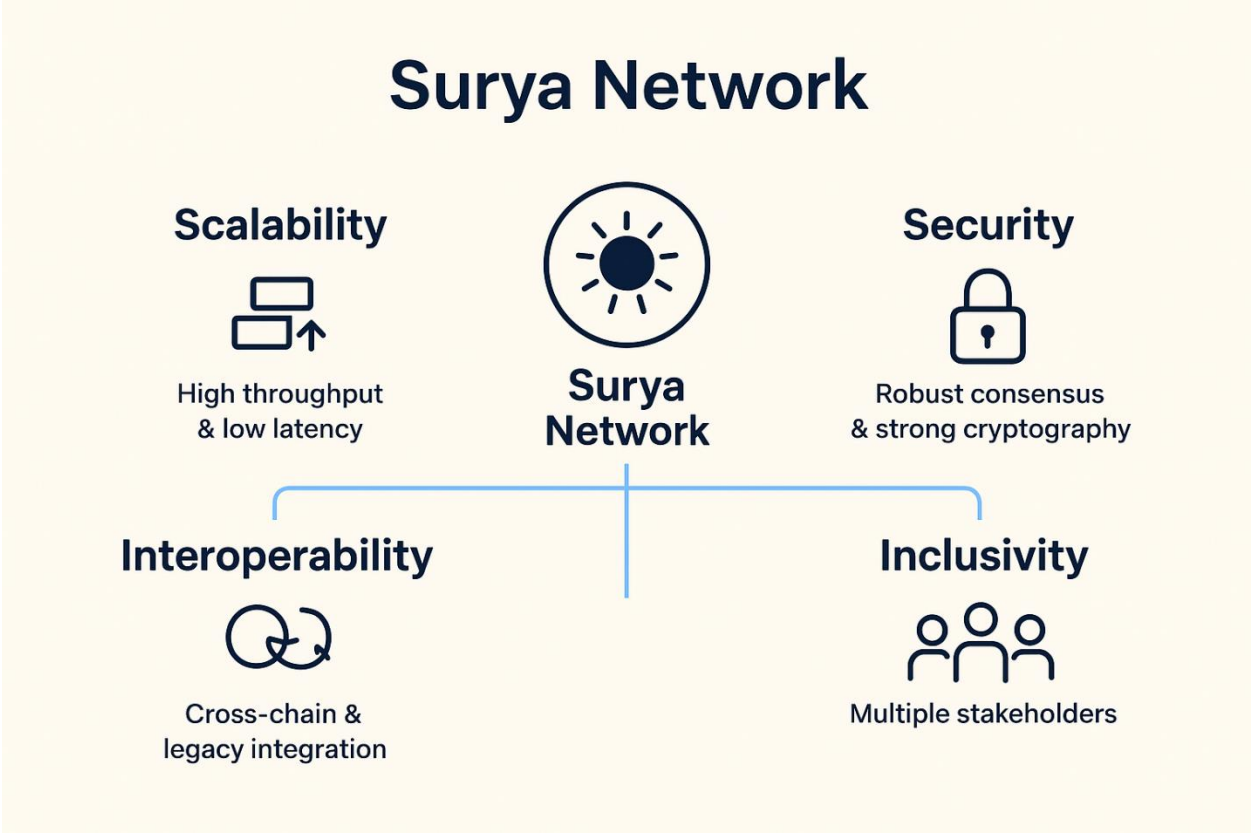
Design Goals of Surya Network

The Surya Network is envisioned as a **next-generation blockchain infrastructure** designed to address the limitations of current decentralized systems while enabling scalable, secure, and inclusive adoption of Web3 technologies. Its design goals are rooted in providing an ecosystem that balances performance, usability, and sustainability.

