

# WHITE PAPER

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## Transport Carbon Exchange Platform

### Carbon Exchange LLC

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# Overview

The Carbon Exchange Platform protocol is a revolutionary platform that turns environmentally conscious choices into profitable solutions. We encourage the transition to low-carbon transport by both citizens and companies. We also develop a solution for local governments to integrate carbon reduction strategies into urban planning. All calculations are based on rigorous scientific data, are meticulously verified, and adhere to the international carbon emission standards. Our innovative emissions monitoring system empowers you to track your carbon emission, contribute to environmental sustainability, and earn cryptocurrency rewards.

## Introduction

For the first time, carbon credits will connect with DeFi and make the compensation system transparent, reliable and accessible to everyone. This system is ideal for environmentally conscious citizens, businesses and local governments.

## Citizens | B2C

The Carbon Exchange Platform offers tools that might help switching to environmentally friendly transport, helping to slow climate change and receiving monetary incentives for this. Complex emissions calculations are hidden under the hood of friendly usability and intuitive interfaces.

Imagine that every step you take to improve the environment could ultimately bring you a reward. The point system of rewards is not just a fashionable trend, but an effective gamification tool that involves users in solving global environmental problems. By making informed choices, users generate valuable carbon credits. These credits can be traded for fiat currency with entities seeking to offset their carbon emissions.

Integration with the carbon market makes this approach even more attractive. Users of the Carbon exchange platform can not only earn rewards, but also participate in offsetting carbon emissions, which makes their contribution to the environment even more meaningful.

Travel activity is translated into transaction history, visual dashboards show your environmental progress - day by day, month by month, year by year. You will understand your level of environmental performance and realize how much you have contributed to saving the climate in your region and, ultimately, the entire Earth.

For example, many airlines already provide options for passengers to offset carbon emissions from their flights. Our platform streamlines this process, offering simplified verification, transaction completion, and integration with existing carbon offset assets. This is a prime example of our product's application.

## Business | B2B

The Carbon Exchange platform offers companies a much simpler way to receive compensation for reducing carbon emissions. This approach opens up a number of financial and marketing advantages:

**Cost reduction:** Switching to more environmentally friendly transport can lead to lower operating costs through savings on fuel and lower taxes.

**Risk management:** Control and risk management tools on our platform enable companies to more effectively manage risks associated with climate change and tightening environmental legislation.

**Image improvement:** Companies that work with us demonstrate their commitment to environmental values and can improve their image among consumers and investors.

**Access to new markets:** Companies offering environmentally friendly products and services can access new markets and attract new customers.

**Impact Investing:** This platform could offer a great guidance for Environmental, Social, and Governance (ESG) investment considerations, also referred to as responsible and impact investing.

Buyers of carbon credits no longer need to doubt the accuracy and reliability of measurements and data. The Carbon exchange platform was developed by a team of experienced scientists and developers whose leaders Dr. Harikishan Perugu PhD, Director of Data Analytics, Environmental Science Expert, and Mr. Raju Porandla, Division Chief, California Department of Transportation, a veteran in the field of

emissions reduction modeling, Technology Development Expert and a recognized expert in Sustainable Solutions Innovation. A proven scientific approach, coupled with decades of experience, guarantees the quality of our services.

If your company needs to estimate carbon emissions from low-carbon transportation operations, we can help. Our services cover a wide range of initiatives, including fleet conversion from traditional to electric vehicles, innovative commute programs like shuttle services or ride-sharing, and the transition from conventional gasoline/diesel equipment to electric or hydrogen powered alternatives for on-site operations. Carbon Exchange Platform will provide analysis, reporting that you can use to understand your current production situation, tell you where there are opportunities to reduce emissions, and help you cover damages through direct access to the carbon credit market.

Moreover, so that you can be confident in us as a business partner, we will subject our initial carbon reduction calculations to independent audits by globally recognized expert consulting firms.

These audits will verify our emissions reduction calculations and data, issuing certificates confirming the accuracy of our claims. Essentially, our early clients benefit from double validation at no extra cost. Accurate, profitable, and indisputable results are guaranteed.

### **Target Industries for Carbon Credit Offsetting**

The use of carbon credits has become an important tool for companies looking to reduce their carbon emission and do their part to combat climate change. Here are just a few of the industries where companies are actively using carbon credits:

*Airlines:* to offset the emissions associated with air travel. This allows them to offer customers "carbon neutral" flights.

*Automobile manufacturers:* to offset the emissions associated with the production of cars and their operation.

*Energy companies:* to offset the emissions from electricity production.

*Logistics companies:* especially those involved in long-distance transportation, often purchase carbon credits to offset the emissions from trucks and planes.

*Manufacturing companies:* especially those with large greenhouse gas emissions, use carbon credits to offset their carbon emission.

*Farms:* can use carbon credits if they implement carbon sequestration projects, such as by restoring soils or forests.

*Technology companies:* especially those with large data centers, can use carbon credits to offset emissions from electricity consumption.

*Financial institutions:* can use carbon credits to offset their indirect emissions associated with investments in carbon-intensive industries.

CBX has a deep understanding of the specifics of the transport industry, including its different types, routes, seasonal fluctuations, etc. This allows our company to easily take into account all the features and nuances of a particular industry in calculations, and the horizontal scalability of the protocol allows us to quickly adapt to growing markets and expand the geographic presence of the platform - from state to state, from country to country.

We consider regional and industry specifics, are ready to integrate with local systems and departments of transport, as well as cooperate with government agencies, so that the calculations are as accurate as possible, comply with regional legislation and are completely reliable for the industry and a specific enterprise.

## Government | B2G

Partnership with Carbon Exchange Platform in the measurement and valuation of carbon credits will enable local governments and businesses to work together to achieve sustainable development goals. Municipalities will be able to promote carbon neutrality in new projects and resource developments by supporting the use of clean technologies for trading carbon credits verified via blockchain. Crucially, we can offer tailored products to track carbon reductions for new residential, commercial, and other planned projects. These products enable clients to offset future carbon emissions, adjust their carbon emission based on development priorities, or both. This will turn environmental responsibility into a source of financing.

Accelerating climate goals: The exchange can become an effective tool for self-control in reducing greenhouse gas emissions in the transport sector, helping the state/region achieve its climate goals.

*Collecting additional income:* The government can generate additional revenue from trading carbon credits, which can be used to finance other transportation projects.

*Increased transparency:* The exchange provides transparency on carbon emissions and tracks progress towards environmental goals.

*Stimulating innovation:* The creation of a carbon credit market stimulates the development of new technologies in the field of sustainable transport.

Our B2G SaaS platform, combining tokenization with CO2 reduction capabilities, offers a robust, scalable, and flexible solution ideally suited for the demanding needs of government agencies. This platform can be a pivotal tool in achieving transport sustainability objectives within green transportation initiatives.

