



Global Hemp Ledger

Tokenizing Carbon Sequestration from Seed to Credit

The blockchain protocol connecting verified hemp carbon capture to global carbon markets. We're building the infrastructure for trustworthy, transparent carbon credits that reward farmers and restore planetary health.

Seed Round: \$2.2M

Carbon Markets Are Broken

\$50 Billion Market, Zero Trust



The voluntary carbon market is plagued by fundamental failures that undermine corporate climate commitments and prevent effective climate action. Despite massive growth potential, systemic issues have created a crisis of confidence.

The 2023 voluntary carbon market reached \$2 billion, yet corporate buyers increasingly refuse to participate due to greenwashing scandals and verification failures. This represents a catastrophic market breakdown at the moment we need carbon solutions most.

Three Critical Failures

Double-Counting Crisis

The same carbon offset sold multiple times across different registries. Verra and Gold Standard face credibility crises over verification quality. No immutable tracking exists to prevent fraud.

Intermediary Extraction

30-50% of carbon credit value extracted by middlemen including verification bodies, brokers, and registries. Small farmers cannot justify certification costs, excluding those who need revenue most.

Static Valuation Trap

Farmers can only monetize carbon at harvest, not during the 90-120 day growth cycle when sequestration actively occurs. This creates crippling cash flow gaps that prevent investment in sustainable practices.

The Solution: Proof of Sequestration

Hemp Credit (HC): Carbon You Can Verify

We've built a blockchain protocol that tokenizes verified carbon sequestration from industrial hemp cultivation. By combining IoT sensors, satellite imagery, and immutable ledger technology, we create carbon credits that buyers can actually trust.

1

IoT + Satellite Verification

Soil carbon sensors and Sentinel-2 satellite imagery create tamper-proof sequestration data. Machine learning models estimate carbon capture with 85%+ accuracy, validated against ground-truth measurements.

2

Blockchain Settlement

Every Hemp Credit is backed by on-chain verification hashes. No double-counting possible. Full audit trail from field to buyer creates unprecedented transparency and trust.

3

Continuous Monetization

Farmers receive HC tokens as sequestration occurs—not just at harvest. This unlocks working capital during the growth cycle and rewards sustainable practices in real-time.

Cost Reduction: Transaction fees drop from 30-50% to 5-10%. Disintermediation returns value directly to farmers and buyers, making carbon markets efficient for the first time.

Why Hemp? The Perfect Carbon Crop



Nature's Carbon Capture Machine

Hemp is uniquely positioned as the foundation for tokenized carbon credits, combining unmatched sequestration power with economic viability and global scalability.

Sequestration Power

9-15 tonnes CO₂ per hectare per year—2-3x more efficient than forests. One of the most powerful carbon sinks on the planet.

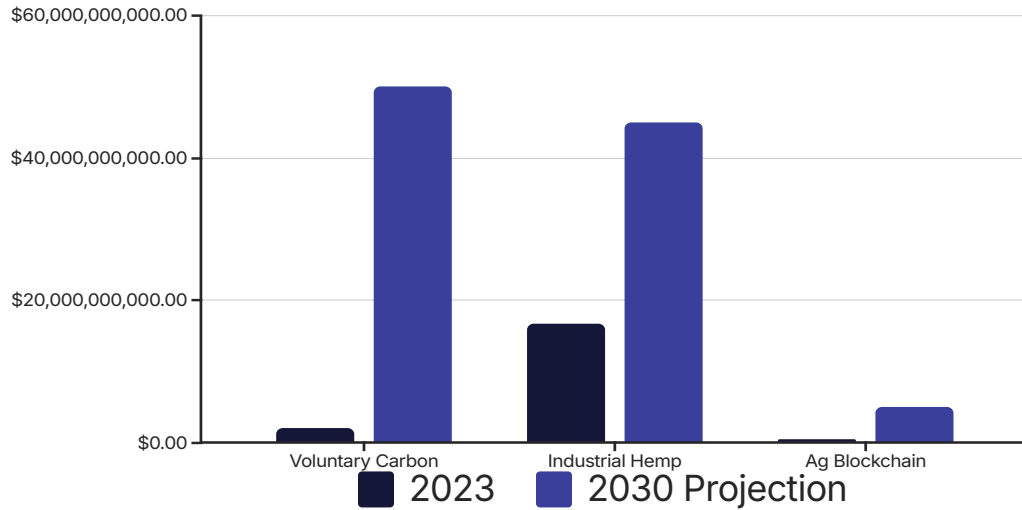
Rapid Growth Cycle

90-120 days from seed to harvest. Multiple growing seasons per year in many climates enable fast carbon credit generation.

