



# Unlock The World's Largest Carbon Market

White Paper - Carbon Credit Technology

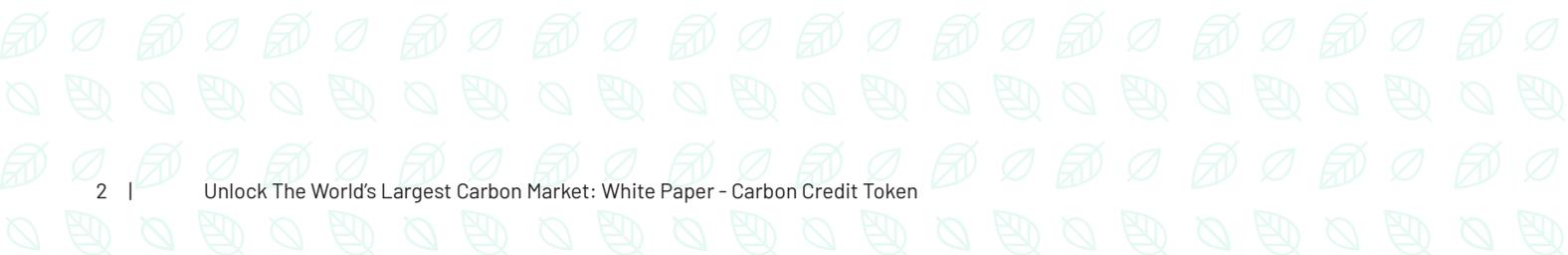
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# 01 Introduction

## Background

Whilst the Paris Agreement<sup>1</sup> was a landmark in the effort to combat climate change, there is a long way to go to achieve the goal of global climate neutrality by 2050. The recent Intergovernmental Panel on Climate Change (IPCC) report<sup>2</sup> highlights that climate risks are approaching more rapidly and with greater severity than previously estimated. Without immediate intervention, the catastrophic consequences of rising global temperatures will only continue to destroy lives, homes, livelihoods, and culture.

Our project, Carbon Credit Technology (**CCT**), is a response to the many calls to action. By inviting consumers and businesses to participate in the carbon markets, we influence the carbon credit prices by increasing the demand side of the equation, which in turn will incentivize businesses to make more environmentally conscious decisions.

## About CCT

We are a digital climate project that democratizes access to regulated carbon credits. We have created the first cryptocurrency that is notionally backed by the European Union Allowance (EUA) – the most traded carbon credit in the world<sup>3</sup>.

## CCT's Mission

By providing unique access to the world's largest carbon market through blockchain technology, we revolutionize climate action for consumers and businesses alike.

<sup>1</sup> <https://www.un.org/en/climatechange/paris-agreement>

<sup>2</sup> <https://www.ipcc.ch/report/ar6/wg2/>

<sup>3</sup> [https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets\\_en](https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en)

## Overview of the Carbon Market

Broadly, the function of a carbon marketplace is to allow an entity to purchase credits (allowances) to offset their carbon footprint, and there are two different types of markets (compliance and the voluntary) which are summarized below:

Characteristics	Compliance Market	Voluntary Market
<b>Users</b>	Regulated entities (e.g., governments and businesses)	Private sector
<b>Purpose</b>	To obtain or transfer emissions allowances	To obtain verified carbon credits for all types of carbon offsetting activities
<b>Regulation</b>	Yes - mandatory national, regional, or international carbon reduction regimes	No - voluntary carbon credits are verified by private entities and issued/maintained in a private register
<b>Global Market Value</b>	c. \$899 billion <sup>4</sup> ( 760 €billion)	c. \$2 billion <sup>5</sup>
<b>Market Growth (YoY) 2020-2021</b>	164% <sup>6</sup>	282% <sup>7</sup>
<b>Example</b>	EU Emission Trading Scheme (EU ETS) - accounts for 90% of total global market value <sup>8</sup>	Natural-based projects, such as reforestation

## What is the EU ETS and EUA?

Established in 2005, the EU ETS operates as a “cap and trade” model whereby a limit for total EU emissions is set and all sectors covered by the emissions trading scheme (with exceptions) receive a free allocation of carbon credit allowances (EUAs). Each EUA entitles

<sup>4</sup> Refinitiv. 2022. Carbon Markets Year in Review. Available at: <https://www.refinitiv.com/en/trading-solutions/commodities-trading/carbon-trading/#t-carbon-markets> – figures have been converted to USD using 2021 average rate 1 EUR = 1.183 USD

