
CLIMATECOIN™
INTRODUCING THE TOOL TO
Unlock the wealth of a
Better world

CLIMATECOIN™

Index

Abstract

Climatecoin is a Climate Finance decentralized ecosystem to realign incentives around achieving Climate Balance for the generations to come. Its base asset is ClimateCoin, a fully fungible token that is backed 1:1 by high integrity carbon credits registered in the most trusted carbon registries, and which will serve as the foundation of new structured financial products, and ClimaT, the Governance token that allows leveraging the wisdom of the crowd via decentralized governance, acts as a collateral for providing uncollateralized funding to carbon credit developers all around the world, amongst other utilities and allows benefitting from the appreciation in the value of carbon credits.

Climate change poses arguably the greatest challenge humanity has ever encountered. Achieving the target of limiting its impact to 1.5°C, as outlined in the Paris Agreement, demands substantial emissions reductions from corporations, governments, and individuals. Compliance and voluntary carbon markets are pivotal in this endeavor. Voluntary markets offer financing for emission avoidance and reduction measures, crucial for steering towards decarbonization. They also incentivize scaling up CO2 removals. Projections indicate a remarkable growth trajectory, with voluntary carbon markets anticipated to scale by over 15 times by 2030, reaching 1-2 GT CO2e.

However, the current voluntary market faces acute pain points: fragmentation, pockets of low-quality carbon credits, and limited price transparency. These challenges impede market entry for both buyers and suppliers, hindering its potential. Meanwhile, compliance markets, now encompassing 21% of global emissions, are gaining traction worldwide. Although large financial institutions actively participate, individual contributions are not yet feasible.

As we enter the era of Real World Asset (RWA) tokenization, the tokenization of carbon credits could infuse the much-needed liquidity and capital to invigorate traditional carbon markets. According to Boston Consulting Group, the tokenization of illiquid assets could evolve into a $16 trillion industry by the decade's end. A joint survey by Celent and BNY Mellon reveals that 91% of institutional investors express interest in tokenized assets, foreseeing a paradigm shift in asset management.

The momentum for RWA tokenization builds on improved regulatory clarity in specific jurisdictions. Against this backdrop, the Climate Coin ecosystem emerges. This ecosystem harnesses blockchain to tokenize high-quality carbon credits and allowances. It integrates centralized/decentralized finance solutions to democratize supply and fintech solutions to democratize demand, thereby infusing liquidity into carbon markets and sustainable

projects globally. Its overarching goal is to robustly support the scaling of high-integrity carbon markets, significantly contributing to the Paris Agreement's 1.5°C ambition. Scientists warn that breaching this threshold would lead to substantial global impacts, emphasizing the urgency of initiatives like Climate Coin

The overarching purpose is supported by six core objectives against which the Climate Coin ecosystem has been designed:

- Scale up high-quality carbon removal and avoidance / reduction projects with real climate impact by enabling appropriate funding.
- Contribute to enhancing the integrity of carbon markets and guide users towards high-quality standards (e.g., Integrity Council for Voluntary Carbon Markets- ICVCM Core Carbon Principles - CCP´s or others).
- Democratize supply by ensuring equitable financing opportunities to carbon credit suppliers.
- Structuring financial products with tokenized carbon credits which allows accredited investors and institutional capital to bring liquidity to the carbon markets.
- Democratize demand by allowing buyers easy access to offsetting and climate friendly savings opportunities.
- Avoid pure speculation on carbon credits to incentivize the prioritization of real world impact.

The issuance of Climate Coins plays a pivotal role in catalyzing positive climate impact by effectively locking away high-quality carbon credits and allowances for a specified period. As this ecosystem expands, an increasing number of carbon credits become securely reserved. This drives the demand for carbon credits and incentivizes further climate action to develop new Mitigation and Adaptation projects. Concurrently, it enables the creation of innovative financial products, underpinned by these valuable carbon credits.

Concretely, each Climate Coin token will be backed by verified and certified by the registry 1 metric ton of CO2. Every carbon credit or allowance that meets pre-defined high-quality criteria can be converted into a fully fungible Climate Coin. At any point in time, Climate Coins can be burned by their owners, causing underlying carbon credits / allowance to be released for use against climate commitments (e.g. Net Zero). The released carbon credit / allowance will always be the oldest existing credit / allowance in the pool of underlying credits to ensure that the ecosystem does not become overloaded with legacy credits. When buyers are exiting the system through retiring tokens out of circulation, they will have full transparency on which credits have been used for retirement as every retired credit's metadata is available on the blockchain. Before burning the Climate Coins, the Organization retires an equal amount of carbon credits on the registry on behalf of the

buyers. After the retirement process is complete, buyers will be issued an NFT certificate, listing all the carbon credits retired on the registries. Climate Coin is now available for beta testing on Algorand (beta.climatecoin.io), but will be migrated to Ethereum during Q3 2024

Not every carbon buyer is the same. Companies subject to compliance caps will need specific allowances for their jurisdictions. In voluntary markets there are also differences. Some buyers are looking for high-quality avoidance / reduction credits (e.g. to meet carbon neutral targets), while recent guidance by the SBTi[1] only allows for removal credits in order to reach Net Zero targets. A new threshold standard called the Core Carbon Principles (CCP) is currently being developed as an outcome of the work of the Taskforce on Scaling Voluntary Carbon Markets. The CCP standard will mark out high-quality avoidance / reduction and removal credits. Furthermore certain buyers want to support the next generation of innovation in the market (e.g. Digital Monitoring, Reporting and Verification enabled by technologies such as satellite, drone, IoT sensors).

Hence there needs to be some differentiation in the Climate Coin offering to cater to various buyer needs. Within the first phase the following Climate Coins are foreseen, with potentially more types to be added based on user demand:

- EUA: EU Allowance credits issued by EU Member States, which are used in the European Union Emissions Trading Scheme (EU ETS)
- VCM incl. DMRV methodologies: VCM credits supplemented by credits relying on credible 3rd party standard providers' methodologies leveraging Digital Monitoring Reporting and Verification technology in order to generate carbon credits, such as electromobility, agriculture (e.g., hemp), biochar, etc.
- CCP basic: Any CCP compliant carbon credits, such as REDD+, cookstove, energy efficiency, waste management, etc.
- CCP removals: CCP compliant removal carbon credits, such as reforestation, soil, BECCS, DACCS, etc.

Alongside the Climate Coins, a thriving "Cli-Fi" ecosystem – climate focused decentralized finance – will be developed. The primary purpose would be to enable supply democratization by providing financing options to underbanked project developers. Increased access to capital will support the generation of further carbon credits, both scaling up climate impact and improving economic outcomes for communities. Lending in Climate Coins has the particular advantage for suppliers that they can repay the principal and interest in self-generated Climate Coins from their projects. This means suppliers do

[11] Science Based Targets Initiative

not face risks of low future carbon prices impacting their ability to pay back their loan, or any foreign exchange risk.

This ecosystem will be enhanced by the creation of structured financial products centered on carbon credits. These instruments will bridge traditional finance with carbon markets, bolstering purchasing power and liquidity within them. As the system evolves for greater efficiency, there's potential to integrate future carbon credit projects (carbon forward) into this framework.

Together with Climate Coin, the ecosystem will also contain a utility / governance token. It will be a key enabler for a thriving Cli-Fi ecosystem, with governance token owners being able to vote on proposals on further developments and also vote via an automated process (e.g. setting interest rates in case an under-collateralized Cli-Fi protocol is developed). Beyond the “on-chain” governance by governance token owners, there will also be two major “off-chain” governance components. The Organization will make the decisions on which critical community-backed proposals will be put for final executive vote by governance token holders. The Organization will also subsequently implement the accepted proposals. There will also be a separate and fully independent Credit Quality Assurance Committee. This body will make the final decision on all credit quality related topics (e.g., acceptable standards and methodologies for carbon credits, including related to localized government and compliance requirements). The Credit Quality Assurance Committee will not have any financial interest in the growth of the Climate Coin ecosystem to ensure objective decisions in the best interest of climate integrity.

The Climate Coin ecosystem is envisioned to further evolve and grow to increase its impact over time:

- Phase 1 (year 1): Launch Climate Coins based on VCM including Digital MRV (using methodologies by existing credible 3rd party standard providers), to be followed by CCP basic and CCP removal tokens, each sold through marketplaces, 3rd party (de)centralized exchanges and structured into financial products by partnership agreements with major financial institutions.
- Phase 2 (year 1-3): Develop Cli-Fi protocol(s) which enable supply democratization in particular providing financing options to underbanked project developers. Furthermore the aim is to increase adoption of Climate Coin through increased acceptance under other De-Fi protocols.
- Phase 3 (year 3-5): Enabling demand democratization through Fintech solutions (e.g., POS offsetting for retail & corporates, automatic Climate Coin purchases after debit card payments for offsetting, etc.)

- Phase 4 (year 5+): Climate Coins to evolve into a climate positive globally accepted means of payment through developing key partnerships (e.g., credit card networks and payment processors)

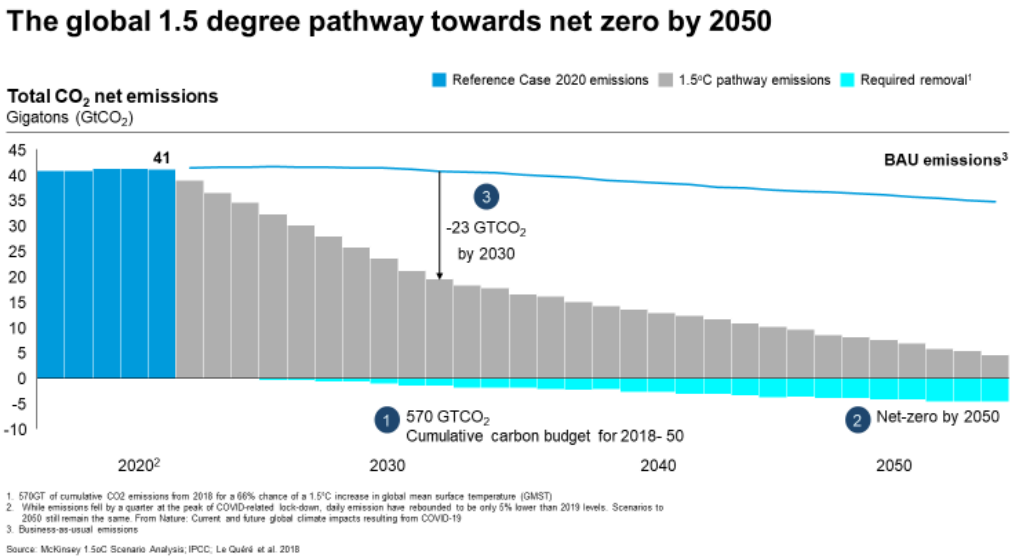
Step by step the Climate Coin ecosystem will accelerate the development and scaling of high-integrity carbon markets to make a meaningful contribution towards the Paris 1.5 °C ambition.

Purpose and objectives

Climate change may be the greatest challenge humanity has ever faced. Reaching the ambitious target set by the Paris Agreement of limiting global warming to 1.5°C requires cutting global annual greenhouse gas (GHG) emissions by 50% compared to current levels by 2030 and reducing to net-zero by 2050[2].

It is vital that corporates, governments and individuals reduce their emissions drastically in order to reach this target. However that will not be enough. Even when assuming a highly ambitious 1.5°C scenario (Exhibit 1), humanity will need to continuously remove at least 5 GT CO2 yearly from the atmosphere in order to remain at net-zero. To achieve such a scale up of removals, investments need to start now.

Exhibit 1 – Global 1.5 degree pathway until 2050



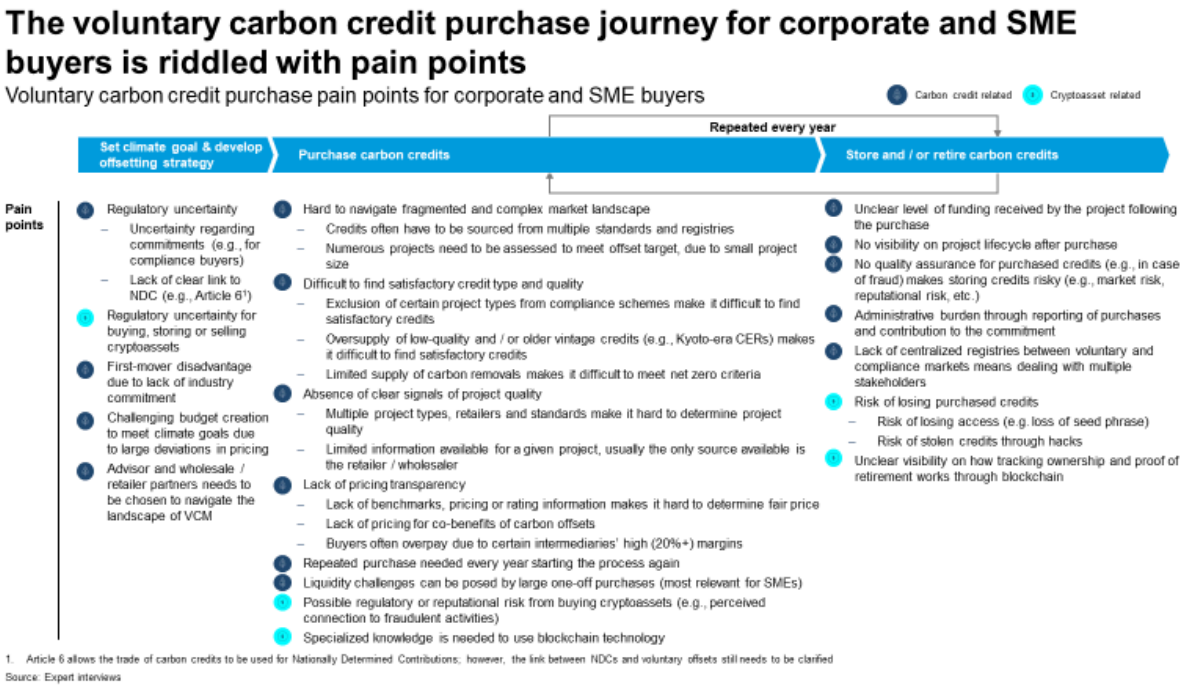
[2] IPCC: Special Report: Global Warming of 1.5 °C

Carbon markets can play an important role. Compliance carbon markets offer explicit carbon pricing policies enacted by a government mandate. Their aim is to incentivize cost-effective mitigation and they are enacted through either a carbon tax or an ETS (emissions trading system)[3]. Voluntary carbon markets can provide financing for avoidance / reduction measures which help achieve the decarbonization pathway as well as offer incentives to scale up the CO2 removals required.

The voluntary carbon market can enable billions of dollars to flow from entities emitting carbon to those avoiding, reducing or removing carbon by 2050. At scale funding for high-quality carbon projects requires a well-functioning voluntary carbon market (VCM), which adheres to high integrity standards.

