



TECHNICAL WHITE PAPER

ABFY TOKEN
August ✨ 2021
V1.0



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THE WORLD IS LOOKING AT ESG

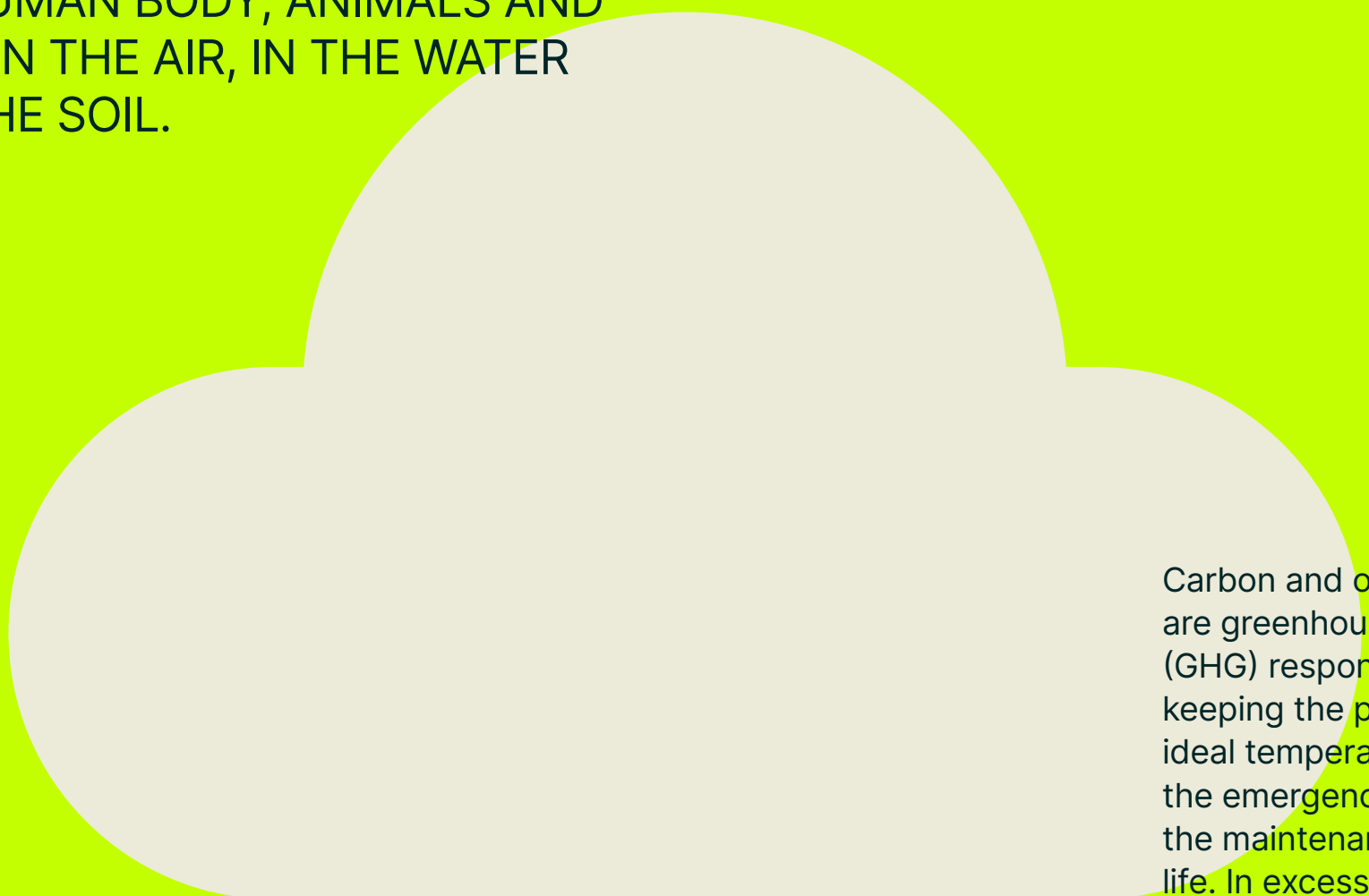
“In 1994, the Triple Bottom Line concept was a good idea for CEOs, investors and ministers not to think only about the financial return on the investment, but also in the economic, social and environmental impact in an integrated way. Now, we realize that its not only about Responsibility, but of Resilience and Recovery too. This mindset renewal will be an opportunity to boost our schedule's change faster than in normal times.”

John Elkington, *The Green Swans*



CLIMATE CHANGE ☀️ SCENARIO

→ CARBON IS IN ALL FORMS OF LIFE:
IN THE HUMAN BODY, ANIMALS AND
PLANTS; IN THE AIR, IN THE WATER
AND IN THE SOIL.



Carbon and ozone are greenhouse gases (GHG) responsible for keeping the planet in ideal temperatures for the emergence and the maintenance of life. In excess in the atmosphere, they put at risk this balance and produce Socio-environmental impacts.

With the Industrial Revolution of the 18th century, the emission of greenhouse gases accelerated, leading to global warming and climate change. In particular, CO₂, produced by respiration, burning of fossil fuels, industrial activity and unsustainable land use, has accumulated in the atmosphere, causing rising sea levels and temperatures, greater climate variability, long periods of drought and of heavy rains. In addition to being an environmental threat, it is a social threat, due to its impacts on food production and for making some regions uninhabitable, causing population exodus.