### **How do we measure carbon emissions?**

The Carbon exchange platform specializes in calculating carbon emissions (CO2) from various transportation modes, as well as other greenhouse gases including methane, nitrous oxide (NOx), and additional compounds.

To determine emissions in the USA we use the US Environmental Protection Agency's MOVES model, which considers many factors: fuel type, speed, route and vehicle characteristics.

We use the COPERT model for calculation of emissions in the Europe region. By merging these models with detailed trip data including origin, destination, speed, fuel type, and vehicle type, we conduct granular analysis of each trip to accurately calculate carbon emissions. This enables us to measure emissions reductions achieved through switching to low-carbon intensive transportation modes.

Most importantly, our calculations allow companies to generate detailed reporting that fully complies with the requirements of local environmental regulatory standards, which simplifies the process of interaction with regional pollution regulatory authorities.

Carbon emissions contribute to environmental pollution and can be considered a resource when managed and offset effectively. Companies can “buy” the right to pollute by purchasing carbon credits. On the other hand, the same companies and ordinary citizens who reduce carbon emissions can sell these credits.

“The platform aims to encourage the use of low-carbon technologies and is a hybrid tool that crosses the growing fintech sector with the growing carbon credits and offsets market. This system could benefit from trends in environmentally conscious consumer behavior, corporate responsibility and regulatory pressure for sustainable development.”

## Global Carbon Credit Market

Carbon dioxide (CO<sub>2</sub>) levels in the atmosphere have reached an all-time high in May last year and are projected to continue to grow in 2024 at a much higher speed. Research on the remainder of the global carbon budget- the net amount of CO<sub>2</sub> we have left to emit before we exceed the set limit - established that this potential will be used up in six years globally. Against the backdrop of a deteriorating environmental situation, pressure on the political elite is steadily growing. Society is demanding leaders take decisive action to combat global warming and place the climate agenda at the center of election campaigns.

The carbon credit market, including the voluntary segment, has shown significant price growth in 2023, exceeding previous years, according to Ecosystem Marketplace reports. Small and Medium Enterprises are increasingly looking for ways to participate in carbon offsets. There is an opportunity to provide resources (this platform) to tap into the voluntary market segment in the form of a user-friendly mobile app to help find a user-friendly solution.

There is a lot of ongoing evidence about climate change like multi-fold increase of wildfires, droughts, hotter average temperatures, extremely large floods. Moreover, there was an increased commitment from presidents of many countries who came together to set country level carbon or GHG reduction goals. At the same time, environmental protests took place in about 100 countries, including Kenya, Turkey, France, Brazil, Australia and Canada. This is due to several factors:

*Raising awareness about climate change:* Thanks to scientific research and widespread publicity, people are increasingly aware of the seriousness of the problem of global warming and the need to take action to solve it.

*Strengthening environmental regulation:* Many countries are introducing stricter environmental standards and promoting sustainable economies.



*Technology development:* The emergence of new technologies makes environmental solutions more accessible and effective.

*Social media:* social media allows environmental activists to quickly network and spread information about environmental issues.

*Corporate Social Responsibility:* Companies are increasingly incorporating environmental aspects into their activities, which stimulates the development of related projects.

### ***Available Market Served***

The innovative blockchain-based platform to help reduce carbon emission shows strong investment potential, especially given the growing demand for sustainable solutions. Despite challenges in adoption and market volatility, the platform's innovative approach to carbon offsetting holds promise. With proper risk management and strategic partnerships, the project can become a leader in a rapidly developing market segment.

First of all, we plan to occupy the California/USA market - the cradle of our project. Despite progress in climate change mitigation /carbon emission reduction control, important problems remain in the region:

California has long been one of the largest emitters of greenhouse gas in the United States, transportation being the largest sector. Major forest fires in recent years have become a major obstacle to reducing emissions, as they release huge amounts of carbon dioxide. 2018: Tubbs, Mendocino Complex, Carr, Camp, Woolsey and Hill fires. 2017: Tubbs Fire.

What impact can citizens have by successfully using our app?

- Direct reduction in emissions: Every kilometer traveled by bicycle or public transport instead of a personal car means a reduction in carbon emission.
- Reduced demand for fossil fuels: Reduced use of personal vehicles leads to lower demand for gasoline and diesel fuel.

- Stimulating infrastructure development: Increased demand for public transport and cycling infrastructure can stimulate their development.

An additional effect will be the data that we can obtain by testing the Carbon Exchange Platform in a single state. We will be able to find out what impact technologies like ours can have on the state of climate change mitigation/ carbon emission reduction - whether each individual user is making progress, which categories of citizens and places of residence are the most “expensive”, how much CO2 can be saved per week, month, year.

Will the innovation have an impact on the regional economy for ordinary citizens, businesses and municipalities? The collected data and practices can subsequently be used for other US states.

## Competitors

The competitive landscape includes carbon offset companies, green rewards programs, and other environmentally focused cryptocurrency initiatives.

Geography	Company	Emissions estimate	Target Audience	Earning Model	Assessing the Quality of Carbon Credits
USA and Canada	Native Energy	Yes	B2B	Sales of carbon credits, project development	Verra, GHG Protocol
Global	South Pole	Yes	B2B	Consulting, project development, carbon credit trading	Verra, Gold Standard
USA	Carbonfund.org	Yes	B2C, B2B	Sales of carbon offsets, project development	Verra, Gold Standard
Global	Toucan Protocol	-	B2B, DeFi	Tokenization of carbon credits	Verra
Global	Klima DAO	-	DeFi	Managing a decentralized reserve of carbon credits	Verra
Global	Celo Carbon	-	B2C, B2B	Tokenization of carbon credits	Verra
Brazil	Moss Earth	Yes	B2C, B2B	Tokenization of carbon credits associated with the Amazon forest	Own standards
Global	Cool Earth	Yes	B2C, B2B	Tokenization of carbon credits	Own standards

				associated with reforestation	
Russia	TerraPass	Yes	B2B	Sales of carbon credits, project development	Verra, Gold Standard
Global	CO2 Fit	Yes	B2B	Sales of carbon credits, project development	Verra, Gold Standard
USA	3Degrees	Yes	B2B	Consulting, project development, carbon credit trading	Verra, Gold Standard
Europe	Offset	Yes	B2C, B2B	Sales of carbon offsets, project development	Gold Standard
USA	Nori	Yes	B2B	Trading platform for agriculture-related carbon credits	Greenhouse Gas Protocol (GHG Protocol), Carbon Transfer Corporation (CTC) and the University of Vermont Soil Restoration Protocol

Such projects are almost always closed to ordinary citizens. However, there are B2C companies, such as Ecosia, where you can donate to forest restoration. Tree planting is financed through advertising. Tree Nation works on approximately the same principle. CO2 Fit is an application from Germany that rewards ecologically correct habits: it gives out points (Recoins) and CO2 certificates.

