Matter Foundation DAO Network Tokenomics White Paper MTR Token Economics

VERSION 1.2 | JUNE 2026

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1. Executive Summary

Matter Foundation DAO LLC introduces MTR, the native utility token powering the agentic world. With a fixed supply of 500 million tokens, MTR serves as the economic backbone for secure compute and AI Agent collaboration.

The token economy is designed around three core principles:

- Utility-Driven Demand: MTR is required for computation fees, proof generation, and network access
- Stake-Based Security: Validators and resource providers must stake MTR, aligning incentives with network integrity
- Protocol-Funded Operation: Quadratic emission tied to protocol activity supports ongoing network operation and security

2. Introduction

THE AGENTIC ECONOMY

Artificial intelligence is no longer confined to chat interfaces. AI agents now act on behalf of users, organizations, and other agents — querying systems, executing transactions, training on private data, and coordinating across institutional boundaries at machine speed. As the agentic economy scales, autonomous agents will increasingly transact with each other at machine speed, often without human review.

This new economy creates a coordination problem that today's infrastructure cannot solve. Agents need to:

- Compute on data they cannot see — healthcare records, financial positions, proprietary models — without exposing it to counterparties or operators
- Prove the integrity of their work to other agents, regulators, and humans, cryptographically rather than reputationally
- Transact at machine speed with predictable economics and no centralized intermediary
- Coordinate at scale across organizations, jurisdictions, and trust boundaries

Traditional cloud computing requires data exposure. Traditional blockchains lack the privacy primitives and throughput that agents need. Centralized AI platforms require trust in a single operator.



THE MATTER CHAIN SOLUTION

Matter Chain is a decentralized network purpose-built for agentic coordination. The chain provides:

- **A verifiable compute marketplace** — agents and applications submit compute jobs; resource providers execute them and produce on-chain proofs of correctness
- **Masked execution** — sensitive inputs are kept private through advanced cryptographic primitives, so agents can collaborate on data without exposing it
- **Match-making and accounting** — the protocol assigns workloads, settles payments, and records the history of executed compute
- **Consensus and finality** — a nominated proof-of-stake (NPoS) validator set produces blocks and finalizes transactions

Matter Chain functions as a compute marketplace and verification layer for the agentic economy.

ROLE OF THE MTR TOKEN

MTR is the native utility token of Matter Chain. It coordinates the economic activity of the network by:

- Paying for compute, deployment, and collaboration services
- Securing the network through validator and resource provider staking
- Governing protocol parameters through token-weighted voting
- Supporting network operation and security through protocol-level emission and fee mechanics

Every economic interaction on the network — from a single compute job to a multi-party AI workflow — is settled in MTR.

3. Token Overview

CORE PARAMETERS

PARAMETER	VALUE
TOKEN NAME	MATTER
TOKEN SYMBOL	MTR
TOTAL SUPPLY	500,000,000 MTR
INITIAL CIRCULATING SUPPLY	50,000,000 MTR (10%)
NATIVE ASSET	MATTER CHAIN (NPOS LAYER 1)
CANONICAL REPRESENTATION	ERC-20 ON BASE (1:1 BRIDGED)

SUPPLY CHARACTERISTICS

- Fixed Supply: 500,000,000 MTR is the absolute cap; no additional tokens can be created
- Controlled Circulation: Initial circulating supply of 50 million MTR (10%) ensures measured market entry

NATIVE ASSET AND CANONICAL REPRESENTATIONS

MTR is the native protocol asset of Matter Chain, a sovereign network secured by the nominated proof-of-stake (NPoS) consensus mechanism described in §7. In its native form, MTR is the unit in which validators and resource providers post stake, in which protocol-issued service payments are denominated, and in which network ("gas") fees for block space and compute are paid. To support liquidity, custody, and exchange access, a canonical ERC-20 representation of MTR is made available on Base; this representation is a bridged, one-to-one claim on native MTR and does not alter MTR's role as the consensus, staking, and fee asset of Matter Chain. The total supply of 500,000,000 MTR is fixed across the native asset and its canonical representations in the aggregate, and bridging does not create additional supply.



