DOCUMENT 07 · VALIDATOR FEES

Validator *Fees*.

Protocol revenue from commercial buyers of hardware-signed data, distributed in USDC to Genesis 200 operators, continuous and outside the MLMA emissions cap. Draft pending six implementation items.

STATUS	FRAMEWORK	MAINNET TARGET	CARDANO PREPROD
Pre-Launch	Six-Layer DePIN	Q4 2026	Active

STATUS
v0.1 · Draft 2026-05-23

CURRENCY
USDC on Base

CADENCE
Monthly (target)

CAP
None (scales with revenue)

MLMA INTERACTION
Parallel, not substituted

OPEN ITEMS
6 pending v1.0

Protocol revenue from commercial buyers of hardware-signed environmental data, distributed in USDC to Genesis 200 operators. Distinct from MLMA emissions in source, currency, schedule, and cap. Six open items pending finalization before this page locks to v1.0.

This page is published as Draft v0.1. Six open items in §07 require finalization before it locks to v1.0. The structural model has been approved by the token team; the open items are implementation details, not structural questions.

§ 01

What validator fees *are*

Validator fees are Mālama protocol revenue, paid by commercial buyers of hardware-signed environmental data, and distributed in USDC to the Genesis 200 operators whose hexes produce the underlying signal. They are distinct from MLMA emissions in every meaningful way:

DIMENSION	MLMA REWARDS	VALIDATOR FEES
Source	Scheduled token emissions	Commercial buyer revenue
Currency	MLMA	USDC (stablecoin)
Schedule	Milestone vesting (15/15/20/20/30 over 12 months)	Continuous, target monthly
Cap	25M MLMA Genesis 200 operator pool (per Whitepaper v1)	No cap; scales with adoption
Triggers	Hardware activation + milestone qualification	Per-hex revenue accruals + uptime/PONO weighting
Counts against emissions cap?	Yes	No

The separation is deliberate. MLMA rewards bootstrap the network during the period before commercial demand matures. Validator fees compensate operators on an ongoing basis as commercial demand materializes. Operators receive both; they are not substitutes.

§ 02

Where validator fee revenue comes *from*

Mālama Labs structures commercial relationships with buyers of hardware-verified environmental data across the nine commercial verticals. Each agreement identifies which hex or set of hexes produces the data being purchased, and revenue accrues to those hexes. Categories of buyer:

- **Carbon registries** (Verra, Puro.earth, Gold Standard, Isometric, Article 6.4) paying for hardware-verified MRV data.
- **AI compute emissions buyers** (data center operators, ESG customers, regulators) paying for hardware-verified energy and emissions measurement.
- **Energy and utility buyers** licensing grid and weather telemetry.
- **Parametric insurers** paying for hex-level data that resolves rainfall, temperature, wildfire, flood, and supply-chain triggers.
- **Supply-chain compliance buyers** demonstrating EUDR compliance with hex-level deforestation and land-use data.
- **Prediction market platforms** paying for oracle resolution on environmental events.
- **Agricultural enterprises** subscribing to soil and field intelligence.
- **Municipalities and grid operators** procuring Smart City environmental and grid data.
- **Carbon-finance counterparties** paying settlement fees on LCO_2 and VCO_2 conversions.

Validator fees are the mechanism by which operator economics participate in these markets as demand converts into actual revenue. Market sizing for each vertical is in the Markets deep-dive.

§ 03

How accruals *work*

Per-deal attribution. Each commercial agreement identifies which hexes produce the data: a single hex (a parametric carrier covering one region), a defined set (a registry partnership across regions), or the full network (a portfolio subscription). Revenue is allocated to the producing hexes by per-hex flat fee, per-reading volumetric pricing, or revenue-share.

Per-hex accrual. Each hex maintains a running USDC accrual balance, updated continuously and visible in the Node Command Center.