We see that the carbon market is open to ordinary people mainly in the form of donations for environmental projects. With this approach, there is no robust monitoring, verification and reporting process that validates the impacts of the implementation of projects.

Companies are forced to order calculations and consultations from third-party companies, which take a lot of time and cost a lot. There is no single system where all players can be allowed into the market, while making transactions and reporting transparent and secure.

## Problem and Solution

Thus, the uniqueness of our Carbon exchange platform consists of several aspects:

1. We are creating a unified ecosystem citizen-business-government (B2C|B2B|B2G): through the platform, all system participants can receive reliable data protected by the blockchain and trade carbon credits. This expands the boundaries of the market and makes it active and filled with players who have a personal incentive and their own strategy to achieve environmental goals.
2. Calculation accuracy - methods for calculating emissions are based on scientific research and mathematically verified. The Carbon Exchange Platform is not just an application - it is a tool of scientific data with robust research background, connected to the best international and regional standards. and all this in real time.
3. Elimination of double counting: Reuse of carbon emissions records poses a serious threat to the integrity and efficiency of emissions accounting and carbon credit trading systems. Companies involved in double billing schemes may face legal consequences, including fines and reputational damage. With blockchain, such a mistake becomes impossible, which means the company's reputation will not suffer.
4. Gamification: Any citizen will be able to monetize their sustainable habits by receiving cryptocurrency as an incentive. Essentially, this is a competitive game with yourself and other market players. This is much more attractive than a regular donation or simply relying on willpower. With the app, people will be able to achieve much better success. It can attract a large number of users into carbon reduction tasks, thus a scaled solution.
5. Earnings: All mined crypto assets can then be withdrawn as fiat money via P2P. Cash incentives will attract more people than just calls to help the environment. Transit agencies, private companies, and other organizations can incentivize user adoption by offering these coins as rewards.

6. Convenience: Everything you need to save the planet and earn crypto rewards is literally at your fingertips - on your smartphone. And the implementation strategy focuses on developing an accessible application interface and creating a comprehensive communication plan to maximize user engagement and participation.
7. Liquidity Vault. Providing stable trading and reducing cryptocurrency volatility through a liquidity vault may appeal to users concerned about financial risks in crypto markets.
8. Market volatility: There are plans to include stablecoin options to insulate users and stakeholders from the volatility typical in cryptocurrency markets.

## ***How does our platform work?***

### ***Step 1: Registration and Verification***

Download our app from Google Play or App Store or get web access. For security, we use double authentication through your Google account. This means that only you will be able to access your data. There will be a separate registration on the exchange - where you can sell your credits. On the site you can register through the following combination: a unique crypto wallet number + account.

*What data do we collect?*

To provide you with the most accurate recommendations, we collect the following information:

- For all users:
  - o Geographical location
  - o Transport type funds(s) user, type of fuel used by the vehicle.
  - o Travel frequency
  - o Crypto wallet address (for transaction security)
  - o Unique identifiers: Other details that differentiate the user from others.
  - o Commonly used vehicle with registration number.

- For corporate clients:
  - o Company name
  - o Transport fleet type (gasolene, diesel, electric, etc.)
  - o Transport fleet average age
  - o Fleet operational area (On-site or off-site)

We guarantee the confidentiality of your information. All data is stored on secure servers and is used solely to improve our service and provide personalized recommendations.

### ***Step 2: Connecting Accounts***

Sync the app with your existing accounts such as Google Maps, Apple Maps, Uber or Lyft (and more). This will allow us to collect more accurate information about your travel and habits.

### ***Step 3: Data Analysis and Personalized Recommendations***

Based on the data collected, we will calculate your carbon emission and offer personalized recommendations to help you reduce it. This could include advice on choosing greener routes, using public transport or optimizing your driving style. In any case, now you and I have a starting point from which we will begin our progress.

#### *User's Personal Account*

Your personal account is the center for managing your environmental activities. Here you can:

- Create a detailed profile: Choose a nickname or indicate your first and last name. Please indicate your region of residence for more accurate emissions calculations.
- Add transport: List all the vehicles you use, from cars to bicycles. This will allow you to accurately determine your carbon emission.

- Track movements: By allowing access to GPS to track your trips and get accurate emissions data.

### *On-the-go mode*

Select the transport you want to use from the previously saved ones and start the route:

- Tracking: The platform uses GPS data to track your trips.
- Calculations: Based on vehicle data, distance and other factors, the platform calculates the carbon emission associated with each trip.
- Analysis: You get detailed information about your emissions for every trip. In the statistics section you can see the history for any period of time.
- Compensation: The platform can provide you with the opportunity to offset your emissions by supporting environmental projects.

To calculate carbon emission for a trip from location 'i' to 'j' using vehicle type 'v' within area 'at', we employ the following formula:

*carbon emission = Average fuel consumption (L/km) of vehicle type 'v' in area 'at' \* Distance traveled (km) \* CO2 emission factor (kg/L) for vehicle type 'v'*

Our database includes highly detailed emission factors considering engine type, fuel type, geographic location (US states, countries), emission standards, and vehicle age. This robust framework allows for precise calculations and potential expansion to incorporate additional details in the variables. You can then tokenize the resulting kg of CO2 and value them at market value.

A classic example is a daily commute to work or a market. A typical 40 km round trip in a gasoline car emits approximately 2.6 kg of CO2 per day. Over 200 working days, this equates to 0.52 metric tons, valued at around \$42 in the carbon market. Switching to an electric car eliminates these emissions, potentially earning the driver \$42. Similar savings can be achieved by opting for public transport like trams or electric buses.

However, calculations vary based on the vehicle type and trip purpose, emphasizing the need to collect detailed user data. Instead of gasoline cars, if the user switches to CNG vehicles the savings are not that much.

### *Statistics*

A section that will allow you to visually track your progress and think about what you can improve in your strategy.

- *General balance dashboard*: This is your main screen, which provides a brief but informative summary:
  - Total carbon emission: Total emissions for the selected period.
  - Kilograms of CO<sub>2</sub> saved: How many emissions have you avoided through green solutions?
  - Dynamics of changes: A graph showing how your emissions have changed over time.
  
- *Trips dashboard*: Here you will find detailed information about each of your trips:
  - Route map: Visual representation of the path traveled.
  - Distance: Length of trip in kilometers.
  - Travel time: Duration of the trip.
  - Carbon emission: The amount of emissions associated with this trip.
  - Comparison with other modes of transport: What emissions would look like if you chose a different vehicle.
  
- *Transaction dashboard*: This section focuses on your interactions with the Carbon Exchange Platform:
  - Compensation history: A list of all your carbon offset purchases/sales.
  - Amount of compensation: Total amount spent on offsetting/trading emissions.