Multiple Revenue Streams

Fiber for textiles and construction, seeds for food and oil, CBD for wellness, AND carbon credits create stacked economics for farmers.

Market Opportunity: Three Markets Converging



Massive Growth Across All Verticals

The voluntary carbon market is projected to grow 25x by 2030, driven by corporate net-zero commitments from 4,000+ companies with Science-Based Targets. Industrial hemp cultivation expands at 22.99% CAGR through 2030, with 200,000+ hectares currently cultivated globally.

Our TAM Calculation: 200,000 hectares × 12 tonnes CO₂/ha × \$30/tonne = \$72M annually at current scale. At 2030 projections (500,000+ ha, \$50/tonne): \$300M+ annual market.

GHL Target: Capture 10% of hemp carbon market by 2030 = \$30M+ annual revenue.

How It Works

Simple for Farmers. Verified for Buyers.

01

Farm Registration

Farmer downloads app, registers plots, installs IoT sensors (we provide kit). Takes one afternoon to get started.

02

Continuous Monitoring

Soil carbon sensors transmit data every 15 minutes. Satellite imagery updates every 5 days. All automatic—no manual data entry required.

03

AI Verification

Our ML model processes sensor + satellite data, estimates sequestration, and generates Proof of Sequestration hash.

04

Token Minting

Verified sequestration automatically mints Hemp Credit (HC) tokens to farmer's wallet. No crypto knowledge required.

05

Marketplace Sale

Farmer lists credits for sale. Buyer purchases with one click. Certificate generated instantly with full verification trail.

"It's like checking my bank balance, but for carbon." — Farmer Experience

"First carbon credits I actually trust." — Buyer Experience

Technology Architecture

Built for Scale, Designed for Trust

Blockchain Layer

Polygon PoS: \$0.003 per mint, 2-second finality, carbon-negative network, EVM compatible

Smart Contracts

HC Token (ERC-20):
Fungible carbon credits with retirement tracking

Plot NFT (ERC-721):
Dynamic metadata

IoT Infrastructure

Sentek TriSCAN: $\pm 5\%$ accuracy soil sensors, LoRaWAN mesh (15km range), solar-powered



ML Verification Engine: XGBoost + CNN ensemble model trained on 50+ hemp plots with ground-truth measurements. Target RMSE less than 2.0 tCO₂e/ha. Satellite integration uses Sentinel-2 (free, 10m resolution) for biomass verification and Planet Labs (3m resolution) for fraud detection.

Go-to-Market Strategy

Anchor Partners, Then Scale

1 Phase 1: European Anchor

Months 1-12

La Chanvrière Cooperative (France): 440 farmers, 9,600 hectares, 20% of European hemp production. Single partnership delivers critical mass. EU regulatory sandbox under MiCA framework.