<sup>5</sup> Forest Trends Ecosystem Marketplace. 2022. The Art of Integrity: State of Voluntary Carbon Markets, Q3 Insights Briefing. Available at: <https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-markets-2022/>

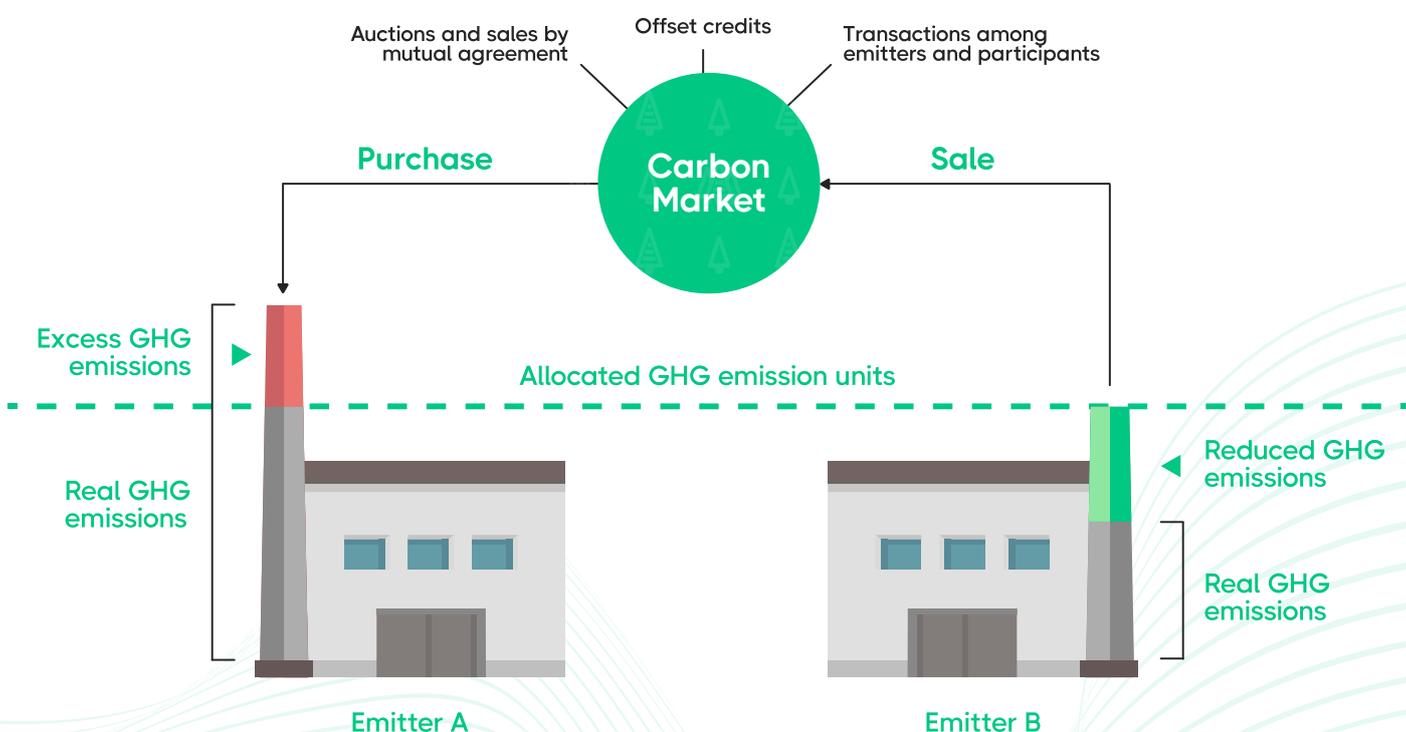
<sup>6</sup> Refinitiv (n 4)

<sup>7</sup> Forest Trends Ecosystem Marketplace (n 5)

<sup>8</sup> Refinitiv (n 4)

With the holder to emit one tonne of CO<sub>2</sub>, or the equivalent amount of another greenhouse gas. The allocation of EUAs is calculated using EU-wide harmonized rules, therefore companies that require additional emissions allowances will need to obtain further EUAs either via auction or secondary market trading.