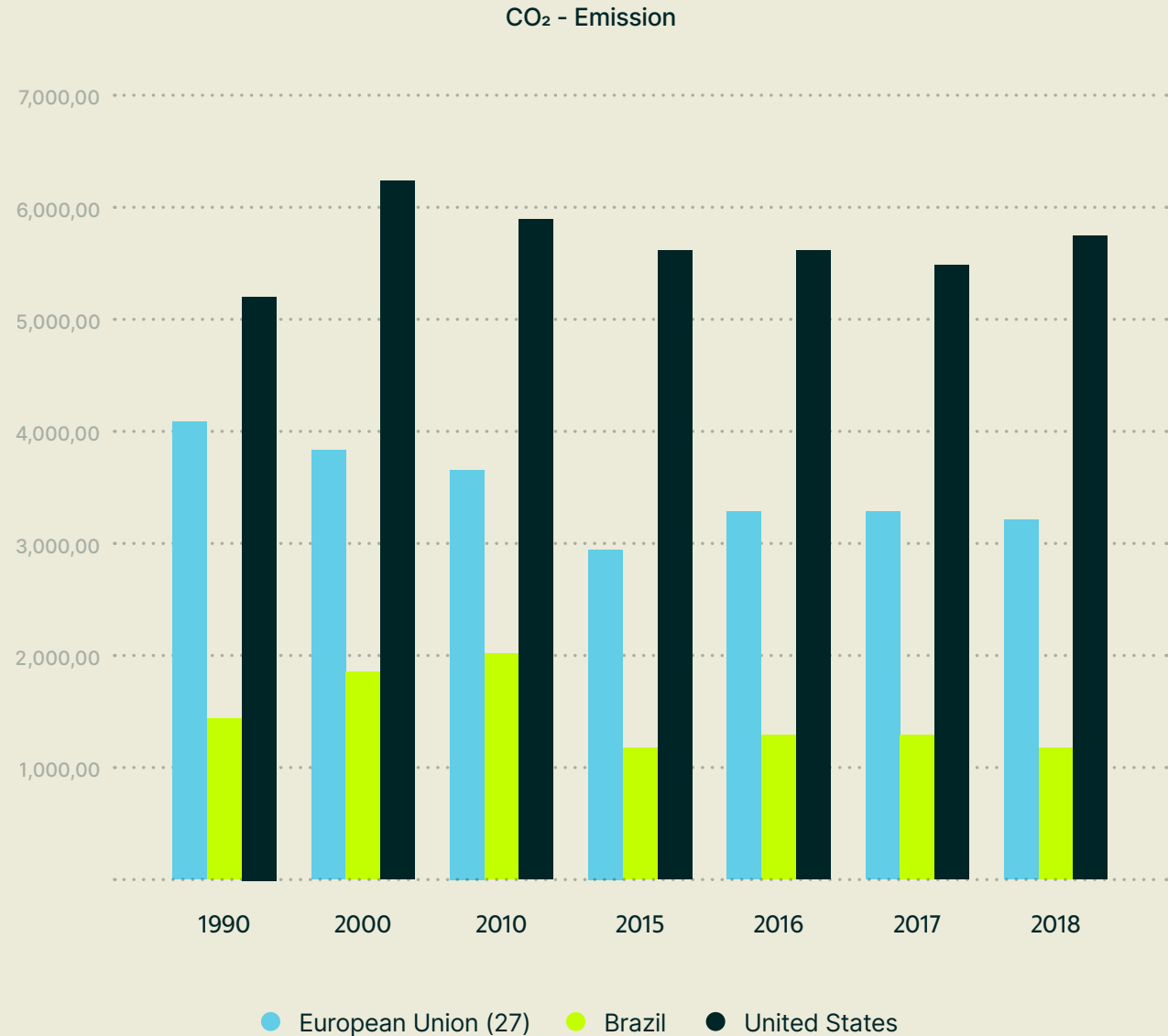


→ In August 1912, on the verge of the industrial revolution, New Zealand newspaper The Rodnem & The Otamatea Times reported the annual global emission of 7,000,000,000 tons of carbon dioxide. In 2016, according to WRI Brazil, the annual global emission was of 49.4 gigatons of CO₂.

World Bank data from 2021 show that CO₂ emissions have been growing over the past 30 years. However, there is a possibility of changing the scenario, with a view to combating Greenhouse Gases (GHGs) via carbon credit compensation and from technological innovations to mitigate their impacts.



Since sustainability became a central theme in discussions about the environment, the market for carbon reduction has been gaining strength around the world. Increasingly, companies and people search to mitigate their footprints. According to research conducted in 2020 by EY-Parthenon, 70% of Brazilians are considering the environmental impacts and social aspects of products they consume and demanding more responsible attitudes from the brands.





CO₂ MARKET

The carbon market was created during ECO-92, held in Rio de Janeiro, under the United Nations Framework Convention on Climate Change (UNFCCC). Brazil was the first country to adhere to this treaty, which established that the 150 signatory countries should limit or reduce their emissions of polluting gases.



→ The first rules came into force in 1994 and, since then, the signatory countries, or “Parties”, have been systematically meeting to find solutions to global warming. So far, there have been carried out 14 Conferences of the Parties (COP), the first in 1997, when the Kyoto Protocol emerged.