Core Goals

- **Scalability without Compromise**
  Surya Network aims to achieve high transaction throughput and low latency while maintaining decentralization. This ensures the network can handle real-world applications at scale, from DeFi to enterprise-level deployments.
- **Security as a Foundation**
  The architecture of Surya Network prioritizes robust consensus mechanisms and strong cryptographic guarantees, ensuring resistance to attacks, safeguarding user assets, and maintaining trust across the ecosystem.
- **Interoperability & Composability**
  Surya Network is designed to seamlessly connect with other block chains, legacy financial systems, and Web2 platforms, enabling a frictionless transfer of value and data across ecosystems.
- **Sustainable Tokenomics**
  The native token of Surya Network — Surya Coin — will be a productive and sustainable asset, balancing validator incentives, governance rights, and ecosystem funding without creating long-term economic risks.
- **Inclusive Governance**
  Governance on Surya Network extends beyond token-only models. It is designed to empower multiple stakeholders — including developers, users, and institutions — ensuring decision-making processes are fair, transparent, and representative.
- **Developer-Centric Infrastructure**
  Surya Network provides a modular architecture, comprehensive SDKs, and developer incentives, reducing barriers to entry and enabling builders to deploy applications efficiently.

- **Green & Energy-Efficient Operations**
  A core design principle of Surya Network is sustainability. The consensus protocol minimizes energy consumption while delivering strong security guarantees, aligning block chain growth with environmental responsibility.
- **Beyond Cryptocurrency: Institutional Utility**
  Surya Network is not limited to cryptocurrency. It also provides a secure and reliable infrastructure for institutions to transfer and protect sensitive data, ensuring privacy, compliance, and efficiency. This broader use case strengthens the adoption of the Surya ecosystem.
- **Driving Surya Coin Utilization & Community Growth**
  As institutions and applications adopt Surya Network for secure data transfers and real-world solutions, the demand and utility of Surya Coin will naturally increase. Future projects will be designed to drive greater Surya Coin consumption, supporting long-term value creation for the community and ensuring a sustainable ecosystem for all participants.



Utility of Surya Coin (OHM)

The native token of the Surya Network is **OHM**. It serves as the cornerstone of the network's economic and governance model, ensuring security, sustainability, and community-driven growth.

4.1 Validator Staking

OHM is required for validator participation in the Surya Network.

- Validators must stake OHM to secure the network and participate in consensus.
- Staking ensures economic alignment by placing collateral at risk, incentivizing honest and reliable validator behavior.
- Delegators may also stake their OHM by supporting validators, strengthening decentralization and earning proportional rewards, though they do not gain direct governance rights.

4.2 Validator Rewards

Validators and delegators receive OHM as rewards for securing the network and validating transactions.

- Rewards are distributed from transaction fees and, if applicable, newly issued tokens.
- This incentive mechanism ensures validators are consistently motivated to maintain honesty, uptime, and performance.
- The reward distribution algorithm is designed to prevent centralization and encourage wide participation across the validator set.

4.3 Governance Participation

Governance in the Surya Network is **validator-centric**.

- Only active validators (nodes) hold governance rights, allowing them to propose and vote on protocol upgrades, treasury allocation, and other key ecosystem decisions.

- Ordinary OHM holders do not receive governance power by default. They may gain governance participation only when they are **allocated or recognized as a validator node through Surya's institutional and community-driven projects**.
- This ensures governance remains in the hands of responsible, committed participants who have a direct role in securing and operating the network, while still being representative of the wider ecosystem.

