VELD.

Where value is earned.

A Proof-of-Work Cryptocurrency with Tiered Staking, Validator Endorsements, and On-Chain Governance

Whitepaper v1.0 | 2026

Veld is a proof-of-work cryptocurrency with a 21,000,000 hard supply cap, memory-hard mining via VeldHash, a four-way coinbase split (50% miner / 20% co-mining pool / 20% vault / 10% validator pool), tiered staking with lockup multipliers, validator endorsement rewards, and on-chain governance. The protocol rewards long-term participation through rolling-window mining tiers, lockup-tier multipliers, and a whale-capped vault distribution system. All 21M VELD is mined — there is no premine, no ICO, and no team allocation.

veld.network | explorer.veld.network | wallet.veld.network

Table of Contents

1. Introduction
2. Supply and Emission
3. Coinbase Split
4. Mining — VeldHash
5. Mining Tiers
6. Staking
7. Vault Distribution
8. Validators
9. Co-Mining Pool
10. Governance
11. Network Parameters
12. Wallet Security
13. Economic Model
14. Conclusion

1. Introduction

Veld is designed to align incentives across miners, stakers, and validators through a unified reward system. Unlike traditional PoW chains that reward only block finders, Veld distributes every block's coinbase across four participant classes — ensuring that securing the network, committing capital, validating blocks, and contributing hash power are all economically rewarded.

- VeldHash: a memory-hard, ASIC-resistant proof-of-work algorithm
- Smooth emission decay to 21M cap (no halving events)
- Vault distribution system with 8 safety caps
- Rolling-window mining tiers that reward consistent participation
- Lockup-tier staking multipliers (1.00x to 1.50x)
- Validator endorsement system funded by 10% of coinbase
- On-chain governance with quorum-based voting
- No premine, no ICO, no founder allocation

2. Supply and Emission

Parameter	Value
Total Supply	21,000,000 VELD
Smallest Unit	1 vel = 0.00000001 VELD
Target Block Time	60 seconds
Block Reward	~1.90 VELD per block
Emission Model	Smooth continuous decay (no halving)
Estimated Full Emission	~21 years

As mined supply approaches the 21M cap, the block reward automatically shrinks via a smooth decay function. There are no discrete halving events. The reward function ensures the cap is asymptotically approached but never exceeded.

3. Coinbase Split

Every block's reward is split four ways:

Recipient	Share	Distribution
Block Miner	50%	Immediate (in coinbase)

Co-Mining Pool	20%	Every 100 blocks
Vault	20%	Every 144 blocks to stakers
Validator Pool	10%	Every 144 blocks to validators

Additionally, all transaction fees (minimum 0.001 VELD) flow to the vault.

4. Mining — VeldHash

VeldHash is a memory-hard proof-of-work algorithm designed for ASIC resistance. It combines a large random-access scratchpad with a superscalar integer VM to ensure that general-purpose CPUs maintain a competitive advantage over custom hardware.

Component	Specification
Scratchpad	256 KB L2-resident, random access
VM Opcodes	19 integer operations
Registers	8 general-purpose 64-bit
Program Size	256 instructions per hash
Execution Rounds	8 superscalar rounds
Program Seed	Per-block unique (from header)
Branching	Data-dependent (CBRANCH)
Hash Pipeline	SHA256 → VM → SHA256 → Double-SHA256
Difficulty Adjustment	Every 1,440 blocks (1 day)

5. Mining Tiers

Miners earn multipliers based on consistent activity over rolling windows. A “day” is defined as a 1,440-block window. A miner is “active” in a window if they mined at least 1 block. Tiers are not permanent — if activity drops below the threshold, the miner drops to the qualifying tier.

Tier	Requirement	Window	Multiplier
Base	—	—	1.00x
Bronze	7 active days	14 days	1.25x
Silver	21 active days	30 days	1.50x
Gold	150 active days	180 days	2.00x

Platinum	300 active days	365 days	2.50x
Diamond	900 active days	1,095 days	3.00x

6. Staking

Parameter	Value
Minimum Stake	1,000 VELD
Maximum Stake Per Address	10,000 VELD
Staking Activation	1,000,000 VELD mined
Combined Multiplier Cap	3.00x

Lockup Tiers:

Tier	Duration	Multiplier
Base	7 days	1.00x
Short	14 days	1.10x
Medium	30 days	1.25x
Long	90 days	1.50x

The combined multiplier is calculated as mining_tier × lockup_tier, hard-capped at 3.00x. Example: A Silver miner (1.50x) with Tier 4 lockup (1.50x) gets a 2.25x effective multiplier. A Diamond miner (3.00x) with any lockup tier is capped at 3.00x.

