

A Blockchain Experiment Uses Carbon Consensus to Form Community Tokens

Summary

Carbonage is a coined word combining Carbon and Seigniorage [1].

The term Seigniorage (derived from Old French Seigneurage) is used to define the difference between the value of a currency and its cost. This reminds us that when the operation of industrial society is ultimately attributed to carbon emissions, carbon emissions actually become the energy capital that drives the market (although it is not traded like currency), and the process of carbon "casting" (emissions) will also produce the difference between economic value and social cost——

We call it Carbonage and regard Carbonage as the carbon consensus in the Carbon Age.

Base on Carbonage, Carbonage Token is the power of consensus formed by carbon consensus through decentralized community tokens.

In the total market value of Carbonage Token, a fixed proportion is set as a donation pool, and the community decides to donate to organizations that contribute to the achievement of carbon neutrality goals for mankind. This part of the donation will offset the net social cost of carbon emissions.

Therefore, the higher the value of Carbonage Token, the larger the assets that can be donated, and the stronger the ability of the institutions that accept donations to reduce carbon emissions.

Our goal is that when the world reaches Carbon Neutrality [2], with the help of Carbonage Token, carbon will "eliminate" its own costs. Mankind will also enter a new and more sustainable development age.

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1. The Formation and Problems of

Carbon Consensus, Carbon Market and Carbon Finance

1.1 Carbon Consensus

From the Kyoto Protocol [3] to the Paris Agreement [4], human society has gradually established a consensus foundation on shared responsibility for climate.

If human beings look back on today in 2060, that the current incredible changes are actually inevitable, the continuous wave of competition and innovation that will eventually end the fossil fuel era.

The fossil fuel era is mainly achieved by making machines (real capital) increase the hourly work efficiency of people. However, the world now has to provide more than 7 billion people with job opportunities while at the same time absorbing carbon emissions and other pollution. Innovation is absolutely indispensable to optimize resource allocation [5].

The energy system is experiencing the creation and destruction described by Schumpeter. Outdated ideas, outdated regulations, poor risk management, underestimated emissions, and improper government replenishment of fossil fuels are no longer sustainable, and things that seem impossible today will soon be broken.

1.2 Carbon Market

Establishing a carbon market by setting a price for carbon emissions is an effective way to achieve a carbon consensus.

In 2016, the OECD report conducted the first comprehensive analysis of the use of energy carbon pricing in 41 OECD and G20 economies, showing that global carbon prices are still very low [6]. The "carbon price gap" is a comprehensive indicator that shows the extent to which the effective carbon price is lower than the priced emissions.

In 2017, according to the report of the high-level carbon price committee co-chaired by Joseph Stiglitz and Lord Nicholas Stern, 85% of global carbon emissions had not yet been priced. And about three-quarters of the emissions covered by the carbon price are less than US\$10 per ton, or US\$0.01 per kilogram. If the goals of the Paris Agreement are to be achieved, the carbon price level should be at least US\$0.04-0.08/kg by 2020 and US\$0.05-0.1/kg by 2030 [7,8].

In 2020, the value of the global carbon market reached a record 229 billion euros, a five-fold increase from 2017. Europe has the largest emissions trading system in the world. On February 12, 2021, the market set a new record, equivalent to nearly US\$0.049 per kilogram

of carbon dioxide (Market price for Carbon is even higher than February now). This year, about 1 billion euros of emission allowances changed hands every day [9]. There are now clear signs that the market is joining the financial mainstream, with hundreds of investment companies trading in it. Obviously, when investors start to treat carbon market transactions as ESG transactions (considering environmental, social and governance factors), more funds will be allocated to the carbon market.

1.3 Carbon Finance

We found that once we leave the European market, the penetration rate of the carbon market and carbon finance may be greatly reduced and as well very fragmented. Although the UK is launching the ETS (Emissions Trading Program) [10] and California has also launched The Cap and Trade Plan [11], the government-controlled carbon finance system still cannot solve its own inherent problems: risks and frictions brought about by geopolitics. At this time, only by relying on the collective consensus of human society can it be possible to bring about fundamental changes.

2. Historical Community Currencies and Scale Bottlenecks

2.1 Community Currency Ideas in History

Johann Silvio Gesell, born in 1862, was a little-known German amateur economist who invented a currency independent of the central government and central bank [12]. One year after Gesell's death, Austria tried to promote Gesell's ideas. Free monetary policy and local infrastructure construction have created job opportunities for local people and stimulated the development of local economic activities without causing inflation. However, due to concerns about political division, the Austrian Central Bank ordered the termination of the so-called "Vogel Miracle" two years later.

In the 1930s, John Maynard Keynes wrote that "I believe that the future will learn more from Gesell's spirit"[13]. Irving Fisher also wrote a book "Stamp Scrip", in which he pre-specified the use of community-based currencies as economic stimulus measures during the Great Depression [14].

2.2 The latest experiment of community currency

Now, there are dozens of community-based currencies. The idea of the last century, using blockchain technology, may create new development tools for the future. In the economic sphere, they are still big and new.

In Turkey, *Good4Trust* is a community currency based on blockchain technology to establish a virtual market for producers and consumers with social and environmental awareness. In UK, in 2008, the Brixton community in London launched the *Pound Sterling* community for well-known locals and community residents (including pop icon David Bowie). In Kenya, *Sarafu* (meaning "currency" in Kiswahili) also uses blockchain technology. In 60 villages, 41,000 people are using it, and by 2020, 335,000 transactions have been made via mobile phones [15].

2.3 Difficulties of Community Currency

The central bank's digital currency has received widespread attention from all parties. Community-based currencies can provide a testing platform for these programs. However, there are still huge difficulties for emerging currencies minted with this new technology to enter the mainstream currency market.