### *Trip and Transaction History*

These sections store a detailed history of all your actions on the Carbon Exchange Platform. You can filter the data by various parameters (date, type of transport, location) and export it for further analysis.

- Travel history: Each trip is saved with date, time, route, selected vehicle and emissions.
- Transaction history: Here you will find information about all your carbon offset purchases, including date, amount and project selected.

### *Statistics on Trips and Transactions*

- Statistics are your key to understanding your own environmental behavior. You will be able to:
  - Identify trends: Track how your habits change over time.
  - Identify areas for improvement: Find out which modes of transport you use most often, and which routes produce the highest emissions.
  - Assess the effectiveness of compensation: Understand how your offset efforts contribute to achieving your goals.

This section is important because visualizing your progress and comparing your results with other users motivates you to take further action. Understanding your carbon emission helps you make more informed decisions when choosing transportation.

### *Earning points and tokens*

- The Carbon Exchange Platform has developed a system in which a certain number of kg CO<sub>2</sub> saved is equivalent to a certain number of points. They are obtained for every useful action - just like in a game.
- The scoring process is automated. This allows for transparency and eliminates the human factor.

- The user can exchange the accumulated points on the exchange for the CBX token. The rate for exchanging points for tokens may vary depending on the supply and demand for tokens.
- Tokens are available on the exchange for purchase and sale. The user will be able to withdraw the proceeds to a crypto wallet.
- Carbon emissions are measured in kilograms and valued at market rates. All transactions are recorded on the blockchain - we know the source of the carbon credit, the date of its creation. This eliminates double counting errors.

### *Shop*

A carbon credit store integrated into your app should be a trusted and intuitive place for users looking to offset their carbon emission. If a user has an overconsumption of CO<sub>2</sub> at the end of the month, he can purchase additional credit without leaving the application - using the points that he had previously accumulated. If there are not enough points, you can purchase them through transactions on Google Play Store and the Apple Store for dollars. The store will offer different volumes of carbon credits so that each user can cover their environmental needs in line with their lifestyle.

Purchased carbon credits will be processed on the exchange and will be repaid automatically for the convenience of the user. As a result of the process, an NFT certificate of loan repayment will appear on the owner's crypto wallet. All detailed information will be recorded in the blockchain - the origin of the loan, the volume, the date of the transaction and other data.

## **Tokenomics**

### ***CBX Carbon Credits Tokenization and Market Circulation***

The CBX Protocol aims to make the carbon credits liquid and available to everyone. Below you can see how we achieve it:

- Tokenize carbon credits.
- Deposit carbon credits and join the Carbon Pools.
- Trade the Carbon Pool tokens.
- Redeem carbon credits from the pool.

- Retire carbon credits.