With the carbon market, the reduction of emissions started to generate economic value for countries. According to the Convenção-Quadro, a ton of carbon dioxide (CO₂) corresponds to a carbon credit, which can be traded on the international market. The 2015 Paris Agreement gained traction almost a year later, when the signatory nations decided to undertake ambitious joint efforts to combat global warming. Until then, only developed countries had targets and could trade their credits. With the agreement, the market expanded to 194 countries.



THERE ARE THREE MECHANISMS THAT GOVERN THE CARBON MARKET:

JOINT IMPLEMENTATION (JI)

Developed countries act in cooperation to achieve goals.

INTERNATIONAL EMISSION COMMERCE (IEC)

Allows countries to trade the leftovers.

CLEAN DEVELOPMENT MECHANISM (CDM)

Allows the creation of projects for emission reduction in developing countries that do not have fixed targets by the Protocol.



Acting in the carbon market brings many benefits to companies, such as by proving the reduction in emissions, they can obtain carbon credits that can be traded. In addition to the economic benefits, there are image benefits, as society increasingly values companies committed to combating climate change.



CO₂, COMPANIES AND SOCIETY

Developing carbon capture technologies and new energy sources are sustainable transformations with long-term execution. Opting for environmental management and investing in the circular economy, with the engagement of society, may be a shorter way to regenerate natural systems and allow countries to meet people's needs without depleting the planet's resources. Society can further accelerate times, opting for sustainable products and demanding information about their origin, production systems and the purpose of the brands involved.

Entrepreneurs, acting in partnership with other sectors, can **contribute decisively to a low carbon regenerative economy**, foreseeing environmental risks and creating technological solutions to avoid negative impacts and mitigate those that cannot be avoided. In this sense, Ambipar is a leader.



← **Ecosoil**: a soil conditioner for a regenerative agriculture. Made from the assisted biodegradation of organic waste, it is approved by the Ministry of Agriculture and Supply (MAPA) and as an input for organic agriculture.

AMBIPAR IS A BRAZILIAN ENVIRONMENTAL MANAGEMENT MULTINATIONAL WHICH, DUE TO THE VERY NATURE OF THE BUSINESS, BASES ITS STRATEGIES ON SUSTAINABILITY AND IS DEEPLY COMMITTED TO THE ESG AGENDA.

ESG



E for Environmental:

for a regenerative and resilient economy, with low carbon emissions.



S for Social:

for a way to do business that makes the society prosper.



G for Governance:

for ethical management and transparent business.

Since its foundation, in 1995, Ambipar has acted on two fronts to curb global warming: **Environmental Solutions (Environmental)**, for a low carbon economy and **Adressing Emergencies (Response)**, to mitigate the impacts caused by major accidents.



Ambipar's purpose is to be recognized as a global reference in environmental solutions for mitigating climate change, contributing to business continuity and preserving the world for future generations.





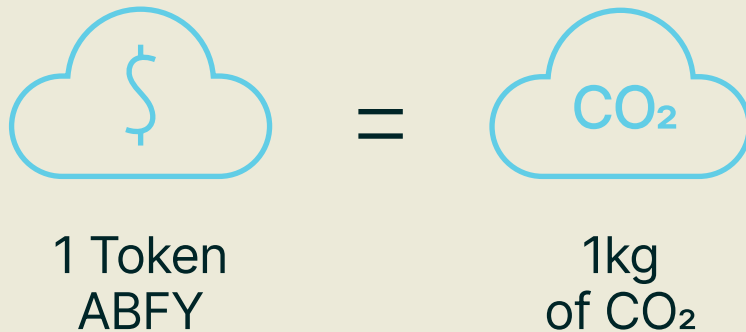
FOR A LOW CARBON ECONOMY



The aim of this paper is to demonstrate that it is possible to avoid the risk of Climate change and thus preserve the world for the future generations. The strategy is to engage people and companies in the joint construction of a low carbon economy and offer them the best means to act.

In this context, Ambipar puts what was only possible for large companies in common people's hands: the possibility to neutralize the carbon generated through the Ambify platform, accessible by cell phone.

→ AMBIFY IS A TOOL RESULTING FROM INNOVATIVE TECHNOLOGIES, WHICH INCLUDES CARBON CREDIT* IN A FRACTIONAL WAY AND, THEREFORE, MORE ACCESSIBLE, FOR ANYONE TO OFFSET THEIR GREENHOUSE GAS EMISSIONS.



*1 carbon credit is equivalent to 1 ton of CO₂.

By fractionating, Ambify seeks to popularize and democratize carbon credit, encouraging changes in behavior and engaging ordinary people in the fight against climate change.

Ambify achieves robustness through the tokenization of the tangible carbon credit asset, certified by **Verra** - world reference in international accreditation of the voluntary carbon market, with recognized methodologies to quantify generation.



What is expected is to **speed up awareness and behavior change**, in order to do grow the movement by **preservation of our planet** in an organical and natural way.



THE AMBIFY TOKEN 😊BALLAST

AMBIPAR'S CREDIBILITY

→ The Ambify token carries the entire credibility story of Ambipar, the first environmental management company listed on B3. Ambipar is in 18 countries and has more than 300 bases of operations in the world. Since its foundation in 1995, it has supported large companies in their efforts to reduce and neutralize their CO₂ emissions and offer technological solutions to make the transition to a low carbon economy based on the precepts of the circular economy.



