MEZE

Whitepaper

Version 1.0

A Transaction-Driven Economic System for Adaptive Digital Commerce

Prepared by: Michael Anan Onimisi
Role: Founding Partner — Web3 & Blockchain

ABSTRACT

This paper introduces MEZE, a transaction-driven economic system designed to align digital value creation with real-world economic activity. Unlike traditional monetary or token-based systems that rely on predefined supply schedules or speculative demand, MEZE derives its issuance directly from verified economic participation.

At the core of the system is a simple principle:

Value must be created before it is represented.

By embedding token creation, incentives, and coordination mechanisms into everyday transactions, MEZE establishes a dynamic and adaptive economic framework capable of scaling with real-world usage.

The system introduces key innovations, including transaction-triggered minting, the Milestone Economic Value (MEV) framework, milestone-based coordination, an on-chain historical layer through Epoch NFTs, and a cryptographically secured off-chain oracle architecture. Together, these components form a new class of economic infrastructure — one that evolves continuously with participation, maintains alignment between stakeholders, and preserves a transparent record of its own growth.

1. INTRODUCTION

Digital economies have grown rapidly, yet most remain structurally disconnected from real-world economic activity. Existing token systems often depend on pre-allocated supply, speculative incentives, or artificial emission schedules that fail to reflect actual usage.

This disconnect leads to systemic inefficiencies:

- Inflation without corresponding value creation
- Weak alignment between participants
- Short-term speculation dominating long-term utility

MEZE introduces a different model.

Instead of defining supply first and seeking demand later, the system derives supply directly from economic activity. Transactions become the fundamental input, and value representation follows naturally.

This approach transforms economic systems from static constructs into adaptive, data-driven networks capable of learning, scaling, and coordinating participation over time.

2. DESIGN PHILOSOPHY

The system is built on a set of foundational principles that guide its structure and behavior.

2.1 Real-Value Anchored Minting

Token creation is exclusively triggered by the introduction of external value into the system. This ensures that every unit of supply corresponds to measurable economic activity.

2.2 Separation of Creation and Circulation

The system distinguishes between token creation and token movement. While external transactions generate new supply, internal transactions only redistribute existing tokens. This separation prevents inflation caused by internal activity.

2.3 Adaptive Supply Through MEV

Instead of a fixed total supply, the system introduces a dynamic framework — MEZE Milestone Economic Value (MEV) — which tracks cumulative economic output and serves as a living measure of growth.

2.4 Reward Distribution

Rewards are distributed to users and merchants at the point of value creation. When a qualifying transaction triggers minting, the user and merchant reward shares are immediately credited to their claimable balances on-chain, which they may withdraw at any time. This design provides flexibility without adding complexity, and ensures that every reward is directly tied to a verifiable economic event.

2.5 Long-Term Sustainability

Rather than relying on rigid emission schedules, the system uses adaptive controls for supply, liquidity, and incentives, ensuring resilience as adoption scales.

3. UTILITY AND VALUE SINKS

The value of the system is derived from its usage.

3.1 Core Utility

- Payments within the ecosystem
- Loyalty and rewards
- Discounts and incentives

3.2 Value Sinks

To maintain balance, tokens are continuously cycled through:

- Spending
- Transaction fees
- Burn mechanisms
- Locking (staking)

These mechanisms ensure that value is not only created but also retained.

4. THE MINTING ARCHITECTURE: CONTROLLED VALUE CREATION

4.1 Revenue-Backed Minting and Transaction-Driven Economy

4.1.1 Overview

Meze operates a Revenue-Backed Minting (RBM) model, where all token issuance is directly tied to verified economic activity generated off-chain. Unlike traditional token systems that rely on pre-minting, speculative issuance, or fixed supply assumptions, Meze introduces a value-reflective issuance model in which tokens are created only when real revenue is generated and validated.

This model ensures that:

- Token supply reflects actual economic output
- Minting is grounded in verifiable activity
- The system remains adaptive and scalable over time

4.1.2 Core Framework

The Meze minting system is structured across three distinct layers:

1. Value Origin — Revenue-Backed Minting (RBM)
2. Execution — Transaction-Driven Minting (TDM)
3. Flows — RBT (User Transactions) and RBA (Platform Revenue)

4.1.2.1 Value Origin — Revenue-Backed Minting (RBM)

RBM defines the economic foundation of the Meze system. All tokens are minted as a representation of real revenue generated off-chain, including:

- User transactions (payments, merchant activity)
- Platform revenue (SaaS subscriptions, advertising, fees, etc.)

A configurable percentage of this revenue is converted into on-chain value and minted as MEZE tokens. The minting formula is defined as:

Mint Amount = (Normalized Revenue Value × RBM Percentage) × Emission Rate

Where:

- **Normalized Revenue Value** is the standardized on-chain representation of off-chain fiat value, converted by the OCEO before submission
- **RBM Percentage** determines what portion of revenue is converted into tokens
- **Emission Rate** defines token output per unit of value

Both RBM Percentage and Emission Rate are dynamic parameters, governed by the system and subject to controlled updates. Neither is hardcoded. Both are bounded by absolute hard ceilings that governance itself cannot exceed, ensuring that no parameter change — however it is approved — can result in unbounded token issuance.