Effectively, EUAs are the main currency of the EU ETS and therefore companies are incentivized to reduce emissions to create a surplus, which can be sold to other companies via the carbon market. Ultimately, this leads to the EU's cap being met and the price of carbon is determined by market forces (supply/demand):



To accelerate progress and as part of the 2030 Climate Plan, the EU announced a new target of a 55% net reduction in greenhouse gas emissions by 2030<sup>9</sup>. Starting from 2021, the EU ETS will decrease the cap of emission allowances at a steeper annual rate of 2.2% compared to 1.74% previously.

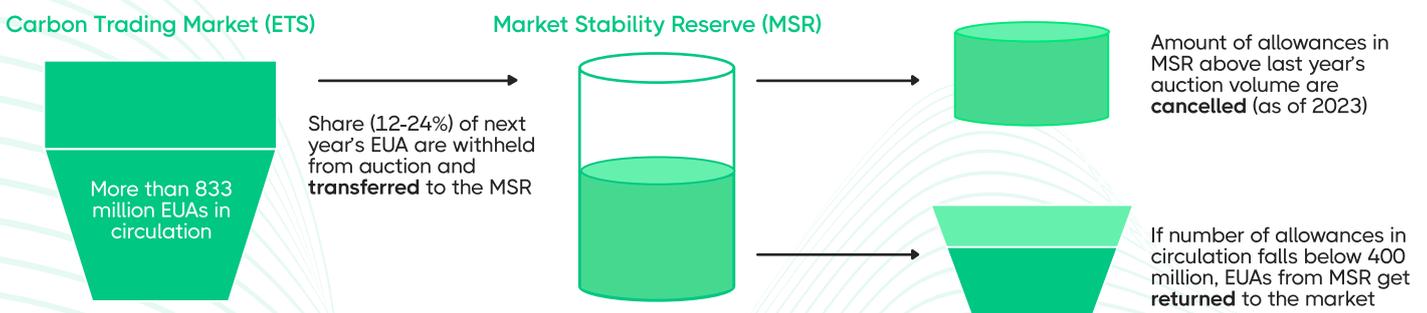
<sup>9</sup> [https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan\\_en](https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan_en)

## Market Stability Reserve (MSR)

The MSR mechanism was introduced in 2019 to reduce the surplus of emission allowances in the carbon market and to improve the EU ETS's resilience to future shocks. In practice when there are excess EUAs in circulation, a share of these will be automatically transferred to the MSR where companies won't be able to auction or trade them. Only if the number of EUAs in circulation falls below a designated level can these allowances be released back into the market for auctioning. As a further reform, the automatic cancellation mechanism prevents EUAs in the MSR from returning to the market at a future date, which curbs future emissions.

Between 2019 and 2023, the number of allowances deposited in the Market Stability Reserve (MSR) will double to 24% of the allowances in circulation. The regular feeding rate of 12% will be restored as of 2024, limiting the number of EUAs in the MSR to around 900 million tonnes of CO<sub>2</sub><sup>10</sup>.

### Reducing the allowances (EUAs) surplus in the ETS as of 2019: How the Market Stability Reserve (MSR) and cancellation mechanism work



It is likely there will be upward pressure on EUA prices as carbon credits become more scarce owing to the reduction in EU ETS supply and the substantially reinforced MSR.

## UK Emissions Trading Scheme (UK ETS)

On 1 January 2021, the UK ETS replaced the UK's participation in the EU ETS. Following Brexit, the four UK governments established the scheme to provide continuity of emission trading for UK businesses, whilst also protecting the competitiveness of UK businesses. The UK ETS operates in a similar way to EU ETS.

<sup>10</sup> <https://www.consilium.europa.eu/en/press/press-releases/2015/05/13/market-stability-reserve/>

## Why CCT?

The EU ETS is not a perfect system, and companies wishing to participate in regulated carbon trading encounter many obstacles. Using blockchain technology, CCT addresses the two main challenges of accessing carbon markets and the cost of trading within them for all users:

### 1) Access

The barrier to entry for regulated carbon trading is prohibitively high. To participate in the EU ETS, companies or individuals must open an account in the Union Registry which involves a cumbersome process of sending a request to the national administrator, who collects and checks all supporting documentation. Currently, the EUA futures market is dominated by large utility suppliers and industrial conglomerates, only allowing small and medium-sized industrial companies to access the spot market, and even more restricted access for retail investors. Furthermore, existing blockchain carbon credit projects mostly operate in the voluntary carbon market, such as Klima DAO, Single Earth or Toucan Protocol.

