# Carbon Footprint Monitoring System





- Introduction
- Market Justification
- Feasibility & Viability
- Conclusion and Key takeaways

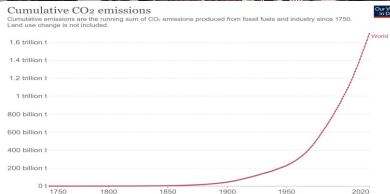
# 1 Introduction



## **Overview of the Carbon Footprint Problem**

- What is it? The carbon footprint measures the total greenhouse gas emissions from human activities primarily in industry, transportation, and agriculture.
- The Growing Issue: Emissions are on the rise globally,
   accelerating climate change and environmental damage.
- Why it matters: If we don't act now, unsustainable practices will continue to harm ecosystems, economies, and future generations.







## Why It Matters: The Urgency for Action!

- Climate change is already causing significant impacts such as rising sea levels, extreme weather events, and loss of biodiversity.
- Businesses are losing billions due to inefficient sustainability planning, while governments are imposing stricter carbon regulations.
- Action is needed not only to combat climate change but also to avoid long-term financial losses for organizations.





## The Proposed Solution: Carbon Footprint Emission Tracking

- Real-Time Carbon Tracking: Monitor emissions across all sectors with up-to-date data.
- Actionable Insights: Get personalized recommendations to reduce carbon footprints.
- **Seamless Integration**: Easily integrate with existing systems for scalability.
- Continuous Improvement: Track progress and optimize emissions reduction over time.
- Clear Roadmap to Carbon Neutrality: Align with regulatory requirements and consumer expectations for a sustainable future.

# Market Justification



# Market Trends: A Growing Need for Sustainability Solutions

- The carbon tracking software market is growing rapidly, projected to reach \$103 billion by 2032.
- Increasing global focus on sustainability and the tightening of environmental regulations drive demand.
- Companies are prioritizing carbon tracking to meet regulatory obligations and consumer expectations.





# **Opportunities: A Profitable and Growing Market**

- Comprehensive Economic Impact: The carbon footprint spans across all sectors: transport, manufacturing, agriculture, energy, and more.
- Untapped Potential: Each industry faces unique challenges and opportunities for reducing emissions, making it a prime area for innovative solutions
- Solid Market Drivers: Projections show continued growth in sustainability solutions, providing a clear and profitable opportunity for carbon tracking technologies.

# **CARBON FOOTPRINT**





# Driving Forces: What's Fueling Carbon Tracking Adoption?

- Investor Priority to meet regulations: Companies with strong
   ESG (Environmental, Social, Governance) profiles are receiving
   more investments
- Consumer Pressure: Consumers demand greater transparency regarding environmental impact.
- Competitive Advantages: Early adopters are seeing reduced costs and improved market position.





## Our Unique Fit

- Real-Time, Predictive Carbon Tracking: Unlike traditional solutions that rely solely on sensors, our platform
  uses predictive analytics for live, dynamic tracking, providing forward-looking insights.
- Scope 2 & 3 Emissions Focus: While often overlooked, Scope 3 emissions have a significant collective impact on companies. Our solution gives these emissions the attention they deserve, tracking them in real-time for better optimization.
- End-to-End Sustainability: A complete solution that measures, tracks, and optimizes emissions across all scopes.
- Tailored Industry Solutions: Customized insights for each industry, ensuring relevance and actionable recommendations.



# **Market Justification**

## Our Unique Fit

- Real-Time, Predictive Carbon Tracking
- Scope 3 Emissions Focus
- End-to-End Sustainability
- Tailored Industry Solutions



- · Fuel combustion
- · Company vehicles
- Fugitive emissions



 Purchased electricity, heat and steam



- · Purchased goods and services
- Business travel
- · Employee commuting
- · Waste disposal
- · Use of sold products
- Transportation and distribution (up- and downstream)
- Investments
- · Leased assets and franchises