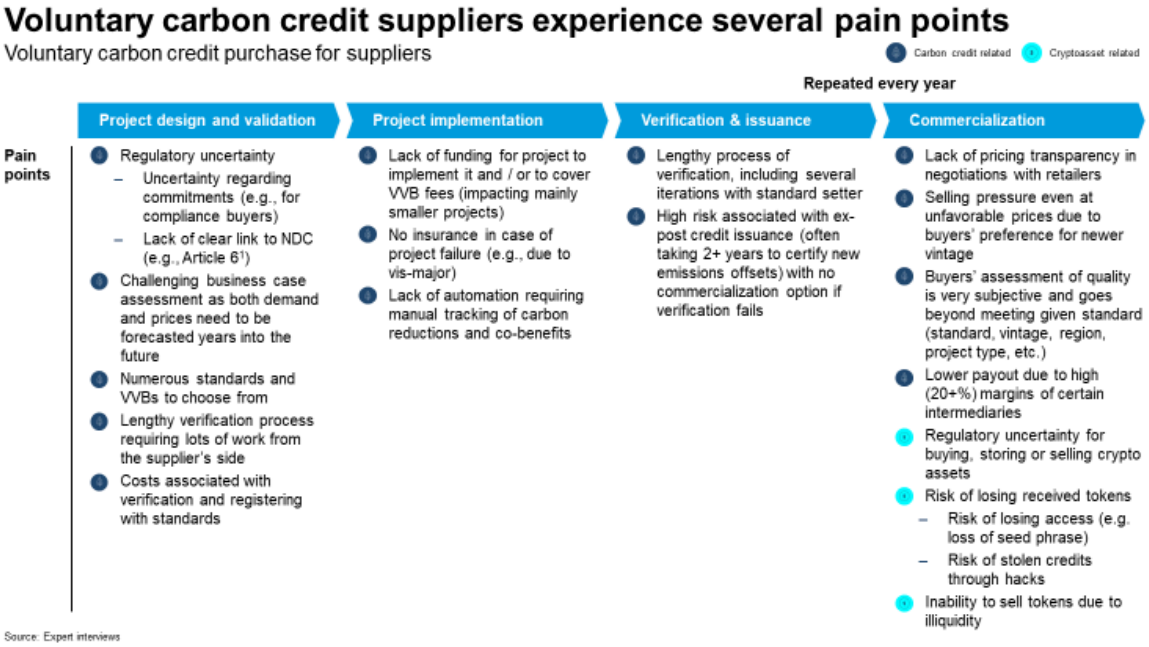
However, this is not the case today. Participants in the voluntary carbon market experience several acute pain points. Most critical is the lack of consistent high quality projects. Other challenges include carbon accounting (e.g., double counting of credits), lack of pricing transparency, unclear property rights and high costs throughout the value chain[4]. These pain points are acute for both buyers and suppliers, contributing to an opaque, inefficient and immature market.

Exhibit 2 – Carbon credit buyer pain points for corporates and SMEs



[3] World Bank: State and Trends of Carbon Pricing 2021
[4] TSCVM Final Report 2021

Exhibit 3 – Carbon credit supplier pain points



Against this backdrop, the Climate Coin ecosystem is launched. The Climate Coin ecosystem is based on tokenizing carbon credits and allowances. Its overarching purpose will be to support the high-integrity scaling of carbon markets, in order to make a meaningful contribution towards the Paris 1.5°C ambition. The overarching purpose is supported by six core objectives against which the Climate Coin ecosystem has been designed:

- Scale up high-quality carbon removal and avoidance / reduction projects with real climate impact by enabling appropriate funding.
- Contribute to enhancing the integrity of carbon markets and guide users towards high-quality standards (e.g., TSVCM's CCPs or other).
- Democratize supply by ensuring equitable financing opportunities to carbon credit suppliers.
- Structuring financial products using tokenized carbon credits, enabling traditional finance to infuse liquidity into the carbon markets. This convergence creates a bridge between the realms of traditional finance and the crypto world.
- Democratize demand by allowing buyers easy access to offsetting and climate friendly savings opportunities.
- Avoid pure speculation on carbon credits to incentivize the prioritization of real world impact.

Exhibit 4 – Purposes and objectives of the Climate Coin initiative

The Climate Coin ecosystem supports the development of high-integrity scaling of voluntary carbon markets

The overarching aim is to support the development of high-integrity scaling of voluntary carbon markets, to make a meaningful contribution towards the Paris 1.5C ambition, which can be achieved through five core purposes

	1	2	3	4	5
Purpose	**Scale up high-quality carbon removal and avoidance / reduction projects with real climate impact by enabling appropriate funding**	**Contribute to enhancing the quality and integrity of voluntary carbon markets and guide users towards high quality standards (e.g. CCP or other)**	**Democratize supply by ensuring equitable financing opportunities to carbon credit suppliers**	**Democratize demand by allowing buyers easy access to offsetting and climate friendly savings opportunities**	**Avoid pure speculation on carbon credits to incentivize the prioritization of real world impact**
Need for action	Corporate commitments towards offsetting will kick in after 2030, but funding needs to be channeled into high-quality carbon projects now to enable a 1.5C pathway	Voluntary carbon markets operate in an opaque, unstandardized and illiquid way, leading to double counting and inefficient price discovery	Underbanked suppliers residing mostly in developing nations have limited access to initial capital needed to start-up carbon projects	Corporates and individuals do not have access to easy user journeys to purchase carbon credits or keep savings in assets that lead to immediate climate impact today	Eliminate the parts of both the voluntary carbon market and the cryptocurrency space which can be characterized by excess speculation and fraudulent activities with the aim of individual enrichment

The opportunity

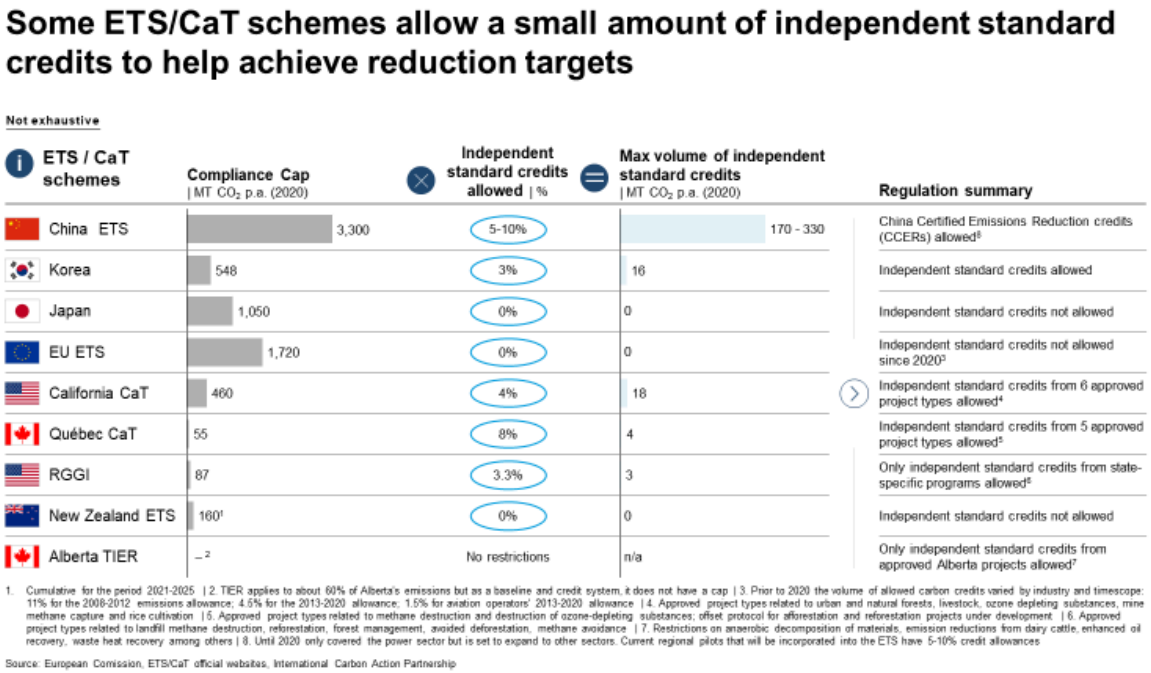
Compliance market overview

Compliance markets have experienced unprecedented growth in the past years with global market value reaching 272 billion USD in 2020, which is five times the market size compared to 2017. Emissions trading systems now cover 21% of all global emissions. The largest ETS systems include the EU Emissions Trading System, the Chinese ETS as well as North American regional carbon markets[5].

There is also an inherent overlap between ETS markets and Voluntary Carbon Markets, as most ETS systems allow for a certain component of independent standard credits to be used against regulatory requirements (usually below >10%). Notably this link no longer exists in the EU ETS.

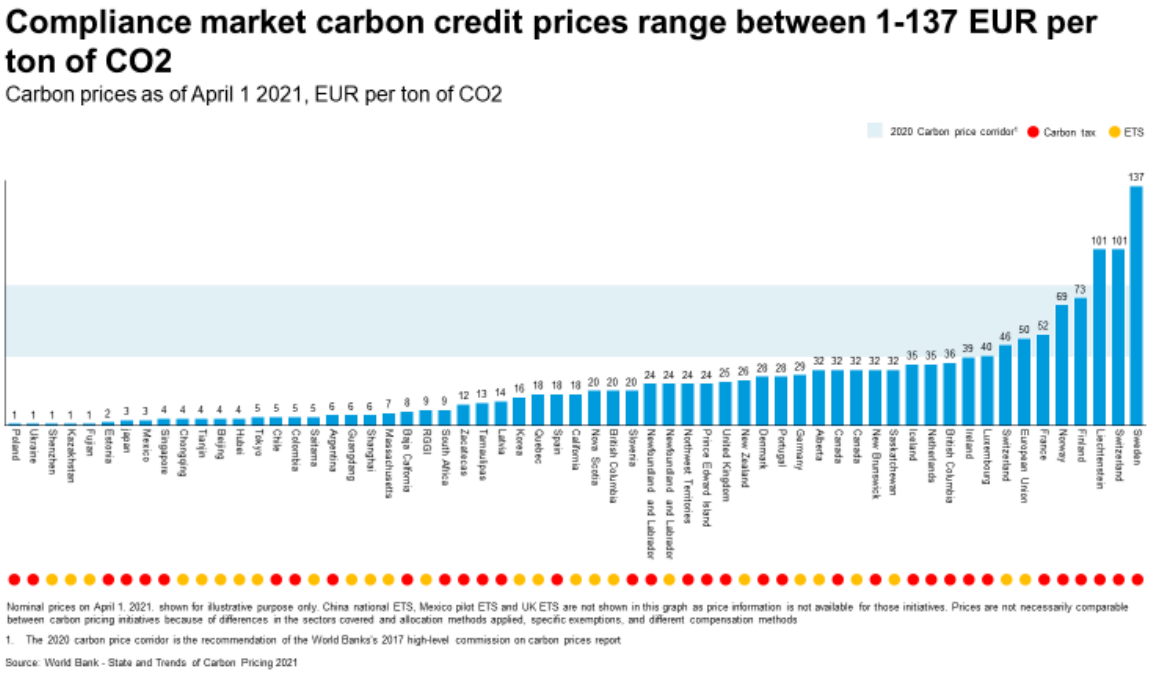
[5] World Bank: State and Trends of Carbon Pricing 2021

Exhibit 5 – Overview of most important ETS / CAT (cap-and-trade) schemes



As governments have been constantly decreasing the allowance cap in line with increased political ambition, prices have been rising rapidly, in particular the EU ETS which has been trading at above 85 EUR per ton in 2021.

Exhibit 6 – Compliance market carbon credit prices as of April 1st 2021

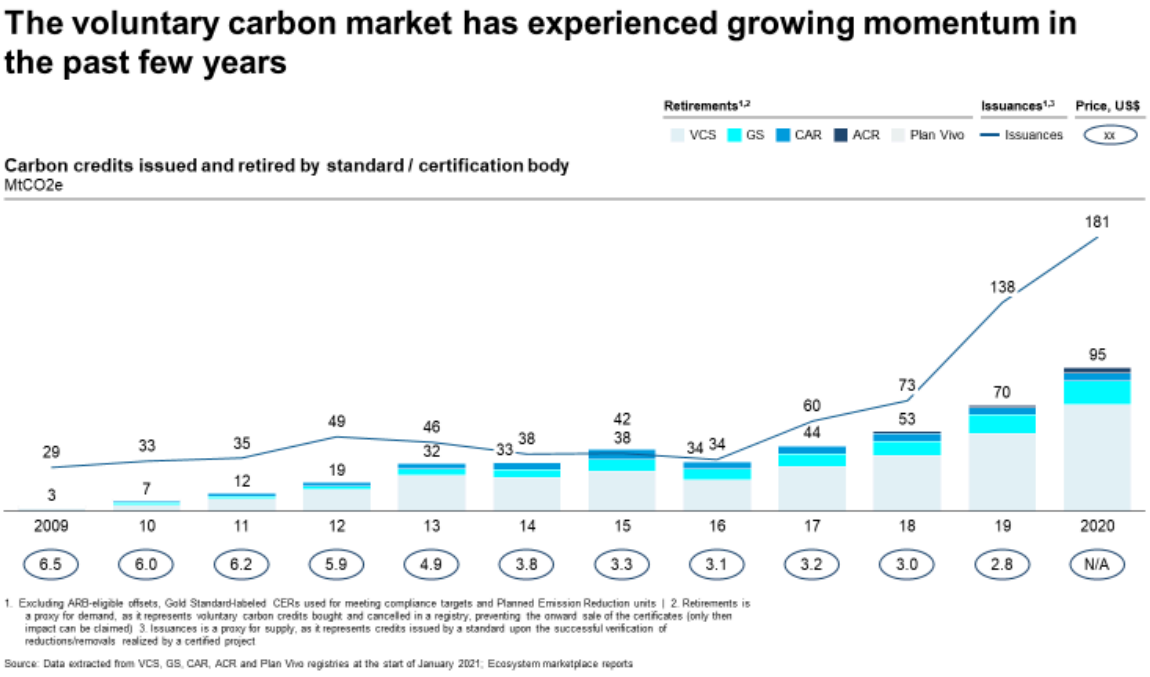


So far governments have been open to provide opportunities for institutional financial market players to take part in the market to provide liquidity, however traditionally retail investors have not been able to contribute to this function.

Voluntary carbon market overview

Voluntary carbon markets are also experiencing growth at a staggering pace. Between 2017 and 2020 credit issuances and retirements grew by 45% and 29% p.a., respectively. In 2020 the total value of the market reached 473 million USD. In 2021, the voluntary carbon market grew at a record pace, reaching $2 billion—four times its value in 2020. The overall voluntary carbon market is expected to continue this strong growth and is expected to reach anywhere between 5 to 50 billion USD by 2030[6].

Exhibit 7 – Voluntary carbon market size (retirements and issuances)



Despite the strong momentum in the overall market, the growth is not universal. The volume of credits issued and transacted varies significantly by standard and credit type, with Verified Carbon Standard (VCS) being the largest issuer and REDD+ credits being the most transacted credit type by MtCO2e volume. This variance can also be observed in prices by methodology type. The gap in price is particularly stark between avoidance / reduction and removal credits – with the latter garnering a ~5x average price premium in 2021. The difference in avoidance / reduction and removal credits can be expected to continue or further increase, as both the high volumes of corporate commitments to

[6] TSCVM Final Report 2021

long-term net zero and the overall 1.5°C goal will intensify the need for expensive technology based removal credits. A clear “bound” of the 1.5°C pathway is 2050, by when remaining emissions should equal removals. In this state there would be limited room for avoidance / reduction credits anymore. Hence it is reasonable to believe that phase out of avoidance / reduction credits has to happen sometime prior to or latest in 2050.