**CCT is the only project that provides exposure to EUAs, the largest compliance market.**

### 2) Cost

In addition to the acquisition costs of EUAs, the below table summarizes the application and maintenance costs (from April 2021) associated with having an EU ETS trading account<sup>11</sup>:

A	Category A Less than 50kt / year	Category B At least 50kt and no more than 500kt	Category C More than 50kt / year
Permit application	\$2,102	\$3,938	\$9,405
Annual subsistence	\$4,010	\$5,224	\$6,421
Variation	\$666	\$666	\$666
Transfer	\$666	\$666	\$666
Revocation	\$1,059	\$1,059	\$1,059
Surrender	\$1,059	\$1,059	\$1,059
Allocation from New Entrant Reserve*	\$1,761	\$1,761	\$1,761

<sup>11</sup> <https://www.daera-ni.gov.uk/articles/emissions-trading-schemes-fees-charges-and-civil-penalties> - figures have been converted to USD using 2021 average rate 1 GBP = 1.375 USD

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## 02 Business Model

### Background

Carbon Credit Technology Ltd (hereafter the “Company”) is a Cayman-based limited liability company that develops, maintains, and markets the CCT Token. The Company owns the immaterial rights of the software components related to the ecosystem.

The Company acquires EUAs and releases a matching number of CCT tokens to cryptocurrency exchanges.

In terms of revenue streams, a 2% management fee applies for both the CCT and CCV tokens, which covers the trading and maintenance costs of the carbon credits.

The Company may issue new climate tokens in the future with other underlying climate assets.



## 03 CCT Token

In early 2022, our token was launched on Algorand as an Algorand Standard Asset. We selected this blockchain due to its superior sustainability credentials, as Algorand has been carbon-negative since April 2021. Furthermore according to the founder, Silvio Micali, Algorand runs on a version of proof-of-stake which drives electricity consumption to almost zero. All tokens were minted at the inception of the project, and they will be distributed according to a pre-defined schedule.

The future of Web3 is a multi-chain one. With this in mind, the project team is constantly evaluating other Layer 1 chains and will seize the opportunity to bring CCT to other ecosystems.

## Token Design

Each CCT Token represents one kilogram of regulated carbon.

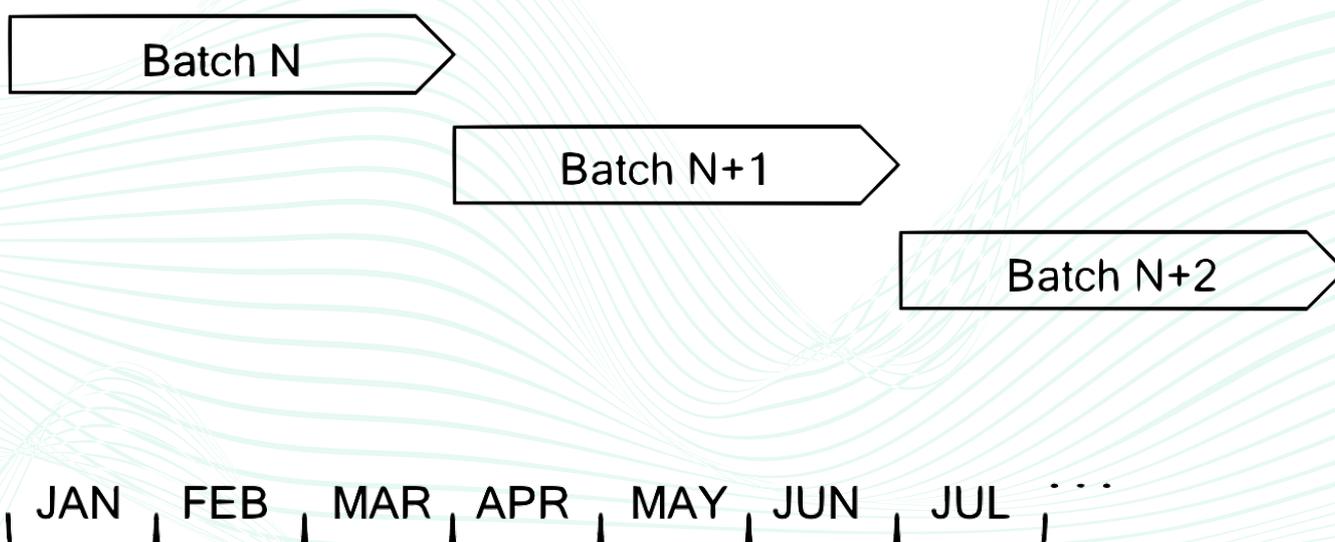
The Company acquires physical EUA certificates (or its UK equivalents) from its account with the EU ETS and UK ETS. One EUA entitles the holder to emit one ton (1,000 kilograms) of carbon dioxide or carbon-equivalent greenhouse gas.



