

# Carbon Credit Trading Platform

## Product Research & Requirements

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# 1. Executive Summary

## **Purpose & Vision**

- We want to create a top-notch, user-friendly carbon credit trading platform *that feels like a Bloomberg terminal*.
- Our goal is to make carbon markets more transparent, accessible, and data-rich for everyone.

## **Core Proposition**

- Centralize carbon credit trading, analytics, and offset management in one place.
- Provide professional-grade tools, real-time data, and credible project info.

## **Key Objectives**

1. Become the go-to marketplace for carbon credits.
2. Deliver advanced analytics and data visualization.
3. Ensure a seamless experience for retail and institutional users alike.

## 2. Market Overview & Opportunity

### **Carbon Credit Market Landscape**

- The push for corporate ESG compliance and net-zero goals is driving demand.
- Voluntary and compliance carbon markets are both rapidly expanding.

### **Opportunity**

- Existing solutions are often fragmented with limited data.
- We see a big gap for a robust, *Bloomberg-like* platform that consolidates trading, research, and portfolio management.

### **Target Segments**

1. Institutional Investors (hedge funds, asset managers).
2. Corporate Buyers (for compliance or voluntary offsets).
3. Retail Traders (environmentally conscious individuals).

# 3. Competitive Landscape

## Existing Solutions

- Multiple smaller exchanges and broker platforms exist, but they lack the integrated depth of data and user experience.

## Our Differentiators

- Professional, data-heavy interface reminiscent of top financial terminals.
- Verified project info and robust ESG analytics.
- Simple offset purchasing and retirement, *all* in one platform.

## Why It Matters

- Users want *one place* to trade, research, and track carbon credits *without* sifting through scattered resources.

## 4. User Personas & Use Cases

### 1. Institutional Trader (Lucy)

- Needs real-time data, advanced order types, and performance metrics.
- Monitors daily P&L and risk exposure.

### 2. Corporate Sustainability Officer (Mark)

- Buys credits in bulk to offset emissions and meet compliance.
- Needs easy tracking of total offsets and ESG reporting.

### 3. Retail Eco-Investor (Asha)

- Wants a straightforward way to buy small-lot credits.
- Relies on built-in analytics to gauge project credibility.

### 4. Broker/Analyst (Tim)

- Aggregates data for clients, performs technical and fundamental analyses.
- Recommends trades based on market insights.

## 5. Key Features & Functional Requirements

### **Market Overview Dashboard**

- Real-time tickers for various carbon credit types (VERs, CERs, etc.).
- Quick stats: price, volume, daily change.

### **Portfolio Management**

- Track holdings, P&L, and offsets in real time.
- View overall tCO<sub>2</sub>e reduction in a single snapshot.

### **Advanced Charting & Analytics**

- Candlestick charts, technical indicators, project rating overlays.
- Compare different credits or benchmarks side-by-side.

### **Order Management & Execution**

- Market, limit, stop-loss orders with minimal latency.
- Detailed order history and trade confirmations.

## 6. User Experience (UX) & Interface

### Design Philosophy

- Clean, data-rich interface with a *dark theme* option (like pro terminals).
- Fast navigation, minimal clutter, customizable layouts.

### Layout Highlights

- **Left Panel:** Main navigation, watchlists.
- **Center:** Charts, analytics, order entry.
- **Right Panel:** News feed, notifications, or chat.

### Mobile Responsiveness

- Condensed UI for quick trades on the go.
- Essential features remain easily accessible in the mobile app.

## 7. Data & Integrations

### **Market Data Providers**

- Partner with reputable carbon registries (Verra, Gold Standard).
- Aggregate quotes from multiple exchanges and brokers.

### **ESG & Project Verification**

- Verified project data from recognized standards.
- Third-party ESG ratings to confirm credibility and impact.

### **News & Research**

- Live news feeds filtered by climate and sustainability tags.
- In-house research plus curated content from leading institutions.

### **Analytics Engine**

- Real-time data ingestion for instant chart updates.
- AI/ML modules planned for advanced risk and sentiment analysis.



## 8. Pricing & Monetization Model

### Transaction Fees

- Tiered fee structure based on trading volume.
- Bulk discounts for large corporate or institutional clients.

### Subscription Plans

- **Free Tier:** Basic quotes, limited analytics, smaller trade sizes.
- **Pro Tier:** Advanced charts, premium research, priority support.
- **Enterprise:** Bulk credits, compliance modules, dedicated manager.

### Data & Research Sales

- Specialized reports or data feeds for institutional players.
- Potential *white-label* solutions for corporate intranets.