Exhibit 8 – Voluntary carbon market size (retirements and issuances)

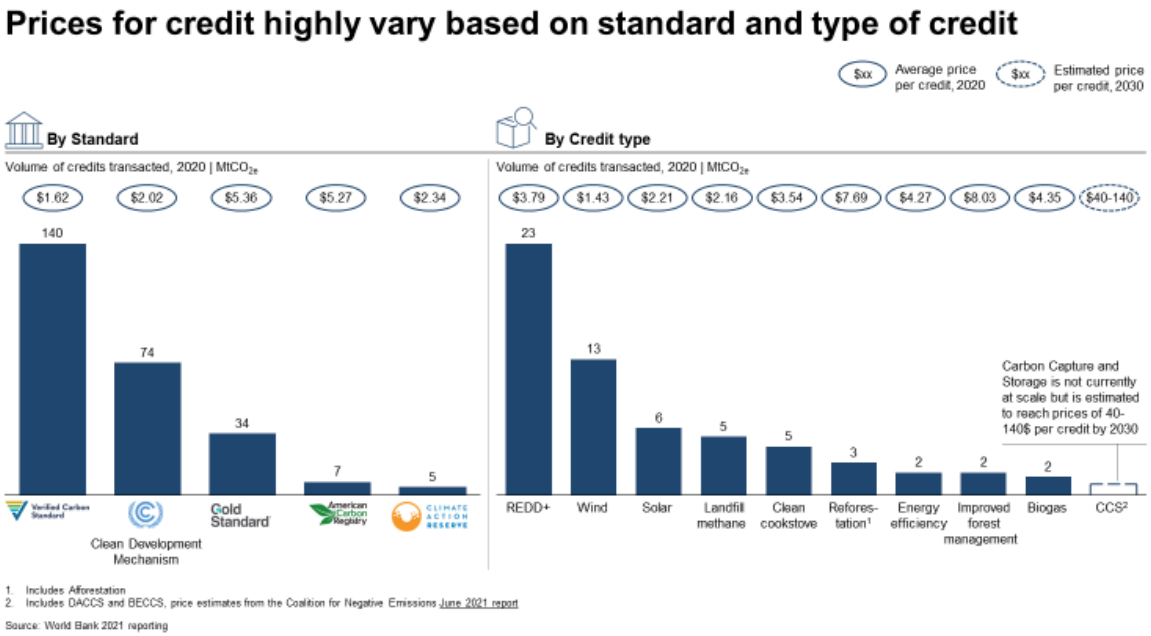
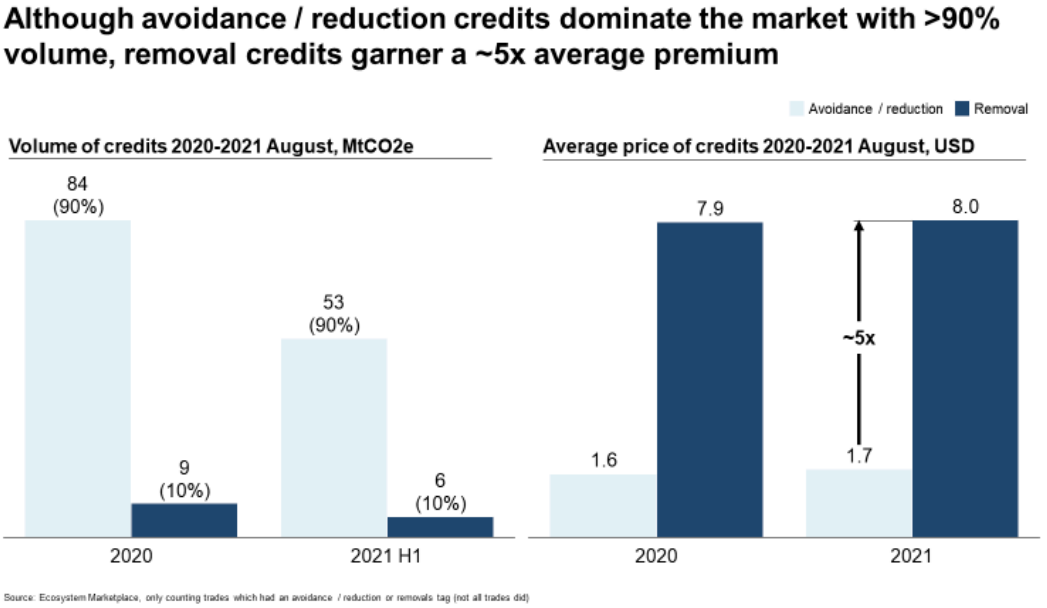
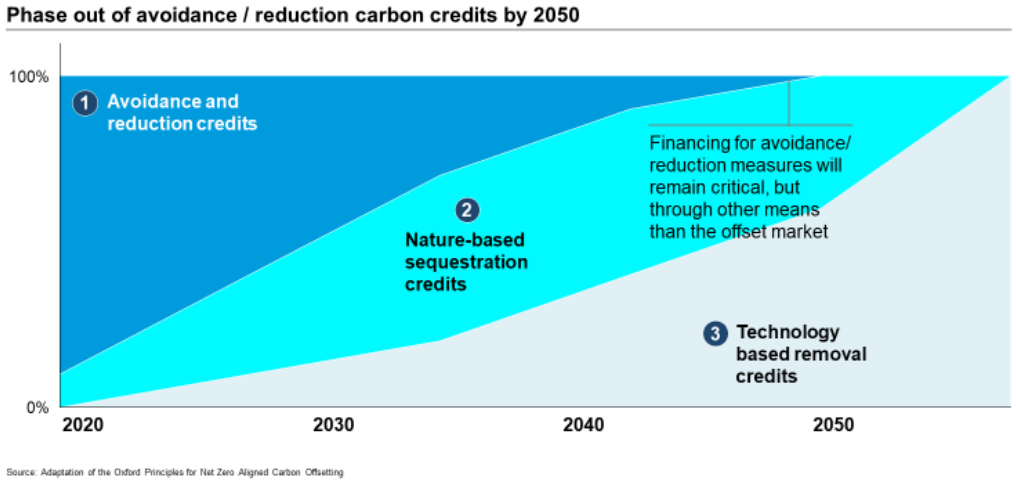


Exhibit 9 – Volume and price of avoidance / reduction and removal credits (only counting trades which had an avoidance / reduction or removals tag)



There is a clear analytical case to be made for phasing out avoidance / reduction offsets by 2050



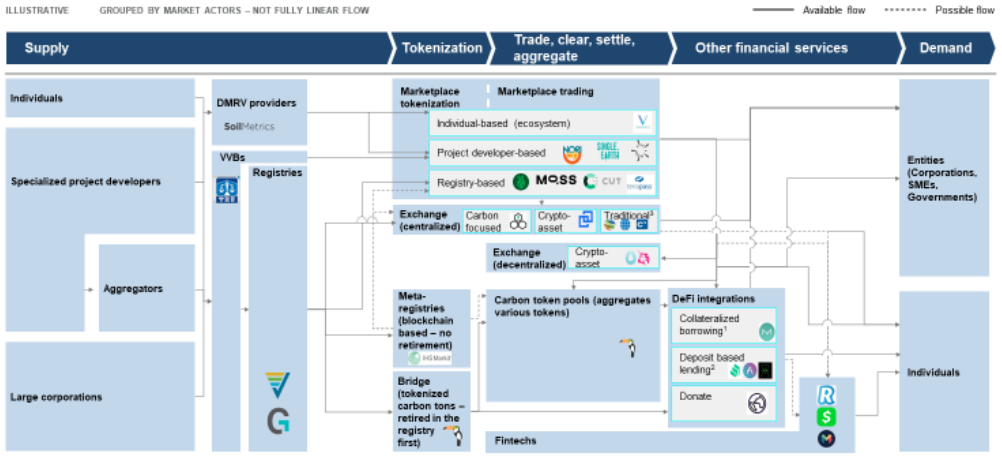
Source: Adaptation of the Oxford Principles for Net Zero Aligned Carbon Offsetting

Past and current initiatives trying to solve VCM pain points

There have been and currently are numerous initiatives trying to solve the pain points permeating the voluntary carbon markets, some trying to improve market efficiency through traditional means, while others aim to apply new technologies. One of these technologies is distributed ledger technology (DLT), which can facilitate more efficient and reliable carbon credit markets in particular by offering immutable records to increase trust and avoidance of double counting as well as atomic settlements to improve trading.

Exhibit 11 – Blockchain-based players in the voluntary carbon market value chain

The current state of the voluntary carbon market has seen an influx of blockchain-based players



1. E.g. borrow 0.5 USD at certain interest rate, based on 1 USD equivalent carbon token as collateral
2. Either i) provide tokenized carbon credit and receive interest rate or ii) bond based lending
3. Not blockchain-based exchanges

One of the most well-known applications of DLT is blockchain, which is the underlying technology leveraged by several new entrants to the voluntary carbon market. For these blockchain-based incumbents the most common business model is tokenizing registry certificates to sell them through their own OTC marketplace and / or a 3rd party exchange. These token issuers follow either a "blended token" or a "pure play token" strategy. Blended token issuers sell one token type, backed by both avoidance / reduction and removal projects as the underlying asset. Ventures following this strategy include players such as Single.Earth, Carbon Utility token (CUT) and Terrapass. The other approach is launching pure play tokens, where the token issuers sell one token type which is backed only by avoidance / reduction credits (e.g., MOSS, UPCO2, etc.) or removal credits (e.g., Nori, Regen Network, etc.) as underlying.

Besides marketplaces, we can also can see digital exchanges which launch their own token(s). One prominent player is AirCarbon Exchange, which trades multiple self-issued token types (e.g., nature based), backed by pools of carbon credits meeting specific criteria.

Exhibit 12 – Blockchain-based exchanges and marketplaces

Several digital exchanges leverage blockchain technology to tokenize voluntary carbon credits

Blockchain-based exchanges and marketplaces

	Technology	Value chain position	Credit verification	Supply	Credit quality	Buyers	Governance	Tokenomics	Token unit	Revenue model
Vechain Carbon Ecosystem	Blockchain (VeChainThor)	Marketplace (ecosystem provider)	3rd party verifier (DNV)	Avoidance/reduction (consumer goods)	N/A	Ecosystem partners (currently only BYD)	N/A	N/A	N/A	N/A
Single.Earth	Blockchain (Layer 1 unknown)	Marketplace & verifier (project developer-based)	Inhouse real-time verification through DMRV[1]	Avoidance / reduction & removal (landowners)	Conservation & reforestation (proprietary standard)	Companies and individuals	N/A	N/A	1 metric ton	N/A
Regen Network	Blockchain (own blockchain created on Cosmos SDK)	Marketplace & verifier (project developer-based)	3rd party verifiers & in-house verification through DMRV[1]	Removal	Agriculture, water management and forestry	Companies and individuals	On-chain and off-chain	Token can be staked to earn yield, and acts as fee and governance token	N/A	Transaction fees
Nori	Blockchain (ERC20)	Marketplace (project developer-based)	3rd party verifiers	Removal (farmers only)	Agriculture (soil carbon)	Companies and individuals	N/A	Separate token for purchase and offset Fully fungible (FIFO)	1 metric ton	One time fee from suppliers, 15% transaction fee
UPCO2	Blockchain (ERC20)	Marketplace & verifier (registry-based)	3rd party verifiers & in-house	Avoidance/reduction	REDD+	Companies and individuals	Off-chain (Carbon Foundation)	Single token Issued according to demand	1 metric ton	N/A
MOSS	Blockchain (ERC20)	Marketplace & verifier (registry-based)	3rd party verifiers & in-house	Avoidance/reduction (projects in the Amazon Forest)	REDD+	Companies and individuals	N/A	Single token Issued according to supply and demand	1 metric ton	N/A
CUT	Blockchain (ERC20)	Marketplace (registry-based)	3rd party verifiers	Avoidance/reduction & removal	Renewable & carbon capture (ISO, CDM, ETS, VCR)	Companies and individuals	N/A	Separate token for purchase and offset Offset connected to project	1 metric ton	N/A
Terrapass	Blockchain (ERC20)	Marketplace (registry-based)	3rd party verifiers	Avoidance/reduction & removal	Renewables & gas capture (Verra, CAR, GS or ACR)	Companies and individuals	N/A	N/A	1 metric ton	N/A
Aircarbon Exchange	Blockchain (Layer 1 unknown)	Exchange (carbon focused)	3rd party verifiers	N/A	N/A (BSI)	Companies and accredited investors	N/A	N/A	1 metric ton	Trade commissions (~1%)

1. Digital Measurement, Reporting and Verification

Source: Company websites, press research

Climate Coin must differentiate its value proposition from currently available solutions (1/3)

Blockchain-based exchanges and marketplaces

	Overview	Value proposition	Key design choices	Competitive position
VeChain Digital Carbon Ecosystem	Blockchain based solution (VeChainThor) Partnership with automotive company BYD in 2018 VeChain is one of the top 25 cryptocurrencies by market capitalization[1]	Carbon reduction platform which utilizes economic incentives to encourage both individuals and enterprises to participate in the reduction of carbon emissions	Consumers engaging in low-carbon behaviors earn carbon reduction credits which can be redeemed for benefits Benefits are offered from ecosystem partners who buy carbon credits and benefit from higher user traffic Credits are verified by DNV	+ Unique solution incentivizing both consumers and ecosystem partners − No press report of actual implementation of the concept
Single.Earth	Carbon credit backed, blockchain based token (no information on Layer 1) Pre-sale of MERIT token to launch in autumn 2021 EQT Ventures backed (7.9M USD) start-up	Real-time issuance of tokens to landowners for captured CO2 based on "digital twin" analysis leveraging satellite data, big data, and machine learning	Real-time verification done through DMRV[2] process Landowners who conserve and restore natural resources as only supply stream	+ DMRV process could be leveraged to scale supply − Limited supply with only landowners − Verification quality is not universally excepted
Regen network	Carbon credit backed, blockchain based token (own blockchain created on Cosmos SDK) REGEN token to be launched (no date specified)	Ecosystem that aims to reduce project development costs, streamline MRV[2] processes and increasing revenues for land stewards	Verification done through DMRV[2] process and 3rd party verifiers Landowners who conserve and restore natural resources as only supply stream	+ DMRV process could be leveraged to scale supply + Leverages 3rd party verifiers to verify quality − Limited supply with only landowners

1. As of September 10th 2021, based on CoinMarketCap data
2. (D)MRV = (Digital) Monitoring, Reporting and Verification

Source: Company websites, press research, expert interviews

Climate Coin must differentiate its value proposition from currently available solutions (2/3)

Blockchain-based exchanges and marketplaces

	Overview	Value proposition	Key design choices	Competitive position
Nori	Carbon credit backed, blockchain based token (ERC20) NORI and NRT tokens to be launched (no date specified) Shopify and Grammy winning artist Imogen Heap have used the Nori platform	Buy carbon removals directly from farmers	NORI and NRT tokens are minted, with NRT tied to a given project, providing an offset certificate when bought Only sells credits supporting carbon removal, suppliers are farmers practicing regenerative agriculture to remove carbon Offers 10-year buyer warranty Insurance pool to absorb fraudulent projects	+ Existing relationships with prominent buyers + High-quality credits sourced − Limited supply with only farmers − Not clear what standards do the credits satisfy
Universal Carbon	Carbon credit backed, blockchain based token (ERC20) UPCO2 token traded on Bittrex Global (less than 300 USD 24-hour volume)[1]	The world's first retail tradable REDD+ carbon credit	Established Carbon Foundation, which is part of carbon credit certification Supply from only REDD+ carbon credits UPCO2 is issued according to demand, with every token backed by an underlying carbon credit registry	+ Has off-chain governance body − REDD+ carbon credits can vary significantly in quality − In-house credit certification can limit scaling
Moss Carbon Credit	Carbon credit backed, blockchain based token (ERC20) MCO2 token is traded with a self-reported market cap of ~15M USD[2]	The first truly global Carbon Credit Token, that provides ease, transparency, global scale and security for carbon footprint compensation	MOSS does its own legal and reputational checks prior to purchases MCO2 holders have legal ownership of an associated carbon credit MOSS buys carbon credits from projects operating in the Amazon Forest (only REDD+)	+ Actively traded MCO2 token − REDD+ carbon credits can vary significantly in quality − In-house credit certification can limit scaling