2 Phase 2: North American

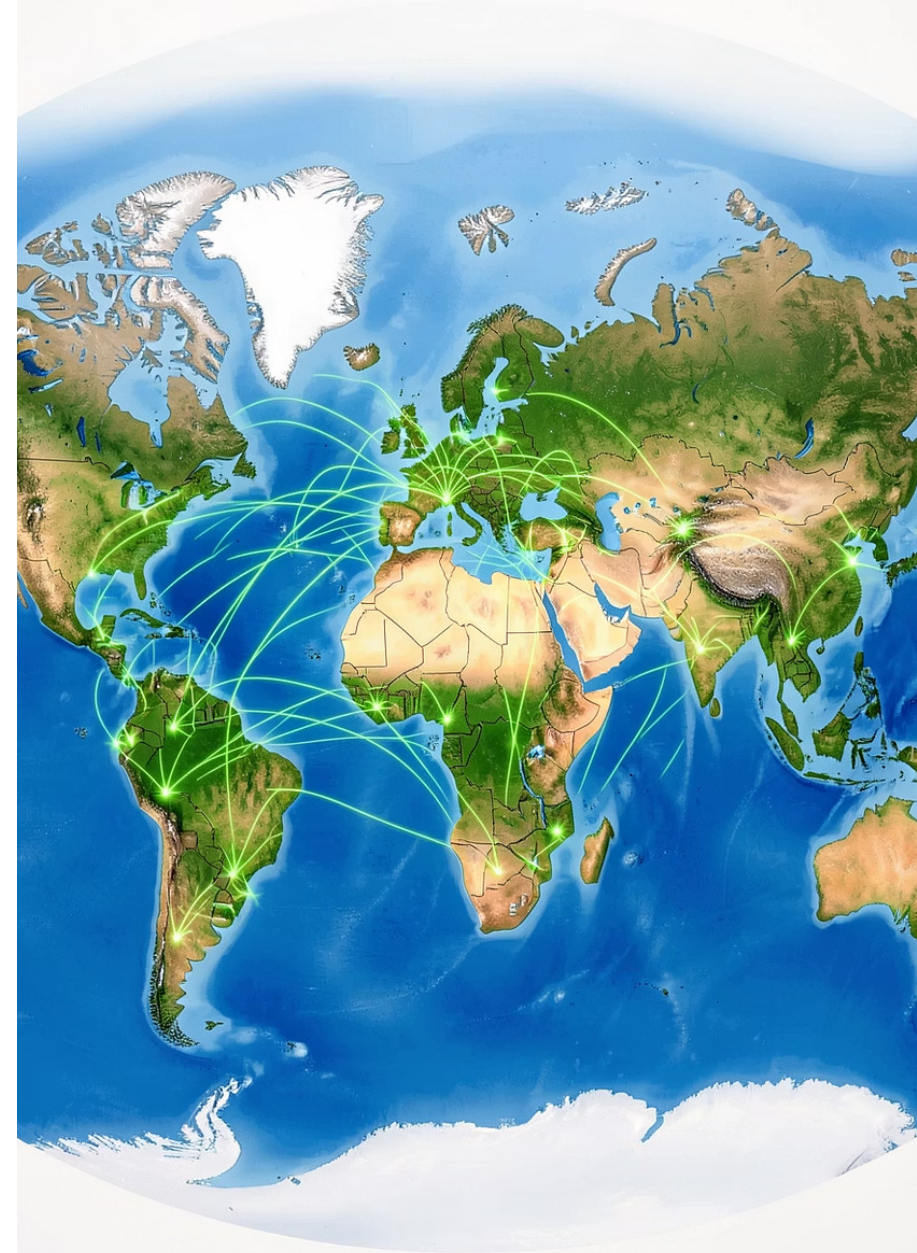
Months 12-18

IND HEMP (Montana): Large-scale US farming operation.
Tilray/Manitoba Harvest: \$1.1B public company with profitable hemp foods division.

3 Phase 3: Global Scale

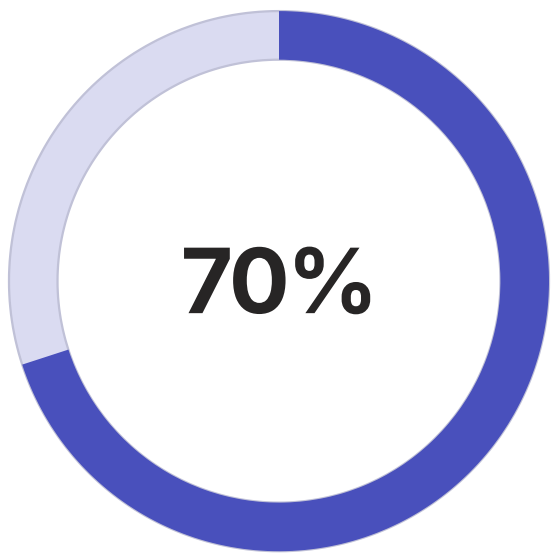
Months 18-36

Ecofibre (Australia), BOHECO (India), HemPoland. Our database of 93 hemp companies identified 6 Tier-1 candidates based on scale, financial stability, technical capability, and cooperative structure.