# Tokenize Carbon Credits

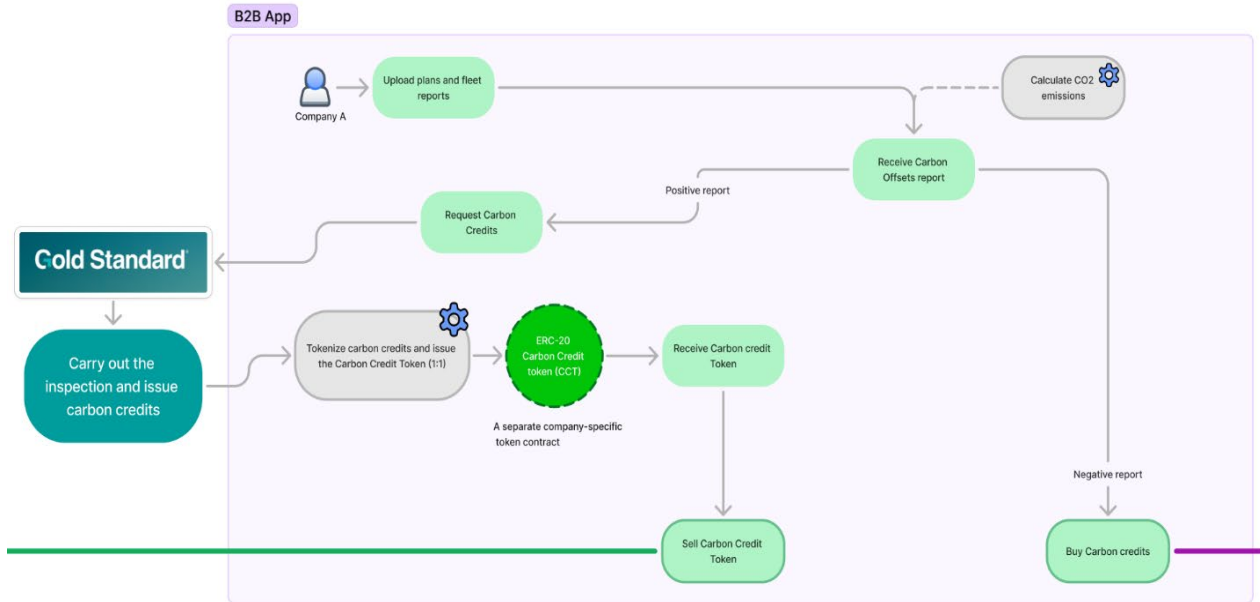


Figure 1: B2B Tokenization Flow

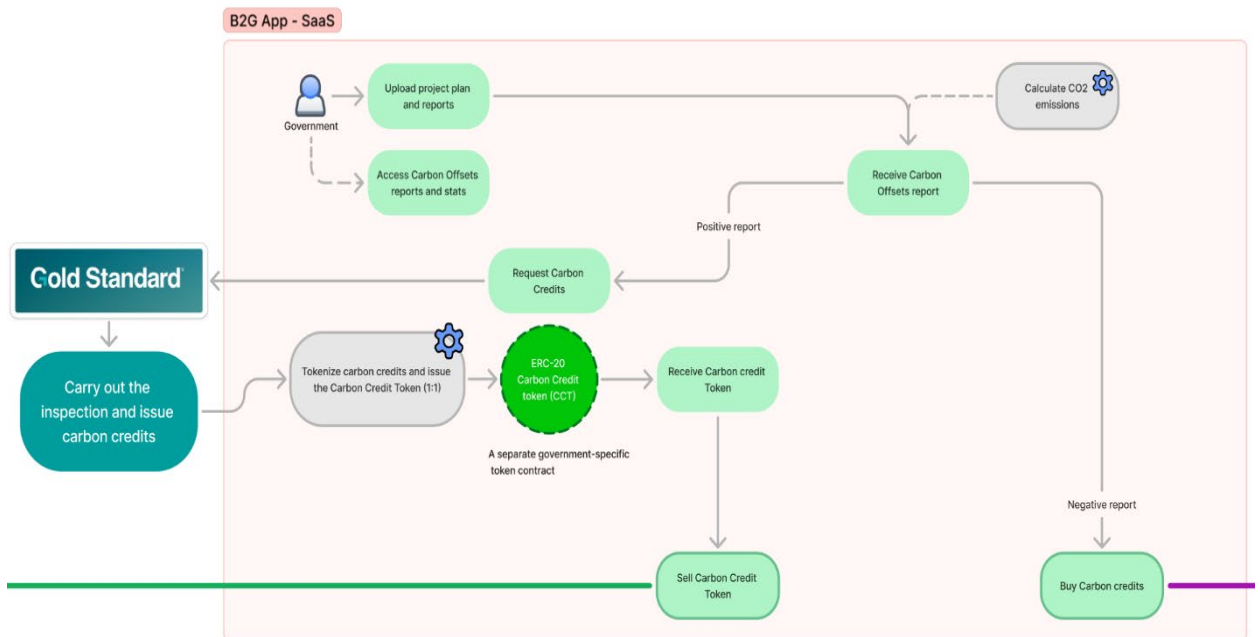


Figure 2: B2G Tokenization Flow



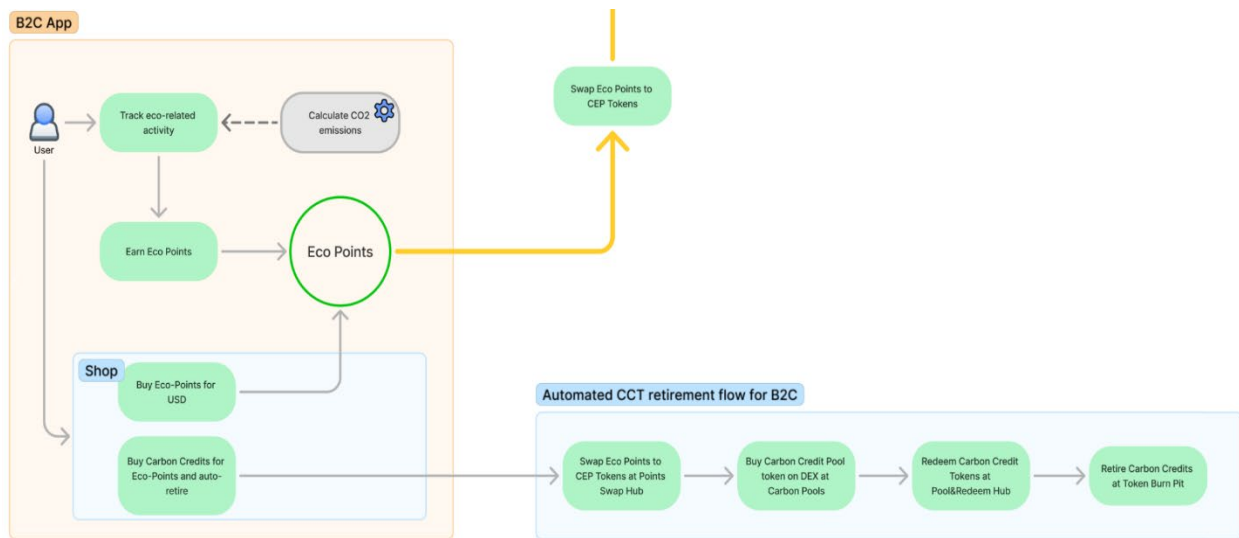


Figure 3: B2C Tokenization Flow

Traditionally, carbon credits have been managed in off-chain registries, limiting their liquidity and transparency. The CBX Protocol addresses these issues by allowing carbon credit holders to tokenize their assets. This process transfers the credits to the blockchain, creating a digital representation. Once tokenized, the credits are locked in the original registry, preventing fraudulent claims.

Tokenizing carbon credits offers several advantages:

- Enhanced liquidity: Credits become easier to buy and sell.
- Increased transparency: All transactions are publicly visible on the blockchain.
- Expanded opportunities: New markets and innovative solutions become accessible.

## Join Carbon Pools

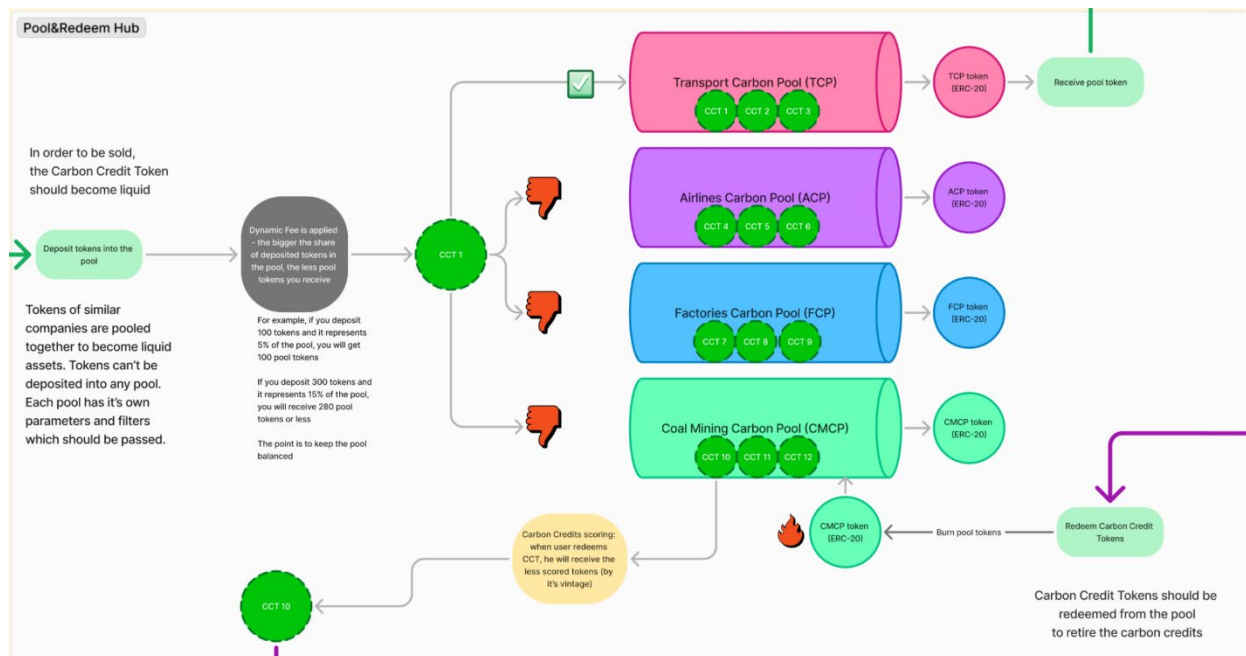


Figure 4: Pool & Redeem Hub

CBX Carbon Pools simplify the trading of carbon credits by combining similar assets into larger, more liquid markets. This bundling process addresses the liquidity challenges often faced by private carbon credits, which can be difficult to buy or sell due to factors like project type, vintage, and market value.