4. Token Utility

MTR serves multiple essential functions within the Matter Chain ecosystem:

4.1 COMPUTATION PAYMENTS

All network services require MTR payment:

SERVICE	DESCRIPTION
NETWORK FEES	ONE-TIME FEE FOR DEPLOYING APPLICATIONS AND COMPUTE JOBS TO THE NETWORK
COMPUTE HOSTING	ONGOING COSTS FOR APPLICATION HOSTING
SECURE COLLABORATION	USAGE BASED FEES FOR DEPLOYING DISTRIBUTED COLLABORATION WORKLOADS

4.2 RESOURCE PRICING

Compute resources are priced based on utilization of SKUs. SKUs are preconfigured machine sizes that range from micro to very large and are reported onchain and verified by the network.

Per-unit base rates and dynamic multipliers are set and adjusted by DAO governance based on network congestion, resource availability, and prevailing market conditions. Current rates are published in the network's live fee schedule.

4.3 STAKING

Network participants stake MTR to perform protocol services. Protocol-issued payments compensate these participants for the validation and resource-provision services they perform; such payments are determined automatically by protocol rules and are not yield, APY, or passive earnings. No operator guarantees, sets, or fixes the payments any participant receives.

- **Validators:** Secure consensus and produce blocks
- **Resource Providers:** Supply computation resources for MPC workloads
- **Nominators:** Delegate stake to validators that perform validation services

4.4 GOVERNANCE

MTR holders participate in protocol governance: - Propose and vote on network upgrades - Adjust economic parameters (fees, emissions, slashing rates) - Allocate ecosystem development funds

4.5 FUNCTIONAL USES OF MTR

The utility mechanics above are exercised by four groups of network users:

1. **Compute users.** Enterprises, AI agents, and developers who run workloads on Matter Chain use MTR to pay deployment, hosting, and collaboration fees. Compute services are priced in USD-equivalent and settled in MTR (§4.2), so the MTR required for a given workload corresponds to the USD value of the compute consumed.
2. **Validators and resource providers.** Producing blocks or supplying compute resources requires posting MTR as stake. Operators hold MTR to participate in consensus and resource provision, and stake is subject to slashing for failure to meet protocol requirements.
3. **Nominators.** MTR holders may delegate stake to validators to participate in securing the network and receive protocol-issued payments for the validation services their delegated stake supports.
4. **Governance participants.** Voting on protocol parameters requires holding MTR. Governance participants include network users, operators, and other holders who choose to take part in setting protocol parameters.

These uses describe how MTR functions on the network. Nothing in this whitepaper is a representation or promise that any party will undertake efforts to increase the price or value of MTR, and no holder should expect profits from the efforts of others; the market price of MTR, if any, is determined by independent third-party market forces.

5. Token Distribution

ALLOCATION OVERVIEW

CATEGORY	ALLOCATION	TOKENS	PURPOSE
OMNI (OPENMATTER NETWORK INC.)	24%	120,000,000	PROTOCOL DEVELOPMENT AND GOVERNANCE PARTICIPATION
OPERATOR REWARDS	20%	100,000,000	NODE OPERATOR EMISSION REWARDS
DAO TREASURY (MATTER FOUNDATION)	33%	165,000,000	GOVERNANCE-CONTROLLED FUND
TEAM & ADVISORS	15%	75,000,000	4-YEAR VEST, 6-MONTH CLIFF
ANGELS & INVESTORS	8%	40,000,000	25% TGE UNLOCK, 2-YEAR VEST ON REMAINDER

VESTING RATIONALE

- Team tokens vest over 4 years with a 6-month cliff to ensure long-term alignment
- Investor tokens unlock 25% at TGE, with the remaining 75% vesting linearly over 2 years to balance liquidity with commitment
- Operator rewards emit over 50+ years tied to protocol performance
- **Matter Foundation DAO funds** - 20M unlock at TGE, with the remaining 145M unlocked over 5 years on a linear monthly vesting schedule starting 12 months from TGE
- **OMNI (OpenMatter Network Inc.) funds** — 20M unlock at TGE, with the remaining 100M unlocked over 5 years on a linear monthly vesting schedule starting 12 months from TGE, deployed strategically for partnerships, protocol development, and governance participation