Tokenomics & Supply

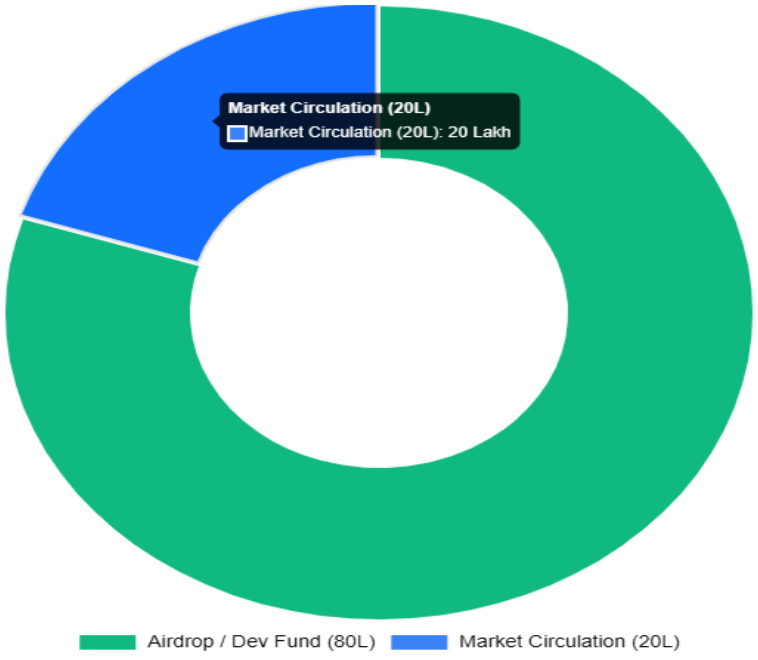
5.1 Initial Supply

- **Total Supply (Fixed Cap): 10,000,000 OHM**
  OHM supply is permanently capped at 10 million to ensure long-term scarcity.

- **Locked Supply: 8,000,000 OHM (80%)**
  Locked in Surya protocol reserves for **20 years**, providing security and long-term sustainability.

- **Circulating Supply at Genesis: 200,000 OHM (2%)**
  Available at launch for validator bootstrapping and initial liquidity.

- **Gradual Unlocking:**
  - **400,000 OHM released every 20 blocks**.
  - Ensures smooth supply expansion without sudden inflationary shocks.



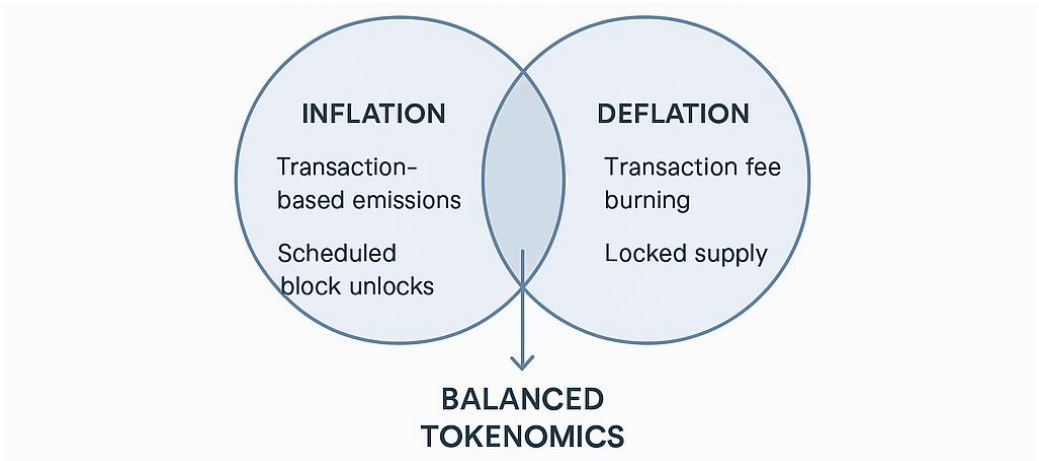
5.2 Emission & Distribution Model

- **Transaction Emission:** Each transaction generates **0.008 OHM**.
- **Reward Allocation:**
  - **100% of this emission goes directly to active validators (nodes).**

- **No Delegator Rewards:** Unlike other PoS systems, Surya eliminates passive delegation. Only committed **validator nodes** secure the network and earn rewards.
- **Validator Expansion:**
  - Future validators may be onboarded via Surya institutional/community projects.
  - Once added, they participate in consensus and share transaction rewards.

5.3 Deflationary & Inflationary Mechanisms

- **Inflationary Dynamics:**
  - **0.008 OHM per transaction** adds to circulating supply.
  - Block-based unlocks (400K every 20 blocks) gradually release reserves.
- **Deflationary Dynamics:**
  - A percentage of **transaction fees can be burned**, offsetting emissions.
  - 8M OHM locked for 20 years ensures scarcity and market stability.
- **Balanced Economics:**
  - Inflation = validator rewards & security.
  - Deflation = burning + long lockup.
  - Net Result = **self-sustaining economy** that rewards validators while preserving long-term value.