Once the Company has acquired the EUA certificates, it will release tokens to one or more exchanges based on the design that each CCT represents one kilogram of regulated carbon. For example, if the Company acquires 1,000 EUAs and each EUA entitles the holder to emit one ton of greenhouse gas, then 1,000,000 tokens will be released to the market.

The Company will continuously acquire EUAs in batches according to a pre-defined schedule. After purchasing a batch, the Company will release a set of CCT tokens to the exchange and collect funds from the market which will be to acquire additional carbon credits.

The **timing of three batches** is illustrated below:



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Regarding the composition of the batches, their size is not fixed and the number of lots in a batch will gradually increase. However, the Company will solely manage the process and can freely adjust the number of EUAs purchased to reflect market demand.

## Token Issurance

The total number of CCT Tokens will be **600,000,000**. Each token is a single unit, and they cannot be divided into smaller units. All tokens will be minted at the inception of the ecosystem and kept in the reserve account controlled by the treasury. New tokens will only be released into circulation when at least an equivalent amount of EUAs have been purchased by the Company. All EUAs are held on a single Union Registry controlled by the EU. As for UK allowances, these are recorded on the UK Emission Trading Registry.

## Token Usage

CCT Tokens can be used for the following:

- ⦿ Staking for token rewards related to overall economic activities
- ⦿ Voting and participating in the DAO
- ⦿ Playing the Carbon City Zero game
- ⦿ Paying for services in the network

## 04 CCV Token

The project is due to issue a CCV token with the underlying asset being a verified voluntary carbon credit.

**1 CCV =**  
1kg of verified voluntary carbon

Similar to CCT tokens, each CCV Token represents 1 kilogram of verified voluntary carbon. Voluntary carbon credits are mostly generated through nature-based projects around the world. These credits will then be verified by private, not-for-profit entities who ensure that a sequestration activity has occurred. Each private entity maintains a ledger that logs the verified carbon credits and all transaction activities.

The Company maintains good relationships with leading brokers and various quality projects that are verified by widely recognized international standards. The full list of verified carbon credits acquired will be released at the launch of CCV token.

With the launch of CCV token, our project will cover both compliance and voluntary carbon credits. This in turn will provide complete carbon market exposure to our token holders.



## 05 External Audit

The Company maintains robust internal procedures for carbon trading and inventory management and will appoint one of the Big 4 accounting firms to conduct periodic, independent audits. These audit reports will be available on the company website and will ensure the Company meets the requirements of the token holder agreement at all times.

## 06 The DAO

### The CC ecosystem adopts **DAO governance**

whereby participants in the DAO will be owners and managers of the entire CCT network.

Initially, the decision-making will reside with the founding team. Gradually, it will involve early investors, community leads and asset owners. Ultimately, token owners will collectively decide the direction of travel for the entire ecosystem.

### Our First subDAO - CC Startup DAO

No one can save the earth alone - CC Startup DAO is the subDAO that aims to support the growth of the CCT ecosystem. In total, \$25,000 fiat + \$25,000 CCT tokens will be initially committed to support new and rising digital climate projects. Selected projects will also be featured on the CCT website and its social media pages.

### Future SubDAOs

Subject to community votes, the CCT team will continue to roll out subDAOs that are in line with our mission and serve our community. Some subDAO ideas currently under consideration include a CCT NFT DAO that raises funds by selling Climate NFTs and deploys these funds to further build out the ecosystem.

## 07 Carbon City Zero Game

Carbon City Zero is a collaborative deck-building game in which players adopt the role of city mayors striving to create a carbon-neutral city. Every player is in it together; either everyone wins, or everyone loses. To win the game, the players must achieve a zero carbon level before the time runs out.

Every player will start with the same basic income which can be used to purchase cards from the marketplace. Special cards can be purchased using CCT or CCV tokens depending on the card category. If the special cards fall into the public sector/government policy category, CCT tokens need to be used. Whereas if it is a private sector card, CCV tokens will be used.





For more information, please visit:

[www.cct.co](http://www.cct.co)