LOW CARBON ECONOMY IS A CONTINUOUS AGENDA AT AMBIPAR:

- ✨ Measure greenhouse gas emissions (GHGs) of all processes.
- ✨ Understand reduction opportunities.
- ✨ Reduce emissions. Compensate for what cannot be reduced.
- ✨ Remeasure to update goals and challenges.
- ✨ Develop circular economy technologies and products.

AMBIFY'S CARBON CREDITS PROVIDE:

CARBON SEQUESTRATION

From forestry projects
(REDD+);

REGENERATIVE AGRICULTURE

Which conditions the soil
and increases its potential
to store carbon;

CIRCULAR ECONOMY

That transforms waste into
raw material, reinserting it
in industrial processes.



VERRA'S CERTIFICATION

Ambipar works with international protocols and world-renowned methodologies to measure and reduce carbon emissions and increase sequestration. All processes are certified by Verra, a world-renowned certifier. The voluntary market adopted the Verra methodology, which standardizes the norms of projects for the generation of carbon assets.




To mitigate impacts of Global Warming, Verra keeps almost

1.700
PROJECTS
OF VERIFIED
CARBON STANDARDS
(VCS) CERTIFIED,
that reduced or
collectively removed

+THAN 630
MILLION
TONS OF CARBON
AND OTHER
GREENHOUSE EFFECT
EMISSION (GHGs)
FROM THE ATMOSPHERE.



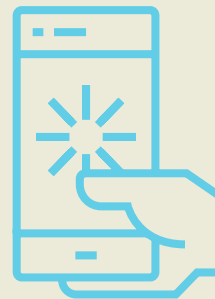
→ ACCORDING TO VERRA, BOTH INDIVIDUALS AND LEGAL ENTITIES WORLDWIDE, **RECOGNIZE THE IMPORTANCE OF REDUCING THEIR GHG EMISSIONS**, AND MANY ARE REDUCING THEIR CARBON FOOTPRINTS THROUGH ENERGY EFFICIENCY AND OTHER MEASURES RESULTING FROM TECHNOLOGICAL INNOVATIONS.



When it's not possible to meet the goals with internal reductions, the carbon credit market presents itself as a valid mechanism.

Verra-certified projects have public records in their open system, which makes it possible to check whether that particular credit has already been retired or is still active, available for transactions. This way, **the serial number of the tokens guarantees that the credit has already been invested,** the sequestration occurred and the methodology was fulfilled.

From the certification of Verra, Ambify fractionates carbon credits and makes them available to the users for immediate or future neutralization. The tokens can be stored within the Ambify system (access through application or website) in listed crypto-asset brokers listed or cold wallets created from the blockchain protocols.



→ Carbon markets allow people or organizations to neutralize or offset their emissions by buying carbon credits generated by GHG sequestration projects. It is essential to be able to verify that this sequestration is actually taking place. This is where the Verified Carbon Standard (VCS) comes in, which guarantees the credibility of projects.

Once the projects have been certified in accordance with the strict set of rules and requirements of the Verified Carbon Standard (VCS), the project developers can receive tradable GHG credits, the so-called Carbon Units Verified (VCUs). These VCUs can be traded on the open market and withdrawn by individuals and companies as a means of offsetting their own emissions and channel financing to business and clean and innovative technologies.



THE AMBIFY PLATFORM

On the Ambify platform, anyone can calculate their carbon emissions in everyday activities, from a meal to a family's monthly consumption. To do this, all you need is to enter basic information on average consumption and then offset emissions by buying carbon credits that are genuinely generated and certified with traceability and ballast.



→ The carbon footprint is calculated using the national program tool **GHG Protocol**, an international standard for estimating greenhouse gas emissions. Articles published in scientific journals such as Nature Climate Change, Climatic Change and Global Environmental Change are also taken into account, which underlie these complex calculations.



But that's not all. The platform is also a means of disseminating knowledge about climate change and the reduction of negative impacts by using carbon neutralization. It is possible, for example, to understand that carbon sequestration is not just a matter of planting trees, as many believe. **The circular economy** and agriculture have enormous potential for carbon uptake and capture, respectively.

Once sustainable management is implemented in the cultivation of food and commodities, using Ambipar technology, the soil can capture atmospheric CO₂ and also increase soil fertility and the richness of the biome. Changes in management begin with the training of farmers and the realization, in the short term, that conditioning the soil reduces costs and extends the productive potential of planted areas.





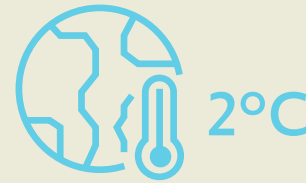
WORLDWIDE TREND

VALUE OF CARBON CREDIT

The largest stock exchanges in the world have indexes that corroborate the evolution of carbon credit prices in the world. Indexes such as DJSI (Dow Jones), FTSE4 (London) and ISE (B3) have been growing since the last decade, showing that the market is focused on climate change. Some experts say that the strength of this market is closer than imagined. One day, not too far away, the voluntary market alternative will no longer exist, as saving the planet will no longer be an option, but an imperative.