4.1.2.2 Execution — Transaction-Driven Minting (TDM)

TDM defines the execution mechanism through which minting occurs. All minting is triggered by verified and settled economic events, ensuring that:

- No arbitrary minting is possible
- All token issuance is event-driven
- Each mint is tied to a specific, auditable source

TDM acts as the operational layer that converts validated off-chain activity into on-chain token issuance.

4.1.2.3 Flow Classification — RBT and RBA

Within TDM, minting is categorized into two distinct flows:

A. Revenue-Based Transactions (RBT)

RBT represents user-driven economic activity, including:

- Payments
- Merchant transactions
- Real-world financial interactions

RBT minting is executed through the Transaction Verifier, which:

- Interfaces exclusively with the Meze Off-Chain Economic Oracle (OCEO)
- Receives cryptographically signed transaction payloads
- Verifies the OCEO signature on-chain before accepting any data
- Confirms settlement status
- Validates that the transaction has not been previously processed

Only verified and settled transactions can trigger minting under RBT. User and merchant wallet addresses are included in the verified payload, ensuring accurate and direct allocation of rewards.

B. Revenue-Based Allocation (RBA)

RBA represents platform-generated revenue, including:

- SaaS subscriptions
- Advertising revenue
- Platform and service fees

RBA minting is executed through the Enterprise Verifier, which:

- Interfaces exclusively with the OCEO
- Validates revenue sources and category classification
- Verifies the OCEO signature cryptographically

- Ensures uniqueness and authenticity of each revenue event

RBA functions as a system-level economic input, distinct from user-driven transactions. Because RBA does not involve individual users, all allocation flows to protocol-level buckets as defined in the RBA allocation model.

4.1.3 Verifier Layer

The Meze system introduces a dual-verifier architecture to ensure integrity and separation of concerns:

- **Transaction Verifier** — handles RBT (user transactions)
- **Enterprise Verifier** — handles RBA (platform revenue)

Both verifiers:

- Interact exclusively with the Meze Off-Chain Economic Oracle (OCEO)
- Accept only settled and validated data
- Verify cryptographic signatures on every payload using the EIP-712 standard
- Enforce a data freshness window, rejecting any payload older than five minutes
- Prevent duplicate processing of transactions or revenue events

This ensures that all minting activity is verifiable, auditable, and resistant to manipulation. The combination of cryptographic signing and freshness enforcement means that even a valid historical payload cannot be replayed to trigger a second mint.

4.1.4 Allocation and Distribution

Once minting is executed, tokens are transferred to the AllocationVault, which serves as the custody and distribution layer.

The AllocationVault:

- Receives all newly minted tokens
- Distributes tokens based on predefined allocation models
- Supports dynamic, governance-controlled allocation percentages
- Maintains contract addresses for all allocation buckets

RBT Allocation (User Economy)

Bucket	Share	Distribution Method
User Rewards	50%	Pull — user claims claimable balance
Community & Marketing	20%	Push — CommunityMarketingEscrow
Treasury	15%	Push — MezeTreasury
Foundation (MCF)	10%	Push — MezeMCF
Merchant Incentives	5%	Pull — merchant claims claimable balance

RBA Allocation (Platform Economy)

Bucket	Share	Distribution Method
Treasury	50%	Push — MezeTreasury
Community & Marketing	15%	Push — CommunityMarketingEscrow
Team & Advisors	15%	Push — TeamAdvisorsEscrow
Foundation (MCF)	10%	Push — MezeMCF
Merchant Reserve	5%	Push — MerchantReserveEscrow
User Reserve	5%	Push — UserReserveEscrow

All allocation percentages are not hardcoded and can be updated through governance, with each change emitting an on-chain event recording both the previous and new values for full transparency.

User Rewards and Merchant Incentives use a pull distribution model. Rather than pushing tokens to every user address on each mint — which would create a griefing vulnerability where a failing recipient could block the entire transaction — rewards accumulate in a claimable balance mapping on the AllocationVault. Users and merchants call a claim function to withdraw their accumulated balance at any time. There is no expiry, no deadline, and no minimum claim period. The full balance is always visible on-chain.

4.1.5 Design Principles

The RBM and TDM framework is built on the following principles:

- **Value-Driven Issuance —** Tokens are minted only when real revenue exists
- **Event-Based Execution —** Minting is triggered by verified and settled activity
- **Separation of Flows —** User activity and platform revenue are handled independently
- **Dynamic Adaptability —** Key parameters evolve through governance over time
- **On-Chain Accountability —** Every mint is traceable to a verifiable economic event
- **Cryptographic Integrity —** All off-chain data is signed by the oracle and verified on-chain

4.1.6 Summary

Meze establishes a new model for token economies where:

Revenue → Verification → Minting → Allocation

Token supply is no longer predefined or speculative — it becomes a direct function of real economic output, enabling a system that is both adaptive and grounded in measurable value.

4.2 Governance and Liquidity Extensions (GDM and LDM)

While the Meze system is fundamentally driven by Revenue-Backed Minting executed through Transaction-Driven Minting, additional controlled layers are introduced to support system governance and market functionality. These layers do not replace or override RBM, but operate as secondary mechanisms under strict constraints.