Traditional carbon credit trading can be inefficient, with project owners struggling to find buyers at fair prices and buyers relying on intermediaries or over-the-counter markets. The CBX Protocol's carbon pools solve these issues by:

- Pooling credits: Grouping credits with similar characteristics.
- Issuing pool tokens: Creating fungible tokens representing the pooled credits.
- Enhancing liquidity: Offering a deeper market for trading.

By joining a carbon pool, credit holders can:

- Increase liquidity: Easily buy or sell pool tokens.
- Access a broader market: Benefit from the combined value of the pooled credits.
- Retain ownership: Maintain control over their underlying carbon credits.

Project owners and suppliers holding pool tokens can quickly monetize their carbon credits and eco-activity by:

- Depositing credits: Adding their credits to a carbon pool.

- Receiving pool tokens: Obtaining pool tokens in exchange for their deposited credits (minus fees).
- Selling tokens: Instantly selling the pool tokens on a supported decentralized exchange (DEX).

This approach eliminates the need for intermediaries and allows for rapid sale of carbon credits, providing funds for further eco-friendly initiatives. Buyers seeking to offset their carbon emissions can also benefit from carbon pools:

- Purchasing pool tokens: Directly buying pool tokens on a DEX.
- Redeeming carbon credits: Exchanging pool tokens for specific carbon credits to retire.

CBX Protocol offers instant access to carbon credits for buyers and supports efficient carbon offsetting.

## Redeem Carbon Credits

The CBX Protocol makes it easy and fast to redeem carbon credits. To redeem:

- Get pool tokens: Own tokens from the desired pool.
- Locate the pool: Find the corresponding pool on the CBX Protocol platform.
- Initiate redemption: Exchange your pool tokens for carbon credits.

When you redeem, your pool tokens are burned, and you receive the underlying carbon credits. The protocol prioritizes redeeming older credits to ensure they are retired first.

## Retire Carbon Credits

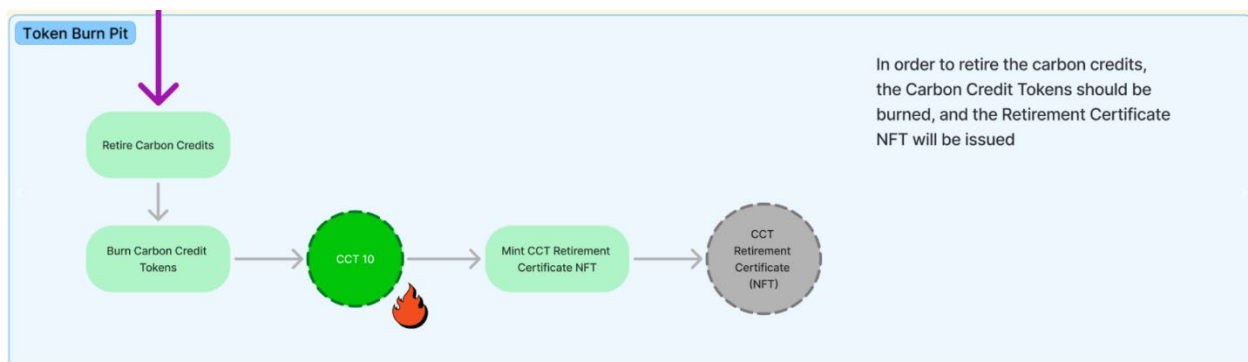


Figure 5: Carbon credits retirement

To offset carbon emissions, businesses and individuals must permanently retire carbon credits. This prevents them from being used for future offsets. Tokenized carbon credits can be retired through the CBX Protocol. Here's how:

1. Select carbon credits: Choose the credits and amount you want to retire.
2. Provide details: Add your information, including name, wallet address, and a message.
3. Initiate retirement: Start the retirement process.
4. Receive certificate: Upon completion, you'll receive a retirement certificate NFT and a document.
5. Retiring tokenized carbon credits permanently removes the corresponding real-world credits from circulation.

The CBX Protocol simplifies the entire process of tokenizing, trading, and retiring carbon credits, making it accessible to a wide range of users.

## CBX Token

Field	Value
Ticker	CBX
Standard	ERC-20
Decimals	18
Network	Polygon
Type	Utility, Governance
Inflationary	no
Deflationary	no
Burnable	no
Mintable	no
Total Supply	100,000,000

The CBX token plays a crucial role in the ecosystem, serving multiple purposes:

- Platform Access and Fees: Used to access the CBX Protocol and pay transaction fees.
- Future Governance: May be used for future protocol governance decisions.
- Liquidity Provision: Helps provide liquidity for carbon credits.

- Upcoming Features: Will support additional features and enhance user experience.

The CBX token has a fixed supply, meaning it is neither inflationary nor deflationary. This ensures that the token's value is not manipulated and primarily serves as an access key to the CBX Protocol. Its main purpose is to bridge the gap between real-world assets and crypto tools and markets.

## Use of Funds

The total supply of the CBX will initially be distributed as follows:

- Private sale
- Public sale
- Liquidity
- Community Rewards and Incentives
- Ecosystem Growth and Development
- Team
- Advisors
- Marketing
- Reserve fund



