Methane Token Whitepaper

A Decentralized, Blockchain-Driven Model for Quantifying and Trading Captured Methane

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1. Purpose & Definition

- ➔ **1 METH Token = 1 liter of methane**
  - ◆ captured under standard conditions (0 °C, 1 atm).
- ➔ **Decentralized Digital Commodity**
  - ◆ METH represents methane absorbed through natural processes, providing a transparent, verifiable measure for trading methane credits.

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2. Sources & Methane Capture Model

- ➔ **Tree-Based Absorption:**
  - ◆ Certain European deciduous species absorb methane via bark microorganisms.
    - Per-Tree Absorption: 8.2–16.6 g of methane annually.
    - Per-Hectare Estimate: With ~500 trees/ha, absorption ≈ 6 kg CH_4/ha·yr.

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3. Production, Distribution & Staking

- ➔ **Minting Process**
  - ◆ METH tokens are minted periodically based on aggregated, average methane digestion data from registered land.
- ➔ **Staking-Driven Distribution**
  - ◆ Only ECB token holders who lock (stake) ECB Tokens (“digital batteries”) in the ECB staking contract are eligible for METH rewards. Rewards distribute proportionally by share of total staked ECB.
- ➔ **20% Reserve Integration**
  - ◆ Ecobal Holding retains 20% of ECB tokens to guarantee a fixed share of METH rewards, supporting operations and expansion.

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4. Conversion Metrics & Production Calculation

- ➔ **Methane Density:**
  - ◆ ~0.7168 kg/m³ at 0 °C, 1 atm.
- ➔ **Volume Conversion:**
  - ◆ 1 kg CH_4 ≈ 1.395 m³ ≈ 1,395 L.

Pilot Data (143 ha):

- ➔ 6 kg CH_4/ha·yr × 1,395 L/kg = 8,370 METH/ha·yr
- ➔ Total = 8,370 tokens/ha·yr × 143 ha ≈ 1,196,910 METH/yr

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5. Decentralized Commodity Model & Open Participation

- ➔ **Usufruct Participation**
  - ◆ Landowners retain usage rights while tokenizing sequestration benefits via usufruct agreements.
- ➔ **Market-Driven Valuation:**
  - ◆ METH's value reflects real-world capture, determined by decentralized market dynamics as an alternative to traditional methane management schemes.

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6. Roadmap & Future Extensions

- ➔ **Immediate Objectives:**
  - ◆ Finalize technical integration of METH minting with robust verification (third-party audits, remote sensing).
  - ◆ Streamline staking for seamless, real-time reward distribution.
- ➔ **Expansion & Scalability:**
  - ◆ Onboard additional landowners via usufruct to expand capture capacity.
  - ◆ Enhance smart contracts to optimize reward calculations and distribution.
- ➔ **Long-Term Vision:**
  - ◆ Scale production proportionally as land integration grows, reinforcing our decentralized, market-driven approach.
  - ◆ Develop widgets for utilizing digested methane in various applications.

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7. Disclaimer

➔ **Technical Overview Only**

- ◆ This whitepaper outlines the conceptual and operational framework for METH issuance. It does not constitute financial advice or an investment recommendation.

➔ **Evolving Framework**

- ◆ All models and projections may be updated as the ecosystem evolves with new partnerships, technologies, and regulatory changes.

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8. Glossary

- **METH Token:** A digital token representing 1 liter of methane captured under standard conditions.
- **ECB Token:** The primary meme utility token within the ECB Dynamics ecosystem, used to stake and earn METH rewards.
- **Usufruct Rights:** A legal mechanism allowing landowners to retain land usage while tokenizing environmental benefits.
- **Staking Contract:** The smart contract where ECB Tokens are locked to qualify for METH distributions.
- **Burn Mechanism:** The process of retiring METH Tokens to represent actual methane utilization or offset.