1. As of September 10th 2021, based on Bittrex data
2. As of September 10th 2021, based on CoinMarketCap data

Source: Company websites, press research, expert interviews

Climate Coin must differentiate its value proposition from currently available solutions (3/3)

Blockchain-based exchanges and marketplaces

	Overview	Value proposition	Key design choices	Competitive position
Carbon Utility token	Carbon credit backed, blockchain based token (ERC20) CUT token can be traded on Bittrex Global (less than 3K USD 24-hour volume[1])	An immutable ledger for tracking and retiring certified Carbon Offsets, focusing on high-quality credits (e.g. no REDD+)	Credits verified by protocols (e.g., ISO, CDM, VCR, etc.) from 3rd parties CUT and a connected OFFSET token are minted which is linked to a given project Only projects accepted where CO2e has already been captured, destroyed, and offset to a specific and certified protocol of measurement (e.g., no REDD+ credits)	+ High-quality credits sourced − Not clear exactly which projects are behind credits and what standards they satisfy
Terrapass	Carbon credit backed, blockchain based token (ERC20) Terrapass Coin (TPSC) to be launched (no date specified) Current partners include Adobe and Expedia	Full control of the Terrapass Coins to hold them as an investment, transfer them as a gift or retire to offset carbon footprint	Offers subscription plans for offsetting Only delivers Terrapass Coins 1-4 months after purchase Supply from several registries (Verra, CAR, GS or ACR)	+ Delayed delivery conserves cash flow for the organization − Currently only two projects serve as underlying for tokens − Tokens can be purchased by U.S. residents only
AirCarbon exchange	Carbon credit backed, blockchain based tokens (no information on Layer 1)	A digital exchange focused on eliminating market friction in a carbon constrained economy, with project verification done by British Standards Institution	Offers 5 different tokens, for each the physical delivery of the underlying carbon credits can be requested Project developer continues to get a percentage of the ongoing trading fees of every token transaction Revenue based on trade commissions	+ Offers variety of specialized tokens + Unique incentive system for suppliers with recurring earning − Not clear which projects are behind credits − Only companies or accredited investors can trade on exchange

1. As of September 10th 2021, based on Bittrex data

Source: Company websites, press research, expert interviews

The current competitor landscape offers both fully commoditized and differentiated assets for voluntary carbon credit trading

Detailed next

	Fully commoditized reference contract		Differentiated reference contract
Electronic exchanges	*N/A*		Exchanges specialized in trading standardized carbon credit contracts with **different buckets of standardized reference contracts**
Digital exchanges / marketplaces (blockchain-based)	**"Blended" token** Token issuers selling one token type, backed by both avoidance / reduction and removal projects as underlying Conservation & reforestation Renewable & carbon capture Renewables & gas capture	**"Pure play" token** Token issuers selling one token type, backed only by avoidance / reduction or removal projects as underlying **Avoidance** REDD+ REDD+	**Removal** Agriculture (soil carbon) Agriculture (soil carbon)	**Differentiated token** Exchanges or marketplaces **trading multiple token types** (e.g., nature based, renewables), backed by pools of carbon credits meeting specific criteria
De-Fi protocols (blockchain-based)	Decentralized protocols with "blended" tokens backed by carbon credits Pooled credits, specifics not available: Klima token to launch fall 2021			

Real World Assets (RWA) overview

The tokenization of Real World Assets (RWA), with an expected market size of $16 trillion by 2030 as stated by Boston Consulting Group, represents a significant shift in asset management and investment, facilitated by blockchain technology. This process includes various assets like real estate, art, government bonds, and notably, carbon credits. Major financial institutions such as UBS and JPMorgan are pioneering in this space, signaling a trend towards widespread adoption in mainstream finance. The benefits of tokenization, particularly in the carbon credit market, include enhanced transparency, accurate information by incorporation of metadata about the projects, trading efficiency, and financial returns by structuring financial products, as well as a boost in climate change mitigation efforts.

For a more comprehensive understanding, please refer here and here.

The asset tokenization and real-world asset (RWA) space caught the eye of retail and institutional capital investors in 2023 for its favorable blend of professionally managed products and digital asset mechanics.

A variety of asset categories are actively being tokenized and garnering investments, with recent data suggesting that the total value of tokenized real-world assets reached an all-time high of $2.75 billion in August.

What the Climatecoin initiative is and how it would help ?

A Climate Coin is a standardized, easy to understand, high-quality carbon credit vehicle which creates price transparency and democratizes access and investment into carbon credits through instant and low-cost transactions for corporations and individuals alike. Climate Coins are the main token of the Climate Coin ecosystem, each token backed 1:1 by 1 metric ton CO2 of a high-quality carbon credit. Every carbon credit or allowance that meets the high-quality criteria can be converted into a fully fungible Climate Coin, leveraging credible 3rd party standard setters' methodology, The Organization makes sure that only high-quality, high-integrity, verified and insurable projects enter the pool of underlying assets. Suppliers receive Climate Coins after transferring ownership of their carbon credit certificates to Climatecoin on trusted standard setter registry databases. Climatecoin tokenizes the carbon credit meta-data via an NFT, and simultaneously issues a fully fungible Climate Coin to the supplier.

Issuing Climate Coins drives positive climate impact by temporarily locking away high-quality carbon credits or allowances. The larger this ecosystem grows, the more carbon credits will be locked-in. This drives the demand for carbon credits and incentivizes further climate action to develop new carbon credits.

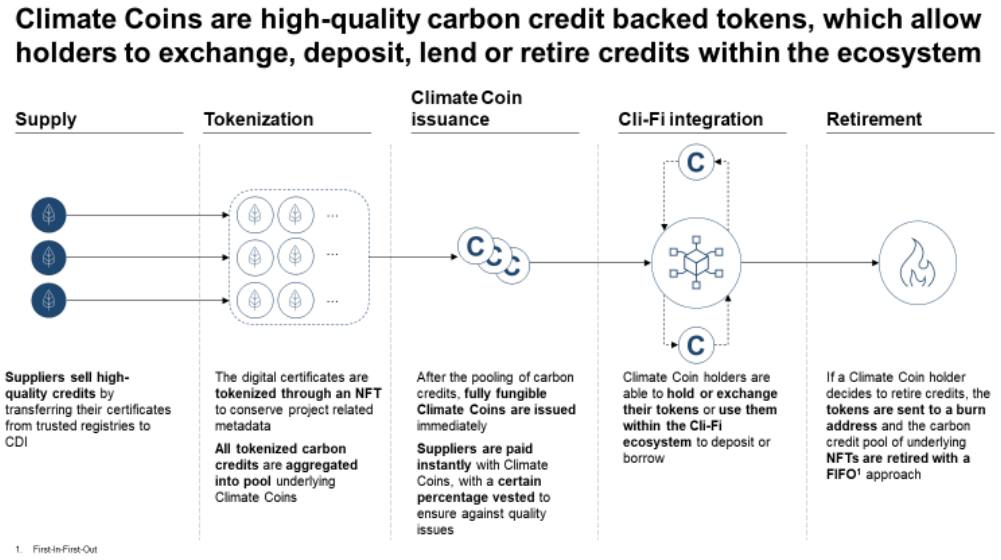
At any point in time, Climate Coins can be burned by their owners, causing an underlying carbon credit / allowance to be released for use, to meet climate commitments (e.g. Net Zero). The released carbon credit / allowance will always be the oldest existing credit / allowance in the pool of underlying credits (using the First-In-First-Out method for credit vintage) to ensure the pool keeps refreshing and is not overloaded with legacy credits. When buyers are exiting the system through burning tokens, they will have full transparency on which credits have been used for retirement as every retired credit's metadata is available on the blockchain. Before burning the Climate Coins, The Organization retires an equal amount of carbon credits on the registry on behalf of the buyers. After the retirement process is complete, buyers will be issued an NFT certificate listing all the carbon credits retired on the registries.

On the carbon credit supply side Climate Coin offers specialized project developers an easy, highly liquid and transparent sale of all generated carbon credits with potentially higher payout in the long term compared to the traditional value chain (e.g. retailers and brokers). On the buyer side it enables easy to understand, fully fungible, purchase of high-quality credits for compensating emissions, and allows for a liquid hedging tool against potential future credit price increases. It also allows holders the ability to benefit from possible price appreciation as a climate-conscious investment. This last part is the definitive application that we envision to drive demand for Carbon credits, by structuring financial products

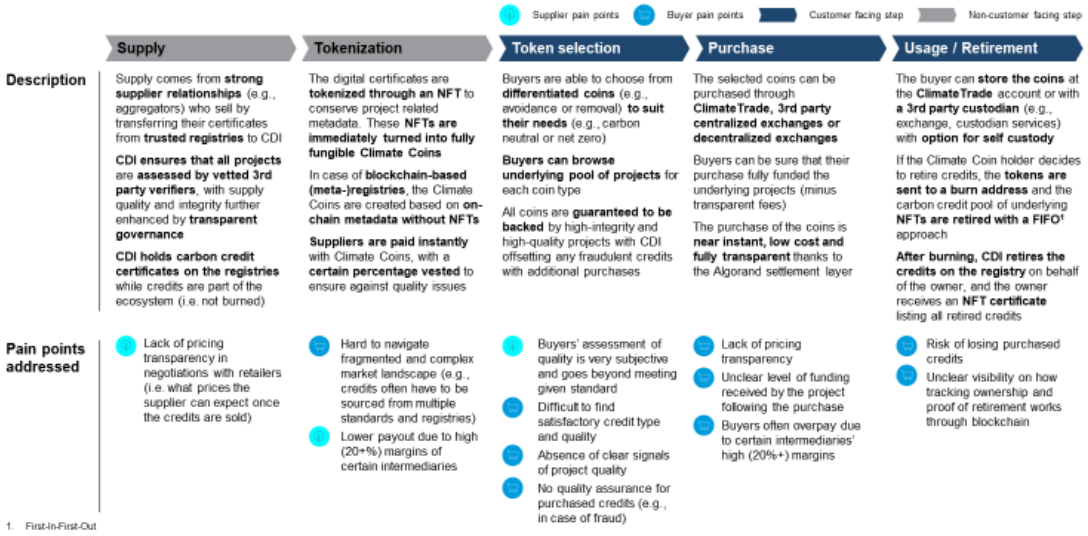
around tokenized carbon credits (Mutual funds, Green bonds, etcetera.), where investors can expect a return as price appreciation of the credits used as a collateral.

Our double bridge tokenization platform is in process of certification and validation by one of the top certification companies worldwide. They will be able to certify how the retirement, holding, issuance of credits and Climatecoins is made and will give veracity to the whole process both for buyers, project developers and investors.

Exhibit 13 – Climate Coin addresses key pain points for both suppliers and buyers of carbon credits



Climate Coin connects buyers to high-quality carbon credits in a transparent and seamless way



However, not every carbon buyer is the same. Companies subject to compliance caps will need specific allowances for their jurisdictions. In voluntary markets there are also differences, as some buyers are looking for high-quality avoidance / reduction credits (e.g. to meet carbon neutral targets), while recent guidance by the SBTi[7] only allows for removal credits in order to reach Net Zero targets. Furthermore certain buyers want to support the next generation of innovation in the market (e.g. Digital Monitoring, Reporting and Verification enabled by satellite, drone, IoT sensors) and new technological removals not yet ready to be deployed and invest in the future carbon capture to be generated.

Hence there needs to be some differentiation in the Climate Coin offering to cater to various buyer needs. Within the first phase the following Climate Coins are foreseen, with potentially more types to be added based on user demand:

- **EUA - "EUA Coin"**
    - **Description:** Tokenization of EU Allowance credits issued by EU Member States, which are used in the European Union Emissions Trading Scheme (EU ETS). Credits are issued on primary market auctions, based on political decisions on how many EUAs to issue each year.
    - **Rationale:** Allows individuals to play a role in driving liquidity in EU ETS markets where only institutional investors play today.

[7] Science Based Targets Initiative

- **VCM incl. DMRV methodologies - “VCM Coin”**
    - **Description:** Tokenization of high-quality VCM credits from today’s market issued by the most credible 3rd party standard providers’ methodologies. In particular including credits from 3rd party standard providers’ methodologies which leverage Digital Monitoring Reporting and Verification technology (e.g. IoT sensors, Soil sensors, Satellite images) in order to generate carbon credits, for project types such as electromobility, agriculture, etc. The Credit Quality Assurance Committee will decide on the precise list of standard setters / methodologies accepted under the “VCM Coin”
    - Rationale: Allows Climate Coin to make an immediate entry into the voluntary carbon market until the CCP standard is launched. Furthermore the focus on DMRV methodologies will help drive the next generation of technological capabilities while incentivizing individuals to take further climate action.

- **CCP Basic – “CCP Coin”**
    - **Description:** Once the new CCP standard is released a Climate Coin may be launched which accepts any credits that meet this standard. CCP compliant carbon credits are likely to include the highest quality methodologies for REDD+, cookstoves, energy efficiency, waste management, etc. While many removal credits would be eligible under this standard, they would likely not be converted to CCP Basic credits, due to the large price differential between removal and avoidance / reduction credits. Hence the CCP Basic is likely to largely contain avoidance / reduction credits, which form 90% of today's market.
    - **Rationale:** “CCP Coin” ensures yet another layer of environmental quality control for buyers that are looking for this assurance. The “CCP Coin” will help drive the overall liquidity, fungibility and price transparency for CCP credits. voluntary carbon markets focusing on the largest parts of today’s markets with avoidance / reduction credits.

- **CCP Removals “CCP Removal Coin”**
    - **Description:** Once the new CCP standard is released a Climate Coin may be launched which accepts any removal credits which meet this standard. This is likely to contain high-quality removal carbon credits, such as reforestation, soil, biochar, BECCS, DACCS, etc.

- **Rationale:** Even though the removals part of the market is only 10% today, it's projected to become 100% of the market by mid-century. Many buyers even today only wish to purchase removal credits (e.g. Microsoft, Stripe, Shopify). It's hence important to be at the forefront of scaling these technologies for the Climate Coin ecosystem.