4.2.1 Governance-Driven Minting (GDM)

Governance-Driven Minting (GDM) functions as a policy and control layer within the Meze economic system. GDM is not intended to act as a primary source of token issuance. Instead, it is used for:

- Economic parameter adjustments
- Strategic treasury actions
- Ecosystem stabilization measures
- Long-term system tuning

All GDM actions are:

- Subject to multisignature approval
- Governed by timelock mechanisms with a minimum two-day execution delay
- Restricted by per-epoch caps that automatically reset on a defined schedule
- Bound by absolute supply ceilings that cannot be overridden

This ensures that governance cannot introduce uncontrolled inflation or arbitrary token issuance. The per-epoch cap means that even legitimate governance decisions cannot mint large volumes in a compressed timeframe.

4.2.2 Liquidity-Driven Minting (LDM)

Liquidity-Driven Minting (LDM) supports the market infrastructure layer of Meze. Its purpose is to:

- Facilitate liquidity provisioning
- Support exchange listings (DEX and CEX)
- Enable market accessibility for MEZE tokens
- Manage protocol-owned liquidity (POL)
- Track pool reserves, LP token balances, and protocol share

LDM operates under the principle that liquidity follows usage, not precedes it. This ensures that market depth grows alongside real adoption and that token issuance remains aligned with economic activity.

LDM uses a two-step on-chain approval process:

4. LiquidityManager confirms a pool pairing and submits a mint request to NativeTrigger on-chain
5. The request is queued with full details — paired value, calculated mint amount, and timestamp

6. Multisig admin reviews the pending request on-chain and explicitly approves or declines
7. If approved, minting executes. If declined, a reason is recorded on-chain

This process creates a full, auditable on-chain record of every LDM decision — not just outcomes but also the review and approval chain. No LDM mint can occur without an explicit multisig approval event recorded on-chain.

4.2.3 Liquidity Pair Expansion

To support broader market access and ecosystem integration, the Meze Liquidity Manager supports multiple asset pairings. Primary liquidity pairs include:

- MEZE / USDT
- MEZE / USDC

These pairs provide price stability and valuation consistency. All swaps occur through liquidity pools, where prices are determined algorithmically based on pool ratios and users can exchange supported assets for MEZE and vice versa. Liquidity depth influences execution efficiency and price impact.

The LiquidityManager contract tracks total MEZE and stable assets in each pool, LP token balances held by the protocol, and per-pair activity history. Treasury holds all LP tokens, ensuring that the protocol retains ownership of its liquidity.

4.2.4 Relationship to Core Minting Model

The relationship between minting layers is defined as:

RBM — Value Origin

TDM — Primary Execution

  RBT (User Transactions)

  RBA (Platform Revenue)

GDM — Governance Control Layer

LDM — Market Infrastructure Layer

4.2.5 Design Constraints

To preserve the integrity of the Meze economic model:

- RBM-driven minting remains the primary source of token creation
- GDM and LDM are restricted, non-primary issuance mechanisms
- All non-RBM minting is transparently recorded on-chain
- All non-RBM minting is governed through multisig with timelock delay
- All non-RBM minting is bound by strict immutable limits

4.3 Strategic Implication

This layered approach enables Meze to:

- Maintain value-backed issuance as the core principle
- Introduce controlled flexibility for governance and growth
- Support real-world market integration without compromising discipline

By separating value creation, execution, governance, and market infrastructure, Meze achieves a system that is both adaptive in operation and disciplined in issuance.

4.4 Emission Control

Emission parameters are dynamic and governance-controlled. No parameter is hardcoded. All changes are subject to multisig approval and timelock execution delay.

The system maintains four independent emission parameters:

- **RBT Percentage —** the share of RBT revenue converted to tokens
- **RBA Percentage —** the share of RBA revenue converted to tokens
- **LDM Rate —** the share of paired liquidity value converted to tokens
- **Emission Rate —** the scaling multiplier applied after the percentage calculation

Each parameter has an absolute hard ceiling defined as an immutable constant in the protocol contracts. These ceilings cannot be modified by governance, by multisig, or by any other mechanism. They represent the absolute maximum values these parameters can ever hold, regardless of how the protocol evolves.

Emission rate objectives over time:

- Incentivize early participation through favorable initial parameters
- Allow gradual adjustment as adoption matures
- Maintain long-term value stability through disciplined governance

Every parameter change emits an on-chain event recording the previous value and the new value, creating a permanent and auditable history of all emission policy decisions.

4.5 Native Trigger — Minting Execution Engine

The NativeTrigger contract serves as the central execution layer of the Meze minting system. It acts as the bridge between verified off-chain economic activity and on-chain token issuance.

4.5.1 Role in the Minting Architecture

NativeTrigger operates within the RBM and TDM framework as the final validation and execution point before tokens are minted. Its responsibilities include:

- Receiving validated inputs from verifier contracts

- Ensuring transactions or revenue events are not processed more than once
- Applying current economic parameters at the time of mint
- Computing the exact mint amount
- Calling the native minter precompile to create tokens
- Routing minted tokens to the AllocationVault for distribution
- Recording mint activity in the MEV tracking system
- Managing the LDM approval queue

4.5.2 Minting Flow Integration

The complete minting flow is defined as:

OCEO (off-chain economic data, EIP-712 signed)
↓
Verifier Layer
├── **Transaction Verifier** (RBT)
└── **Enterprise Verifier** (RBA)
↓
NativeTrigger (execution engine)
↓
Native Minter (token creation via subnet precompile)
↓
AllocationVault (distribution to ecosystem buckets)
↓
MEV Tracker (economic accounting and milestone detection)