## Token Allocation

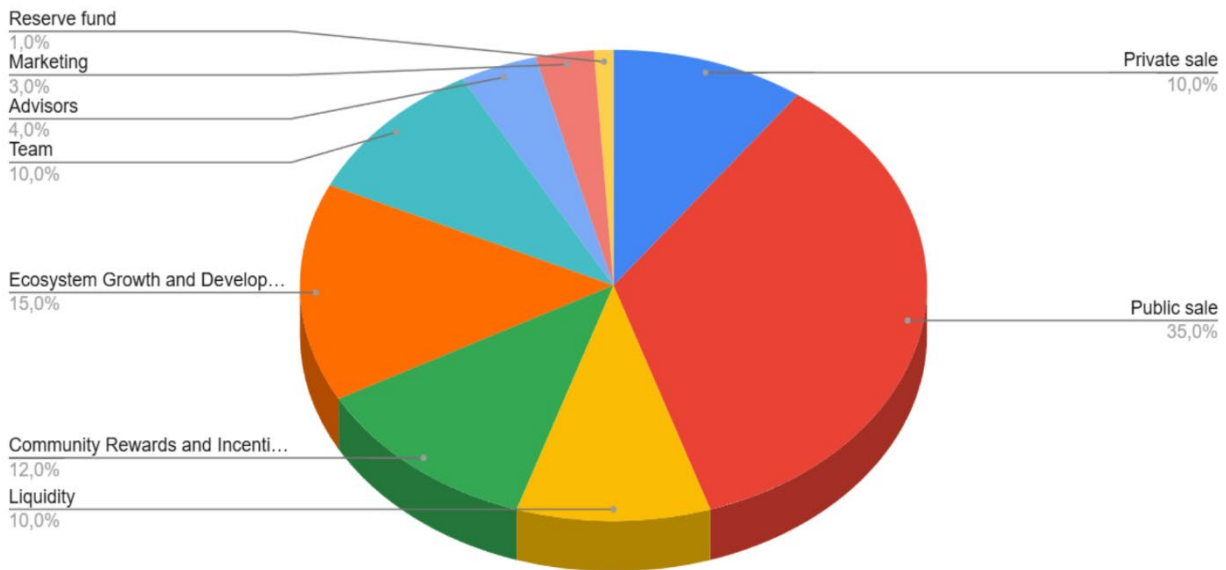


Figure 6: Token Allocation

### **Private Sale**

10% of the initial supply, or 10,000,000 CBX, will be offered to our early investors and strategic partners who take part in establishing the protocol. This will also help us raise funds for the development and marketing of the project.

Field	Value
Period	14 days
Start price	0.04 USD
Payment methods	USDT, USDC, native
Price raise	0.001 USD
Price raise frequency	once each 2 days
Eligibility	whitelisted wallets only
Limits (per single transaction)	300,000 CBX
Limits (per wallet)	600,000 CBX

### **Public Sale**

35% of the tokens, or 35,000,000 CBX, will be offered to the public through a crowd sale. The public sale will allow anyone to take part in the project and gain exclusive access to the platform. The crowd sale will also raise funds for the development of the CBX Protocol and initial liquidity.

Field	Value
Public sale Period	30 days
Start price	0.047 USD
Payment methods	USDT, USDC, native
Price raise	0.001 USD
Price raise frequency	once each 2 days
Eligibility	anyone
Limits (per single transaction)	300,000 CBX
Limits (per wallet)	600,000 CBX

## ***Liquidity***

As the protocol grows, the CBX token will also take its share of the market and community. To make the token valuable and to make carbon credits even more liquid, we plan to list CBX on DEXes and allocate 10% (10,000,000 CBX) of the token supply to the liquidity fund. This will increase the availability of the token, as well as reduce slippage and volatility in the token price.

By doing so, we create a community-driven liquidity pool, giving our users the opportunity to play an important role in the success of the project. By directly contributing to the liquidity pool, you can help maintain a stable token price and share mutual benefits for the entire community. And even more, this would be a direct contribution to the carbon market popularity.

## ***Community Rewards and Incentives***

We are open to our community and want our users to be interested and motivated by our product. Therefore, we are allocating 12% of the tokens (12,000,000 CBX) to incentivize our community and share our success with them. These funds are earmarked for rewards, airdrops, referral programs, competitions and other activities that will reward users for their participation and the eco-positive impact.

## ***Ecosystem Growth and Development***

We expect our protocol to grow exponentially, which requires a lot of work and innovation. We allocate 15% of the token supply for future development and partnerships. The ecosystem growth allocation will be used to fund the research and development of new markets, ways of carbon emissions reduction, as well as to establish strategic partnerships and collaborations with other projects and platforms in the crypto space. The ecosystem growth allocation will also be used to support the innovation and improvement of the CBX Protocol.

## ***Team***

Our protocol includes not only users, but also a large team of professionals interested in product development. We are allocating 10% (10,000,000 CBX) of the token supply to our team to add a little more motivation. The distribution of team tokens will be carried out over a period of time to ensure long-term commitment and compliance of team members with the vision and goals of the project. This share of tokens will also reflect the contribution and performance of each team member.

## ***Advisors***

4%, or 4,000,000 CBX, will be allocated to partners who will collaborate with the protocol and provide additional services. This includes eco-platforms, producers, carbon credit market experts, DeFi protocols and other organizations in this market area that will help us develop our ecosystem.

## ***Marketing***

We strive to reach the top and become a global leader in the industry. We allocate 3% of the token supply (3,000,000 CBX) for marketing purposes. The Marketing fund helps us create and execute effective marketing campaigns and strategies to increase awareness and adoption of the CBX Protocol and CBX token. The Marketing fund also helps us interact with the media, influencers and other stakeholders.

## ***Reserve fund***

The CBX Protocol and the CBX token are an evolving product that may face some risks in the future. We value our users and investors and want to protect them from any adverse consequences. This is why we allocate 1% (1,000,000 CBX) of the token supply to the reserve fund. The reserve fund is our reserve that can deal with any unforeseen situations or crises that may harm the CBX Protocol. The reserve fund also helps maintain the stability and sustainability of the platform and token in the long term. Some of the possible risks that a reserve fund can cover:

- Regulatory changes or compliance issues that may result in legal fees or fines.
- Technical problems or errors that may compromise the security or functionality of the platform or token.

- Market fluctuations or shocks that may cause a significant drop in token price or demand.
- Competition or innovation from other projects or platforms that may challenge or surpass the CBX Protocol.

To be an honest player in the market, we use vesting for both sides of the project - our participants and our team. Thus, we have the following schedule for vesting and token issuance:

Category	Cliff Period	Payment Schedule
Private sale	14 days from Private sale end	10% every 14 days
Public sale	-	10% every 14 days
Liquidity	-	10% every 60 days
Community Rewards and Incentives	-	5% every 30 days
Ecosystem Growth and Development	90 days from Public sale end	20% every 60 days
Team	60 days from Public sale end	25% every 180 days
Advisors	-	25% every 90 days
Marketing	30 days from Public sale end	20% every 90 days
Reserve fund	30 days from Public sale start	100%