Longer term, depending on buyer needs, more Climate Coins could be developed, for example to cater for compliance markets (e.g., China, California) or credits with Corresponding Adjustments (a potential international carbon accounting norm to ensure additionality to countries NDCs)

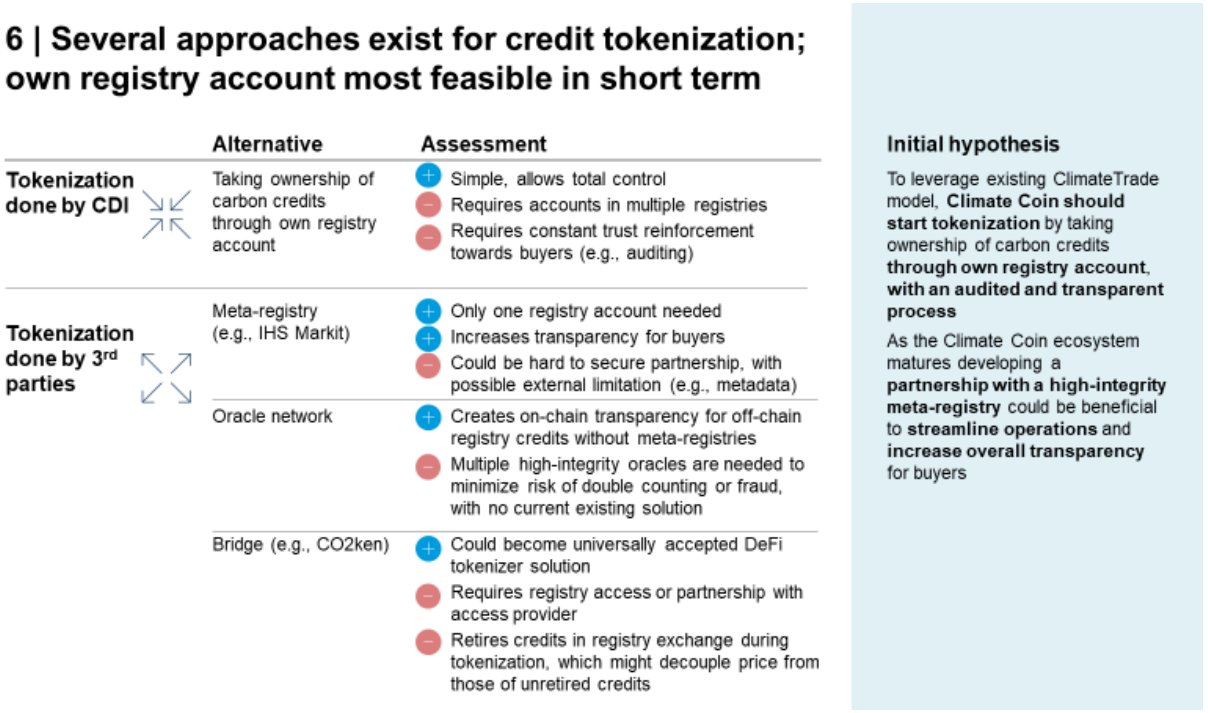
Alongside the Climate Coins a thriving Cli-Fi ecosystem will be developed. The primary purpose would be to enable supply democratization by providing financing options to underbanked project developers. Increased access to capital will support the generation of further carbon credits, both scaling up climate impact and improving economic outcomes for communities. Lending in Climate Coins has the particular advantage for suppliers that they can repay the principal and interest in self-generated Climate Coins from their projects. This means suppliers do not face risks of low future carbon prices impacting their ability to pay back their loan, or any foreign exchange risk. Large CEXs like M2 in Abu Dhabi, can be used as the platform where lending and conversion to fiat would take place in a licensed environment.

Key design blueprint choices for Climate Coin

Each Climate Coin type (e.g. Climate Coin CCP basic) represents a fully fungible unit and can be burned to release carbon credits using the FIFO (First-In-First-Out) principle for credit vintage. Exchange between different Climate Coin types (e.g. between Climate Coin CCP basic and Climate Coin CCP removal) is assured through offering exchange pairings with floating exchange rates, to enable price discovery. Full fungibility of each Climate Coin type is required to achieve real scale and liquidity, to ensure corporate buyers and investors do not need to assess individually every carbon credit they wish to purchase or retire, but know that the fungible product meets a high climate bar.

Every single Climate Coin is intrinsically linked to 1 metric ton of CO2, which retains the 1:1 logic corporates can use to burn Climate Coins to use against their emissions in their corporate claims. The 1:1 logic is also needed in order to apply the FIFO principle outlined above.

Exhibit 14 – Carbon credit tokenization happens through own registry account



6 | Several approaches exist for credit tokenization; own registry account most feasible in short term

	Alternative	Assessment
Tokenization done by CDI	Taking ownership of carbon credits through own registry account	+ Simple, allows total control − Requires accounts in multiple registries − Requires constant trust reinforcement towards buyers (e.g., auditing)
Tokenization done by 3rd parties	Meta-registry (e.g., IHS Markit)	+ Only one registry account needed + Increases transparency for buyers − Could be hard to secure partnership, with possible external limitation (e.g., metadata)
	Oracle network	+ Creates on-chain transparency for off-chain registry credits without meta-registries − Multiple high-integrity oracles are needed to minimize risk of double counting or fraud, with no current existing solution
	Bridge (e.g., CO2ken)	+ Could become universally accepted DeFi tokenizer solution − Requires registry access or partnership with access provider − Retires credits in registry exchange during tokenization, which might decouple price from those of unretired credits

Initial hypothesis

To leverage existing ClimateTrade model, **Climate Coin should start tokenization** by taking ownership of carbon credits **through own registry account**, **with an audited and transparent process**

As the Climate Coin ecosystem matures developing a **partnership with a high-integrity meta-registry** could be beneficial to **streamline operations** and **increase overall transparency** for buyers

The tokenization happens via an NFT, which captures the metadata (e.g., project type, project location, vintage, number of verified carbon units, etc.) from the registry and creates an 'on-chain twin' of the carbon credit's certificate. Leveraging NFT technology offers two main operational benefits: (1) traceability, through being able to identify which projects were tokenized, how many of the project's carbon credits were retired, etc., and (2) transparency through being able to transparently demonstrate proof of underlying projects at any point in time. However, no trading of NFT as a product is allowed, as the NFTs are purely used as an on-chain transfer mechanism. Separate trading would reduce the incentive to enter a high-value NFT into the Climate Coin pool and hence only have the worst quality NFTs would enter. Also, selling NFT attributes separately beyond the carbon component would not allow the creation of a standardized and commoditized product, and would also break the FIFO principle of automatically retiring older vintage credits first in case of token burning, as NFTs containing the oldest credits could not be fractionally burned without the NFT owner's consent.

Governance structure

The governance structure of the Climate Coin ecosystem will utilize a mixed governance structure with both on-chain and off-chain participation and a tiered approach that enables the involvement of non-experts in governance without threatening credit quality-control. The tier-1 governance body is an off-chain body which consists of two completely separate stakeholders: Climate Digital Investments (CDI) and the Credit Quality Assurance Committee. CDI has a decision over which community-backed proposals can go for the final executive vote for critical ecosystem related decisions, except for credit and project quality (e.g., governance process, protocol changes, product roadmap, etc.). The Credit Quality Assurance Committee will consist of reputable climate entities, such as eNGOs or TSVCM members and will decide independently from any other stakeholder on community-backed proposals for credit quality (e.g., applicable VVB, standards, etc.).

All critical topics (including credit quality) will be pre-defined and proactively managed to allow maximum transparency for tier-2 stakeholders. Both CDI and the Credit Quality Assurance Committee have the right to use lazy consensus (i.e., propose a vote which gets passed unless a certain percentage of the governance token holders oppose the vote) on certain pre-defined topics to ensure that ecosystem critical decisions can be made even with low voter participation. No tier-1 stakeholder gets any governance tokens from the initial token allocation, as off-chain governance is not linked to governance token holdings.

Tier-2 governance is the on-chain governance body, which is made up of several different stakeholders. All governance token holders with a certain proportion of governance tokens can submit proposals and vote on any ecosystem related topic by locking in governance tokens into a voting contract. This is to ensure that malicious actors cannot obtain a small percentage of tokens and spam the governance process with inadequate proposals. Topics submitted for proposal can include, but are not limited to (1) governance (e.g., voting process), (2) Climate Coin ecosystem mechanics (e.g., credit standard), and (3) other topics (e.g., treasury fund allocation). Community-backed proposals on critical topics are shown to the relevant tier-1 (off-chain) body, and on non-critical topics are executed automatically.

Using a mixed and tiered governance structure offers many benefits. As all governance token holders (with a minimal stake) are allowed to propose and vote on all ecosystem related topics, it enables the emergence of bottom-up ideas, with quick on-chain decision making for non-critical topics. At the same time the off-chain tier-1 governance body allows for the separation of critical topics with specialized expertise needed (e.g., accepted standards) for additional security. To guarantee the highest integrity decision making regarding credit quality, the Credit Quality Assurance Committee is kept separate from the general ecosystem implementation body (CDI) or the governance token holders, and it does

not hold governance tokens directly as its remuneration is paid in fiat to minimize conflict of interest.

There will be an hybrid off-on chain approach, executive votings and polls to reach consensus on community proposals that should go for executive voting.

Highly technical decisions will be made by the Credit Quality Committee and The Organization using a lazy consensus method for matters such as the kind of carbon credits that are allowed to enter the system.

Other examples of decisions subject to governance voting are the following.

- Protocol Tokenization fee for legacy and DMRV methodologies
- Pools to be created
- Inclusion of different climate assets than carbon credits
- Reflection fee on Climate Coin transactions for project developers.
- Destiny of reflections and percentage
- Type of transactions excluded from reflection, i.e retirement transactions
- Transferability of tokens that give right to project developers that tokenize their registered credits to receive a portion of the reflections originating from Climate Coin transactions.
- Retirement methods
- Conditions for uncollateralized loans for project developers
- Approval of uncollateralized loans (amount to be staked, debt ceiling, interest rate....)
- Conditions for collateralized loans (collateralization ratio, debt ceiling, interest rate, liquidation penalty etc)
- Partnerships
- Approval of credit originators for uncollateralized loans and % percentage of governance tokens to be staked for opening a credit line for project developers
- Split of interest paid for loans
- Governance mechanisms (metagovernance)

Exhibit 16 – Overview of the governance structure

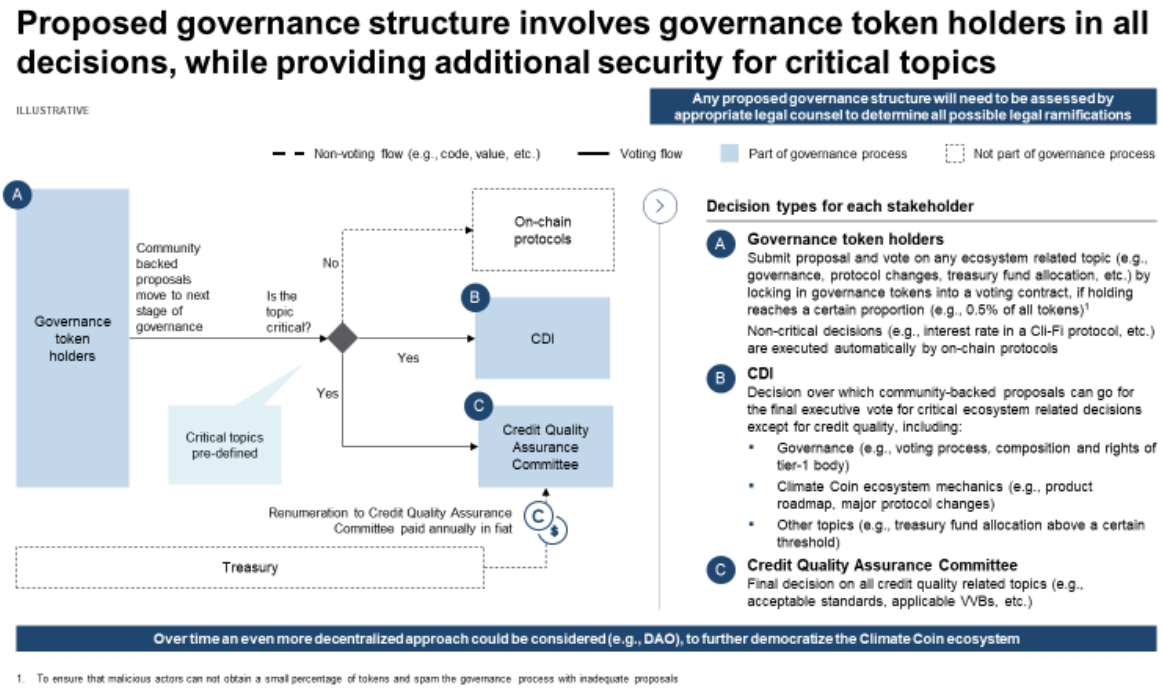


Exhibit 17 – Main stakeholders within the governance structure

GreenClimateDAO

Mission

To massively accelerate Earth's decarbonization providing proper incentives enabled by new models of human collaboration and green finance use cases.

Vision

Contributing to a world in which sustainability is no more an objective but the standard.

CO2 FUND

Every financial transaction of Climatecoins generates a % of the transaction to be sent to the CO2 Fund.

This % is set by ClimaT token holders.

Every quarter, entities who tokenise their carbon credits as ClimateCoins can claim a portion of the Fund proportionally to the ClimateCoins they have entered into the ecosystem.

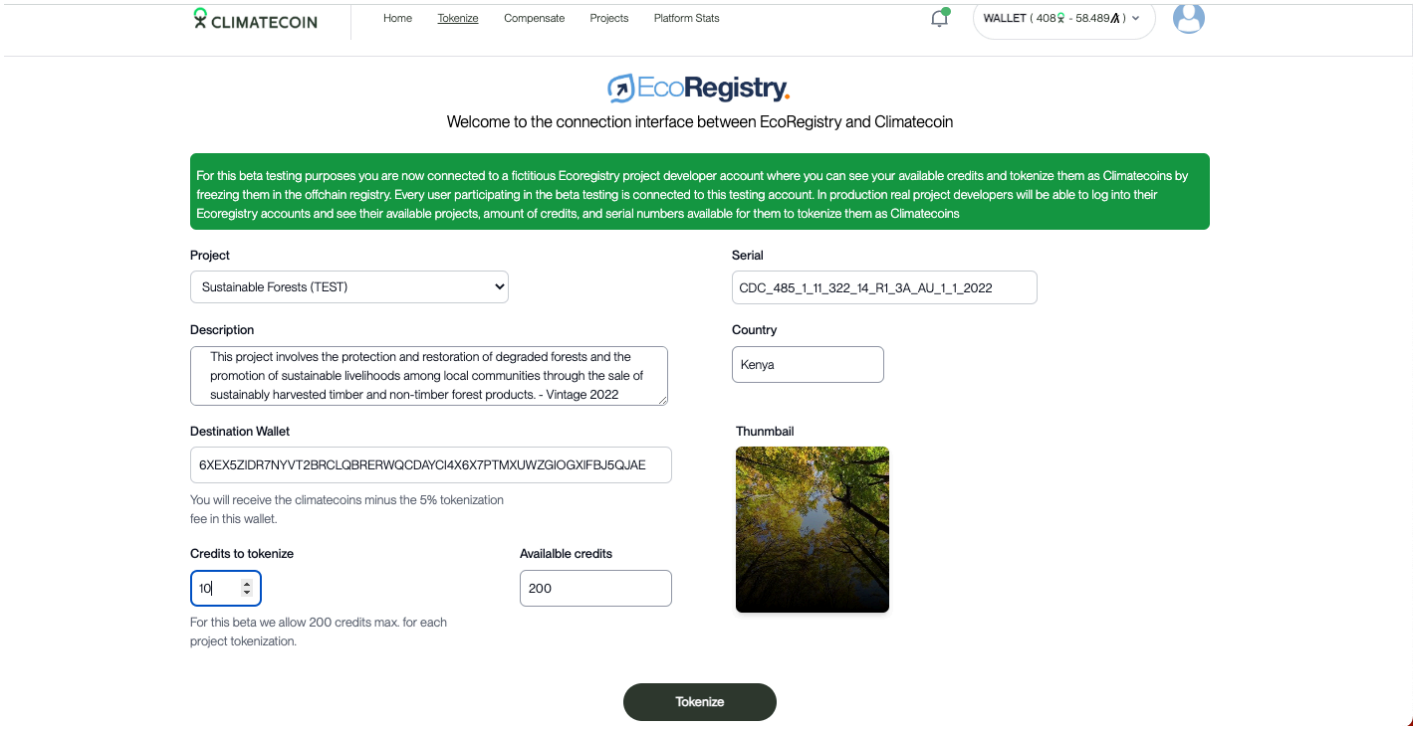
The CO2 fund is the mechanism used to reward carbon credit developers for their Planet Healing action, allowing them to benefit from the potential upside in the price of carbon credits.