4.5.3 Execution Logic

Upon receiving verified data, NativeTrigger performs the following steps:

8. **Validation Check —** confirms the transaction or revenue event is valid and has not been processed previously
9. **Parameter Retrieval —** fetches the current RBM percentage and emission rate at the time of the call
10. **Mint Calculation —** computes: Mint Amount = (Normalized Revenue Value × RBM Percentage) × Emission Rate
11. **Mint Execution —** calls the native minter precompile to generate tokens
12. **Routing —** transfers minted tokens to the AllocationVault
13. **Distribution Trigger —** AllocationVault distributes tokens based on RBT or RBA logic
14. **MEV Recording —** updates total economic output and checks for milestone thresholds

4.5.4 Mint Classification Handling

NativeTrigger supports all four minting pathways:

- **RBT —** triggered via Transaction Verifier, includes user and merchant addresses for allocation

- **RBA —** triggered via Enterprise Verifier, routes to protocol-level allocation buckets
- **GDM —** triggered directly by governance through the Timelock, subject to epoch caps
- **LDM —** triggered by LiquidityManager after on-chain multisig approval

Each mint is tagged with its subtype to ensure accurate accounting, proper allocation routing, and transparent on-chain tracking.

4.5.5 Security and Integrity

To preserve the integrity of the system, NativeTrigger enforces:

- **Authorized access only —** only addresses holding designated roles can trigger each mint pathway. The validator node holds VALIDATOR_ROLE for RBT, the enterprise oracle holds ENTERPRISE_ROLE for RBA, the TimelockController holds GOVERNANCE_ROLE for GDM, and the LiquidityManager holds LIQUIDITY_ROLE for LDM
- **Replay protection —** each transaction or revenue identifier can only be processed once
- **Parameter governance —** all emission parameters are controlled through governance with hard ceilings
- **Pause capability —** minting can be halted immediately in case of emergency
- **Reentrancy protection —** all minting functions are protected against reentrancy attacks

4.5.6 Relationship to GDM and LDM

NativeTrigger also serves as the controlled gateway for Governance-Driven Minting and Liquidity-Driven Minting. However, these are secondary mechanisms subject to stricter governance controls and are not part of the primary RBM issuance flow. This ensures that primary issuance remains revenue-backed while governance and liquidity remain controlled extensions.

4.5.7 Design Principle

The NativeTrigger embodies a key principle of the Meze system:

No token enters circulation without a verified reason.

Every unit of MEZE is traceable, accountable, and linked to a specific economic event or governed action. NativeTrigger acts as the economic control layer, ensuring that value creation, policy control, and market operations are executed under a unified and auditable framework.

5. THE OFF-CHAIN ECONOMIC ORACLE (OCEO)

5.1 Overview

The Off-Chain Economic Oracle (OCEO) is the foundational trust layer between real-world economic activity and the MEZE blockchain. It is an off-chain backend service operated by Meze Labs — not a smart contract — but its presence is registered on-chain through a cryptographic signing address that both verifier contracts reference.

OCEO is responsible for:

- Receiving confirmed, settled economic events from payment processors and revenue systems
- Normalizing raw fiat values to on-chain denomination
- Signing each payload cryptographically using the EIP-712 typed data standard
- Submitting signed payloads for on-chain verification and minting

No token is minted without OCEO first confirming that a real economic event occurred, was settled, and has been signed with its private key.

5.2 Cryptographic Security — EIP-712

All OCEO payloads are signed using EIP-712, the Ethereum standard for typed structured data signing. This provides:

- Cryptographic proof that submitted data was authorized by the registered oracle
- Protection against tampered payloads between OCEO and the chain
- Replay protection across chains through chain ID binding
- Replay protection across contract versions through verifying contract address binding

When the verifier contract receives a payload, it reconstructs the typed data hash, recovers the signer address from the attached signature, and confirms it matches the registered OCEO address. If the signer does not match, the transaction reverts before any business logic executes.

5.3 Data Freshness Enforcement

Every OCEO payload carries a submittedAt timestamp. Both verifier contracts enforce a maximum data age window (default: five minutes). Any payload older than this window is rejected regardless of signature validity.

This prevents replay attacks using captured valid payloads. Even if an attacker obtains a legitimately signed payload, it cannot be submitted after the freshness window expires. Combined with permanent txId marking, the system provides two independent layers of replay protection.

5.4 OCEO Address

The OCEO on-chain presence is a single wallet address registered in both the Transaction Verifier and the Enterprise Verifier. This address corresponds to the public key of the OCEO signing keypair. The private key never touches the chain and is stored in a Hardware Security Module (HSM) or cloud Key Management Service (KMS).

The OCEO address can be updated by the multisig admin through the setOCEOAddress function on each verifier. This enables key rotation without redeployment — a new keypair is generated, the on-chain address is updated through multisig, and the signing service switches to the new key. No historical transactions are affected.

5.5 Trust Properties

The OCEO architecture provides the following trust properties:

- Every payload is authenticated — unsigned data is never accepted
- Every payload is fresh — stale data is always rejected
- Every payload is unique — processed identifiers are permanently marked
- OCEO cannot mint directly — it only signs data that authorized roles submit
- OCEO compromise is recoverable — key rotation requires only a multisig transaction

6. SUPPLY INTEGRITY AND GOVERNANCE CONTROLS

6.1 Hard Supply Ceilings

The protocol defines a set of absolute hard ceilings as immutable constants in the NativeTrigger contract. These ceilings represent the maximum values that emission parameters can ever hold, regardless of governance decisions.