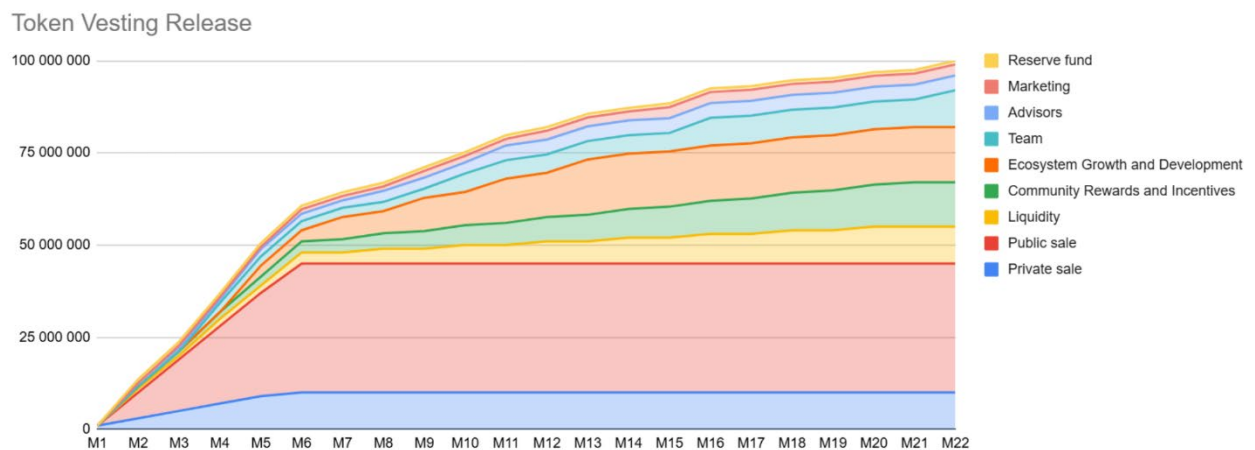


Figure 7: Token Vesting Release

# Roadmap

## ***Stage 1: Launch and foundation***

The first year of development of the application will be devoted to creating a reliable and functional the Carbon exchange platform. The main focuses will be:

- **User Security:** We will implement multi-factor authentication to protect users' personal data.
- **Emissions tracking:** We will develop an algorithm that allows you to accurately calculate a user's carbon emission based on the chosen transport.
- **Reward system:** A system will be created where users will receive cryptocurrency for verified low-carbon trips. This not only encourages environmentally responsible behavior, but also creates an economic incentive for the development of the Carbon Exchange Platform.
- **Financial transactions:** We integrate secure ways to convert cryptocurrencies into fiat money or stablecoins, giving users flexibility in managing their funds.
- **Data aggregation:** Collected emissions reduction data will be anonymously aggregated to create carbon credits, which can then be sold on the market.
- **Personal account:** Each user will have access to a personal account where they can track their achievements, travel history and cryptocurrency balance.
- **Marketplace:** A secure and transparent marketplace for carbon credits will be created where users can buy and sell them.
- **Mobile application:** We will develop convenient mobile applications for iOS and Android to provide access to the platform anytime, anywhere.

## ***Stage 2: Improvement and expansion***

- Smart integration with public transport API
- Collaborate with public transport companies to integrate real-time data for more accurate tracking and incentives.
- Integration of social functions

- Introduce social elements such as leaderboards and challenges to make carbon reduction a community effort.
- Partnership with local businesses
- Form partnerships to allow users to spend their cryptocurrencies on local services and products.
- API for Government Carbon Tracking
- Develop an API for government agencies to track and verify carbon savings from new urban developments.
- Expand voluntary carbon market integration
- Expand the platform's presence in global carbon markets to gain greater trading opportunities and liquidity.
- Custom reports for B2B clients
- Offer businesses and governments customized reporting tools to analyze efforts and costs to reduce carbon emissions.

### ***Stage 3: Focus on security and stability***

During this phase, the focus will be on strengthening the security of the Carbon Exchange Platform, increasing its reliability and expanding its functionality using advanced technologies.

- Security at the highest level:
  - **Advanced encryption:** Implementation of the latest encryption algorithms to protect user data and financial transactions.
  - **Multi-factor authentication:** Strengthen the security of user accounts by adding additional layers of authentication.

- **Threat monitoring:** Constantly monitoring the system for vulnerabilities and attacks.
- **Security audit:** Regular independent audits to confirm compliance with high security standards.
- Stability and scalability:
  - **Cloud technologies:** Transition to cloud infrastructure to ensure high availability and scalability of the Carbon Exchange Platform.
  - **Load Testing:** Conduct regular stress tests to identify bottlenecks and optimize performance.
  - **Backups and data recovery:** Development of reliable backup and data recovery systems to prevent information loss.
- Innovative technologies:
  - **Stablecoins:** Research and potential development of its own stablecoin to reduce volatility and increase the stability of financial transactions on the platform.
  - **Artificial intelligence:** Using artificial intelligence to predict market trends, personalize user experiences, and optimize carbon emission calculation algorithms.
  - **Predictive analytics:** Develop tools to predict future emissions and make recommendations for their reduction.
- User Education and Engagement:
  - **Educational content:** Create a variety of content such as articles, videos and webinars to raise awareness of climate change issues and the importance of reducing emissions.

- **Compensation programs:** Develop long-term carbon offset programs that allow users to invest in projects with lasting impacts.

### ***Stage 4: Global expansion and leadership***

In Phase 4, we will focus on scaling the Carbon Exchange Platform globally and strengthening our sustainability leadership.

- Global expansion:
  - **Localization:** Adaptation of the platform to different languages and regional characteristics.
  - **Partnerships:** Entering into partnerships with international organizations, governments and companies to expand geographic coverage.
- Technological innovation:
  - **Internet of Things:** Integration with IoT devices to collect energy consumption and emissions data.
  - **Blockchain:** Further development of blockchain infrastructure to increase the transparency and security of all operations.
  - **Machine learning:** Using machine learning to optimize carbon emission algorithms and develop new features.
- Corporate Social Responsibility:
  - **Carbon negative operations:** The desire to ensure that the company's activities not only do not harm the environment, but also contribute to its restoration.
  - **Social projects:** Supporting social projects aimed at improving the environmental situation in different regions of the world.
- Ecosystem of services:



- **Platform as a service:** Enabling other companies to use our platform to create their own sustainability solutions.
- **Business tools:** Developing specialized tools for corporate clients to help them monitor and reduce their emissions.

By moving forward on this feature development roadmap, this business concept will strengthen its position as a market leader and a significant contributor to global sustainability efforts. Each stage not only incrementally improves the product, but also expands its potential market and impact on efforts to reduce carbon emissions.

## Team

The company is led by two outstanding leaders whose passion for sustainability and experience in the transportation industry create synergies:

- Dr. Harikishan Perugu is an analytical scientist with a PhD and more than 17 years of experience in transportation and environmental engineering fields. His deep understanding of data and technology allows him to develop innovative solutions to optimize traffic flows and reduce environmental impact. He previously led a large open data and analytics team, bringing expertise in developing robust data platforms ideal for creating powerful eco-travel incentive systems. Author of more than 13 technical publications on the relationship between the transport sector and its environmental impact.
- Mr. Raju Porandla is a seasoned California Department of Transportation executive with nearly 20 years of public sector experience. His strategic thinking and knowledge of the political environment enable him to effectively innovate across the industry. He is a recognized expert on carbon reduction strategies.

The unique combination of Dr. Perugu's academic knowledge and Mr. Porandla allows the company to develop efficient and scalable solutions for environmentally friendly transport. Their joint work aims to create the Carbon exchange platform that will not only reduce the carbon emission of travel, but also open up new opportunities for the development of sustainable tourism.