6. Emission Schedule

QUADRATIC EMISSION MODEL

Operator payments are issued automatically from the pre-allocated Operator Rewards pool (100,000,000 MTR; see §5) to compensate validators and resource providers for the validation and resource-provision services they perform. Emissions are calculated by a fixed, governance-tunable quadratic function and are not profit distributions, dividends, yield, or a return on investment. No MTR holder receives emissions passively by virtue of holding MTR; payments are earned only by operators in exchange for services rendered to the network, and are drawn from a pre-existing allocation rather than newly minted, so total supply remains fixed at 500,000,000 MTR.

Parameters are governance-tunable and meant to be adjusted over time as network activity matures. Through governance, the DAO will set the following parameters: * T_d : the daily target — a governance-set network-activity reference, expressed in USD-equivalent terms * M_d the daily maximum MTR token emissions.

The daily MTR emissions amount will be given by the formula:

$$E(P) = \max(0, -\frac{M_d}{T_d^2} \cdot P \cdot (P - 2 \cdot T_d))$$

where **E**(**P**) is the emission curve value as a function of net protocol activity *P* (net protocol fee inflows after operating costs), averaged over the trailing 30 days.



The emission function is calibrated to a governance-set network-activity reference parameter (the daily target, expressed for convenience in USD-equivalent terms reflecting net protocol fee inflows after operating costs) used solely as an input to throttle the rate at which operator payments are released from the Operator Rewards pool. This parameter is an automation input, not a measure of distributable enterprise profit, and confers no claim on the income, profits, or assets of Matter Foundation DAO LLC, OMNI, or any other party.

This formula gives the only quadratic curve that has the necessary properties: * No “free” token emissions; zero emissions at zero activity * Maximum emissions occur exactly at the target activity level.

Per-period MTR emissions are derived from the curve value and scale with the current circulating supply, so the percentage of supply emitted in any given period depends on net protocol activity relative to the target.

EMISSION BEHAVIOR

NET PROTOCOL ACTIVITY	EMISSION RATE	NETWORK SIGNAL
BELOW TARGET	LOWER THAN PEAK	NETWORK UNDERUTILIZED
AT TARGET	PEAK EMISSION	TARGET NETWORK ACTIVITY
ABOVE TARGET	LOWER THAN PEAK	NETWORK OPERATING ABOVE TARGET ACTIVITY

The schedule releases operator payments at a higher rate as network usage approaches the target activity level and a lower rate above it, so that issuance tracks genuine network usage rather than any effort to support, stabilize, or appreciate the market price of MTR: - Prevents over-emission during low-usage periods - Lowers token issuance as protocol activity rises above the target.

EPOCH-AVERAGED ACTIVITY

The quadratic emission formula uses a rolling average of net protocol activity over 30 days (720 one-hour epochs) rather than raw per-epoch activity. This smoothing mechanism prevents resource providers from gaming emissions by strategically withholding compute resources near the end of an epoch to suppress the activity reading and inflate emissions in subsequent periods.

Because the formula operates on a 30-day moving average, a provider would need to sustain downtime for the full 30-day window to meaningfully affect the average. Long before any emission benefit could materialize, the provider’s sustained downtime would trigger slashing conditions (Resource Provider uptime requirement: 97%, with tiered slashing escalating to 10% of stake), making the attack economically self-defeating.

OPERATOR PAYMENT ALLOCATION

Of total emissions, protocol-issued operator payments are drawn from the Operator Rewards allocation (100M MTR). These payments compensate operators for validation and resource-provision services and are issued automatically by protocol rules:

POOL	SHARE OF OPERATOR PAYMENTS
VALIDATOR POOL	65%
RESOURCE PROVIDER POOL	35%



LONG-TERM EMISSION PROJECTION

Based on Monte Carlo simulations across growth scenarios:

TIMEFRAME	CUMULATIVE EMISSION (MEDIAN)	REMAINING OPERATOR REWARDS
YEAR 5	~10M MTR	~90M MTR
YEAR 10	~20M MTR	~80M MTR
YEAR 25	~50M MTR	~50M MTR
YEAR 50	~85M MTR	~15M MTR

Actual emissions depend on the net protocol activity trajectory

7. Staking Mechanism

NOMINATED PROOF OF STAKE (NPOS)

Matter Foundation DAO LLC employs an NPoS consensus mechanism with **three participant classes:**

7.1 VALIDATORS

Role: Produce blocks, finalize transactions, coordinate MPC jobs

PARAMETER	VALUE
MINIMUM STAKE	50,000 MTR
UPTIME REQUIREMENT	99.5%
SLASHING RATE	TIERED (§11.2)
COMMISSION RANGE	0%-20%
ACTIVE SET SIZE	10 VALIDATORS (EXPANDABLE)

7.2 RESOURCE PROVIDERS

Role: Supply computation resources (CPU, RAM, GPU) for MPC workloads

PARAMETER	VALUE
MINIMUM STAKE	25,000 MTR
UPTIME REQUIREMENT	97%
SLASHING RATE	TIERED (§11.2)
PAYMENT BASIS	PROTOCOL-ISSUED PAYMENT FOR RESOURCE-PROVISION SERVICES, PROPORTIONAL TO STAKE AND PERFORMANCE

7.3 NOMINATORS

Role: Delegate stake to validators that perform validation services

PARAMETER	VALUE
MINIMUM STAKE	NONE (RECOMMENDED: 1,000 MTR)
VALIDATOR SPREAD	1-10 VALIDATORS
PAYMENT BASIS	PROTOCOL-ISSUED PAYMENT FOR THE VALIDATION SERVICES THE DELEGATED STAKE SUPPORTS; NOT YIELD OR GUARANTEED RETURN
RISK	NO DIRECT SLASHING; PAYMENT REDUCTION IF VALIDATOR SLASHED



8. Fee Structure

8.1 NETWORK FEES

All network transactions incur fees paid in MTR:

TRANSACTION TYPE	NOTES
TOKEN TRANSFER	STANDARD TRANSFER BETWEEN ACCOUNTS
STAKING OPERATION	STAKE, UNSTAKE, NOMINATE
GOVERNANCE VOTE	PROPOSAL VOTING
JOB DEPLOYMENT	VARIABLE, BASED ON COMPUTE REQUIREMENTS

Base fees are denominated in MTR and set by DAO governance. The fee schedule is published and maintained in the network's live documentation.

8.2 NETWORK FEE DISTRIBUTION

Network transaction fees (§8.1) are distributed as follows:

DESTINATION	SHARE	PURPOSE
VALIDATORS	70%	SECURING THE NETWORK
PROTOCOL TREASURY	20%	DEVELOPMENT, OPERATIONS
PROTOCOL FEE MECHANISM	10%	AUTOMATIC, USAGE-BASED PROTOCOL ALLOCATION

8.3 HOSTING FEES

Each compute job hosted on Matter Chain incurs an hourly hosting fee that reflects the compute resources (CPU, RAM, GPU) consumed for as long as the job runs. Hosting fees compensate resource providers for the compute-hosting services they perform and are a separate fee stream from the network transaction fees in §8.2.

DESTINATION	SHARE	PURPOSE
RESOURCE PROVIDERS	95%	PAYMENT FOR COMPUTE-HOSTING SERVICES
PROTOCOL TREASURY (DAO)	5%	PROTOCOL OPERATIONS

Hosting-fee payments to resource providers are made in addition to the protocol-issued operator payments described in §6, and compensate operators only for compute resources actually supplied to hosted jobs.

9. Protocol Fee Mechanics

9.1 TRANSACTION FEE ALLOCATION

A fixed ten percent (10%) of network fees is routed to a protocol-layer fee mechanism each epoch pursuant to hardcoded, governance-set rules. This allocation is fully automatic, executes as a function of actual network usage, and is not administered or controlled by any party to support, stabilize, or increase the market price of MTR.