Operator weighting within the period. The operator earns accrued fees only to the extent they operate in good standing: full uptime and PONO qualified is 1.0×; partial uptime is proportional; not-yet-PONO-qualified, a tamper event, or offline beyond threshold is 0× for the period. Forfeited fees (accrued while weight is below 1.0×) are redirected to the Genesis Performing Operator Bonus Pool, consistent with the forfeited-MLMA recycling mechanism in the Genesis Pricing page. Operators are paid for operating, not for holding a license.

§ 04

Distribution *mechanics*

Cadence. Target monthly, paid in USDC to the operator wallet of record on the first business day of the following month, covering the prior month's accruals net of forfeitures. The cadence is a target, not a guarantee, during early operation; sub-threshold months roll forward.

Payment rail. USDC on Base, sent to the operator's wallet of record (specified during onboarding or in the Node Command Center). Operators who purchased via credit card and Magic Wallet receive fees to their Magic-managed wallet by default, with the option to designate a self-custody wallet.

Reporting. US operators above the reporting threshold receive 1099-MISC forms each January. Mālama Labs does not provide tax advice; operators are responsible for their own treatment. Non-US operators are responsible for local compliance.

§ 05

How validator fees interact with MLMA *rewards*

Genesis 200 operators earn both concurrently. MLMA rewards follow the bounded framework in the Genesis Pricing page, vesting on the 15/15/20/20/30 milestone schedule over 12 months from hardware activation, capped at 25M across the cohort, reflecting bootstrap economics. Validator fees flow continuously as commercial revenue materializes, do not count against the 25M cap, are not milestone-vested, and reflect operational economics.

Both flows are gated by the same operational requirements: uptime, PONO qualification, and absence of tamper events. An operator who fails to maintain qualifying operation loses both the next MLMA milestone and that period's validator fee accruals. Over the network's lifecycle, validator fees become the larger share of operator economics and MLMA rewards the smaller.

§ 06

Worked *example*

Illustrative only; not commitments, and not based on actual revenue, which is nascent during the Genesis 200 launch period.

Suppose total monthly commercial revenue is $50,000 USDC, accrued across 200 hexes. Apply operator weighting: 180 hexes at full weight pay their full accrual; 15 at partial weight (0.6× average) pay 60% with 40% redirected to the bonus pool; 5 at zero weight pay nothing, with 100% redirected. A full-weight operator with a $300 accrual hex earns $300; a 0.6× operator with a $200 hex earns $120; a zero-weight operator earns $0 that period. The bonus pool from forfeited fees is distributed quarterly to operators who maintained full weight across the prior quarter, on top of their normal accruals.

§ 07

Open items for *v1.0*

This page is Draft v0.1 because the following require finalization: distribution cadence formalization (monthly target, pending payment-rail and transaction-cost economics); uptime/PONO weighting formula precision; payment rail (direct smart-contract distribution vs off-chain processing with on-chain settlement); per-hex accrual computation for portfolio deals (working assumption: equal weighting plus DDS adjustment, pending token team confirmation); bonus pool distribution mechanics; and tax and reporting infrastructure (1099-MISC, international reporting, Form 1042-S). The team will publish v1.0 once these resolve, with operator notification through Discord and the Node Command Center.

§ 08

What this page does not *cover*

Post-Genesis-200 operator economics. Future cohorts will have their own MLMA allocation framework and may have different validator fee weighting. The per-cohort methodology beyond Genesis 200 will be published separately.

Specific buyer relationships and deal economics. Mālama Labs does not publish commercial deal terms by counterparty. Aggregate revenue is reported to operators quarterly through the Node Command Center.

§ 09

Provenance

Published as Draft v0.1, ratified against: Whitepaper v1 (the 60M emission schedule and the structural separation of MLMA from protocol revenue); the Token Team Ratification of 2026-05-23, Item 7 (MLMA rewards as scheduled emissions, validator fees as protocol revenue in USDC outside the cap); the Pricing Methodology v1.0 (the bounded reward framework and forfeited-MLMA recycling); and the Data Demand Score Methodology v1.0 (the demand-signal framework informing deal attribution).

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