### Partnerships

- Integrations with banks, broker-dealers, or ESG consultancies.
- Revenue share or monthly licensing fees for B2B deals.

# 9. Security & Compliance

## **Platform Security**

- End-to-end encryption, MFA for user accounts.
- Routine penetration testing and bug bounty programs.

## **Regulatory Compliance**

- Integrated KYC/AML checks during onboarding.
- Compliance with SEC (USA), MiFID II (EU), and relevant carbon market regulations.
- GDPR compliance for EU-based users.

## **Data Governance**

- Role-based access control to sensitive info.
- Detailed audit trails for all admin and user actions.

# 10. Risk Management

## **Market Risk**

- Carbon credit prices can be volatile.
- Tools: Stop-loss orders, real-time alerts, potential hedging instruments.

## **Regulatory & Policy Risk**

- Carbon markets heavily influenced by policy shifts.
- Maintain relationships with regulators, adapt quickly.

## **Credit & Project Risk**

- Potential for low-quality or fraudulent projects.
- Verify credits via reputable registries, track project performance.

## **Operational & Technical Risk**

- Outages, data feed interruptions, cybersecurity threats.
- Redundant cloud infrastructure and strong DevOps processes.

# 11. Technology Stack

## Front-End

- React or Vue with TypeScript for a snappy, modular UI.
- High-performance charting (e.g., TradingView widgets or D3.js).

## Back-End

- Node.js or Python for microservices.
- Real-time data streaming via WebSockets or GraphQL subscriptions.

## Database

- PostgreSQL or MySQL for transactional data.
- Redis for caching, MongoDB/Elasticsearch for large data sets.

## Infrastructure

- AWS or Azure with Kubernetes for container orchestration.
- CI/CD pipelines for automated testing and deployments.

## 12. Roadmap & Milestones

### **MVP (Months 1–3)**

- Basic trading engine (market & limit orders).
- Portfolio tracking, real-time ticker, simple charts.

### **Beta Release (Months 4–6)**

- Advanced charting, analytics, news integration.
- KYC/AML module, offset retirement functionality.

### **Public Launch (Months 7–9)**

- Mobile app rollout.
- Subscription tiers (Free, Pro, Enterprise).

### **Growth & Expansion (Months 10–12)**

- Broker/registry partnerships.
- AI-based analytics, multi-currency, multi-language support.

# 13. Deployment & Testing Strategy

## **CI/CD Pipeline**

- Automated builds, unit tests, integration tests for each commit.
- Staging environment mirrors production.

## **Quality Assurance**

- Regression testing on critical features after each sprint.
- End-to-end testing on user flows (trading, offset retirement, KYC).

## **Performance Testing**

- Stress tests for high concurrency trading.
- Aim for sub-second response times on core actions.

## **User Acceptance Testing (UAT)**

- Invite pilot institutional and retail users.
- Gather feedback, refine UI/UX before public launch.

# 14. Marketing & Growth Strategy

## **Early Adopter Outreach**

- Target institutions & sustainability-focused corporations.
- Offer beta access with discounted fees and exclusive features.

## **Content & Thought Leadership**

- Publish carbon market insights, whitepapers, and host webinars.
- Position the platform as the “go-to” source for credible carbon data.

## **Partnerships & Integrations**

- Integrate with corporate ESG solutions (e.g., SAP, Salesforce).
- Collaborate with large banks, brokers for market access.

## **Community Engagement**

- Active forums, Slack/Discord channels for user discussions.
- Referral programs to reward existing users for bringing new traders.

# 15. KPIs & Success Metrics

## **Trading Volume**

- Daily, monthly volumes.
- Growth in new credit instruments listed.

## **User Growth & Retention**

- Monthly Active Users (MAU), Daily Active Users (DAU).
- Churn rate, average session duration.

## **Revenue Metrics**

- Transaction fees, subscription revenue, data licensing.
- Customer Lifetime Value (CLV), Cost of Acquisition (CAC).

## **ESG Impact**

- Total tCO<sub>2</sub>e offset through the platform.
- Number of verified projects funded.



# 16. Appendix & Next Steps

## **Regulatory References**

- EU ETS, California Cap-and-Trade, other relevant frameworks.

## **Technical Diagrams**

- High-level architecture, data pipeline overview.

## **Future Enhancements**

- AI-driven risk and project credibility scoring.
- Potential tokenization of carbon credits on the blockchain.

## **Immediate Action Items**

1. Finalize MVP features and confirm data provider partnerships.
2. Conduct user testing on wireframes.
3. Develop marketing plan for pilot launch.

**Thank You!**