7. Vault Distribution

The vault accumulates 20% of every block reward plus all transaction fees. Every 144 blocks (~2.4 hours), the distribution daemon distributes a portion of the vault to stakers proportional to their weighted stake (amount × multiplier).

Whale Cap: No single staker can receive more than 50% of any distribution cycle. Activates when there are 5 or more active stakers. Excess is redistributed pro-rata to non-capped stakers.

The vault is protected by 8 layered safety caps:

1. 90-day linear ramp from staking activation (starts at 2% floor)
2. Participation-based bonus: staking_ratio × 50
3. Hard ceiling: 8% of vault per cycle maximum
4. One distribution per cycle (no catch-up)

5. Liveness check: skip if chain hasn't grown in 2 hours
6. Minimum threshold: skip if distributable < 1 VELD
7. Income cap: never distribute more than 2× vault income since last distribution
8. Post-reserve mode: cap tied to actual income ratio when supply > 99.9% of 21M

These caps ensure the vault can never be drained regardless of staker configuration, multiplier values, or governance changes.

8. Validators

Validators endorse each new block by signing a message (SHA256 of block height + block hash) with their private key. Endorsements are recorded on-chain via OP_RETURN transactions.

The validator pool receives 10% of every block's coinbase. Every 144 blocks (~2.4 hours), the pool is flushed and distributed to validators proportional to their endorsement count over the recent window.

Parameter	Value
Minimum Validator Stake	10,000 VELD
System Activation	250,000 VELD staked network-wide
Endorsement Message	SHA256(height || block_hash)
Pool Flush Interval	Every 144 blocks (~2.4 hours)

9. Co-Mining Pool

The co-mining pool receives 20% of every block reward. Miners who submit near-miss proof-of-work (hash within 4× the difficulty target but not solving the block) earn shares in the pool. Every 100 blocks, the accumulated pool is distributed proportionally to all contributors.

This smooths out solo mining variance — miners earn consistent rewards for their hash power even when they don't find a block.

10. Governance

Veld supports on-chain governance with three proposal types:

Type	Threshold	Quorum
General (advisory)	51% majority	3 validators
Promo Activation	51% majority	3 validators
Protocol (upgrade)	67% supermajority	5 validators

Voting is weighted by stake amount. Constitutional constants (supply cap, coinbase split, core consensus rules) cannot be modified via governance.

11. Network Parameters

Parameter	Value
Network Magic	0x56454C44 ('VELD')
Default Port	8333
Address Format	Base58Check, version byte 0x46 ('V' prefix)
Max Block Size	1 MB
Max Transactions/Block	4,096
Minimum Transaction Fee	0.001 VELD
Difficulty Adjustment	Every 1,440 blocks (1 day)
Confirmation Depth	6 blocks

12. Wallet Security

Wallet encryption uses ChaCha20-Poly1305 AEAD (RFC 7539) with PBKDF2-SHA256 key derivation (100,000 iterations). Private keys are encrypted at rest and wiped from memory after use via platform-specific secure zero functions. RPC authentication uses 256-bit tokens with constant-time comparison and rate-limited brute-force protection.

13. Economic Model

Over the full emission schedule:

Recipient	Share	Total VELD
Miners (direct block reward)	50%	~10,500,000
Co-Mining Pool (near-miss rewards)	20%	~4,200,000
Vault (staker distributions)	20%	~4,200,000
Validator Pool (endorsement rewards)	10%	~2,100,000

There is no premine, no ICO, no team allocation, and no founder reward. All 21M VELD enters circulation exclusively through proof-of-work mining.

14. Conclusion

Veld creates a self-sustaining economic ecosystem where miners, stakers, and validators are all incentivized to participate long-term. The rolling-window tier system, lockup multipliers, and whale cap prevent concentration of rewards. The 8-layer vault protection system ensures sustainable distribution. The result is a cryptocurrency that rewards commitment, consistency, and contribution to network security.

---

veld.network | explorer.veld.network | wallet.veld.network