Staking Layer Architecture

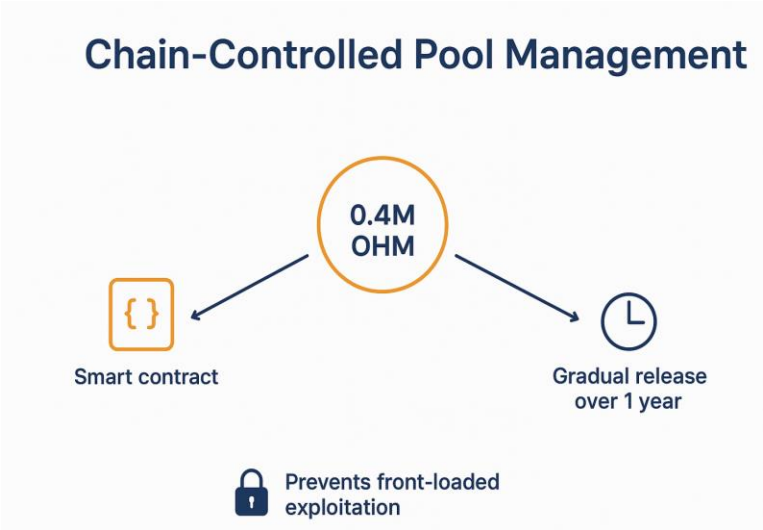
6.1 Design and Implementation

The staking layer of Surya Network is designed to align economic participation with long-term ecosystem growth. Unlike validator transaction rewards (which are direct emissions), **all staking, sponsor, and royalty rewards are derived from a fixed reward pool** allocated during supply unlocking.

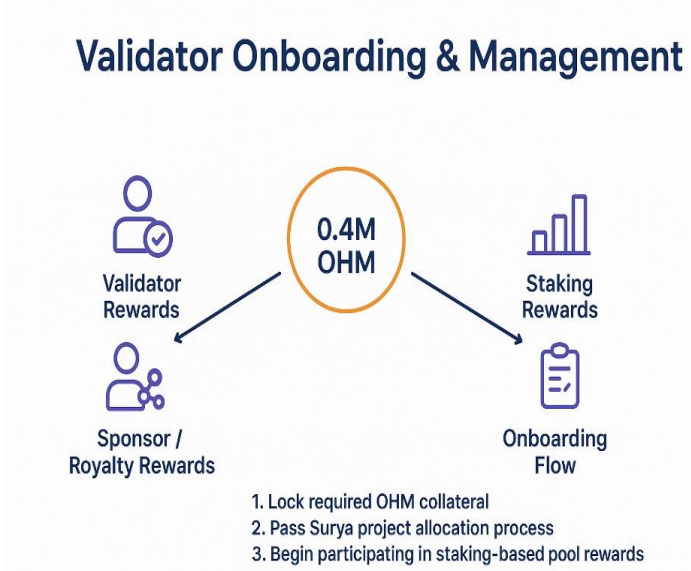
- **Reward Pool:** 400,000 OHM allocated for staking-related incentives.
- **Distribution Mechanism:** Rewards are issued algorithmically based on staking amount, validator support, and community participation.
- **Sustainability:** By using a fixed pool instead of unlimited inflation, Surya ensures staking rewards remain predictable, fair, and economically sound.

6.2 Surya Chain Management

- **Locked Governance Control:** The staking pool (0.4M OHM) is managed natively by the Surya Chain.
- **Smart Contract Allocation:** Contracts govern the disbursement of rewards, ensuring fairness and transparency.
- **Time-Based Release:** The pool is gradually consumed over one year, preventing front-loaded reward exploitation.