10. Governance

10.1 GOVERNANCE SCOPE

MTR holders govern critical protocol parameters:

- **Economic Parameters:** Fee rates, emission curves, slashing percentages
- **Technical Upgrades:** Runtime upgrades, new cryptographic primitives
- **Treasury Allocation:** Grants, partnerships, ecosystem activations
- **Network Expansion:** Validator set size, resource pricing model

10.2 STANDARD GOVERNANCE PROCESS

Proposals follow a 7-day lifecycle designed for rapid decision-making:

PHASE	DURATION	REQUIREMENT
PROPOSAL SUBMISSION	-	10,000 MTR DEPOSIT
DISCUSSION PERIOD	2 DAYS	COMMUNITY FEEDBACK
VOTING PERIOD	4 DAYS	TOKEN-WEIGHTED VOTING
EXECUTION	1 DAY	TIMELOCK FOR SECURITY

Proposals require a quorum of 5% of circulating supply participating and a supermajority (>=67%) to pass. The 10,000 MTR deposit is returned to the proposal submitter after the voting period and execution period.

10.3 SECURITY COUNCIL

The Security Council is a multisig body (5-of-9 threshold) authorized to execute **immediate runtime changes without governance** in response to active security threats. This includes:

- **Emergency parameter changes** (e.g., disabling a compromised validator, adjusting slashing)
- **Emergency runtime upgrades** to patch critical vulnerabilities

Security Council actions are constrained by:

- **Scope:** Only security-critical changes. Economic policy, treasury, and non-emergency upgrades require standard governance.
- **Transparency:** All emergency actions are published on-chain with a written justification within 24 hours.
- **Retroactive ratification:** Every emergency action must be submitted for DAO ratification within 7 days. If the DAO votes to reject, the action is reversed and the Council seat(s) responsible are put to a confidence vote.
- **Term limits:** Council members serve 12-month terms, elected by MTR holders through standard governance. The DAO can remove any member at any time via governance vote.

Council composition: 3 seats appointed by the OMNI (OpenMatter Network Inc.), 3 seats elected by MTR holders, 3 seats held by active validators (rotating by stake weight).

10.4 VOTING POWER

- 1 MTR = 1 vote
- Staked tokens retain voting rights
- Delegation of voting power supported



11. Economic Security

11.1 STAKE-BASED SECURITY

Network security derives from staked capital at risk:

ATTACK TYPE	MITIGATION	ECONOMIC DETERRENT
VALIDATOR DOWNTIME	TIERED SLASHING	LOSS OF STAKED MTR
PROVIDER COLLUSION	PROTOCOL ABORT + SLASHING	STAKE FORFEITURE
SYBIL ATTACK	MINIMUM STAKE REQUIREMENTS	CAPITAL BARRIER
51% ATTACK	NPOS ELECTION MECHANISM	STAKE CONCENTRATION LIMITS

11.2 SLASHING CONDITIONS

Downtime slashing — tiered escalation:

OFFENSE	VALIDATOR SLASH	RESOURCE PROVIDER SLASH
FIRST DOWNTIME BELOW THRESHOLD	2%	1%
SECOND DOWNTIME WITHIN 90 DAYS	5%	3%
THIRD DOWNTIME WITHIN 90 DAYS	10%	10%
EXTENDED DOWNTIME (>48 HOURS)	10%	10%

The tiered schedule gives operators an opportunity to correct issues and restabilize before facing the maximum penalty. Repeat offenses within a rolling 90-day window or sustained extended downtime trigger the maximum slashing rate.

12. Long-Term Operation

12.1 PROTOCOL-FUNDED OPERATIONS

The protocol's ongoing operation and security are funded through automatic, protocol-level mechanics:

1. **Revenue Diversification:** Multiple fee streams (deployment, compute, proofs)
2. **Quadratic Emission:** Automatically adjusts to network health
3. **DAO Treasury Reserves:** 33% allocation for governance-directed development
4. **Protocol Fee Mechanics:** Automatic, usage-based fee allocation executed by hardcoded, governance-set rules

12.2 ECOSYSTEM DEVELOPMENT

OMNI (OpenMatter Network Inc.) fund (120M MTR) supports:

- Developer grants and hackathons
- Integration partnerships
- Research collaborations
- Protocol development

12.3 FUNCTIONALITY & DECENTRALIZATION MILESTONES

Matter Chain assesses its progress against its own stated definitions of "functional" and "decentralized." These definitions are disclosed here so that participants can measure the network's maturity against objective, project-defined criteria.