In various community token experiments, any one token can fully reflect the collective consensus and collective interests of a single community, but it cannot condense the more general consensus and interests between different communities, unless when people discover a larger vision that is related to the common destiny of mankind.

3. Carbonage Token

Is A Community Currency Experiment For Carbon Consensus

3.1 The Casting Concept of Carbonage Token

Is The Belief In Carbon Consensus And Community Currency

For the sustainable development goals of reducing carbon emissions and building on clean energy, the international community has initially formed common values. Now, a common course of action and a technical solution to realize this course of action are even more needed.

As one of the cornerstones of the future world, blockchain technology precisely supports this urgent need from a deep level—that is, starting from nothing, mobilizing a distributed and consistent climate action community, and establishing a token economy as a basis, a positive financial incentive framework for tracking climate commitments.

This will be the first time in history that the economic ideals of community tokens and the high consensus of all mankind on the future destiny are connected through blockchain technology.

2. The Issuance Scale of Carbonage Token

Is Based on The Calculation of Carbon Cost

Carbonage Token converts the society's consensus on reducing Carbon emissions and increasing Carbonage's net value into actual donations for the research and development of clean energy technologies, the promotion of a Carbon Neutral global agenda, and the promotion of education for sustainable development.

According to researchers' latest estimates of the social cost of carbon, in today's dollars, it's more than \$100 per ton of carbon. In other words, the social cost per kilogram of carbon is no less than US\$ 0.1. A study by the University of Oxford shows that the upper limit of human carbon emissions to maintain the current climate is 1 trillion tons [16] (1000 trillion kilograms). Using this as a reference, 1,000 trillion Carbonage Tokens will be issued.

We hope that with the joint efforts of the community, eventually, when the value of each Carbonage Token reaches 0.1 USD, this consensus conversion donation can cover all the social costs of the global carbon emission cap. The circulation mechanism of Carbonage Token is to encourage private forces to promote carbon peak and Carbon Neutrality goals as soon as possible.

4. The Road Map of Carbonage Token Economy and Ecology

4.1 Carbonage Token, CAGE

CAGE is the first step.

From the first day, all 1,000 trillion Tokens will enter Uniswap and ETH to form a trading pair, and LP will be destroyed. Every CAGE can only be bought on the open market, and the initial promoters of the community are no exception. Each CAGE holder can directly donate CAGE to any address in the GCCI (Global Carbon Credit List). CAGE holders can use the Carbon footprint calculate App to track their carbon footprint and determine the donation amount based on their own emission level.

The GCCI is nominated by CAGE holders, NGO institutions and individuals that have made outstanding contributions to the earth's green ecology and carbon emission reduction, carbon peaking, and carbon neutrality.

Every coin holder who has donated more than a certain number of CAGEs can receive an NFT airdrop jointly by an institution or individual and a well-known artist after being accepted by the donation institution or individual.

4.2 Carbonage Governance Token, CAGG

CAGG is the second step.

200 million Carbonage Governance Tokens will be issued.

Each CAGG needs to be obtained by staking Uniswap LP mining. Of the CAGG generated by mining, 90% is paid to miners and 10% is allocated to the community.

Among all tokens used for community governance, 50% will be donated to the top institutions and individuals who have achieved outstanding results in the GCCI every year.

40% will be used to motivate technology development teams, community management and ecological construction.

10% will be deposited into the CAGE repurchase pool shared by the community. According to the GCCI of the current year, part of the CAGE will be repurchased in proportion and destroyed.

GCCI is based on data published by authoritative organizations around the world, such as UN, IMF, OECD, Open Earth Foundation, Spatial Web Foundation, The Digital Economist, etc.,

and is commissioned to research by professional institutions. It is published once a year by the community.

4.3 Carbonage Starter, Cage-Starter

CAGE-Starter is the third step.

CAGE-Starter is a trading platform built in a decentralized manner and De-Fi technology to develop innovative low-carbon trading methods to support the tokenized market of the off-chain green economy. Community members can post tasks, crowdfund projects, and build markets on CAGE-Starter.

CAGE-Starter will establish the NFT market. Crypto artists can make "carbon" themed artworks and cast them into NFTs. After the NFT is sold on the market, in accordance with the ratio determined by the smart contract, in addition to giving back to the artist's creation, it will also be donated to the GCCI.

Collectors of all NFT works in the world can donate part or all of their income to the GCCI by auctioning and trading their NFT works on the CAGE-Starter market.

5. Carbonage Token Community and The Future

5.1 Carbonage Token Community Before and After CAGG Casting

Our community adopts the DAO governance model. Each CAGE holder can initiate a mission in line with the purpose of the community and set mission rewards. Before the emergence of the community governance token CAGG, the CAGE token holder task system will operate in the form of a free community organization.

After the CAGG casting, the Carbonage Token community will use the community management system organized by the DAO to ensure that each CAGG holder can participate in the voting and governance of major issues in the community.

5.2 The future of Carbonage Token

In the future, carbon-reducing communities and environmentally friendly brands can use CAGE to mint their own community tokens (CAGG is just our first experiment). Using CAGE to generate community tokens can obtain CAGE resources and financial support. At the same time, this also makes Carbonage Token a universal value standard, serving all small communities (such as a community that studies carbon capture technology) that aim to reduce carbon emissions and sustainable development.

In the future, the Carbonage Token community will establish its own research and investment mechanism. The community will cooperate with authoritative research institutions around the world to support and promote research on innovative technologies and mechanisms for green and sustainable development. Furthermore, Carbonage Token will coexist with all green financial systems, and promote human beings to achieve sustainable development with community consensus.

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