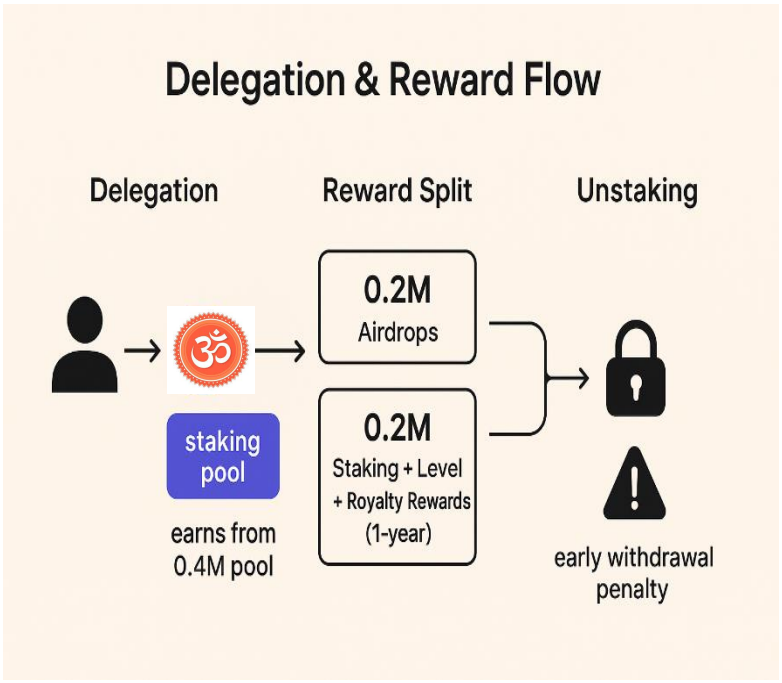
6.3 Validator Onboarding & Management



- **Validator Rewards:** Validators continue to earn **0.008 OHM per transaction** (Section 5).
- **Staking Rewards:** Users staking OHM (non-validators) participate in the **0.4M reward pool distribution**, not transaction emissions.
- **Sponsor / Royalty Rewards:**
  - Referral-based staking support yields level rewards.
  - Royalty incentives are tied to staking growth and validator sponsorship.
- **Onboarding Flow:** New validator candidates must:
  1. Lock required OHM collateral.
  2. Pass Surya project allocation process.
  3. Begin participating in staking-based pool rewards.

6.4 Delegation & Unstaking

- **Delegation:** Users can delegate OHM to staking pools, but unlike validators, they earn from the **0.4M pool distribution**, not transaction emissions.



- **Reward Flow:**
  - **0.2M OHM → Airdrop-based distribution according to staking contributions.**
  - **0.2M OHM → Staking rewards + level rewards + royalty rewards over one year.**
- **Unstaking:**
  - Subject to time-bound lockup to ensure stability.
  - Early withdrawal penalties prevent exploitation and maintain fairness.

Economic & Technical Model

9.1 Hypothesis

The Surya Network hypothesizes that a **balanced incentive structure** combined with a **sustainable token economy** can achieve long-term network security, scalability, and adoption. By integrating:

- A **fixed maximum supply** (10M OHM).
- **Locked reserves** (8M OHM) with time-based release.
- **Validator-centric reward mechanisms** (0.008 OHM/transaction + annual pool rewards).
- **Governance rights tied to validator participation**, not just token holding.

…the network ensures **economic sustainability** while preventing speculative centralization.

9.2 Inputs

The model considers the following key economic and technical inputs:

- **Token Supply**
  - Total: 10M OHM.
  - Circulating: 0.2M initially.
  - Locked: 8M for 20 years, gradual release.
- **Reward Pools**
  - 0.4M OHM per unlock cycle → 0.2M airdrops (to stakers) + 0.2M annual staking/royalty rewards.
  - 0.008 OHM per transaction → distributed only to validators.
- **Consensus Model**
  - Validator staking with OHM.
  - Secure cryptographic mechanisms for block validation.
- **Governance Model**
  - Validators hold voting rights.
  - Future validator nodes (through Surya projects) gain governance power.
- **Adoption Inputs**
  - Network usage (DeFi, institutional data transfer, Web2 integrations).
  - Validator participation and staking ratio.
  - Community-driven ecosystem growth.