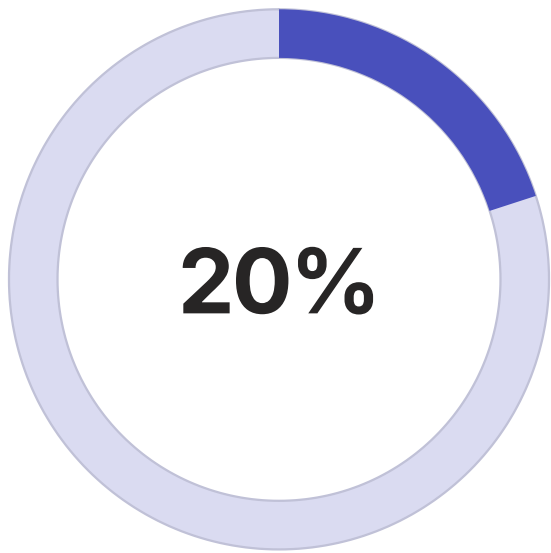
Business Model

Multiple Revenue Streams, Clear Path to Profitability



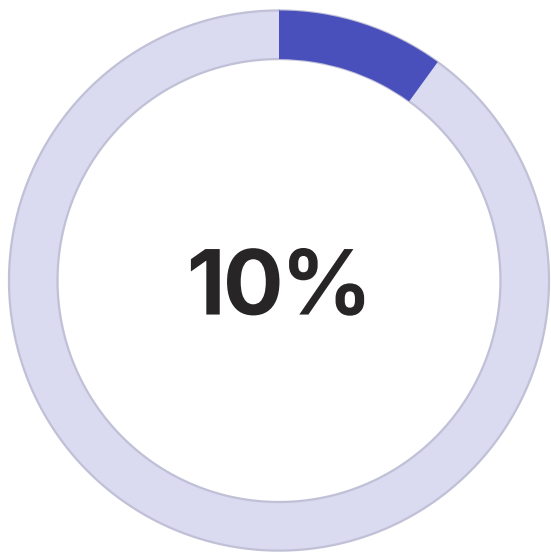
Transaction Fees

5-8% fee on carbon credit sales through marketplace



Verification SaaS

License platform to cooperatives and enterprises



Data & Hardware

Aggregated carbon data and IoT sensor margins

Unit Economics

At 50,000 tonnes traded annually × \$30/tonne × 6.5% fee = **\$975K revenue** from transaction fees alone. Verification SaaS adds \$5,000/month per enterprise customer.

Customer Acquisition Cost: \$500 (through cooperative partnerships)

Lifetime Value: \$3,000+ (3-year average farmer retention)

LTV:CAC Ratio: 6:1

 **Path to Profitability:** Break-even at 30,000 hectares under management (Year 3). Profitable at 50,000+ hectares with positive contribution margin.

Traction & Milestones

Foundation Built, Ready to Execute

Completed ✓

- Industry research: 93 companies mapped across 30+ countries with financial data
- Technical specification: 13-section development blueprint complete
- Architecture design: Smart contracts, IoT infrastructure, ML pipeline specified
- Cost modeling: \$1.78M MVP budget validated
- Partner identification: 6 Tier-1 launch partners identified and ranked

In Progress →

- La Chanvrière partnership discussions
- EU MiCA regulatory sandbox application
- Academic partnership for ML model validation



Month 3

Smart contracts deployed on testnet

Month 9

First HC tokens minted (testnet)