# Feasibility & Viability

### **Market Feasibility**

- Technical Feasibility
- Operational Feasibility

## Viability

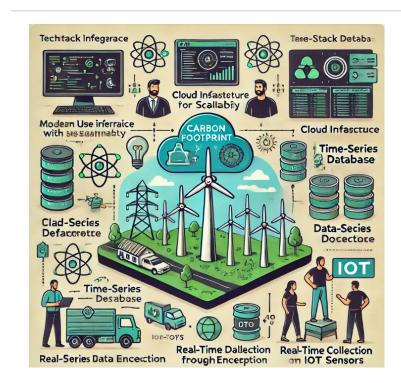
Economic Feasibility & Recommendations



# **Technical Feasibility**

- **Technology:** React.js frontend, time-series database, free cloud infrastructure, APIs for seamless integration.
- Data Management: Real-time data collection, support for multiple formats, secure storage, and robust validation.
- Expertise Required: Developers, DevOps, environmental scientists, UI/UX designers.
- Reliability: Scalable, modular architecture with real-time processing and validation algorithms.







# **Operational Feasibility**

- Adoption: Intuitive UI, role-specific training, and guided resources.
- Integration: Compatible with ERP and supply chain systems, modular deployment minimizes disruption.
- Security: Data encryption and compliance with privacy regulations.





# **Viability Assessment**

## **Economic Feasibility**

- Cost Efficiency: Optimized energy usage reduces carbon taxes and operational costs.
- Green Financing: Leverages subsidies and financial incentives for sustainability projects.
- Compliance & Efficiency Gains: Proactive compliance avoids fines and boosts operational efficiency.
- Market Competitiveness: Enhances brand reputation and attracts eco-conscious customers, expanding market reach





# Recommendations

**Key Success Factors:** Focus on data accuracy, system integration, flexible pricing, and user training.

**Risk Mitigation:** Use phased development, gather stakeholder feedback, and ensure rigorous quality assurance for reliability.



### **Real-Time Emissions Tracking:**

- Automatically collects data from energy consumption, transportation, and waste production.
- Monitors carbon emission trends in real-time.

### **Predictive Analytics:**

- · Uses machine learning to detect patterns and predict emission spikes.
- Suggests corrective actions proactively.

### **Customizable Dashboards:**

- Provides tailored data views for different user roles (e.g., operations managers, sustainability officers).
- Offers visual tools like heatmaps and line charts to simplify data interpretation.

### **Compliance Reporting:**

- Generates reports aligned with global and regional standards automatically.
- · Helps companies meet regulatory requirements efficiently.

# **High-Emission Areas and Cost Savings from Reduction Strategy**





# **Project Plan Overview**

### Phase 1: Initiation

- · Identify stakeholders and define project scope.
- Gather feature requirements for real-time tracking and compliance reporting.

### **Phase 2: Planning**

- Develop WBS, map task dependencies, and create a risk management plan.
- Design Gantt charts tailored to emission tracking tasks.

### **Phase 3: Development**

- Backend development for emissions calculation and frontend for dashboards.
- Integration with APIs for automated data collection.

### **Phase 4: Testing & Deployment**

- Perform functional and user acceptance testing.
- Deploy the system and provide user training.



# Risk Management Overview

- Regulatory compliance risk: Failure to comply with environmental and government regulation => Legal repercussions, fines, and reputation damage
- Data collection accuracy risk: Errors in data collection => regulatory penalties, undermining the software's credibility
- Cost Overrun risk: Underestimation of budget due to lack of knowledge/information, unknowns, etc.
- Resource unavailability risk: Limited availability of skilled resources for a development phase => delayed updates, risk of bugs, and security vulnerabilities
- Schedule overrun risk: Underestimating the time needed to complete complex tasks like ensuring regulatory compliance => delays and poor reputation
- Technological Advancement risk: Emerging technologies that make the current solution outdated or less competitive in the market => Loss of market relevance and competitiveness
- Integration issue risk: Compatibility issues with client's existing software
- User Adoption risk: Insufficient training or a steep learning curve for users
- Rapid Regulatory Changes risk: Frequent changes in environmental regulations =>
   Increase in operation costs and budget and schedule overrun



# **Budget Overview**

### Resource Costs

- Human Resources: Project team, Support staff, Consultants, salaries/wages
- Technology: Development Environment, Hosting/Cloud Services, Data Storage and Backup
- Physical: Office space, hardware
- Operational: Customer support, user training, customer support training, maintenance