Moved US\$ 53 BILLION IN 2020

According to the One Planet article, of 05/26/2021, the carbon credit moved US\$ 53 billion in 2020, as pointed out by the World Bank, based on carbon pricing strategies, surpassing by almost 18% the number of 2019.



In 2019, a commission from the regulated carbon market indicated that, to play a decisive role in limiting global warming to less than 2°C, the price per ton of emissions would have to be above US\$40. This World Bank report raised that only 5% of prices practiced in all markets were above this value. Main source of transactional resources is still the European market, where prices reached the average of US\$ 60 in Sweden, which is not part of European carbon, where the price was in the range of US\$ 140 per tCO₂e.

↑ € 47,25 / tCO₂e
2021 > 2025
↑ € 58,62 / tCO₂e
2026 > 2030

According to Reuters, carbon prices in the European Union's emissions trading system are expected to rise significantly over the next decade due to tougher climate targets, according to participants in a recently published industry survey. The EU's Emissions Trading System (ETS) is the world's largest carbon market, covering around 45% of the block's greenhouse gas output and charging emitters for every ton of carbon dioxide they emit. The International Emissions Trading Association (IETA) survey revealed that members expect carbon prices in the EU ETS to average €47.25 (US\$57) a ton between 2021 and 2025 and €58.62 a ton between 2026 and 2030.

ACCELERATION OF THE CARBON MARKET (BR)

According to the EPBR magazine, of December 23, 2019, the Brazilian government, together with the World Bank, will accelerate the creation of the carbon market. Bill 599/18 provides for the taxation of greenhouse gas emissions as an Intervention of Contribution in the Economic Domain.

BRAZIL HAS A PRIVILEGED POSITION

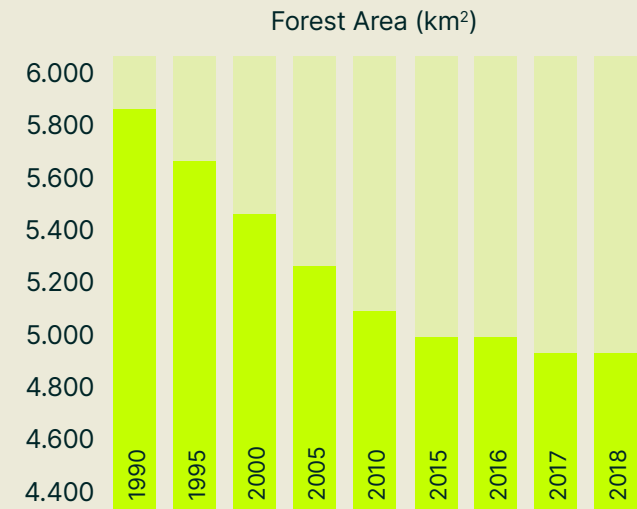
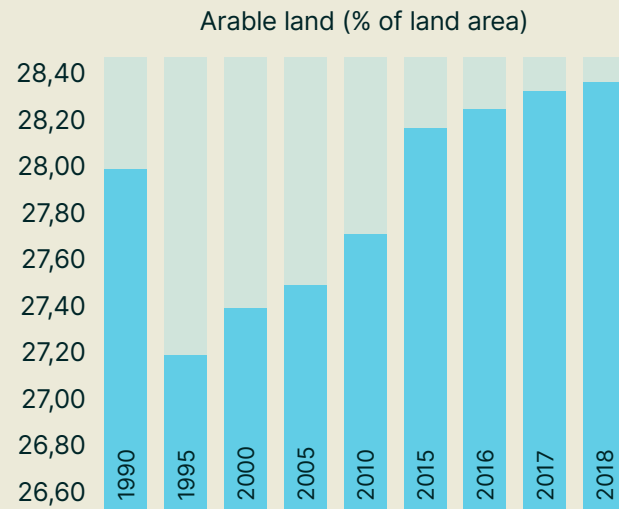
Countries like Mexico, Colombia and Chile levy carbon taxes on highly emitting economic sectors, such as energy. Other countries have imposed taxation, especially those that have a strong use of coal in their energy matrix. Brazil is in a privileged situation due to its clean energy matrix.

30% OF COMPANIES HAVE PLANS TO DECARBONIZE

A study by CEBDS (Brazilian Business Council for Sustainable Development), with the support of WWF-Brasil and the Carbon Disclosure Program (CDP) Latin America, showed that 30% of the companies that are part of this council have developed a decarbonization plan and 10% have a plan under development to be finalized in the next two years. Data from the study also show that 33% of companies use internal carbon pricing and another 21% intend to do so in the next two years. The global average price of carbon credits in 2019 was US\$23.65. As of early 2018, the total return potentially earned by investors on carbon projects is 132%. The data is part of the IHS Markit Global Carbon Index, recently released by IHS Markit.

WE WILL INCREASE THE FOREST AREAS

Opportunities found for soil carbon sequestration are identified by the percentage of arable land available in Brazil, according to World Bank data. However, forest areas have been falling over the years, as shown in the graphs on the side. →



Numbers in reference to millions of km².