Parameter	Hard Ceiling	Meaning
RBT Percentage	50% (5000 basis points)	Maximum share of RBT revenue convertible to tokens
RBA Percentage	50% (5000 basis points)	Maximum share of RBA revenue convertible to tokens
LDM Rate	50% (5000 basis points)	Maximum share of paired value mintable as MEZE
Emission Rate	1e20	Absolute token output ceiling per unit of value

These ceilings cannot be modified by governance, by multisig, by protocol upgrade, or by any other mechanism. They are compile-time constants that define the absolute boundaries of the economic model. Any governance proposal that would set a parameter above its ceiling will be rejected by the contract at execution time.

6.2 TimelockController — Governance Execution Delay

All sensitive protocol operations are routed through the TimelockController, which enforces a mandatory minimum delay between scheduling and execution. This delay is currently set to two days and can only be increased, never decreased below one hour.

The governance execution lifecycle is:

15. Multisig proposes an operation through the TimelockController
16. Operation is recorded on-chain in a pending state with full call data visible
17. Minimum delay passes — community and stakeholders can observe the pending change
18. Multisig executes the operation — it takes effect on-chain

Operations that require TimelockController routing include:

- RBT percentage updates
- RBA percentage updates
- LDM rate updates
- Emission rate updates
- GDM epoch cap updates

- Allocation percentage updates in AllocationVault
- Treasury and escrow disbursements

The two-day window ensures that no sensitive parameter change can be executed without a period of public visibility. Community members, auditors, and stakeholders can review pending changes and respond before they take effect.

6.3 Multisig Administration

All admin operations across the entire MEZE protocol are controlled by a multisig wallet. No single person can unilaterally execute a sensitive protocol action. The multisig requirement applies to:

- All governance parameter changes (through TimelockController)
- All escrow disbursements
- Contract address updates
- Role assignments and revocations
- Emergency pause activation
- OCEO address rotation

The multisig is the sole admin of every contract in the system. No externally owned account (EOA) holds elevated permissions in the deployed protocol.

6.4 Escrow Architecture and Vesting

Each allocation bucket in the MEZE system is a fully independent escrow contract. Funds flow in automatically from the AllocationVault on every mint and are held in the escrow until released through the appropriate mechanism.

Escrow Contract	Allocation Source	Release Mechanism
MezeTreasury	RBT 15%, RBA 50%	Multisig disbursement via TimelockController
MezeMCF	RBT 10%, RBA 10%	Multisig disbursement to approved beneficiaries
CommunityMarketingEscrow	RBT 20%, RBA 15%	Multisig disbursement for programs
TeamAdvisorsEscrow	RBA 15%	Cliff + linear vesting schedule
MerchantReserveEscrow	RBA 5%	Multisig disbursement for merchant programs
UserReserveEscrow	RBA 5%	Multisig disbursement for user programs

6.4.1 Team and Advisors Vesting

The TeamAdvisorsEscrow contract implements a cliff and linear vesting schedule for all team member and advisor allocations:

- **Cliff period —** 1 year from the vesting start date. No tokens are claimable before the cliff ends.
- **Vesting period —** 4 years of linear monthly vesting after the cliff, releasing 1/48 of the total allocation per month.
- **Total vesting duration —** 5 years from start date.

Individual allocations are assigned per beneficiary. Beneficiary wallet addresses can be updated by multisig before the cliff ends, accommodating key changes during the lockup period. After the cliff, addresses are locked to prevent changes during active vesting.

The multisig can revoke a beneficiary at any time. Unvested tokens at the point of revocation are returned to the Treasury. Already-vested tokens remain claimable by the beneficiary. Each team member or advisor claims their vested allocation by calling the claim function directly — pull pattern, no automatic distribution.

6.4.2 Emergency Protection

All escrow contracts include an emergency pause and admin withdrawal capability. If a contract is compromised, the multisig can immediately pause all claims and move all funds to a safe destination. This capability requires the contract to be in a paused state first, preventing accidental use.

7. MEZE MILESTONE ECONOMIC VALUE (MEZE MEV)

7.1 Redefining Supply

Traditional systems define supply upfront. MEZE replaces this with the MEV standard — a dynamic, cumulative measure of total economic output. MEV tracks not what tokens exist today, but the total value that the protocol has generated and represented on-chain since inception.

7.2 Definition

MEV tracks:

- Total tokens minted across all pathways (RBT, RBA, GDM, LDM)
- Cumulative economic activity represented on-chain
- System growth over time, independently of circulating supply

7.3 Key Distinction

- **MEV —** historical cumulative output. Never decreases.
- **Circulating Supply —** active tokens in circulation. Can decrease through burns, locking, and fees.

Burning tokens affects circulation but does not alter MEV. MEV is a measure of how much value the system has created and acknowledged, not how much is currently in active use.

7.4 Logarithmic Milestone System

MEZE milestones are generated dynamically using a base-10 progression model representing stages of growth:

$$\textbf{Milestone} = k \times 10^n, \quad \textbf{where } k \in \{1, 5\}$$

Examples: 1, 5, 10, 50, 100, 500, 1,000, 5,000, 1,000,000, 5,000,000 ... and continuing infinitely.