What "functional" means for Matter Chain. The network is functional when MTR can be used for its intended purposes without reliance on any single party's continued promotional or developmental efforts. Specifically:

- Compute users can submit, execute, and settle compute jobs on-chain using MTR
- Resource providers can supply compute and receive protocol-issued payments through automated protocol rules
- Validators can produce blocks and finalize transactions under NPoS consensus
- Fees, emissions, and the protocol fee mechanism execute automatically from hardcoded, governance-set rules
- Governance participants can propose and vote on protocol parameters on-chain

What "decentralized" means for Matter Chain. The network is decentralized when its operation, security, and evolution do not depend on any single party. Specifically:

- Block production and finality are performed by an independent, permissionless validator set rather than a central operator
- Compute is supplied by independent, permissionless resource providers
- Protocol parameters (fees, emissions, slashing) are set by token-weighted governance rather than by a single party
- Core economic mechanics (emission curve, fee allocation) run autonomously on-chain without discretionary administration
- No single party can unilaterally alter the protocol outside the governance and Security Council processes described in §10

Milestone status. The following table records progress against these definitions.

ATTACK TYPE	MITIGATION	ECONOMIC DETERRENT
ON-CHAIN COMPUTE SUBMISSION & SETTLEMENT IN MTR	FUNCTIONAL	LIVE
AUTOMATED PROTOCOL-ISSUED OPERATOR PAYMENTS	FUNCTIONAL	LIVE
NPOS BLOCK PRODUCTION & FINALITY	FUNCTIONAL / DECENTRALIZED	LIVE
AUTOMATIC FEE, EMISSION, AND FEE-MECHANISM EXECUTION	FUNCTIONAL	LIVE
ON-CHAIN GOVERNANCE (PROPOSAL + VOTING) LIVE	FUNCTIONAL / DECENTRALIZED	LIVE
PERMISSIONLESS, INDEPENDENT VALIDATOR SET	DECENTRALIZED	LIVE
PERMISSIONLESS, INDEPENDENT RESOURCE-PROVIDER SET	DECENTRALIZED	LIVE
GOVERNANCE-CONTROLLED PROTOCOL PARAMETERS	DECENTRALIZED	PLANNED TO GO LIVE WITHIN 90 DAYS OF TGE

Milestones not yet achieved remain on the protocol roadmap and are pursued through the governance and development processes described in this whitepaper.



13. Conclusion

The MTR token economy is engineered for long-term network operation and aligned incentives. By combining:

- **Fixed supply** with automatic, usage-based protocol fee mechanics
- **Utility-driven demand** across computation, staking, and governance
- **Quadratic emissions** tied to protocol performance
- **Stake-based security** with meaningful economic deterrents

Matter Chain creates an economic system where network growth increases the utility and security of the system for its participants while maintaining security and decentralization.

Powered by MTR, Matter Chain provides the coordination, privacy, and verification layer that the agentic economy needs — anchored by mathematical proof and economic incentive.

Appendix

A. DISCLAIMER

This document is for informational purposes only and does not constitute financial advice. Token economics are subject to change based on governance decisions and network evolution. All projections are estimates based on modeling assumptions and may not reflect actual outcomes.

MTR is offered for functional use on Matter Chain and not as an investment. No person should expect to profit from the efforts of Matter Foundation DAO LLC, OMNI, or any other party.

Protocol emissions and fee mechanics operate automatically pursuant to hardcoded, governance-set rules. They are not administered, controlled, or deployed by any party to support, stabilize, or increase the market price of MTR, and they do not entitle any holder to a share of revenue, profit, or assets of any enterprise. The market price of MTR, if any, is determined by independent third-party market forces.

Document Version: 1.2 Last Updated: June 2026 Matter Foundation DAO LLC