METHODOLOGY

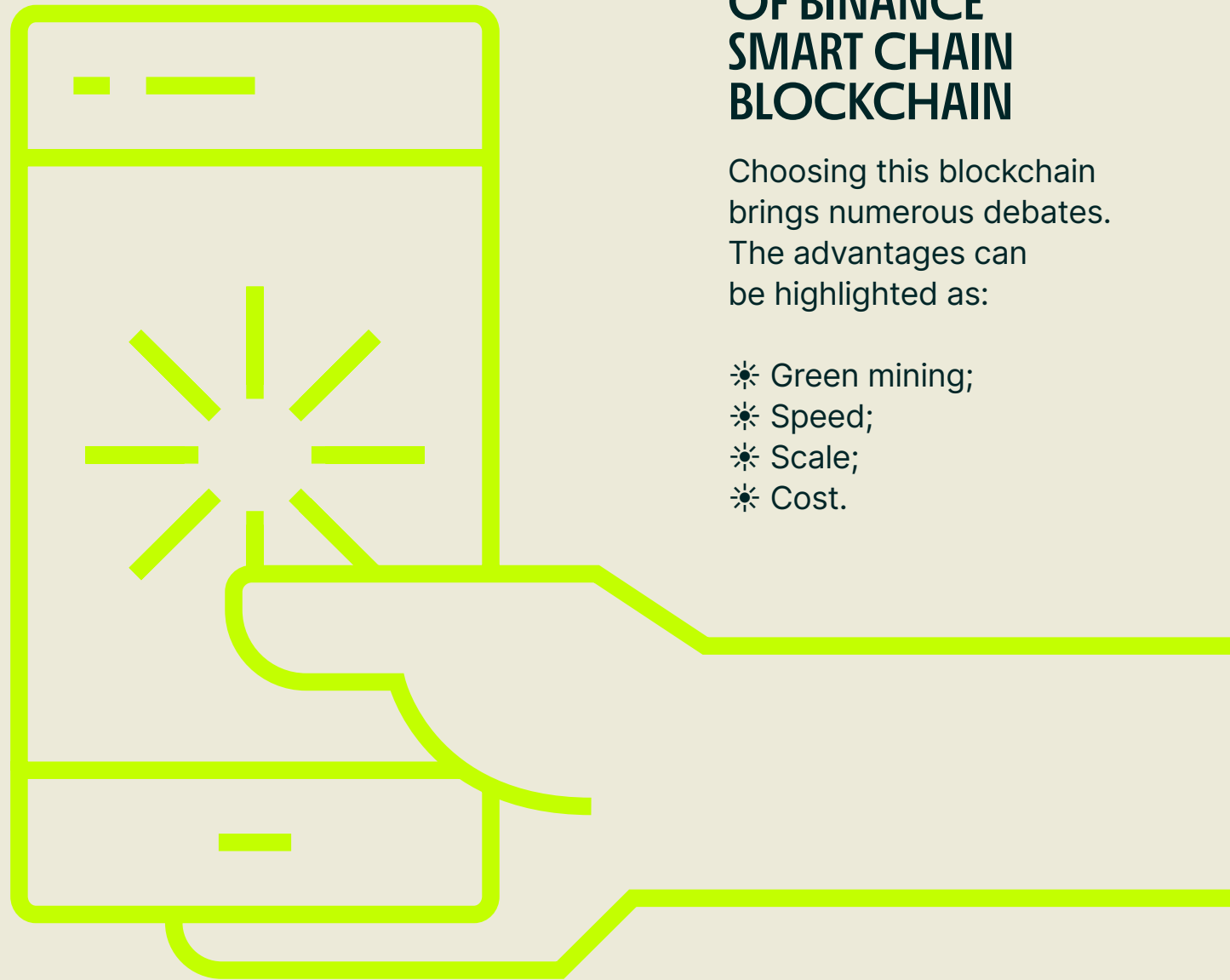
INITIAL CHOICE OF BINANCE SMART CHAIN BLOCKCHAIN

Choosing this blockchain brings numerous debates. The advantages can be highlighted as:

- ✨ Green mining;
- ✨ Speed;
- ✨ Scale;
- ✨ Cost.

→ The **Ambify (ABFY)** is a token backed by carbon credits registered in a BEP-20 smart contract and used to record transactions of:

- ✨ Creation;
- ✨ Transfers;
- ✨ Neutralization (burning) of carbon credits in the blockchain Binance Smart Chain (BSC).





GREEN MINING

For Ambipar, it made no sense to launch the AMBIFY token on a blockchain network that used the already criticized consensus mechanism known as Proof of Work. This is because this mechanism has shown itself, over time, to be a major consumer of computational power and electrical energy (often coming from fossil fuels, such as thermoelectric power plants powered by diesel oil and even coal).