This ensures infinite scalability, predictable growth tracking, no need for predefined milestone limits, and alignment with natural economic scaling patterns.

7.4.1 Purpose

This structure ensures:

- Infinite scalability — milestones always exist ahead of the current MEV
- Predictable growth tracking — the progression is mathematically deterministic
- No need for predefined limits — the system never runs out of milestones
- Alignment with natural economic scaling — reflecting real compound growth patterns

7.4.2 Milestone Detection and Registration

When MEZE MEV reaches a milestone threshold:

19. The MEVTracker contract detects the threshold crossing
20. The milestone is registered on-chain with a status of Pending Metadata
21. A MilestoneDetected event is emitted — this does not mint, it only signals
22. No NFT is created at this point

The separation between detection and minting is intentional. It allows for a deliberate curation process before any NFT is created, ensuring that each milestone artifact is meaningful rather than automated.

7.4.3 Controlled Metadata Assignment

Before minting, each milestone is curated with a complete metadata package:

- Collection assignment (default: On-chain; custom collections supported)
- Title (e.g., Global Ignition)
- Description of the milestone and its significance
- Artwork representing the milestone
- Storage link (IPFS) for all off-chain metadata
- Ecosystem data and network snapshot at the time of milestone crossing
- Recipient address designated to receive the NFT

This curation step is performed by an authorized metadata operator, not automatically. It ensures narrative control, cultural significance, and deliberate design of each milestone artifact.

7.4.4 Collection and Sub-Collection Structure

The EpochNFT system supports a flexible collection hierarchy:

- **Default collection —** named On-chain, created at contract deployment
- **Custom collections —** any number of named collections can be created by admin
- **Sub-collections —** nested within parent collections for thematic grouping

Every minted Epoch NFT is assigned to a specific collection and optionally to a sub-collection. This structure is captured permanently on-chain per token, enabling full collection provenance.

7.4.5 Final Minting Process

Once metadata is fully assigned, the authorized metadata operator calls the mint function. The EpochNFT is minted with all fields populated at the moment of minting — nothing is predefined or templated. Each NFT carries:

- Metadata URI (full JSON on IPFS)
- Artwork URI
- Milestone snapshot description
- Milestone value
- Collection and sub-collection assignment
- Original recipient address
- Mint timestamp

Each milestone can only ever be minted once. The milestoneMinted mapping ensures permanent uniqueness — once a milestone NFT exists, no second NFT for that threshold can ever be created.

7.4.6 System Flow

MEV Progression → Milestone Detection → Registration (Pending Metadata) → Metadata Assignment → NFT Minting → Ownership Assignment

7.4.7 Strategic Impact

- Enables narrative control of ecosystem history
- Each NFT is a meaningful cultural artifact, not an automated output
- Allows coordination with major ecosystem events
- Bridges quantitative growth with qualitative storytelling
- Creates a permanent, verifiable record of the protocol's evolution

8. EPOCH OWNERSHIP AND DISTRIBUTION MODEL

8.1 Overview

Beyond serving as immutable historical records, MEZE Epoch NFTs introduce a programmable ownership layer that enables the distribution of economic history across the ecosystem. Each Epoch NFT represents a milestone in the system's growth. Rather than assigning permanent ownership to a single entity, the system enables dynamic allocation of these historical assets at the moment of minting.

This approach transforms Epoch NFTs from passive records into active economic instruments.

8.2 Programmable Ownership

At the point of milestone achievement, ownership of the corresponding Epoch NFT is determined through the metadata assignment process. The authorized metadata operator designates a recipient address — the entity or address that will receive the NFT upon minting.

Possible allocation destinations include:

- Team and Founders
- Treasury
- Meze Community Fund (MCF)
- Community members (users and merchants)
- Auction contract (for open market allocation)

8.3 Allocation Logic

Ownership assignment follows structured principles that can evolve as the protocol matures:

- Fixed milestone mapping for early milestones (e.g., early milestones to founders, later milestones to the ecosystem)
- Rotational allocation across ecosystem participants
- Governance-controlled allocation as the system matures

8.4 NFT Properties and Immutability

Each Epoch NFT is an immutable historical artifact. Once minted, it carries a permanent record of the milestone it represents. The metadata can be updated by admin until explicitly frozen, at which point it becomes permanently immutable. This two-phase approach allows for quality control during the curation window while preserving long-term integrity.

The NFT implements the ERC-721 standard with full operator support, enabling compatibility with standard wallets and marketplaces. It also implements the ERC-2981 royalty standard, ensuring that secondary sales generate a configurable royalty that flows back to the designated royalty receiver.

8.5 Ecosystem Transfer Lock

While Epoch NFTs are standard ERC-721 tokens that can be freely held and transferred between wallets, listing an Epoch NFT for auction requires the AUCTION_ROLE, which is held exclusively by the AuctionController contract. This means that while any wallet can hold an Epoch NFT, it can only be formally auctioned within the MEZE ecosystem. This design preserves standard wallet compatibility without compromising the protocol's control over how these artifacts are traded.

8.6 Integrated Auction Mechanism

Epoch NFTs are natively integrated with an on-chain auction system. The auction process is fully automated — no manual intervention is required from the winner or from the protocol after a bid is placed.