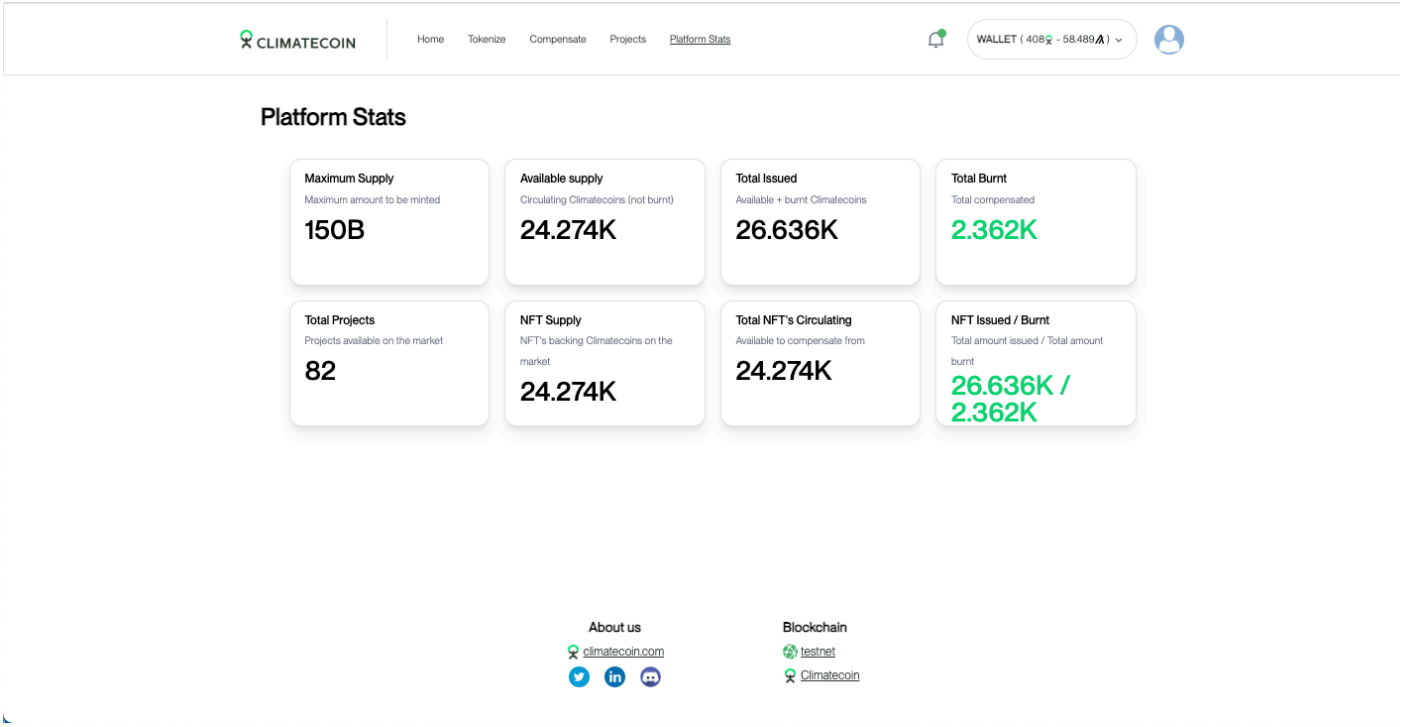
Platform features

Tokenization of carbon credits

ClimateCoin has developed a platform for the tokenization of carbon credits registered in traditional records for their immobilization and issuance as fungible digital tokens backed by those credits, with real-time proof of reserves that guarantees at all times the existence of the credits that back the fungible ClimateCoin in circulation.

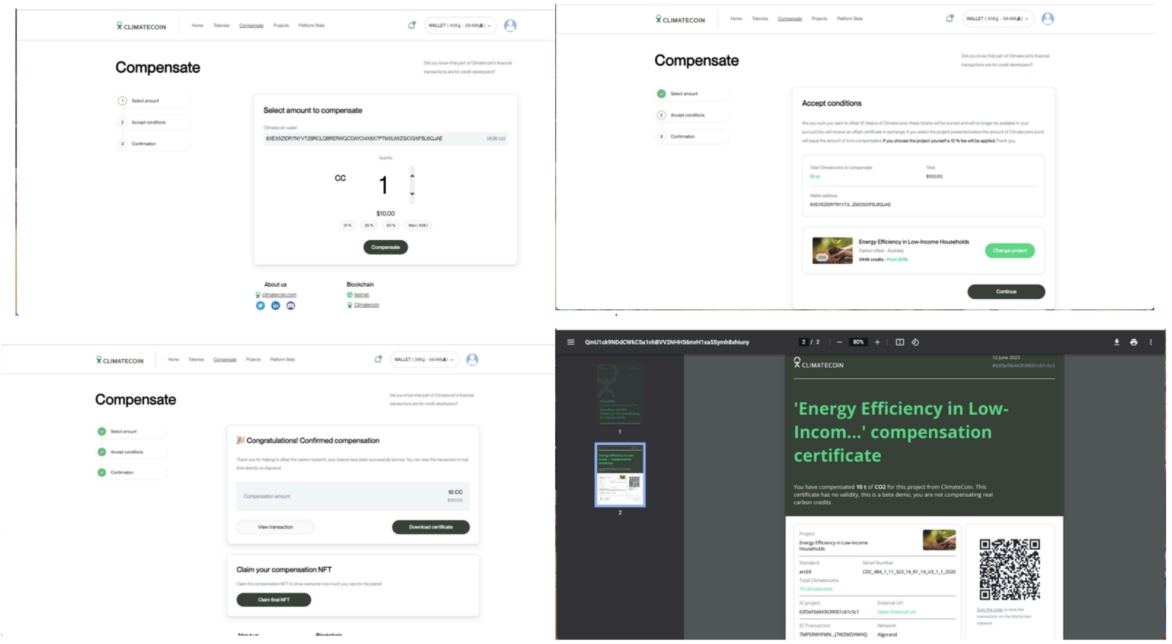
Owners of credits in the records who tokenize them in the form of Climatecoins pay a tokenization fee that is part of the revenue model of The Organization.


CLIMATECOIN
Home
Tokenize
Compensate
Projects
Platform Stats
WALLET (408 - 58.489)
EcoRegistry.
Welcome to the connection interface between EcoRegistry and Climatecoin
For this beta testing purposes you are now connected to a fictitious Ecoregistry project developer account where you can see your available credits and tokenize them as Climatecoins by freezing them in the offchain registry. Every user participating in the beta testing is connected to this testing account. In production real project developers will be able to log into their Ecoregistry accounts and see their available projects, amount of credits, and serial numbers available for them to tokenize them as Climatecoins
Project
Sustainable Forests (TEST)
Serial
CDC_485_1_11_322_14_R1_3A_AU_1_1_2022
Description
This project involves the protection and restoration of degraded forests and the promotion of sustainable livelihoods among local communities through the sale of sustainably harvested timber and non-timber forest products. - Vintage 2022
Country
Kenya
Destination Wallet
6XEX5ZIDR7NYVT2BRCLQBRERWQCDAYCI4X6X7PTMXUWZGIOGXIFBJ5QJAE
You will receive the climatecoins minus the 5% tokenization fee in this wallet.
Thunmbail
Credits to tokenize
10
Availalble credits
200
For this beta we allow 200 credits max. for each project tokenization.
Tokenize

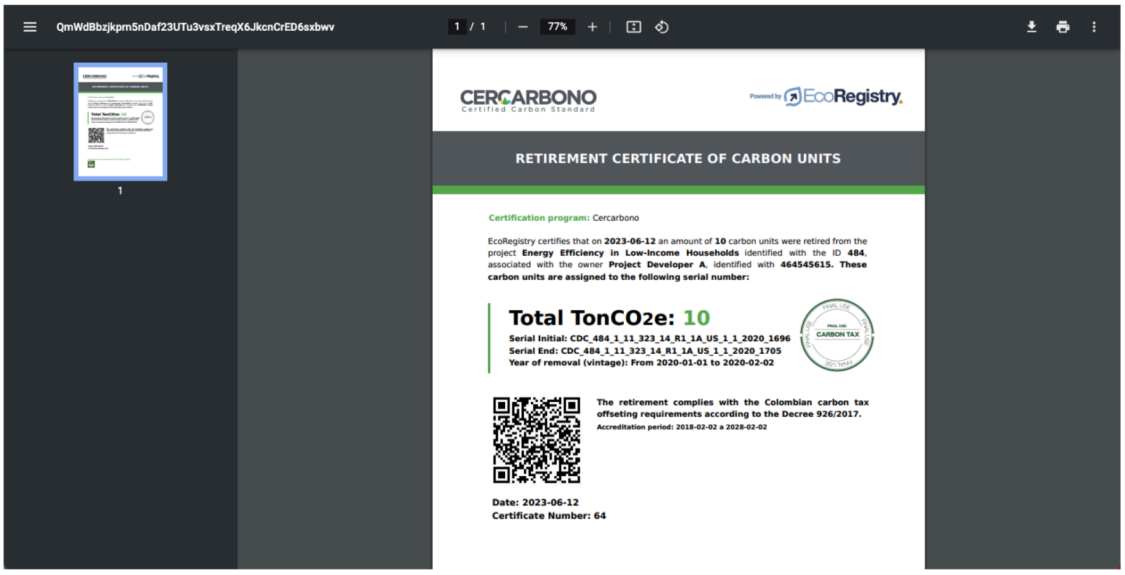

CLIMATECOIN
Home
Tokenize
Compensate
Projects
Platform Stats
WALLET (408 - 58.489)
Platform Stats
Maximum Supply
Maximum amount to be minted
150B
Available supply
Circulating Climatecoins (not burnt)
24.274K
Total Issued
Available + burnt Climatecoins
26.636K
Total Burnt
Total compensated
2.362K
Total Projects
Projects available on the market
82
NFT Supply
NFT's backing Climatecoins on the market
24.274K
Total NFT's Circulating
Available to compensate from
24.274K
NFT Issued / Burnt
Total amount issued / Total amount burnt
26.636K / 2.362K
About us
climatecoin.com
Blockchain
testnet
Climatecoin

Carbon Credit retirement

The platform allows the destruction of Climatecoins owned by a user in exchange for an emissions offset certificate. This process automatically withdraws the credits from the corresponding official registry and issues an emissions offset certificate in the name of the user making the withdrawal.

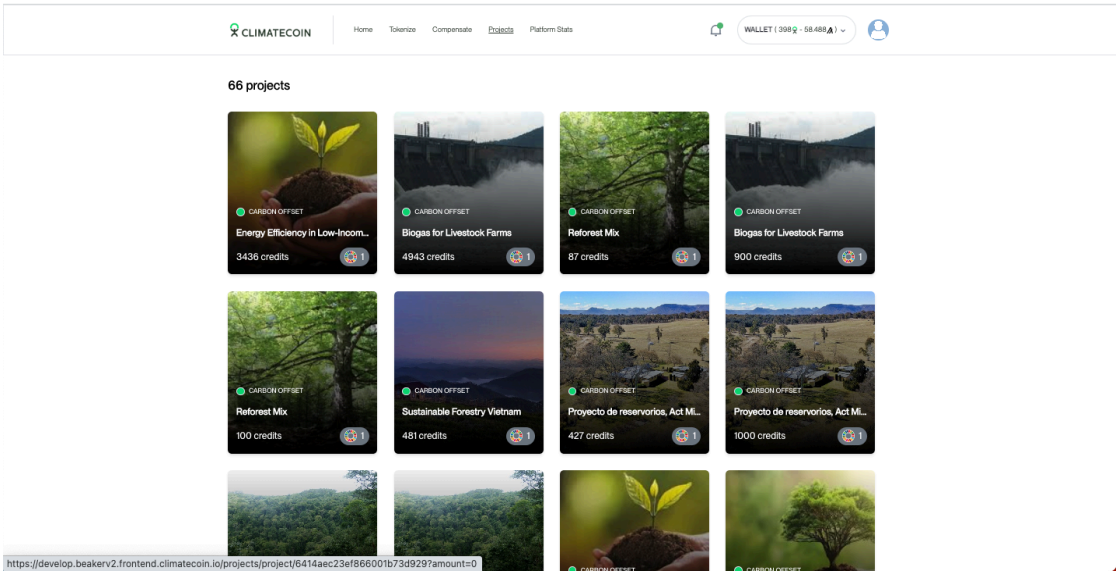


This certificate issued by the platform contains a link to the offset certificate issued by the official registry.



The system proposes to offset by default the oldest credits to maintain the quality of the credit pool as high as possible and discourage users from systematically choosing the most recent projects. The FIFO (First In, First Out) offset method is based on a 1 destroyed Climatecoin = 1 ton offset ratio. If the user wants to choose the offset project from the existing projects on the platform, the ratio will not be 1:1, but they will have to pay a fee in Climatecoins depending on the selected project. This fee is part of the revenue model of Climate Digital Investments SL.

Currently, the tokenization and withdrawal services are in the "beta testing" phase on the Algorand testnet at https://beta.climatecoin.io.



Carbon Credit Batch Auction Platform

Climatecoin will provide carbon project developers with an onchain batch auction system based on the Gnosis Auction protocol. This allows developers to sell large batches of credits under more favorable conditions than in OTC markets, and retail buyers to access the same prices as large buyers. The Organization will receive a sales commission on the total auction amount. More information about the "Gnosis Auction" batch auction system can be found at the following link

CLIMAT / CLIMATE COIN liquidity pool

The Organization will use part of the funds from the public sale to purchase carbon credits and tokenize them as ClimateCoins. These ClimateCoins, along with their counterpart in Climat tokens, will be used to create an initial liquidity that will be deployed on Uniswap against the Climat token. The initial price set in this pool will have a discount of at least 5% on the purchase price of the carbon credits. These carbon credits in the form of ClimateCoins can be purchased at a discount using the Climat token immediately after the Climat token is made available to users who acquire it

Cli-Fi Ecosystem

The foundation of a Cli-Fi ecosystem is ClimateCrowd a crowdlending platform to fund decarbonisation projects. It provides collateralised and uncollateralised loans.

12,5% of the Climat supply is allocated to act as a mutual compensation fund for any possible repayment default of uncollateralized loans.

Uncollateralised loans require that a third party stakes Climat tokens as a first level compensation fund to cover any possible default from the borrowers he brought to the platform. In exchange they receive a part of the interest repaid as reward.

Users can lend and receive back in USDC or ClimateCoins or create compounding donations sent back to the fund to be lent over time.

- ClimateCrowd receives funds as donations, investments or hybrid (based on % selected by the funder)
- Loyalty programs or green payment API's are also a source of funds for the crowdlending platform
- Receivers of the funds have to repay in credits the fiat amount + interest calculated when the loan is made with reference Climate Coin prices at that time
- Funders can choose if they want to receive the credits themselves as an investment, the crowdlending platform receives the credits to be sold to market and borrowed again as a donation, or to split the amount in investment / donation in a chosen %
- All the donations received to be loaned by the fund makes compound interest work for our Planet’s healing

Collateralized loans

- Project developers can lock up Climate Coins as collateral for receiving USDC. Collateralization ratio to be defined by governance
- If there is a default, locked up Climate Coins are sold to market to cover the default and reimburse the funds to the Climate Crowd platform or investor in the set %

Uncollateralized loans

- The crowdlending platform will receive 12,5 % of the governance token supply to cover possible defaults of approved loans.

