Anti Hunter Staking & Locking Whitepaper (Draft v0.1)

90-day time-locked staking for $ANTIHUNTER with linear rewards and a 25% early-unstake penalty routed to stakers.

TL;DR

- **Minimum lock:** 90 days (3 months)
- **Rewards:** streamed **linearly over 90 days**
- **Early exit:** allowed with **25% principal penalty**
- **Penalty routing: 100% to the rewards pool** (paper hands subsidize diamond hands)

1) MOTIVATION

$ANTIHUNTER is a receipts-first on-chain venture desk token. Tokenomics should be driven by real fee inflows, realized gains, and auditable on-chain receipts—not narrative APY. This staking design aims to reduce reflexive dumping, reward commitment, and remain mechanically simple.

2) SYSTEM OVERVIEW

The staking system is a single on-chain vault that coordinates three flows:

- **Stakers deposit** $ANTIHUNTER and lock for 90 days.
- **Rewards accrue** from a funded Rewards Pool and stream linearly over 90 days per epoch.
- **Early exits pay a 25% penalty** on withdrawn principal; the penalty is routed into Rewards Pool for remaining stakers.

3) CORE PARAMETERS

- **Lock duration:** 90 days
- **Reward duration:** 90 days (linear stream)
- **Early unstake penalty:** 25% (2500 bps)
- **Penalty destination:** Rewards Pool (100%)
- **Reward token:** $ANTIHUNTER (default; can be extended later)

4) MECHANISM DESIGN

4.1 Staking

`stake(amount)` transfers tokens into the vault, increases the user's balance, and sets `unlockTime = now + 90 days` (or extends it).

4.2 Reward Accrual (Linear Streaming)

Rewards follow a standard "reward-per-token" accumulator model (Synthetix-style). When an epoch is funded via `notifyRewardAmount(reward)`, the vault sets:

`rewardRate = reward / 90 days`

Users accrue rewards pro-rata to stake size over time and can claim at any time via `claim()`.

4.3 Early Unstake

`unstake(amount)` behavior:

- If `now >= unlockTime`: user withdraws 100% of `amount`.
- If `now < unlockTime`: user withdraws 75% and pays 25% penalty.

Penalty is added to the Rewards Pool (optionally via a new/extended 90-day reward epoch).

5) ECONOMIC INTUITION

- **Commitment premium:** the lock + penalty rewards holders who commit capital.
- **Reflexivity without fraud:** yield can rise during volatility because penalties are real, explicit transfers, not hidden minting.
- **Stabilization:** early exits subsidize remaining stakers, reducing pressure to dump.

6) SECURITY & TRUST MODEL

- Use OpenZeppelin `ReentrancyGuard` + `SafeERC20`.
- Emit events for stake/unstake/penalty/reward-notify/claim.
- Optional timelock on admin functions if any privileged role exists.

7) IMPLEMENTATION NOTES (ENGINEERING SPEC)

Recommended pattern: `StakingRewards`-style vault. Reward epochs stream linearly over 90 days. Penalty is treated as an automatic reward top-up for remaining stakers.

8) OPEN QUESTIONS

- Should rewards be paid in $ANTIHUNTER only, or also in WETH/USDC when fees accrue?
- Should new stakes reset the 90-day lock or create independent tranches?