Auction flow:

23. Admin creates an auction, setting the starting price and duration
24. NFT is transferred to the AuctionController contract via the AUCTION_ROLE mechanism
25. Bidders place ascending bids in MEZE native coin — bids are held in contract escrow
26. Bidders may top up their bid at any time during the auction
27. Anti-snipe protection extends the auction by five minutes if a bid is placed in the final window, up to three extensions maximum
28. When the auction ends, any participant calls settleAuction()
29. The contract automatically: transfers proceeds to Treasury, transfers the NFT to the winner, and enables losing bidders to withdraw their escrowed bids
30. An AuctionWon event is emitted on-chain marking final ownership

If no bids are placed, the NFT is returned to the seller automatically on settlement.

8.6.1 Auction Proceeds Distribution

Funds generated from auctions flow entirely to the Treasury, which holds them as protocol reserves for liquidity, stability, and future ecosystem deployment.

8.6.2 Strategic Role

The Epoch ownership and auction model serves multiple purposes:

- **Economic —** generates liquidity through auctions and strengthens Treasury
- **Social —** creates prestige around milestone ownership and encourages ecosystem participation
- **Structural —** decentralizes ownership of system milestones and integrates historical records into economic design

8.6.3 Long-Term Vision

Over time, the collection of MEZE Epoch NFTs forms a distributed, on-chain archive of the protocol's evolution — owned collectively by participants, institutions, and the broader ecosystem. This creates a new paradigm where economic growth is transparent, milestones are verifiable, and ownership of history is democratized.

9. REWARD AND DISTRIBUTION MODEL

9.1 Reward Allocation

The MEZE Economic System distributes value at the point of creation. When a qualifying transaction occurs and triggers minting, a predefined percentage of newly minted tokens is immediately credited to the user and merchant as a claimable reward.

9.2 Reward Mechanism

Flow:

31. User completes a qualifying transaction
32. MEZE tokens are minted based on the emission formula
33. Minted tokens are distributed across ecosystem pools
34. User and merchant reward shares are credited to their claimable balance in AllocationVault
35. User and merchant call the claim function at any time to withdraw their accumulated rewards

Distribution example per RBT mint:

- User reward (50%) — credited to user claimable balance
- Merchant incentive (5%) — credited to merchant claimable balance
- Treasury (15%) — transferred to MezeTreasury
- Community and Marketing (20%) — transferred to CommunityMarketingEscrow
- Foundation MCF (10%) — transferred to MezeMCF

9.3 Key Characteristics

- Rewards are credited at the moment of minting — no delay
- Users and merchants claim their rewards at any time — no deadline, no expiry
- Accumulated balances are always visible on-chain
- Distribution is directly tied to real economic activity
- Pull pattern prevents a failing recipient from blocking protocol minting

9.4 System Impact

This model ensures:

- Immediate reward acknowledgement at the point of economic activity
- User flexibility — claim once a month or once a year, the balance is always waiting
- Reduced system overhead compared to pushing to every address on every mint
- Strong alignment between participation and reward

9.5 Design Principle

Participation is rewarded at the moment value is created. The reward is yours from that instant. When you claim it is up to you.

10. IMPACT LAYER: MEZE COMMUNITY FUND (MCF)

10.1 Structure

The Meze Community Fund (MCF) is a dedicated impact escrow that receives a portion of every mint and accepts public donations. It is operated as an independent smart contract with a full beneficiary management system.

10.2 Beneficiary System

Each beneficiary organization is registered on-chain with a unique MCF-ID generated at registration. The MCF-ID is computed as a cryptographic hash of the organization name, registration timestamp, and wallet address, producing a unique and tamper-proof identifier.

Each beneficiary record stores:

- MCF-ID — unique on-chain identifier
- Organization name
- Location
- Receiving wallet address
- Total amount received to date
- Approval status
- Registration timestamp

10.3 Functionality

- Automatically receives MCF allocation from every RBT and RBA mint
- Accepts public donations in MEZE native coin
- Funds held in contract escrow until released
- All disbursements require multisig approval
- Disbursement purpose is recorded on-chain with every transfer
- Beneficiaries can be approved or revoked by multisig at any time

10.4 Role

MCF enhances social impact, builds ecosystem trust, and provides a transparent, verifiable mechanism for charitable activity that is natively integrated into the protocol's economic model.

11. LIQUIDITY, STABILITY, AND INTEGRITY

11.1 Liquidity Model

Liquidity in the MEZE ecosystem is protocol-owned. The LiquidityManager contract manages all liquidity operations, pairing MEZE with stablecoins to create accessible and stable market infrastructure.

Liquidity sources include:

- Revenue-backed LDM minting paired with treasury stablecoin
- Treasury allocation over time
- Protocol-owned LP token accumulation

11.2 Protocol-Owned Liquidity

All LP tokens are held by the Treasury. The protocol owns its liquidity rather than relying on external liquidity providers. This ensures that market depth is under protocol control and cannot be removed by third parties.

The LiquidityManager tracks per pool:

- Total MEZE deposited
- Total stablecoin deposited
- Total LP tokens received
- Last activity timestamp

At the protocol level it tracks total MEZE across all pools and total stable assets across all pools, providing a complete picture of protocol liquidity at any time.