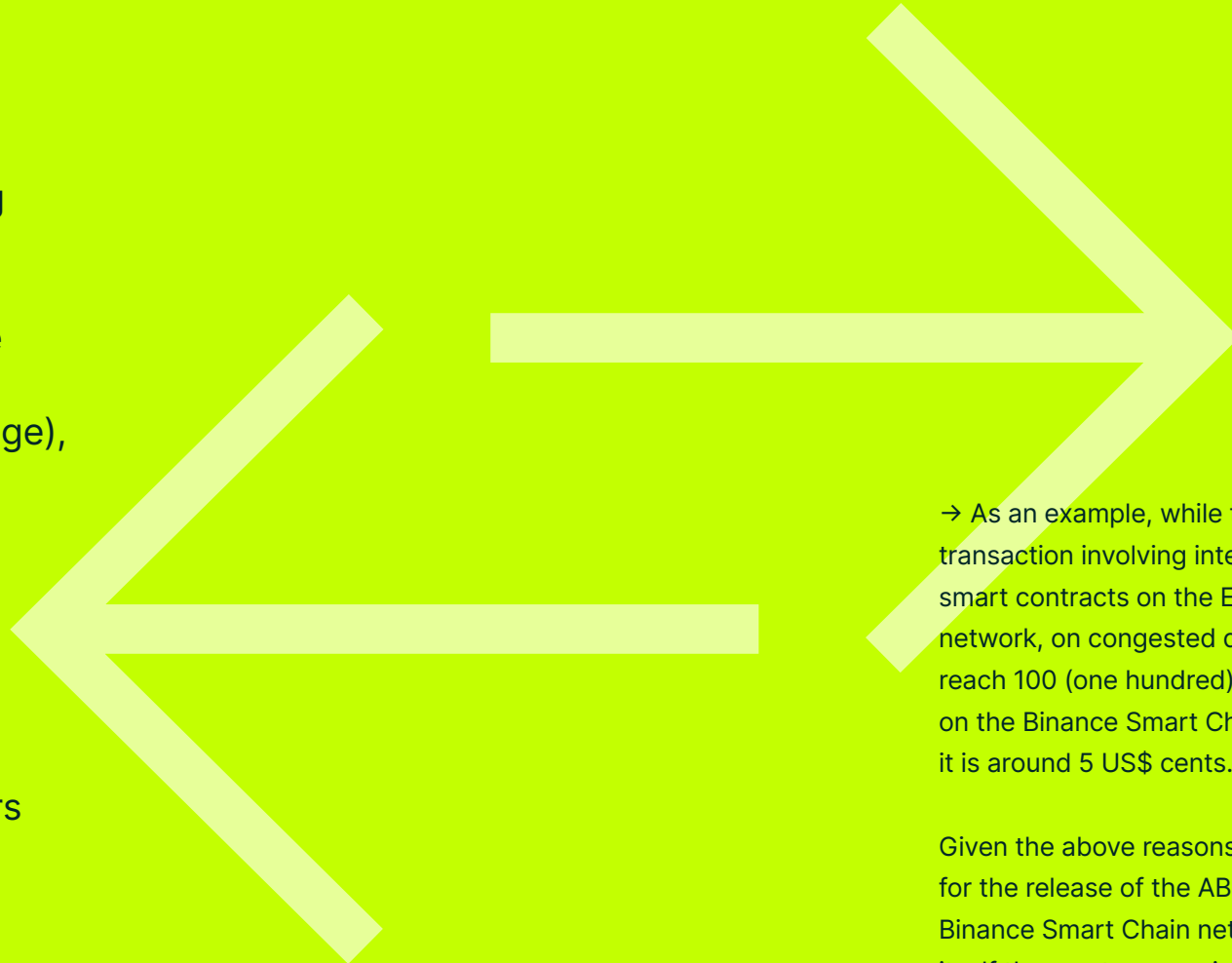


Binance Smart Chain, in turn, uses the consensus mechanism called Proof of Staked Authority (PoSA). Through this mechanism, user validators who have a large amount of BNB (the base currency of the Binance Smart Chain network), validate the performed operations. Thus, it is not necessary to use the Proof of Work consensus mechanism (currently used by the Bitcoin and Ethereum networks), which requires the use of large amounts of computational power and wasted electrical energy, as previously mentioned.

Thus, it can be seen that the option to launch the ABFY token in Binance Smart Chain meets the current desire of cryptoactive users for more sustainable choices, as network mining leaves an infinitely smaller carbon footprint than blockchains that use Proof of Work as a consensus mechanism (such as Bitcoin and Ethereum).


SPEED, SCALE AND LOW COST OF TRANSACTION

Other factors that led to choosing the BSC blockchain were three intertwined issues: speed, scale and low transaction cost. Binance Smart Chain network generates blocks every 3 seconds (on average), which enables four times the speed of the Ethereum network, subsequently increasing the scalability of the network itself. Regarding the transaction cost, given the adoption of the aforementioned Proof of Staked Authority, it is seen that validators do not need to make large investments in mining hardware, nor to spend large amounts of electricity, which enables an infinitely lower transaction cost than the transaction cost in similar networks.



→ As an example, while the average transaction involving interactions with smart contracts on the Ethereum network, on congested days, can reach 100 (one hundred) US dollars; on the Binance Smart Chain network, it is around 5 US\$ cents.

Given the above reasons, the option for the release of the ABFY token in Binance Smart Chain network shows itself the most appropriate, as the BSC seems to be the right blockchain network for a token that scopes the neutralization of the carbon footprints from its users.



FLOW

As already mentioned, AMBIFY is backed by carbon credits previously acquired and aims to neutralize the carbon footprint of its users. The use of blockchain technology aims to bring transparency and registration of all carbon credits available on the platform. In other words, a carbon credit can only be created and neutralized once, which will guarantee the reliability of the system. The flow from creation to carbon neutralization is shown below.