### Software and Technology Costs

- Software license: IDEs, database management systems
- Development tools: Libraries, testing tools
- Cloud infrastructure: Cloud storage, computing, hosting

### Data Acquisition and Licensing Costs

- Data providers: Subscriptions or licensing fees for accessing industry-specific data, such as energy usage or emissions data
- API and integration: Costs for any external APIs that will help integrate data from different sources into the system

### Regulatory Compliance and Certification Costs

- Regulatory audits: Fees for auditing the system to ensure it meets regulations
- Certifications: Costs related to obtaining certifications for the tool to verify its accuracy and compliance with emission reporting standards

### Marketing and Sales Costs

- Branding and Advertising: Budget for promoting the tool to potential clients through digital marketing, ads, or other campaigns
- Sales team: Costs for sales staff responsible for acquiring new clients or expanding existing customer bases.



# **Contingency Budget**

#### • Unforeseen Costs:

- Technical Issues: Unforeseen technical challenges in software development
- Regulatory Changes: Changes in environmental regulations or sustainability reporting standards that require adjustments to the project to ensure compliance
- Scope Changes: Catering to additional feature requests or adjustments that increase the scope

### Risk Mitigation:

- Data Inaccuracies: Issues related to the accuracy of third-party data sources or challenges in integrating different types of data into the platform
- Market Shifts: Changes in the market, such as new competitors entering the space or shifts in client needs, could require pivoting the project or enhancing the platform's functionality.
- Technology Failures: If there are unexpected failures in the technology stack, the contingency budget allows the project to absorb the costs of addressing these failures.

### Innovation and Exploration:

- Research and Development: If a team discovers a better way to measure or track emissions, the project might need to allocate more resources to integrate this innovation.
- **Experimental Features:** A contingency budget allows for the flexibility to explore new ideas.

### Market Testing and Adjustments:

- User Testing Costs: Expenses related to user research, including focus groups, beta testers, or pilot programs to ensure the system meets the needs of the target audience.
- Iterative Improvements: Improving system after feedback

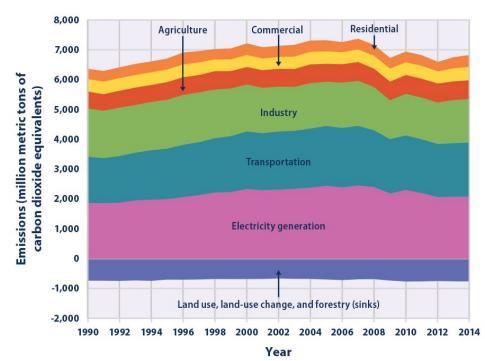
### External factors:

- Economic Inflation: Increases in prices for hardware, software, or labor
- Supply Chain Issues: Delays in acquiring necessary materials or data sources can lead to unanticipated costs that may need to be covered by the contingency budget.



# **Conclusion and Key takeaways**

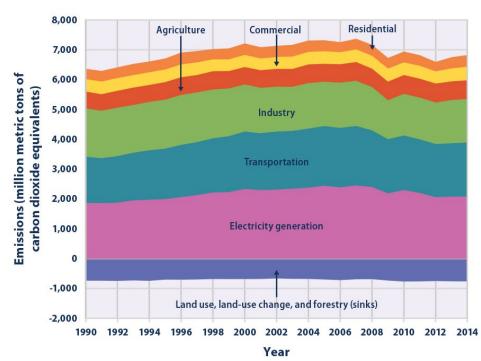
- Project Highlights: Real-time emissions tracking, predictive analytics, seamless integration, and customizable dashboards.
- Benefits: Regulatory compliance, cost savings, enhanced brand reputation, and simplified ESG reporting.
- Impact: Supports global sustainability goals, fosters a culture of accountability, and ensures long-term financial viability.





# **Conclusion and Key takeaways**

- Implementation: Phased deployment minimizes risks; robust strategies handle compliance and integration challenges.
- **Future Outlook**: Scalable, innovation-driven, and adaptable to evolving regulations for sustainable success.





# Thanks!

Any questions?