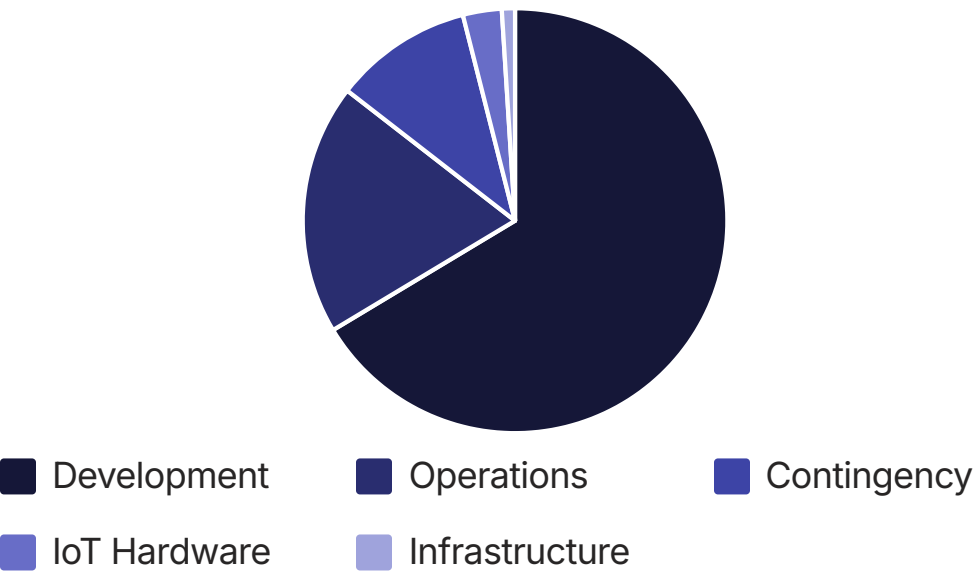
Month 6

First sensor data flowing to cloud

Month 12

10-farm pilot live, 10,000+ HC tokens minted

The Ask: \$2.2M Seed Round



Use of Funds

Development (66%): \$1,460,000

- 9.5 FTE engineering team for 12 months
- Smart contract audits (\$80K)
- External contractors and advisors

Operations (19%): \$420,000

- Legal and regulatory compliance
- Marketing and partner development
- Working capital

Hardware & Infrastructure (4%): \$87,000

- 10-farm pilot sensor deployment
- AWS/cloud services for Year 1

Contingency (10%): \$232,000

18-Month Runway to Series A: Target Series A raise at 50+ farms, \$100K+ transaction volume, regulatory clarity achieved.

Go/No-Go Criteria

Disciplined Capital Deployment

At Month 12, we will evaluate against clear success criteria to determine next steps. This framework ensures disciplined capital deployment and honest assessment of product-market fit.

Must Achieve (All Required)

- 10 farms actively submitting sensor data
- 5,000+ HC tokens minted with verified sequestration
- At least 1 completed buyer transaction
- No critical security vulnerabilities
- Farmer Net Promoter Score greater than 30

Should Achieve (4 of 6)

- Model accuracy RMSE less than 2.5 tCO₂e/ha
- System uptime greater than 99%
- Transaction volume greater than \$25,000
- 3+ buyer expressions of interest
- Regulatory pathway identified
- 1 cooperative partnership formalized

1

PROCEED

All Must + 4 Should → Series A fundraiser

2

CONDITIONAL

All Must + 2-3 Should → 3-month extension

3

PIVOT

Missing Must criteria → Analyze and adjust

4

WIND DOWN

Less than 3 Must → Return capital



The Vision

From Seed to Credit. Verified On-Chain.

Near-Term (2026-2028)

10,000+ hectares tokenized. 100+ farmers earning from carbon. First institutional carbon buyers onboarded with verified, trustworthy credits.

Medium-Term (2028-2030)

50,000+ hectares across 3 continents. Resilience Fund providing farmer loans. Integration with Verra and Gold Standard registries as trusted verification layer.

Long-Term (2030+)

Equity Index 2.0: Measuring ecological contribution alongside economic output. Hemp as the foundation of regenerative finance. Every tonne of carbon, verified and valued.

We're not just building a carbon credit platform. We're creating the infrastructure for a regenerative economy—where farmers are rewarded for healing the planet, and corporations can trust the credits they buy.

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