11.3 Stability Mechanisms

The system maintains controlled volatility using:

- Protocol-owned liquidity providing baseline market depth
- Adaptive emission parameters adjusted through governance
- Treasury operations managed through TimelockController
- LDM aligned with real usage growth

11.4 Integrity Safeguards

To prevent abuse:

- Merchant verification through the Transaction Verifier whitelist
- Transaction validation and settlement confirmation by OCEO
- EIP-712 signature verification on every payload
- Daily per-user volume limits in the Transaction Verifier
- Per-category daily caps in the Enterprise Verifier

- Permanent replay protection through processed transaction records

12. GOVERNANCE, VALIDATORS, AND STAKING

12.1 Current Governance Model

In its current implementation, governance operates through a multisig and TimelockController architecture. All sensitive protocol decisions are made by the multisig, scheduled through the TimelockController with a minimum two-day delay, and executed after the delay period passes.

This model provides:

- Multisig security — no single party can unilaterally change protocol parameters
- Timelock transparency — all pending changes are visible on-chain before execution
- Emergency capability — pause functions can be activated immediately without delay

12.2 Future Governance Evolution

As the protocol matures, governance is planned to evolve toward broader on-chain participation. Future governance models may incorporate:

- Token-weighted voting with activity multipliers
- Proposal creation and voting periods
- Delegation mechanisms for broader participation

These capabilities are planned for future phases and will be introduced as the ecosystem grows and governance tooling matures.

12.3 Validators

Validators secure the network by verifying transactions, maintaining consensus, and ensuring system integrity. The validator node holds the VALIDATOR_ROLE on NativeTrigger and is responsible for submitting verified RBT payloads received from OCEO.

12.4 Staking

Staking mechanisms are planned for a future phase of the protocol. Once introduced, participants will be able to stake tokens to secure the network, earn rewards, and align with long-term growth. Staking will reduce circulating supply, encourage long-term commitment, and strengthen network security.

12.5 Delegation

Token holders will be able to delegate to validators in future phases, enabling broader participation in network security without requiring direct validator operation.

13. FUTURE EVOLUTION

13.1 Long-Term Minting

- External value continues to trigger minting indefinitely
- GDM and LDM expand in line with protocol growth
- Controlled internal minting mechanisms may be introduced at scale

13.2 Adoption Phases

- **Early phase —** fiat-driven transactions, single OCEO, foundational liquidity
- **Growth phase —** hybrid on-chain and off-chain activity, expanded verifier categories, deeper liquidity
- **Mature phase —** token-native economy, decentralized governance, broad ecosystem participation

13.3 Governance Maturation

The transition from multisig governance to broader on-chain participation will occur incrementally as the ecosystem grows, audits are completed, and governance tooling is validated.

14. PRACTICAL SCENARIOS

14.1 Verified Fiat Transaction (RBT)

A user completes a $50 payment at a participating merchant. OCEO confirms settlement, signs the payload, and submits it to NativeTrigger via the validator node. Minting is triggered. The user's reward share is credited to their claimable balance. The merchant's incentive share is credited to the merchant's claimable balance. Treasury, MCF, and Community shares are pushed to their respective escrow contracts immediately.

14.2 Token Payment

A user pays with existing MEZE tokens. No minting occurs — this is an internal transfer only. The system distributes no rewards as no external value entered the ecosystem.

14.3 Mixed Payment

A transaction involves both fiat and token components. Minting applies only to the fiat portion. The token portion is treated as a standard internal transfer.

14.4 Enterprise Revenue Event (RBA)

A SaaS subscription fee is confirmed by the enterprise billing system. OCEO validates the revenue event, classifies it as SAAS, signs the payload, and submits it to NativeTrigger via the enterprise oracle. Minting is triggered under RBA rules. All allocation flows to protocol buckets — Treasury, Community, TeamAdvisors, MCF, MerchantReserve, and UserReserve — according to the RBA allocation table.

14.5 Milestone Achievement

Total MEV crosses a $k \times 10^n$ threshold. MEVTracker registers the milestone on-chain with status Pending Metadata. An authorized metadata operator creates the artwork, captures the network snapshot, and assigns the metadata. The EpochNFT is minted with full provenance. It may be assigned directly to a designated recipient or routed to the AuctionController for open bidding.

14.6 High Adoption

Increased transaction volume drives higher RBT minting. Governance monitors emission parameters and adjusts RBT percentage and emission rate through the TimelockController if needed. The per-epoch caps prevent any single period from producing outsized issuance. Hard ceilings ensure that no governance decision can exceed protocol safety boundaries.

15. ADVANTAGES

- Supply directly tied to real economic activity — no speculative issuance
- Controlled inflation through hard ceilings and epoch caps
- Cryptographic integrity through EIP-712 oracle verification
- Full on-chain auditability of every mint, parameter change, and governance action
- Scalable across markets and revenue categories
- Balanced incentives across users, merchants, team, and ecosystem
- Integrated social impact through MCF
- Protocol-owned liquidity providing stable market infrastructure
- Historical record through Epoch NFTs
- Emergency safety through multisig pause capability across all contracts

16. CONCLUSION

MEZE represents a shift from static monetary models to adaptive economic systems.

By aligning token creation with real-world activity, structuring incentives through verifiable behavior, and preserving growth through on-chain history, the system achieves:

- Sustainability — supply grows only when real value is created
- Scalability — the architecture handles growth across any volume of economic activity
- Transparency — every mint, parameter change, and governance decision is permanently recorded
- Engagement — participants are rewarded at the moment they create value

It is not merely a digital asset.

It is an evolving economic framework — designed to reflect, coordinate, and amplify real-world value creation.