- Credit originators can open credit lines to fund development projects by staking governance tokens and receive part of the interest.

- When there is a default, first tokens to be sold are the ones of the credit originator, the governance tokens initial allocation will only be used as a last resort.

- Repayment is also made in credits with the amount settled at the loan signature.

In both cases, the flow of funds, both in the loan and in the repayment, is managed by smart contracts that only allow the withdrawal of funds by the applicant of the collaborative loan and in the repayment only make repayments to the addresses of the users who have contributed to the crowdlending project. In this way, at no time does Climate Digital Investments SL have access to, custody, or manage third-party funds.

Carbon Credit Money legos

Because of its impact in scaling supply of Voluntary markets, collateralized and uncollateralized loans will be the first use case to develop in-house, however different innovative financial products and use cases will be developed and launched internally and / or through partnerships.

Our objective is to make Climatecoin for the nascent Decentralized Climate Finance ecosystem what ETH is to DeFi today.

Carbon Structured Finance

As the global community intensifies its efforts to combat climate change, the financial sector is evolving to play a pivotal role in this transition. Carbon Structured Finance (CSF) emerges as a groundbreaking approach, blending traditional financial mechanisms with the burgeoning market of the intersection of carbon credits and web3.

CSF involves the innovative securitization of carbon credits, transforming them into tradable financial assets. This process allows for the pooling of diverse carbon credits, thereby diversifying risk and creating instruments that can be sold to a broader spectrum of investors. Essentially, CSF bridges the gap between the environmental imperative to reduce carbon emissions and the financial world's mechanisms to fund such endeavors, through instruments such as the following

- Carbon Credit Tokenized Mutual Funds: Investment vehicles in the DeFi space that focus on diversified portfolios of tokenized carbon credits.
- Carbon Credit-Backed Securities (CCBS) on DeFi: Securities backed by a diversified pool of tokenized carbon credits, offering returns derived from the sale and appreciation of these credits on decentralized exchanges.
- Decentralized Carbon Credit Pools (DCCP): Pools of tokenized carbon credits on platforms like Uniswap or Sushiswap, allowing users to provide liquidity and earn rewards.
- Carbon Credit Derivatives: Financial instruments whose value is derived from the performance of underlying carbon credits.
- Carbon Credit Yield Farms: Users can stake their tokenized carbon credits or DeFi tokens to earn yields, derived from the appreciation and trading of these credits.
- Carbon Credit Collateralized Loans: Platforms like Aave or Compound can allow users to collateralize their tokenized carbon credits to borrow other assets.
- DeFi Green Bonds: Tokenized bonds on platforms like MakerDAO, backed by carbon credits, and issued specifically for eco-friendly projects.
- Carbon Credit DAOs: Decentralized Autonomous Organizations focused on purchasing, managing, and utilizing carbon credits in the DeFi space.

Revenue streams for Climatecoin

- Tokenization Fees
- Loan opening fees
- Part of the interest paid by for collateralized and uncollateralized loans
- Commissions and management fees for the issuance of carbon structured finance products
- Sale of treasury carbon credits
- Retirement fees
- Batch auction fees
- Part of reflections generated by transactions

Concrete figures and revenue streams are voted and settled by offchain and onchain governance.

Token Virtuous cycle

Carbon project developers issue Climatecoins, and they receive an incentive as beneficiaries of the CO2 Fund (receiver of reflections of ClimateCoin financial transactions) which returns value to the people actually executing decarbonization projects and incentivizes the issuance of Climatecoins which gives more value to the Governance token.

Climatecoins “stored” (locked) with long term commitment receive Climat governance incentives. By providing incentives to get tokenised credits out of circulation we constrain supply while at the same time, providing funding for the development of new decarbonisation projects, which will issue new Climatecoins, we neutralize the effect of demand pressure while scaling up supply.

Same happens with Climatecoins locked as collateral for loans in the ClimateCrowd platform (exclusive to decarbonisation project developers) and in third party platforms (open for any use of funds) and future internal and external Cli-Fi developments.

The ClimateCrowd crowdlending platform provides collateralized and uncollateralized loans to decarbonisation projects to be repaid in an amount of Climatecoins calculated with the reference price of the loan execution. Part of the interest paid in Climatecoins of those credits is received by the DAO to either feed the mutual compensation fund (swapping Climatecoins for Climats) and increase the compensation fund for defaults, which allows to increase the borrowing capacity with the same level of risk, and attracting more investment,

that results in the issuance of more Climate Coins. If ClimateCrowd is highly collateralized Climats can be burnt upon successful voting.

Projects that opt to uncollateralized borrowing must be brought by a credit originator that should be accepted by the DAO and stake governance tokens proportional to the amount of available credit, to cover any possible default, in exchange, the credit originator receives part of the interest paid by the borrower.

Investors can send stables to the Crowdlending platform to get repaid in stables or ClimateCoins as a “regular” loan, or make compounding donations as the return of capital + interest is reinvested in funding more projects, compound interest to the service of decarbonisation.

If an investor decides to get repaid in stables not Climatecoins, the platform will sell to market the amount of ClimateCoins needed to repay capital and interest and will keep the rest in the treasury.

In summary the issuance of more ClimateCoins gives more value to the governance token, what increases the value of the compensation fund and incentivizes more loans to be given, that result in the issuance of more Climatecoins, on top of that, governance token can be burnt in situations of overcollateralization of the system if positively voted.

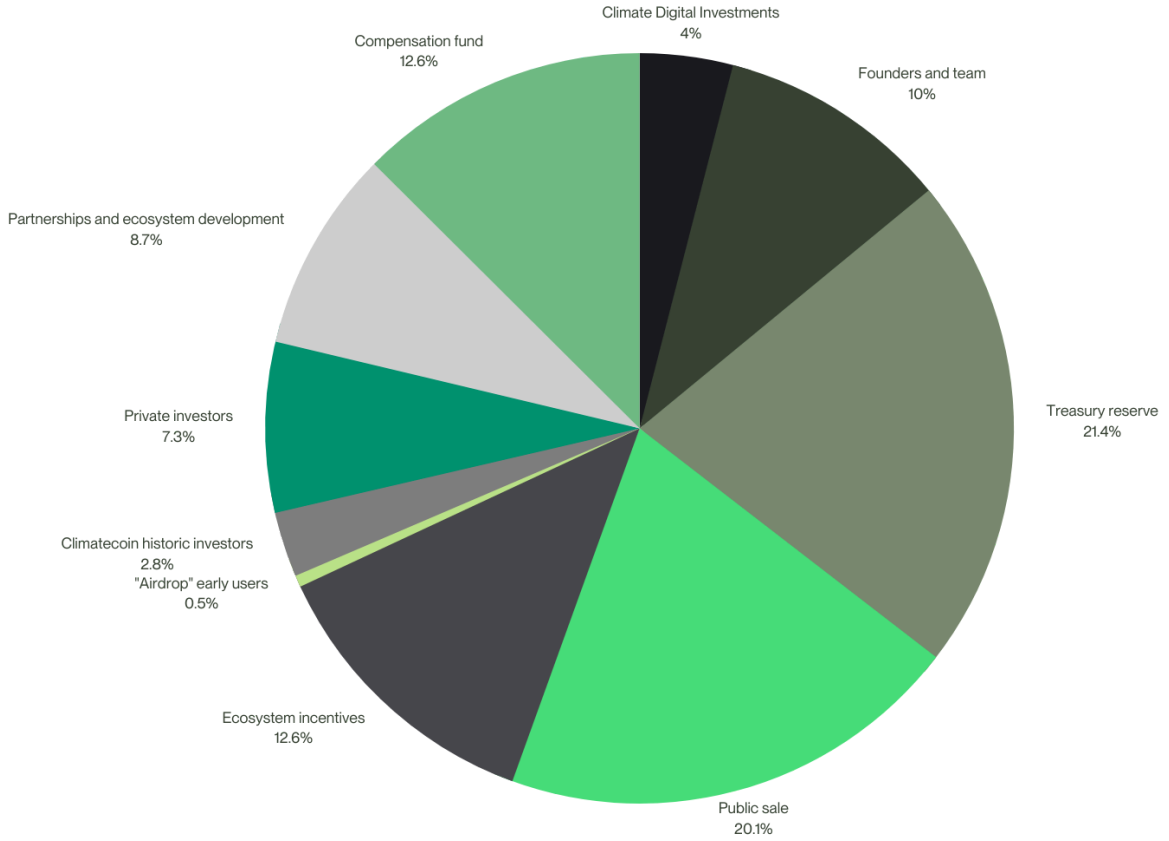
ClimaT token utility summary

- Governance token
- Purchase of discounted carbon credits
- Withdrawal of carbon credits from selected projects with a better fee.
- Use as collateral in uncollateralized crowdfunding projects to receive a portion of the originated interest rate.
- Receiving a higher return on amounts lent through the crowdlending platform.
- Discounts on the tokenization fee (project developers).
- Access to the launch of credit auctions (project developers).
- Access to participate in batch carbon credit auctions
- Ecosystem incentives

Token parameters and distribution

Total Climat Supply: 2.000.000.000 Climats
Native network: EVM (ERC20)
Public sale Climat token price: 0.025 USD / Climat
Public sale allocation: 20 % - 400.000.000 Climats

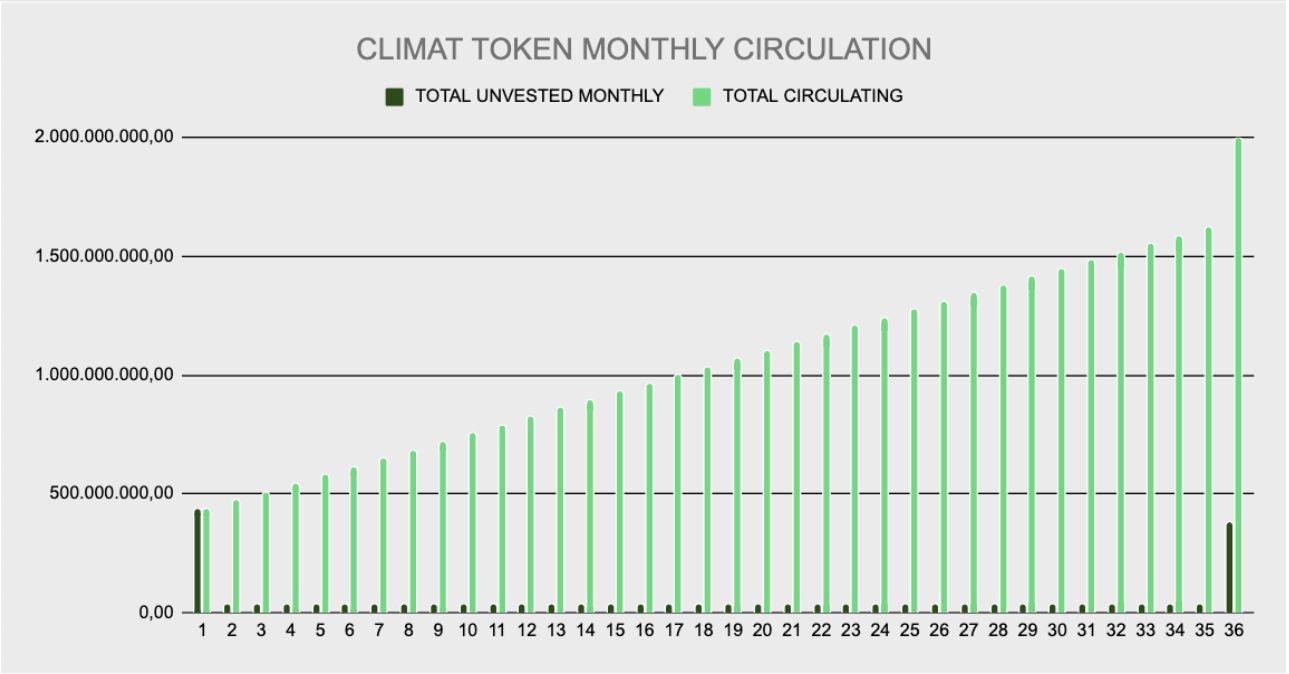
	Number of tokens	Total percentage
Climatecoin Historic investors	55.000.000	2,750%
Seed investors	55.555.555	2,778%
Private investment	89.555.555	4,478%
Public sale	400.000.000	20,000%
Compensation Fund	250.000.000	12,500%
Advisors	10.000.000	0,500%
Airdrop	10.000.000	0,500%
Ecosystem incentives	250.000.000	12,500%
Partnerships and ecosystem development	174.400.000	8,720%
Founders and team	200.000.000	10,000%
Treasury reserve	425.488.890	21,274%
Climate Digital Investments SL	80.000.000	4,000%



- The treasury reserve will be operated by The designed organization transparently until it can be handled by the DAO. Market making needs, incentives for carbon credits locking, partnerships, or additional fund raising might be some of the uses of the treasury. Vested for three years.
- The bucket historic Climatecoin investors is dedicated to the investors of the first Climatecoin launch back in 2017, and to reimburse their investment. Vested for three years.
- Today Climatecoin Digital Investments is the company that bootstraps the DAO and as such receives a portion of the allocation, vested for three years.
- Private sale: allocation dedicated to early private investors. 3 Years vesting.
- Public sale: Allocation that goes to the public. No vesting.
- Airdrops and advisors: advisors of the board and high profile personalities will be rewarded with tokens in exchange for their advocacy and professional services. There is also a small airdrop foreseen to thousands of people in the intersection of crypto and Climat. Tokens for advisors vested for three years. No vesting in the airdrop.
- Ecosystem incentives: this bucket is destined to incentivize behaviors that are positive for the ecosystem, as locking (storing) Climatecoins to take them out of circulation.

- Compensation fund: 12,5 % of the supply will serve to act as a collateral for possible defaults in uncollateralized loans made to carbon credit developers that need funding to produce more credits. Linear vesting.
- Founders and team : Half of the team allocation % is dedicated to the current team and the other half to incentivise future key team members. Vested for three years.
- 8.72% of the maximum token supply is reserved for new integrations with official registries, and partnerships with entities in the climate and WEB3 fields

Inflation chart



Use of funds

The funds obtained from the issuance of the CLIMAT utility token will help the Organization improve its technological development and portfolio of products and services offered to the market, as well as generate user traction globally, and bootstrap the initial liquidity of Climatecoins. Below we show the detailed use of the funds, which may vary depending on market conditions and project needs, always seeking the satisfaction of the interests of the Climatecoin ecosystem users.

Purchase of carbon credits	40,00%
Technology	28,00%
Marketing and business development	19,00%
Legal and operations	13,00%

How Value is Created in the ClimateCoin Ecosystem and How Climat Captures That Value

The ClimateCoin ecosystem is uniquely engineered to foster economic, social, and environmental value through its innovative use of blockchain technology for carbon credit tokenization and project financing. Central to this ecosystem is the Climat token, which not only represents governance authority but also encapsulates the project's ethos of sustainable growth and impactful climate action.

In the transformative world of ClimateCoin, value creation and capture are ingeniously designed to propel the ecosystem towards its ultimate goal: accelerating Earth's decarbonization. This ecosystem not only leverages the burgeoning trend of RWA tokenization but also establishes a robust framework for sustainable financial growth, directly tied to tangible climate action. Here, we elucidate how this innovative approach not only generates revenue but also perpetuates a virtuous cycle that enriches both the ecosystem and its participants, particularly through the ClimaT governance token.