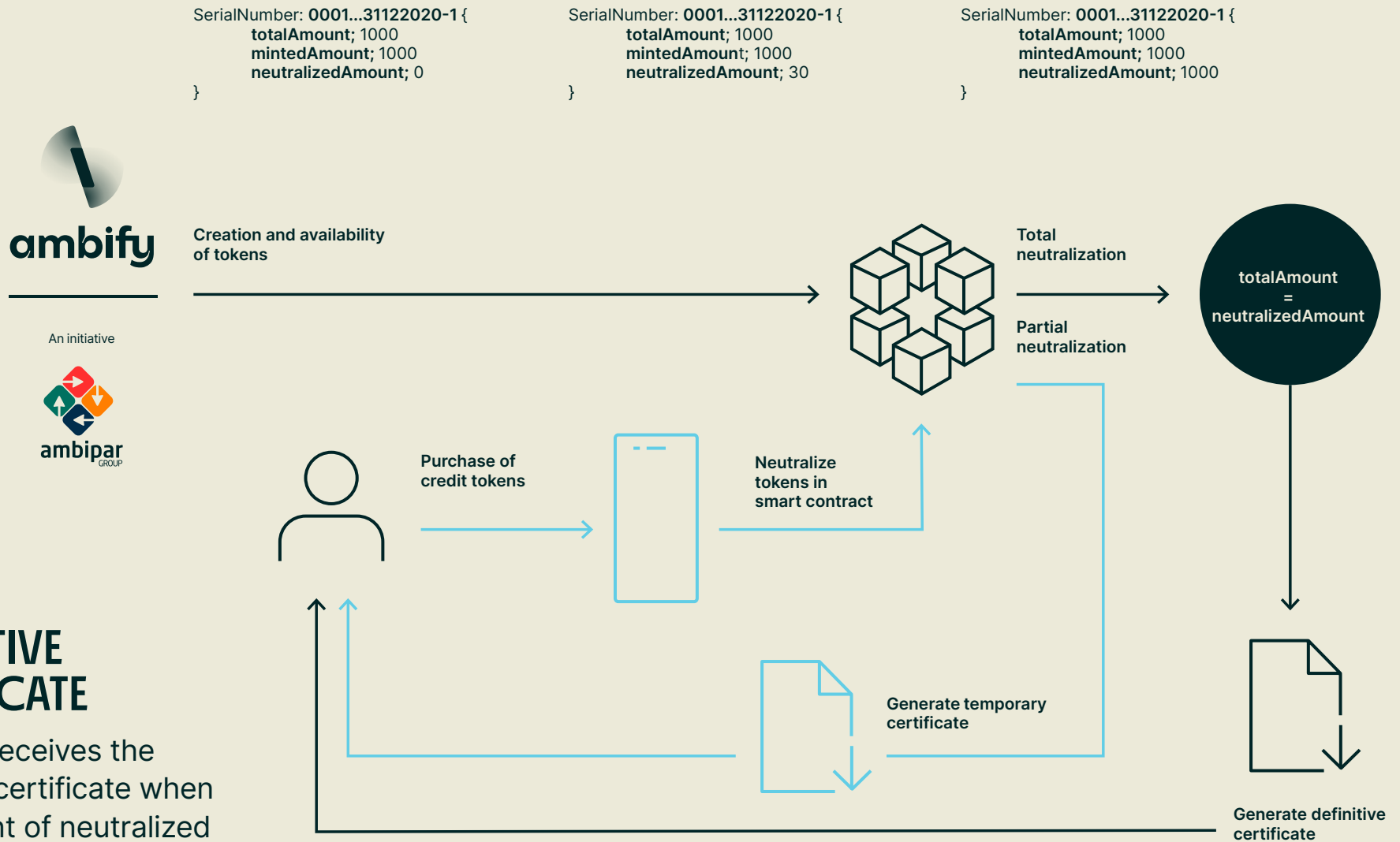
CREATION AND AVAILABILITY OF TOKENS

- ① Ambipar registers a new serial number in the smart contract, indicating the number of tokens associated with the serial number;
- ② Ambify issues tokens to be made available on the platform, passing the serial number and the previously registered quantity.




NEUTRALIZATION

- ① User acquires tokens from carbon credit, directly in the Ambify app or in exchanges;
- ② If the purchase was performed on another platform, the users transfers their tokens to your account on the platform of Ambify;
- ③ Within the app, the user requests neutralization;
- ④ The token is burned in the smart contract along with the registration of the amount of tokens used in this serial number;
- ⑤ The user receives an email with a provisional neutralization certificate.



DEFINITIVE CERTIFICATE

The user receives the definitive certificate when the amount of neutralized tokens corresponds to the quantity of carbon credits reported in the serial number.

PERMISSIONS

Owner;

Exchange;

FUNCTIONS

Only Owner:

Create Serial Number.

When executed, it registers a new serial number with the maximum number of serial tokens sent to the function call.

Name	Type	Description
_serialNumber	string	string of serial number.
_totalAmount	uint256	The max amount of tokens.

MINT

Create new tokens based on serial number, the serial number needs to have the amount available, where the mintedAmount - totalAmount must be less than or equal to the amount being sent.

Name	Type	Description
_serialNumber	string	string of serial number.
_totalAmount	uint256	The amount of tokens.

ONLY EXCHANGE

Neutralize

Burn tokens from a specified serial number.

Name	Type	Description
_serialNumber	string	string of serial number.
_totalAmount	uint256	The amount of tokens.
_neutralizeIdentifier	string	Used only internally

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