9.3 Methodology

The economic model uses **simulation of token flows** under different adoption scenarios:

1. **Validator Incentive Simulation**
    - Projects validator revenue from transaction emissions + reward pools.
    - Ensures validator returns remain positive even at low adoption levels.
2. **Circulating Supply Projection**
    - Models impact of 20-year lock/unlock schedule.
    - Tests inflationary pressure of transaction emissions against deflationary mechanisms (burns, treasury lockups).
3. **Network Stress Testing**
    - Transaction throughput, latency, and fee models are simulated under high usage.
    - Consensus performance under adversarial conditions.
4. **Governance Simulation**
    - Models validator participation in voting.
    - Tests decentralization metrics (no validator can dominate decision-making).

9.4 Results & Analysis

- **Validator Economics:**
  Validators are strongly incentivized by dual reward mechanisms (annual reward pool + per-transaction emissions). Even during low adoption phases, guaranteed pool rewards sustain validator interest.
- **Sustainability of Tokenomics:**
  With 80% supply locked long-term, OHM avoids early oversupply. Controlled emissions balance network incentives without risking runaway inflation.
- **Decentralization & Governance:**
  Restricting governance to validator nodes ensures that decision-making is based on network contributors rather than passive token holders, reducing governance capture risks.
- **Scalability & Utility:**
  Surya Network’s modular design, interoperability features, and institutional data-transfer use cases expand OHM utility beyond crypto speculation, driving long-term demand and adoption.

Conclusion

The Surya Network represents a **next-generation blockchain architecture** that unites economic sustainability, validator accountability, and real-world utility. Unlike many networks that rely solely on speculative token demand, Surya builds a **dual foundation**: a **scarcity-driven token economy** and a **robust infrastructure for institutions** to manage their data securely.

At the economic level, Surya is anchored by a **fixed supply of 10 million OHM**, with **80% (8M OHM) locked for 20 years** to preserve scarcity and reduce volatility. Reward distribution is deliberately structured:

- **Validator Rewards:** 0.008 OHM per transaction, ensuring incentives grow with adoption.
- **Staking & Sponsor Rewards:** 0.4M OHM unlocked per cycle, split into **0.2M for airdrops** and **0.2M for staking, level, and royalty rewards**. This balance prevents inflationary shocks, ensures validators remain motivated, and channels rewards only to those actively contributing to the ecosystem.

Governance is **validator-centric**, ensuring that decision-making rests with those securing and operating the chain. Unlike token-only governance models, Surya restricts governance to validator nodes—including future institutional validators on-boarded via Surya projects—so that influence is tied to responsibility, not speculation.

On the technical and utility front, Surya goes **beyond cryptocurrency** by offering **virtual data spaces to institutions**, built on secure blockchain-based "data blocks." These enable enterprises, governments, and organizations to:

- Transfer sensitive data with cryptographic security.
- Store information immutably, reducing risks of tampering or unauthorized access.
- Leverage Surya's interoperability to integrate seamlessly with both Web2 systems and other blockchain ecosystems.

This **institutional-grade data utility** creates a new dimension of OHM's adoption: as organizations rely on Surya for secure data management, **the utilization and demand for Surya Coin naturally increase**, reinforcing the network's economic model.

The result is a **self-sustaining ecosystem flywheel**:

1. Adoption (crypto + institutional).
2. Transactions on-chain.
3. Validator rewards grow.
4. Security strengthens.
5. Institutional trust expands.
6. More adoption.

By uniting **scarcity-driven economics, validator accountability, institutional utility, and sustainable governance**, Surya Network stands as a blockchain not just for speculation, but also for **real-world impact**. It is designed to serve as a **secure backbone for both decentralized finance and institutional data infrastructure**, ensuring long-term growth, resilience, and community value creation.

"Surya Network is not just a blockchain — it is the foundation of trust for a decentralized future"