Here, we delve into the multifaceted ways Climat captures and delivers value:

Economic Value Capture and Delivery

- **Revenue Stream Governance:** ClimaT token holders play a pivotal role in guiding the ecosystem's financial strategies, from setting tokenization fees to deciding interest rates. This governance extends to overseeing revenue streams that are critical for the ecosystem's sustainability and expansion, ensuring that economic benefits are aligned with token holders' interests.
- **Supply Management for Value Stability:** Through mechanisms that encourage the locking of ClimateCoins, Climat directly influences the ecosystem's token supply, enhancing value stability and growth potential. These mechanisms include long-term commitments to lock tokens and the use of Climatecoins as collateral, which tightens supply and, by extension, augments the intrinsic value of ClimaT through scarcity.
- **Funding Decarbonization Projects:** Climat's governance framework allows token holders to direct funding towards high-impact decarbonization projects. This not only generates new Climatecoins, fostering a healthy demand-supply equilibrium, but also ensures that the ecosystem continuously contributes to tangible climate solutions, enhancing the overall value proposition for investors.

Revenue Streams: The Foundation of Value

The ClimateCoin ecosystem thrives on diverse and strategically developed sources of revenue, including:

- **Tokenization and retirement Fees**: Charges for converting carbon credits into digital tokens, tapping into the RWA tokenization trend and its potential for market expansion. When offsetting from a selected (NOT FIFO) projects fees are also generated
- **Loan Opening and Interest Fees:** Profits from facilitating financing for decarbonization projects, harnessing the power of both collateralized and uncollateralized loans.
- **Carbon Structured Finance Products:** Commissions and management fees from innovative financial instruments designed to fund carbon reduction efforts more effectively.
- **Sale and Retirement of Treasury Carbon Credits:** Revenue from the strategic management of carbon credit reserves, ensuring liquidity and market stability.
- **Batch Auction Fees and Reflections:** Income from auctioning carbon credits in batches and a portion of the transaction-based reflections, enhancing liquidity and participant engagement (if voted positively by governance)

These revenue streams, governed by both off-chain and on-chain mechanisms, ensure that the ClimateCoin ecosystem not only sustains itself but also grows, driven by the principles of transparency, accountability, and community involvement.

Social and Environmental Value

- **Democratic Participation and Empowerment:** By providing governance rights, Climat tokens democratize decision-making within the Climatecoin ecosystem. This empowerment fosters a community-oriented approach where token holders can steer the project towards initiatives with high social and environmental impacts, embedding a sense of ownership and shared responsibility
- **Accelerating Global Decarbonization Efforts:** At its core, the value of Climat is intrinsically linked to its effectiveness in funding and scaling carbon projects. By incentivizing the development of such initiatives, Climat token holders contribute to a broader social and environmental mission, leveraging economic tools to foster global change and sustainability.
- **Enhancing Transparency and Accountability:** Through the Climat governance model, token holders ensure that the ecosystem operates with transparency and accountability, especially in carbon credit verification and project funding. This not

only strengthens the trust and credibility of the platform but also elevates its standing as a leader in ethical and impactful climate finance.

At the heart of ClimateCoin's innovative ecosystem lies a self-reinforcing virtuous cycle that amplifies value creation and capture:

- **Incentivizing Carbon Project Developers:** Developers are encouraged to issue ClimateCoins for their projects, directly contributing to the decarbonization effort. In return, they receive incentives from the CO2 Fund, funded by ecosystem transactions, which bolsters the issuance of ClimateCoins.
- **Supply Constraint and Funding for New Projects:** By incentivizing the locking of ClimateCoins, whether through long-term commitments or as collateral, the ecosystem constrains supply. This, in turn, funds the development of new decarbonization projects, maintaining balance in the demand and supply dynamics.
- **Enhanced Borrowing Capacity and Investment Attraction:** Through the ClimateCrowd platform, the ecosystem provides essential financing to decarbonization projects, repaid in ClimateCoins. This repayment mechanism feeds back into the ecosystem, enhancing the mutual compensation fund and attracting more investment.
- **Governance Token Value and Burn Mechanism:** The issuance of more ClimateCoins inherently increases the value of the Climat governance token by expanding the compensation fund and incentivizing further loans. In situations of overcollateralization, Climat tokens can be burnt, further enhancing their value through scarcity.

The integration of these elements into a cohesive cycle ensures that the value generated within the ClimateCoin ecosystem is not just captured but amplified, particularly through the ClimaT token. This governance token, emblematic of participation and influence within the ecosystem, becomes more valuable as the ecosystem expands its reach and impact. By directly linking the financial mechanisms of the platform to tangible climate action, ClimateCoin sets a new standard for how blockchain technology can be harnessed for environmental sustainability.

Users of the Climatecoin ecosystem are not just using a digital asset; they are contributing to a scalable, self-sustaining ecosystem that offers financial incentives aligned with critical global decarbonization efforts. This innovative approach promises a profound impact, marking a significant step forward in the achievement of Climate Balance.

Team, advisors and partners

Team

Francisco Benedito - Co-Founder & Chairman

Francisco Benedito is the co-founder of ClimateTrade and ClimateCoin, and CEO of ClimateTrade. A visionary entrepreneur, he worked in the banking sector for 15 years before dedicating his career to sustainability. Recognized as one of the 100 Latinos most committed to Climate Action and one of 22 business leaders most likely to create disruptive change in 2022 by Forbes Spain.

Pedro López - CEO

Pedro López is the co-founder of ClimateTrade and ClimateCoin, and Co-CEO of ClimateCoin. He has more than 15 years of experience in banking and finance and is passionate about building a better world through business. Linkedin technology influencer.

Alex Casas - Head of Product

Co-founder of the Blockchain4Humanity foundation, has been starting and collaborating with ventures in the blockchain 4 impact space since 2016, when he quit managing an outsourcing company with 3.000 employees in three continents. Passionate about the potential of blockchain to create a fairer and more sustainable world.

Rio Roberts - Investor relations & Partnerships

Performance-oriented sales and operations professional. Talented in building and maintaining client relationships and reaching company success metrics. Bringing several years of experience working in high-stress roles. Passionate and engaging with a strong attention to detail.

Eduardo Maruri - CMO

Eduardo Maruri Miranda is a creative consultant and entrepreneur with over 30 years of experience in the advertising and marketing industry. He is the co-founder of TRAM Global, a tech sustainability platform on the blockchain, and an advisor at ChargeEuropa, a leading provider of electric vehicle charging solutions in Europe. He is also the chairman of Premios

Verdes, a prestigious award that recognizes the best sustainability campaigns in Latin America.

Eduardo has a proven track record of creating innovative and impactful campaigns that have earned him multiple Cannes Lions, including a Gold Lion in the PR category and a Top Ten Agency of the Decade recognition. He has also led and transformed several regional and global teams and networks, such as Grey Latin America, Grey Europe, and Grey Global Creative Board. Eduardo is passionate about promoting social and environmental causes, and has been involved in several initiatives and projects that support the conservation of the Amazon rainforest, the empowerment of women, and the development of creative leadership.

Anastasia Vitruk - Head of Growth

Growth Lead with a wealth of experience in accelerating tech, lifestyle, and sustainability companies. Renowned for implementing successful marketing and GTM strategies, boosting user acquisition and retention, building communities, and securing fundraising for multiple startups.

Sustainable energy and aerospace enthusiast.

She has worked for companies like LVMH, BBDO Worldwide and HOO KOO E KOO.

Ariel Futorski - Head of Operations

Entrepreneurial operations leader with a passion for innovation and team empowerment. Expert in blockchain, bizdev, and community building. Yoga enthusiast, nature lover, and dedicated lifelong learner. He has worked with renowned web3 brands such as the Algorand Foundation as strategic advisor and Ledger as Web3 Tech specialist.

Pablo Biosca - Full stack developer

He is a seasoned full-stack programmer, responsible for overseeing the technical aspects of projects. With a deep-rooted passion for technology and blockchain spanning several years, he brings a wealth of expertise to the team. He is committed to harnessing the power of blockchain to drive innovation and create solutions for real-world challenges.

Sandra Albero - Community Manager

Web3 and sustainability advocate. With multiple years of experience in the world of Web3, particularly focused on Social Media Management and Communications. She has been dedicated to exploring the intersections between emerging technology and environmental responsibility.

Advisors

Kieren James-Lubin - President and CEO of Blockapps

Kieren James-Lubin is the Founder, President & CEO of BlockApps, an enterprise blockchain platform company whose mission is to connect individuals, businesses, and industries through global cooperation and trust.

Before founding BlockApps, Kieren was instrumental in working on Ethereum prior to its launch. He used this knowledge to help build BlockApps' initial product, STRATO. Kieren is responsible for architecting and implementing BlockApps RESTful API and surrounding products & components, including the authorization framework, peer to peer networking code, Node.js client, and third party integrations. Leveraging his extensive background in technology, Kieren is now responsible for maintaining and growing BlockApps' business.

Kieren was all-but-dissertation at UC Berkeley in Mathematical Physics and holds a B.A. in Mathematics from Princeton University. He is also Co-Chair of the Technical Steering Committee at Enterprise Ethereum Alliance.

David Kumaran - Satya Studio / Mentor / Investor

Co-Founder of The DAO and current partner of Satya Studio.
As a partner at Satya Studio, he has leveraged his extensive experience in building and investing in startups to help the next generation of entrepreneurs navigate the ideas maze of their early-stage ventures. He has been involved in creating and contributing to pre-seed to series B startups for over 15 years, with 5 successful exits and over $100M raised.

He is passionate about societal innovation and using AI and blockchain technologies to enhance human consciousness and design economic models that are human-focused, inclusive, and sustainable. He works with founders on creating a flywheel around product commercialization and growth, aligning stage-based financing with stage-based company building. He also invests in and advises companies that share his vision.

Jon Fatelevich - CEO and Co Founder StadioPlus

Former professional basketball player. He is the founder of various companies such as StadioPlus, PhysioMRI, Scoutim, Cirkuit Planet, Mywigo Smartphones, Fates Investments and 4TE ventures; and he has invested in more than 80 Startups personally and through his companies.

José Javier Guarderas - General Manager Sambito and CEO Premios Verdes

Sambito is a company that provides environmental solutions that are linked to the circular economy, resource savings, carbon footprint and more.

Los Premios Verdes has 3 Cornerstones: the planetary boundaries described by Rocktro¨m (published by the Resilience Center of the University of Stockholm, Sweden), the 2050 agenda of the World Business Council for The UN SDGs.

Benedetto Biondi - CEO Folks Finance

Engineer with three years of experience with Blockchain Italia SRL as Blockchain Innovation Manager. Benedetto has expertise in the integration and application of blockchain in notarization, tokenization, SSI, DAO, and DeFi.

Keatly Haldeman – Co-Founder and CEO of Dequency, the first web3 music licensing marketplace.

Keatly Haldeman is a pioneer in the field of blockchain and copyright management, known for his entrepreneurial spirit and innovative approach. As a founding partner and CEO of Riptide Music Group, a global publishing company and record label, he signed music from internationally-recognized and award-winning artists such as Major Lazer, Foster The People, Selena Gomez, Migos, Quavo, Ziggy Marley, and Fatboy Slim.

An obsession with cryptocurrency and emerging technologies led Keatly to raise nearly $5 million for Dequency, the first web3 music licensing marketplace, demonstrating his adeptness in using experimental technology to benefit creative industries. At Dequency, he led product development, crafting licensing systems for tech platforms, and diving deep into the AI and crypto/web3/blockchain industry.

His belief that music often leads tech innovation fuels his passion for working at the forefront of technological advancements. Moreover, Keatly is deeply passionate about leveraging technology to address climate issues and was an early investor in Tesla, Solar

City and Climate Coin. His unique blend of experience in both the music and technology sectors positions [Your Name] as a visionary leader, constantly seeking to merge creativity with technology to spark opportunities for creators and contribute positively to the world.

Keatly earned a bachelor's degree in electrical engineering from Duke University. He went on to receive his master' degree in music, science & technology from Stanford University.

Steve Suárez - CEO and founder of The Ultimate Gamer

Steve Suarez is an entrepreneur with experience in conceptualizing, executing, and successfully sustaining growth in a broad range of disciplines. Steve's driving philosophy has always been, and continues to be, providing vision and guidance, with a watchful eye on the bottom line.

As a result of his conversations and connections he envisioned a new way to bring gaming to the growing number of enthusiasts around the world. His vision led him to create the Ultimate Gamer which is the world's first proving ground aiming to find the best gamer on the planet. The Ultimate Gamer's inaugural tournament was held in Miami, in March of 2019 and has set the industry on its ear. Steve holds an MBA from the University of Florida.

Alec Saltikoff - Former Head of Sustainability and Energy at JPMorgan Chase &Co

Sustainability, ESG, renewables investments, real estate and energy professional with extensive experience in maximizing asset value by optimizing efficiency, sustainability, and investment strategies. Board Member and Adviser to several firms.

Served as Vice-Chair to the World Green Building Council Corporate Advisory Board, Co-Chair of REBNY Sustainability Committee, director of the Board of Directors of New York Energy Consumers Council (NYECC), Chair of NYECC Energy New York Award (ENYA) Committee. Hold Masters in Electrical Engineering and Executive Certificate in Leadership and Management from MIT Sloan.

Partners and early backers

Legal disclaimers

Disclaimer and Risk Warning: Climatecoin Whitepaper. (issued by Climate Digital Investments SL)

This whitepaper ("Whitepaper") is provided for the purpose of introducing Climatecoin (the "Project"). The information contained in this document is subject to change and may be updated periodically without prior notice. This Whitepaper does not constitute financial, legal, or investment advice, and should not be construed as such.

1. General Risks:

Investing in cryptocurrencies involves significant risks. The extreme volatility of prices, lack of regulation, and market uncertainty can lead to substantial losses. Potential investors should conduct thorough research and carefully assess their risk tolerance before participating in the Project.

2. Changes in Market Conditions:

The cryptocurrency market is highly dynamic and may experience abrupt and unpredictable changes. Prices of digital assets can be influenced by various factors, including macroeconomic events, technological developments, and shifts in market sentiment.

3. Regulatory Aspects:

Cryptocurrency regulations vary by jurisdiction. Investors should be aware of the applicable laws in their country of residence and ensure compliance. Changes in the regulatory environment can significantly impact the viability and valuation of the Project.

4. Technological Development:

The success of the Project depends on the ongoing development of the underlying technology. Participants should recognize the risks associated with potential technical failures, security vulnerabilities, and unforeseen challenges in the implementation of the Project.

5. Uncertainties and Future Projections:

Statements in this Whitepaper regarding future developments, events, or outcomes are forward-looking and subject to risks and uncertainties. There is no guarantee that projections will materialize, and actual results may differ materially from the expectations expressed in this document.

6. Legal Disclaimer:

This Whitepaper does not constitute a binding contract between the Project developers and participants. Provisions and technical features described herein may change without prior notice. Participants should refer to final documents and agreements for detailed and binding information about the Project.

7. Financial Independence:

Participation in the Project does not guarantee financial profits and may result in significant losses. Investors must be prepared to take full responsibility for their financial decisions and understand that achieving financial independence involves considerable risks.

Conclusion:

Participation in the Project carries substantial risks, and investors should conduct their own research. The Project team is not liable for financial losses resulting from participation in the Project.